AECOM

Final Remedial Investigation Report

Columbia Fuel Fabrication Facility
Hopkins, Richland County, South Carolina

Westinghouse Electric Company, LLC

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Acronyms

AECOM	AECOM Technical Services, Inc.
AOC	Area of Concern
BLS	below land surface
BRA	Baseline Risk Assessment
Brockington	Brockington and Associates, Inc.
CA	Consent Agreement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFFF	Columbia Fuel Fabrication Facility
cis-1,2 DCE	cis-1,2-dichloroethene
COPCs	constituents of potential concern
COPECs	chemicals of potential ecological concern
CSM	Conceptual Site Model
CT	Computed Tomography
CVOCs	chlorinated volatile organic compounds
DHEC	South Carolina Department of Health and Environmental Control
DOE	United States Department of Energy
DPT	direct push technology
Elite	Elite Techniques, Inc.
EPA	United States Environmental Protection Agency
ERA	Ecological Risk Assessment
ft	feet
ft^2	square feet
ft/day	feet per day
ft/ft	feet per foot
GEL	GEL Laboratories, LLC
GEX	Geologic Exploration, Inc.
HASP	Health and Safety Plan
HHRA	Human Health Risk Assessment
HLC	Henry's Law Constant
IDW	investigative derived waste
K_d	equilibrium distribution coefficient
K_{oc}	organic carbon partitioning coefficient
$logK_{ow}$	n-Octanol/water partitioning coefficient
µg/kg	micrograms per kilogram
µg/L	micrograms per liter
MCL	maximum contaminant level
MDC	minimum detectable concentration
mg/kg	milligram per kilogram
mg/L	milligram per liter
mRem/yr	millirem per year
MS	matrix spike
MSD	matrix spike duplicate
MSL	mean sea level
NCRP	National Council on Radiation Protection and Measurements
NPDES	National Pollution Discharge Elimination System
NRC	Nuclear Regulatory Commission
OU	operable unit
Pace	Pace Analytical Services
PCE	tetrachloroethene
pCi/g	picocuries per gram
pCi/L	picocuries per liter
QA	quality assurance
QC	quality control
RCRA	Resource Conservation and Recovery Act

RI	remedial investigation
RUSLs	Residential Use Screening Levels
SAEDACCO	South Atlantic Environmental Drilling and Construction Company
SNM	special nuclear material
SGS	soil gas survey
SOFs	sum of fractions
SOLX	solvent extraction area
SVOC	semivolatile organic compounds
TAL	Target Analyte List
TBD	Technical Basis Document
Tc-99	Technetium-99
TCE	trichloroethene
TCL	target compound list
THA	Task Hazard Assessment
TMS	Tax Map Series
U	uranium
USCB	United States Census Bureau
USDA	United States Department of Agriculture
USGS	United States Geological Survey
VC	vinyl chloride
VOC	volatile organic compounds
Westinghouse	Westinghouse Electric Company, LLC
WL I	West Lagoon I
WL II	West Lagoon II
WWTP	wastewater treatment plant

1. Executive Summary

The Westinghouse Electric Company, LLC (Westinghouse) Columbia Fuel Fabrication Facility (CFFF) consists of 1,151 acres, with the operational area encompassing 75 acres. CFFF manufactures fuel assemblies and components for the commercial nuclear power industry.

The South Carolina Department of Health and Environmental Control (DHEC) and CFFF entered into a Consent Agreement (CA) on February 26, 2019. The CA requires a Remedial Investigation (RI) to further assess the source, nature, and extent of known constituents of potential concern (COPCs) as well as additional areas where historical releases may have occurred. The CA also requires that the RI be followed by a Feasibility Study (FS) to assess cleanup alternatives.

RI activities were conducted from June 2019 through October 2021 and included the following:

- 91 soil and/or lithologic borings were completed;
- 103 soil samples were collected;
- a private water supply well survey was conducted within 1 mile of the property boundary;
- four private water supply wells were sampled;
- 120 groundwater samples were collected from temporary wells;
- 57 additional permanent monitoring wells were installed;
- permanent monitoring wells were sampled semi-annually, including 118 wells in October 2021;
- 12 surface water samples were collected;
- 172 sediment samples were collected;
- five aliquots of sediment and 13 soil samples were analyzed for grain size;
- six locations within CFFF's surface water bodies had pressure transducers installed on staff gages to continuously monitor surface water elevations;
- 13 monitoring wells and one piezometer had pressure transducers installed to continuously monitor groundwater elevations;
- 21 slug tests were conducted in 21 monitoring wells;
- bathymetric surveys of the Gator Pond, Upper Sunset Lake, and Lower Sunset Lake were performed; and
- the borings, new wells, staff gage locations and portions of the stormwater ditches were surveyed.

The data generated by this work confirmed that the following COPCs are present in environmental media (soil, groundwater, sediment and/or surface water): chlorinated volatile organic compounds (CVOCs), nitrate, fluoride, technetium-99 (Tc-99) and uranium (U). The RI did not identify any sources of ongoing impacts. Over 50 years of facility operations have resulted in limited impacts to these media, and the extent of these impacts are well within the facility property boundary. There is no evidence that these impacts have or will affect properties off-site in the future.

A Baseline Risk Assessment (BRA) was conducted as part of the RI to assess what risks these impacts might pose to human health and the environment. The BRA indicates that the impacts pose no unacceptable risk to human health or the environment.

A visual, 3-dimensional Conceptual Site Model (CSM) using data collected during previous investigations and the RI has been created to illustrate the source, nature, and extent of COPCs. The CSM will be used to support the decision process, leading to selection of a cleanup alternative(s).

The following recommendations are based on the findings of the RI:

- The FS should be conducted to assess which cleanup options are appropriate for CFFF.
- To support the CSM and FS, a groundwater fate and transport model should be developed to predict when COPCs in groundwater will fall to below levels of potential concern and/or remain in a steady state condition.

2. Introduction

Westinghouse Electric Company, LLC (Westinghouse) Columbia Fuel Fabrication Facility (CFFF) is located at 5801 Bluff Road (site or property) in Hopkins, approximately 15 miles southeast of Columbia, South Carolina (**Figure 1**). The site includes approximately 1,151 acres, with the operational area encompassing approximately 75 acres centrally located on the site, thereby creating substantial buffers from adjoining properties. The property is surrounded by rural forested and agricultural property. CFFF was opened in 1969 and manufactures fuel assemblies and components for the commercial nuclear power industry. Site features are shown on **Figure 2**.

On February 26, 2019, the South Carolina Department of Health and Environmental Control (DHEC) and CFFF entered into Consent Agreement 19-02-HW (CA). This CA requires Westinghouse to comprehensively assess potential environmental impacts from current and historical operations at the CFFF by following the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) process. The CERCLA process requires the following incremental steps: Remedial Investigation (RI), Feasibility Study (FS), Record of Decision, Remedial Design/Remedial Action and Remedial Action completion. This document constitutes the final RI Report that includes data from previous assessments as well as newly acquired data.

Previously, CFFF submitted a *Final Remedial Investigation Work Plan* to DHEC in June 2019 (AECOM, 2019), which DHEC approved on June 19, 2019. Assessment activities outlined in the June 2019 *Final Remedial Investigation Work Plan* (also referred to as Phase I) represented the first step in an iterative process to fulfill the requirements of the CA to assess the source, nature and extent of impacts from historical operations. The RI Phase I work was performed from June to December 2019. Phase I included the installation of 29 monitoring wells (W-69 through W-97).

As agreed with DHEC, an *Interim Remedial Investigation Data Summary Report* (AECOM, 2020a) was prepared to document the findings of the Phase I assessment. Following comments from DHEC, CFFF submitted the *Final Interim Remedial Investigation Data Summary Report* (AECOM, 2020b) on July 15, 2020. On July 30, 2020, DHEC approved the report and requested a Phase II RI Work Plan (also referred to as Phase II) be submitted by September 15, 2020. The *Phase II Remedial Investigation Work Plan* (AECOM, 2020c) was submitted to DHEC on September 15, 2020, and partially approved by DHEC on October 14, 2020. A Phase II Work Plan addendum was submitted on October 29, 2020, to address DHEC's comments on the *Phase II Remedial Investigation Work Plan*, and DHEC approved the Work Plan addendum on November 5, 2020.

A portion of the Phase II field work was performed from October 2020 through June 2021. This work included the installation of 14 new monitoring wells (W-98 through W-100, and W-102 through W-112). Another portion of the Phase II field work included additional monitoring well installations (W-113 through W-126 and replacement well W-4R) and was performed in July and August 2021. Site-wide semi-annual groundwater sampling of the existing monitoring well network has also been performed since 2018.

2.1 Regulatory Framework

CFFF is regulated by both the Nuclear Regulatory Commission (NRC) and DHEC. The NRC regulates activities involving Special Nuclear Material (SNM). These activities are performed under license SNM-1107. In accordance with SNM-1107, CFFF has set aside closure funding to remove radiologically impacted environmental media when the facility is decommissioned (Westinghouse, 2022). DHEC regulates non-SNM activities, including non-radiological air emissions, wastewater discharges, solid and hazardous waste management as well as any impacts to environmental media.

2.2 Project Overview, Objectives, and Report Organization

The purpose of the RI is the following:

- Define the physical characteristics of the study area;
- Refine knowledge of regional and site geology and site hydrogeology;
- Document the source, nature, and extent of COPCs in soil, groundwater, surface water, and sediment;
- Update the site conceptual model; and

- Update the Baseline Risk Assessment.

This RI report provides the results of work performed from June 2019 to August 2021 and is organized into eight sections:

- **Section 1** presents this introduction, an overview of the project, and site background and history.
- **Section 2** outlines the field and analytical methods used to generate the environmental quality data.
- **Section 3** discusses physical characteristics of the area, including site geology and hydrogeology.
- **Section 4** discusses the investigation results and environmental quality data.
- **Section 5** discusses the source, nature, and extent of site-related COPCs.
- **Section 6** presents the Conceptual Site Model.
- **Section 7** summarizes the updated Baseline Risk Assessment (BRA).
- **Section 8** draws conclusions from the data.
- **Section 9** lists references**.**

2.3 Site Description, Physical Setting, and Operational Background

2.3.1 Facility Description and Operational Background

Figures 1 through 3 illustrate the site features discussed below. The CFFF property is located on Bluff Road (SC Highway 48) approximately 15 miles southeast of Columbia, SC and includes approximately 1,151 acres as identified by Richland County Tax Map Series (TMS) numbers 18600-01-01 and 18601-01-02. The property is surrounded by rural forested and agricultural property with some permanent residences located north and east of the site.

The primary plant building is located approximately 2,700 feet (ft) southwest of Bluff Road on the northern portion of the property with the wastewater treatment plant (WWTP) located near the southwest corner of the plant building. Treated wastewater is piped to the Congaree River approximately 3 miles south of the property boundary where it is discharged under National Pollutant Discharge Elimination System (NPDES) permit SC0001848. A 30-40 ft bluff separates the northern, partially developed portion of the property from the southern floodplain portion of the property. Notable features in the floodplain include Mill Creek (including Upper and Lower Sunset Lakes, **Figure 2**), a man-made canal, and man-made stormwater ditches.

Westinghouse purchased the property in 1968, and construction of the CFFF was completed in 1969. Prior to construction the property consisted of farmland and woodlands. The main manufacturing activity is the fabrication of low-enriched U fuel assemblies and components for the commercial nuclear power industry. The manufacturing process generates multiple wastewater streams which are treated by various physical, chemical, and biological processes prior to discharge to the Congaree River.

The facility was divided into eight operable units (OUs) and one Area of Concern (AOC) in recognition of the different types of site activities and potential sources of impact. The OUs are identified as the Northern Storage Area, Mechanical Area (of the plant building), Chemical Area (of the plant building), West Lagoons Area, Wastewater Treatment Area, Sanitary Lagoon Area, Southern Storage Area and Western Storage Area. The “Western Groundwater AOC,” was previously identified; however, work conducted during Phase II of the RI concluded the groundwater impact in this area is part of the main chlorinated volatile organic compound (CVOC) plume as described in **Section 4.2.1**. The OUs and the Western Groundwater AOC are depicted on **Figure 4,** were described in detail in the *Final Remedial Investigation Work Plan* (AECOM, 2019), and are summarized in **Appendix A**.

Releases of COPCs have occurred from the wastewater treatment system and manufacturing operations. CFFF has assessed known releases, installed an extensive groundwater monitoring network (beginning in the early 1980s), and initiated various remediation efforts in response to historic events. Additional comprehensive site assessment of groundwater, surface water, sediment and soils has been performed from 2019 – 2021 under the CA. These assessment activities have determined that environmental impacts from historical operations are largely confined to

the immediate plant area and there are no offsite impacts. Additional facility background and operational information is in **Appendix B**.

2.4 Historical Investigations

As mentioned above, previous environmental investigations were performed from 1980 to 2019. Summaries of and excerpts from the investigation reports are contained in **Appendix C**.

2.5 Historical Remediation Activities

Environmental remediation activities were performed beginning in 1998. Summaries of and excerpts from remediation activities are contained in **Appendix D**.

3. Methods of Investigation

The RI was performed between 2019 and 2021 and included preparation and planning for field related activities followed by implementation of multiple phases of investigation. In general, the RI efforts included the following:

- Project planning and procurement;
- Completion of 91 soil and/or lithologic borings;
- Analysis of 21 groundwater samples collected from seven temporary groundwater screening locations during Phase I and 99 groundwater samples from 43 screening locations during Phase II;
- Installation, development, and sampling of 57 new permanent monitoring wells;
- Collection and analysis of groundwater samples from the site's monitoring well network semi-annually during the RI period;
- Survey of private water wells near the facility;
- Collection and analysis of groundwater samples from four private wells;
- Collection and analysis of 12 surface water samples;
- Collection and analysis of 172 sediment samples;
- Collection and analysis of 103 soil samples;
- Submittal of five aliquots of sediment and 13 soil samples for grain size analysis;
- Bathymetric surveys of the Gator Pond, Upper Sunset Lake and Lower Sunset Lake;
- Installation of seven surface water staff gages;
- Installation of pressure transducers on six staff gages, in 13 monitoring wells, and in one piezometer;
- Slug tests in 21 wells; and
- Surveying of ditches, borings, new wells, and staff gage locations.

Locations of samples collected during the RI are displayed on **Figure 5**. The preparation activities, methods used to collect environmental samples, and the rational for the sampling efforts are discussed in more detail in this section of the report and are summarized in **Table 2**.

3.1 Field Program Preparation Activities

Preparation for the multiple phases of field work included the following activities: development of project specific Health and Safety Plans (HASP), resolution of site access issues with adjacent property owners, utility clearance, drilling and well installation, investigative derived waste management and disposal, sample analysis, and procurement of necessary field and sampling equipment. These activities are summarized in this section.

3.1.1 Preparation of Health and Safety Plan

Prior to implementation of field efforts, AECOM Technical Services, Inc. (AECOM) prepared a project HASP. The HASP was developed in accordance with the Federal Occupational Safety and Health Administration Regulation Title 29, Part 1910 (29 CFR Part 1910), Safety and Health Regulations for General Industry and 29 CFR 1926, Safety and Health Regulations for Construction. The HASP includes AECOM and CFFF specific emergency procedures, a map to the closest emergency medical treatment facility, and Task Hazard Assessment (THA) forms for specific activities performed by field personnel. The HASP provides methods for AECOM and contractor personnel to identify, evaluate, and control safety and health hazards, and outlines emergency response actions for AECOM-managed activities. This HASP was kept on site during field activities and made available to workers including subcontractors and other site occupants for informational purposes. The HASP was updated annually during the RI.

3.1.2 Resolution of Access Issues and Permits

Because limited access was required to private properties surrounding the site, CFFF negotiated access agreements with the property owners. The agreements allowed AECOM and CFFF personnel to access these properties during the RI to obtain groundwater samples from private water supply wells. Sampling of the private water supply wells is discussed in in **Section 2.4.3.2**.

In accordance with the South Carolina Well Standards [R.61-71(H)(1)(a)], AECOM and CFFF obtained approval from SCDHEC for each phase of groundwater screening and/or well installation. This required AECOM and CFFF to submit proposed scopes of work for each phase for which DHEC issued separate monitoring well permits.

3.1.3 Site Reconnaissance

Site reconnaissance was performed prior to individual field activities to observe the accessibility of boring/sample locations and stake out locations. Locations were adjusted as necessary prior to mobilization of the field crews. Sample locations were staked out using either submeter grade global positioning system (GPS) equipment or field observations and marked with paint and/or stakes with flagging tape attached.

3.1.4 Utility Clearance

AECOM coordinated with CFFF to mark and scan each drilling/boring location for the presence of overhead and/or buried underground utility lines. Where available, CFFF utilized historic engineering drawings and plans to identify locations of underground utilities to aid in the process. In addition, AECOM procured a private utility locating contractor (Reed Tech, Inc.) to scan proposed installation locations for underground utilities before drilling efforts were initiated. Utility clearance methodology details are in **Appendix E**.

3.1.5 Drilling Subcontractors

The multiple phases of drilling and well installation required utilization of multiple SC licensed well drilling contractors. The drilling contractors include Geologic Exploration, Inc. (GEX) of Statesville, North Carolina; South Atlantic Environmental Drilling and Construction Company (SAEDACCO) of Rock Hill, South Carolina; and Elite Techniques, Inc. (Elite) of Camden, South Carolina. GEX and SAEDACCO were used to perform the Phase I RI drilling efforts. SAEDACCO and Elite were used to perform the Phase II RI drilling efforts.

3.1.6 Laboratory Subcontractors

RI sample analyses were performed by various SCDHEC certified laboratories. CFFF procured Pace Analytical Services (Pace, formerly Shealy Environmental Services, Inc) based in West Columbia, SC and GEL Laboratories, LLC (GEL) based in Charleston, SC to perform the majority of the analyses. CFFF's certified laboratory also performed a limited set of analyses throughout the RI. The analyses performed by each laboratory are discussed later in this chapter.

3.2 Soil Investigation

The RI soil investigation efforts included advancement of soil and/or well borings using various drilling technologies; collection, visual examination, and classification of soil cores; field screening; collection of surface and subsurface soil samples for physical and/or chemical analyses; and performance of multiple phases of a passive soil vapor sampling effort. The methods utilized during the soil investigative efforts and the rationale for sample locations are discussed in the following sub-sections.

3.2.1 Soil Boring Advancement Methods and Rationale

Soil and/or well borings were advanced across the site during both phases of the RI for purposes including the collection of lithologic data (lithologic borings), collection of samples for groundwater screening and collection of soil samples for physical and chemical analyses. During Phase I of the RI, 14 shallow soil borings (**Figure 6**) and 19 lithologic borings (**Figure 7**) were advanced at the site. During Phase II of the RI, 43 additional lithologic/groundwater screening borings (L-20 through L-62, **Figure 7**) were advanced across the site. A remedial investigation sample

summary is in **Table 2**. This table contains the sample depths, locations, brief rationale description for each boring and the analyses for each sample. Soil boring advancement methodology details are in **Appendix E**.

3.2.2 Lithologic Inspection and Classification

In accordance with the *Final Remedial Investigation Work Plan* (AECOM, 2019), soil and well borings advanced during each phase of the RI allowed collection of soil samples and/or cores that were visually examined, classified, and described using the Unified Soil Classification System. Lithologic information obtained from each soil and/or well boring was documented on boring logs and incorporated into the site's conceptual site model (CSM). Copies of boring logs generated during the RI for each soil and well boring are included in **Appendix F.**

3.2.3 Soil Gas Survey

Historical activities on the CFFF property have resulted in the release of CVOCs, specifically tetrachloroethene (PCE, also known as tetrachloroethylene) and its daughter products. The distribution of CVOCs in groundwater suggested a general area where a release(s) may have occurred; however, a source for this impact had not previously been identified. During Phase II of the RI, a passive soil gas survey (SGS) was performed in two phases in the probable CVOC source area along the west side of the CFFF plant building. During the two phases of the SGS, a total of 53 passive absorbent sampling devices were installed at depths of 2-3 ft below land surface (BLS) at 53 locations (**Figure 6**).

SGS methodology details are in **Appendix E**. Copies of the Beacon Environmental reports completed for both SGS events are in **Appendix G**. The results of the SGS were used to develop the scope of work for the CVOC source area soil investigation which is briefly summarized in **Section 2.2.4** below.

3.2.4 Soil Sample Collection

Soil sample collection efforts were completed in accordance with the procedures described in the *Final Remedial Investigation Work Plan* (AECOM, 2019) and the *Phase II Remedial Investigation Work Plan* (AECOM, 2020c).

The soil samples collected during the RI, their locations, their depths, rationale for each sample and sample analyses are listed in **Table 2**. Soil samples collected during Phase I of the RI were submitted to GEL for Technetium-99 (Tc-99) analysis via DOE EML HASL-300, Tc-02-RC Modified and samples collected during Phase II of the RI were submitted to Pace and analyzed for CVOCs using United States Environmental Protection Agency (EPA) Method 8260B. Soil sample collection methodology details are in **Appendix E**.

3.3 Groundwater Investigation

The RI groundwater investigation included groundwater screening, the installation of monitoring wells, monitoring well sampling, private water well sampling, and slug testing.

3.3.1 Groundwater Screening Methods and Rationale

Groundwater screening was used to refine the knowledge of the horizontal and vertical extent of COPCs in the surficial aquifer and to optimize the locations and screened intervals for additional monitoring wells to be installed at the site. **Figure 7** shows the locations where groundwater screening was performed during the RI. **Table 2** lists the RI groundwater screening samples, the depths at which they were collected, rationale for the locations and the analytical parameters for each sample. Groundwater screening methodology details are in **Appendix E**.

Groundwater samples collected from the screening borings were submitted to Pace, the on-site CFFF laboratory (fluoride analysis only), and/or shipped to GEL for analysis of CVOCs, fluoride, nitrate, and Tc-99. Groundwater sample collection records are in **Appendix H**. The results of the groundwater screening efforts were used to recommend locations for permanent monitoring wells.

3.3.2 Well Installation Methods and Rationale

During each phase of the RI, permanent monitoring wells were installed at strategic locations across the site. Twenty-nine monitoring wells were installed during Phase I of the RI and 28 monitoring wells were installed during Phase II of the RI. Additionally, one well was replaced (W-4R), one well had repairs completed (W-16) and one

piezometer (PZ-1) was installed during Phase II of the RI. The monitoring wells were installed using either rotosonic or hollow stem auger drilling techniques. **Figure 3** depicts the locations of the permanent monitoring wells. **Table 1** lists the monitoring wells located at the site, includes construction information, elevations, and identifies the surficial aquifer zone or aquifer in which each well is screened. **Table 2** lists the wells installed during the RI, rationale for the locations, and the analytical parameters for each sample. Well installation methodology details are in **Appendix E**.

3.3.3 Well Development

Each permanent monitoring well installed during the RI was developed by AECOM personnel in accordance with procedures described in the *Final Remedial Investigation Work Plan* (AECOM, 2019). The purpose of the development was to remove sediment that collected in the well screen and filter pack during installation. Each well was developed no sooner than 24 hours after grouting had been completed. Five monitoring wells (RW-1, W-6, W-22, W-25, and W-27) were also redeveloped during the RI period to either remove sediment from the well. Well development methodology details are in **Appendix E**. Copies of monitoring well development/redevelopment records for the RI are included in **Appendix I.**

3.3.4 Groundwater Monitoring

RI groundwater monitoring included sampling of permanent monitoring wells, collection of groundwater samples during the screening efforts, and sampling of water supply wells. This section briefly discusses the procedures used to perform RI related groundwater sampling.

3.3.4.1 Monitoring Well Sampling

Permanent monitoring wells were sampled in accordance with procedures specified in the *Final Remedial Investigation Work Plan* (AECOM, 2019) and the *Phase II Remedial Investigation Work Plan* (AECOM, 2020c). Groundwater samples were collected at least 24 hours after development. **Table 2** lists the groundwater samples collected from permanent monitoring wells during the October 2021 groundwater sampling campaign, the aquifer zone and/or aquifer that the well is screened, and the analyses that were conducted on each sample. Monitoring well methodology details are in **Appendix E**.

3.3.4.2 Private Water Well Sampling

As part of the RI, CFFF performed a survey of surrounding properties to locate water supply wells within approximately a 1-mile radius of the site. Thirty-one water wells, including two determined to be inactive, were identified during the survey (**Table 3, Figure 8**). Groundwater samples were collected from four water supply wells (identified as WSW-01 through WSW-04) located near the CFFF. Private wells (25 wells) that were upgradient of CFFF or inactive were not sampled. Private well sampling methodology details are in **Appendix E**. Copies of the groundwater sample collection records for both monitoring wells and private wells are included in **Appendix H.**

3.3.5 Hydraulic Data Collection and Conductivity Testing

To assess the hydrogeologic characteristics of the surficial aquifer and the rate of groundwater flow beneath the site, slug tests were performed on multiple wells during both phases of the RI. Slug tests were performed in 17 wells including four during Phase I and 13 during Phase II.

Four wells installed in the floodplain, two in the upper zone of the surficial aquifer (W-96 and W-97) and two in the lower zone of the surficial aquifer wells (W-94 and W-95), were slug tested during Phase I of the RI. Thirteen (13) wells including five screened in the upper zone of the surficial aquifer (W-11, W-67, W-98, W-118, and W-119) and eight screened in the lower zone of the surficial aquifer (W-6, W-19B, W-65, W-68, W-103, W-117, W-120, and W-126) were slug tested during Phase II.

Additionally, slug tests were performed at six wells in 2018 as part of CVOC assessments and are included in this report. These six wells are located above the bluff to the west of the plant. Slug testing included four wells screened in the upper portion of the surficial aquifer (W-13R, W-15, W-39, and W-60) along with two wells screened in the lower portion of the surficial aquifer (W-48 and W-61). Monitoring well locations are depicted on **Figure 3**.

Hydraulic conductivity testing methodology details are in **Appendix E**. The results of the hydraulic conductivity testing are discussed in **Section 3.0**.

3.4 Surface Water Investigation

The RI included an evaluation of surface water quality along with the determination of groundwater-surface water interaction(s) in portions of the site.

3.4.1 Surface Water Sample Collection and Rationale

During Phase I of the RI, surface water samples were collected from 12 locations across the site. **Table 2** lists the RI surface water samples, their locations, rationale for the locations, and the analytical parameters for each sample. Each of these sample points were co-located with sediment sample collection locations. **Figure 9** shows the RI sediment and surface water sample collection locations.

Surface water sample collection methodology details are in **Appendix E**. The results of the surface water sampling are documented in **Section 4.3**.

3.4.2 Surface Water-Groundwater Interaction Evaluation

There are multiple surface water features on the site that interact with and/or locally influence groundwater conditions. During Phase II of the RI, CFFF initiated an evaluation of how the surface water bodies (Gator Pond and Mill Creek) interact with groundwater. A rain gage was installed at the site along with pressure transducers in select monitoring wells and in the surface water bodies.

Figure 2 depicts the locations of the staff gages. Except for the Creek staff gage, each staff gage has a pressure transducer attached to it to measure the surface water elevation. Surface water – groundwater interaction data collection methodology details are in **Appendix E**. The results of the surface water elevation and groundwater to surface water interaction evaluation are discussed in **Section 6.3.6.**

3.5 Sediment Investigation

The RI also included investigation of sediment in various surface water bodies and drainage ditches across the site. Sediment samples were collected from 46 locations during Phase I and 23 locations during Phase II of the RI. Sixty-nine sediment samples were collected from the site during Phase I of the RI, and 115 samples were collected during the Phase II effort. RI sediment and surface water sample collection locations are depicted on **Figure 9**.

3.5.1 Sediment Boring Advancement and Rationale

Sediment samples were collected during the RI using a stainless steel hand auger, a multistage sediment sampler, or a Vibracore Mini Sampler. Sediment boring advancement and sample collection methodology details are in **Appendix E**. **Table 2** lists the RI sediment samples, sample depths, their locations, rationale for the locations, and the analytical parameters for each sample.

3.6 Sample Analysis

Samples collected during the RI were analyzed for a variety of parameters. The analytical program during the RI included a broad list of parameters as is typical of the CERCLA process. Samples collected during the RI were analyzed for the following:

- Target compound list (TCL) volatile organic compounds (VOC) by EPA Method 8260B;
- TCL semi-VOCs (SVOC) by EPA Method 8270D;
- Target analyte list (TAL) metals by EPA Method 6010D/6020B;
- Nitrate by EPA Method 353.2;
- Ammonia by EPA Method 350.1;
- Fluoride by EPA Method 9056A;
- Isotopic uranium (U) by United States Department of Energy (DOE) Environmental Measurements Laboratory Health and Safety Laboratory EML HASL-300 (U-02-RC Modified);

- Isotopic U by EPA Method 200.8/200.2; and
- Tc-99 via DOE EML HASL-300 (Tc-02-RC Modified).

Groundwater, soil for the Tc-99 source area investigation, surface water, sediment, and investigative derived waste (IDW) soil samples were analyzed by Pace Environmental Services and GEL Labs, as appropriate.

Based on the limited detections of TCL SVOCs and TAL metals during Phase I of the RI, these parameters were removed from the analytical suite of parameters for the Phase II efforts as approved in the *Phase II Remedial Investigation Work Plan* (AECOM, 2020c). Samples collected from groundwater screening borings at the site were analyzed for parameters based upon COPC-specific impact in the area where the samples were collected.

A limited number of soil samples collected during Phase II of the RI were analyzed by Schnabel Engineering for grain size. Five aliquots of sediment samples leftover from the sediment sampling were also submitted to Schnabel Engineering for grain size analysis.

3.7 Quality Assurance/Quality Control

As specified in the *Final Remedial Investigation Work Plan* (AECOM, 2019), quality assurance (QA) and quality control (QC) samples consisting of field duplicate, matrix spike (MS)/matrix spike duplicate (MSD), equipment blank, and trip blank samples were collected during all environmental sampling events to provide quantitative data on the precision and accuracy of the sampling and analysis program. QA/QC methodology details are in **Appendix E**.

3.8 Sample Point Location and Surveying

Sample points including soil borings, monitoring wells, soil gas sample locations, sediment sample locations, and surface water sample locations were surveyed. Sample point location and surveying methodology details are in **Appendix E**.

3.9 Equipment Decontamination

Decontamination wastes generated during each phase of the RI were containerized in either department of transportation approved 55-gallon drums and/or 275 gallon high density polyethylene totes. The decontamination waste was managed in accordance with procedures discussed in **Section 2.10.** Equipment decontamination methodology details are in **Appendix E**.

3.10 Investigative Derived Waste Management

IDW generated during the field program were managed in accordance with CFFF procedures and the *Final Remedial Investigation Work Plan* (AECOM, 2019). RI IDW included soil cuttings from drilling or hand augering, drilling fluids, groundwater obtained through well development or well purging, and cleaning/decontamination fluids. IDW management methodology details are in **Appendix E**.

3.11 Deviations From Work Plans

Deviations from the *Final Remedial Investigation Work Plan* (AECOM, 2019) and *Phase II Remedial Investigation Work Plan* (AECOM, 2020c) are described in **Appendix J**. These minor deviations from the work plans did not affect the goal of the RI to assess the source, nature, and extent of historical impacts nor did they affect the conclusions and recommendations.

4. Physical Characteristics of the Study Area

A detailed description of the site setting is included in **Section 1.3**. This section describes the physical characteristics of the site in terms of its topography, surface water hydrology, geology, hydrogeology, cultural resources, and ecology. This section was prepared using information derived from published reports and site assessment reports. This section provides the framework for discussions of the nature and extent of impact (**Section 5**), the Conceptual Site Model (**Section 6**), and human health and ecological risk assessments (**Section 7**).

4.1 Surface Features

The site can be separated into two distinct areas separated by an erosional bluff of the Congaree River: the developed area and planted pine forests to the north of the bluff and the floodplain to the south of the bluff.

Based on topographic data depicted on **Figure 1** and on-site survey data, the elevation of the developed area of the property is approximately 130-140 ft above mean sea level (MSL). Surface features of the developed area include the entry checkpoint, the main plant building, multiple outbuildings, wastewater lagoons, multiple above ground storage tanks and other facility infrastructure, roads and walkways, primary and secondary surface parking, stormwater ditches and undeveloped areas east and west of the main plant building. The eastern and western sides of the developed area are bounded by planted pine forests.

Elevations drop to approximately 110 ft above MSL in the Congaree River floodplain. A bluff that varies from steeply dipping to gradually sloping separates the developed portion of the site from the Congaree River floodplain. The Gator Pond is a man-made surface water body contained within a man-made secondary bluff. Mill Creek (and associated Upper and Lower Sunset Lakes) flows through the floodplain and is described further in **Section 3.3**.

A site wide topographic map created using elevation contour data from the Richland County Geographical Information System website (https://www.richlandmaps.com/apps/dataviewer/) is included in **Appendix K**. The topography of both the developed portion of the property and the floodplain are relatively flat.

4.2 Meteorology

According to the South Carolina Department of Natural Resources State Climatology Office, Richland County receives annual average rainfall of 47.75 inches and has a mean temperature of 66.5 degrees Fahrenheit. The average driest months of the year, in order of least precipitation, are November and October while July and August are the average wettest months. Prevailing wind directions in the Spring are to the southwest, in the Summer to the south and southwest, in the Autumn to the northeast and in Winter to the northeast and southwest. Average wind speeds are between 6 and 10 miles per hour.

Rainfall data began to be collected for CFFF when pressure transducers were installed in select monitoring wells and staff gages beginning on March 25, 2021. From March 25 through May 18, 2021, rainfall data was obtained from the Columbia Metropolitan Airport located approximately 12 miles west northwest of CFFF. On May 19, 2021, CFFF installed a rain gage at the facility to obtain site-specific daily rainfall totals. From March 25, 2021 through March 25, 2022, the facility received 37.19 inches of rainfall.

4.3 Surface Water and Wetlands

Surface water bodies on and within the facility property include the Gator Pond, Mill Creek which contains Upper and Lower Sunset Lakes, and stormwater ditches. These surface water features are displayed on **Figure 2**. Detailed descriptions of these surface water bodies are in **Appendix L**. The dynamics of flow within Mill Creek are discussed in detail in **Section 6.3.6**.

According to the United States Fish and Wildlife Service's National Wetlands Inventory (Federal Geographical Data Committee, 2013), there are two types of wetlands within the property: freshwater forested/shrub wetland and freshwater emergent wetland. The National Wetlands Inventory also documents surface water bodies such as the stormwater ditches and Gator Pond. The locations and types of wetlands identified by the National Wetlands Inventory (including surface water bodies) on the property are shown on **Figure 10**.

Freshwater forested/shrub wetlands are Palustrine non-tidal, inland wetlands containing ocean-derived salts in concentrations less the 0.5 parts per thousand. The shrub variety contains trees less than 6 meters (approximately 20 ft) in height and the forested variety contains trees greater than 6 meters in height. Emergent wetlands are characterized by erect, rooted herbaceous hydrophytes (aquatic plants such as cattails and water lily), excluding mosses and lichens.

4.4 Land Use and Demographics

Land uses in the vicinity of the site are residential, industrial, agricultural and undeveloped. Residential areas are located north and east of the developed area of the property. One former industrial site, SCRDI Bluff Road (formerly known as South Carolina Recycling and Disposal, Inc.) is located north of the property. The SCRDI Bluff Road site is a Superfund site. The adjacent property to the west contains a caretaker's home and is primarily used as a hunting and fishing club including food plots to attract game. Properties to the east and south are undeveloped and are primarily used as hunt clubs with food plots and buildings for hunt club activities.

Except for the operational area of the site, the area surrounding the facility and the undeveloped portion of the property is zoned as rural property by Richland County. Rural property is characterized by residences with larger lot sizes and some agricultural functionality (e.g., personal garden) or hobby farms that are in keeping with the rural nature of the area. The developed portion of the site is zoned for heavy industrial use.

According to the United States Census Bureau's (USCB) 2019 statistics (USCB, July 2019), Richland County's population was 415,759 people with the population being split nearly evenly between blacks (48.7%) and whites (45.4%) with the remaining population being smaller percentages of other ethnicities. The median household income in Richland County between 2015 and 2019 was $54,767 and 16.2% of the population lived below the poverty line.

4.5 Water Supply

The City of Columbia constructed a water line to the facility when it was constructed in 1969. The City of Columbia obtains its water from the Columbia Canal and Lake Murray. Prior to the water line being constructed, private water supply wells were the only source of water in the area. When the water line was installed, property owners were given the option to connect to the municipal water supply.

To assess the presence of water supply wells within a 1-mile radius of the property boundary, AECOM personnel conducted a windshield survey for private water supply wells for upgradient properties, generally including those properties northwest, north and northeast of the facility. This survey identified 30 water supply wells within the search radius. The closest upgradient private water supply well is located approximately 4,000 ft north of the known extent of COPC impact. Results of the private water supply well survey are in **Table 3**. Information in **Table 3** corresponds to the numbers on **Figure 8** that show each private well's location.

CFFF personnel contacted owners of the hunt club properties south of the facility within a mile of the property boundary. Four water supply wells (WSW-01 through WSW-04) were determined to be on properties west, southwest and south of the developed area of the CFFF property. These wells are side gradient to downgradient of the site. The closest downgradient private water supply well is approximately 3,000 ft (over 1/2 mile) southwest of the known extent of COPC impact. The adjacent property to the west also contains two wells that are inactive.

4.6 Soils

Based upon information within the United States Department of Agriculture (USDA) Soil Conservation Service Soil Survey of Richland County (USDA, September 1978), there are six surficial soil types in areas above the bluff and two surficial soil types in the floodplain. Surficial soil types above the bluff consist of loam, fine sandy loam, sandy loam, loamy sand, very fine sandy loam, and the Orangeburg-Urban Land Complex. Surficial soil types below the bluff consist of loam and silty clay loam. Loam is defined as soil with nearly equal parts sand, silt, and clay.

For this survey, soil scientists at the USDA dug numerous holes across the county to expose the surface to near-surface soil profile and recorded the characteristics of the profiles. These characteristics were compared to soils in nearby counties and counties far away to correlate and classify the soils according to nationwide, uniform procedures to generate soil map units. The USDA Soil Survey Map for the property and surrounding areas is displayed on **Figure 11**.

4.6.1 Above the Bluff

The area above the bluff covers approximately 480 acres and includes the developed portion of the site. Soil types above the bluff include:

- the Cantey (Ca) and Smithboro (Sm) loams;
- the Coxville (Cx) fine sandy loam;
- the Faceville (FaA) and Goldsboro (GoA) sandy loams;
- the Orangeburg (ObA) and Vaucluse (VaC) loamy sands;
- the Persanti (Ps) very fine sandy loam; and
- The Orangeburg-Urban Land Complex (OgB).

4.6.2 Below the Bluff

The area below the bluff covers approximately 670 acres, is a portion of the floodplain of the Congaree River, and contains Mill Creek (including Upper and Lower Sunset Lakes) and the Gator Pond (1% of the area below the bluff is water). Soil types below the bluff include:

- The Congaree (Co), Chewcala (Ce) and Toccoa (To) loams, and
- The Chastain (Cd) and Tawcaw (Tc) silty clay loams.

More detailed descriptions of these soil units can be found in **Appendix M.**

4.7 Geology

CFFF is located within the Upper Coastal Plain physiographic province of South Carolina. The South Carolina Coastal Plain is a southeasterly thickening wedge of sediment overlying bedrock of the North American craton. Thicknesses of this wedge of sediment range from 0 ft at the Fall Line (the furthest transgression of the ocean along the southeastern US coast readily evident in the geologic record) to over 3,500 ft in southeastern, SC (Colquhoun, et al., 1983). The Upper Coastal Plain of South Carolina stretches from the Fall Line near Columbia to the northeast to the Orangeburg Scarp to the southwest.

Sediments north of CFFF are a series of northwest to southeast trending, Tertiary aged river terraces (fluvial depositional environment) with the oldest Pliocene Epoch (5.33 million to 2.58 million years ago) sediments being located south of the boundary of the Fort Jackson Army base. Sediments comprising the vadose zone and surficial aquifer of the property are a Quaternary Age, Pleistocene Epoch (2.58 million to 11,700 years ago) river terrace, whereas the sediment in the floodplain portion of the site were deposited during the late Pleistocene Epoch (130,000 to 11,700 years ago) to Holocene Epoch (11,700 years ago to present day). The river terrace deposits and floodplain sediment were deposited by the Congaree River which is located approximately 3 miles south southwest of the southern property boundary. The South Carolina Department of Natural Resources Geological Survey Fort Jackson South Geologic Quadrangle map (DNR Geologic Survey, 2011) is included in **Appendix N**.

Surficial aquifer sediments generally occur to a depth of 30 to 40 ft BLS at the site, depending on topography, and can be differentiated into overbank deposits consisting of clayey silt, clayey sand, silt, sandy silt to silty sand (approximately 8-10 ft thick) and a coarsening downward sand (approximately 20 to 30 ft thick) river channel deposit. Silt and clay lenses and lower permeability silty or clayey sands occur at varying depths within the coarsening downward sands of the surficial aquifer. Geologic cross sections depicting site lithologies are displayed on **Figures 12 through 16**.

Two notable subsurface geologic anomalies were discovered during the RI. The first anomaly is near the location of paired monitoring wells W-95 and W-111 (**Figure 12**) where there is over 80 ft of sediment above the Black Creek confining clay. Further assessment of this anomaly was performed during Phase II of the RI and indicated that the incisement into the Black Creek confining clay is localized to this area. The second geologic anomaly is associated with well pair W-85/W-86 (**Figure 15**) where over 25 ft of clay overlies lower permeability sands and clay. A similar subsurface sequence was also encountered during the installation of nearby monitoring well W-83/lithologic boring L-

41 where clay was encountered to a depth of 23 ft BLS. This clay deposit may represent a former oxbow lake or abandoned stream channel that was slowly filled by silt and clay overbank deposits.

Sediments of the surficial aquifer unconformably overlie the Upper Cretaceous, late Campanian Age sediments (83.6 million to 72.1 million years ago, a gap of approximately 70 million years) comprising the Black Creek Formation (Nystrom, Jr. et al., 1991). The upper portion of the Black Creek Formation beneath the site is a confining bed composed of dry silt/clay and brittle shale that is encountered throughout the site. This confining clay varies in thickness from 38 to 83 ft based on data gathered during the installation of the four Black Creek Aquifer wells (W-3A, W-49, W-50 and W-71). The elevation of the top of the Black Creek confining clay is undulating but is generally highest west of the plant building in the operational portion of the property and decreases radially in all directions with the lowest elevations being within the floodplain. Due to the amount of time that this formation was exposed to precipitation and subsequent erosion, the surface of this clay is undulating. A surface contour map of the top of the Black Creek confining clay is displayed on **Figure 17**.

Beneath the clay confining unit is a sand aquifer within the lower Black Creek Formation known as the Black Creek Aquifer that is artesian in some areas of South Carolina. Four site monitoring wells (W-3A, W-49, W-50 and W-71) are screened within the Black Creek Aquifer. These sediments were deposited in an upper delta plain, fluvial environment and overlie crystalline bedrock of the North American craton.

4.8 Hydrogeology

The CFFF is underlain by three hydrogeologic units: the surficial aquifer, the Black Creek Aquifer, and the Middendorf Aquifer. The predominant direction of groundwater flow in the surficial aquifer is to the southwest with components of flow to the west and south. The inferred groundwater flow direction in the Black Creek Aquifer is to the southwest. **Table 4** summarizes the depth to water and groundwater elevations from the October 2021 synoptic water level gauging event. **Figures 18 through 20** are groundwater elevation contour (potentiometric) maps for the surficial aquifer – upper zone, surficial aquifer – lower zone, and the Black Creek Aquifer, respectively, for October 2021. Wells installed on top of or within 5 ft of the Black Creek confining clay are designated as surficial aquifer - lower zone monitoring wells with the rest of the surficial aquifer comprising the upper zone.

Hydraulic conductivity tests (slug tests) were performed during previous scopes of work and during the RI. The hydraulic conductivity values determined by slug tests ranged from 0.06 to 125.20 ft per day (ft/day). Based on these values, the average hydraulic conductivity calculated for the site is 16.44 ft/day. Slug test results are presented in **Table 5**. Hydraulic characterization data analysis sheets from the RI are in **Appendix O**.

Hydraulic gradient is the change in total head (water elevation) over distance in a given direction (Fetter, 1994). Gradients exists horizontally and vertically within an aquifer. Because the water table generally mimics topography and the bluff represents a comparatively dramatic change in elevation over a short distance, the horizonal hydraulic gradient were assessed for areas of the site above the bluff, near the bluff and below the bluff. Horizontal hydraulic gradients for CFFF are in **Table 6**. Across area of groundwater impact (from well pair W-36/W-122 to well pair W-20/W-109), an average hydraulic gradient of 0.0075 ft per foot (ft/ft) was calculated for the surficial aquifer for October 2021.

Table 7 presents the vertical gradient calculations from 24 well pairs within the surficial aquifer and four surficial aquifer to Black Creek Aquifer well pairs for synoptic water elevation gauging events from October 2019 through October 2021. Positive values indicate that there is upward flow and negative values indicate that there is downward flow in the vicinity of the well pairs. In general, vertical groundwater flow within the surficial aquifer is downward ranging from -0.002 to -0.414 ft/ft. Upward vertical gradients were calculated in the surficial aquifer for well pairs W-22/W-6, W-32/W-11, W-91/W-90 and W-95/W-111 ranging from 0.012 to 0.525 ft/ft. Two of the well pairs (W-32/W-11 and W-91/W-90) with upward gradients are located near areas of steep topography (e.g., the bluff, Western Ditch incisement). Upward gradients in these wells are the result of the upper zone of the water table decreasing in elevation faster than the lower zone.

Groundwater velocity is calculated using Darcy's Law which incorporates hydraulic gradient, hydraulic conductivity and effective porosity. Using an assumed effective porosity of 30 percent (0.30), the average hydraulic gradient and average hydraulic conductivity, a groundwater flow velocity for the surficial aquifer at CFFF of 150 ft/year was calculated. Additional site hydrogeology information is in **Appendix P**.

Although groundwater flow velocities above the bluff and down the bluff are calculated to be higher than those in the floodplain (**Appendix P**), the slower groundwater flow velocity in the floodplain inhibits groundwater in a connected aquifer system from flowing faster than the slowest portion of the aquifer. Slower groundwater flow rates in the floodplain cause groundwater from above the bluff and down the bluff to push against slower moving groundwater in the floodplain. Therefore, groundwater flow velocities in the floodplain limit the overall flow rate in the surficial aquifer.

4.9 Cultural Resources

CFFF contracted Brockington and Associates, Inc. (Brockington) to complete a *Cultural Resources Survey of the Westinghouse Electric Company's Columbia Fuel Fabrication Facility* of their property to assess if historic properties are present at CFFF that may be affected by ongoing operations (Brockington, 2022). The cultural resources survey (CRS) identified, documented and evaluated five archaeological sites, six aboveground historic resources, the man-made canal and Denley Cemetery. The State Historic Preservation Office concurred with the recommendations in the Brockington report that there are no resources on the CFFF site that meet the criteria for listing in the National Register of Historic Places. Of the evaluated locations, only Denley Cemetery requires management consideration. This cemetery is protected from desecration under South Carolina laws and by CFFF's management plan.

4.10 Ecology

The *Baseline Risk Assessment* (AECOM, 2022) documents that the site is comprised of two main ecological communities: 1) a maintained, herbaceous community within the developed area of the facility and 2) a swamp community associated with the Congaree River floodplain. There are extensive areas of planted pines to the north, south, east and west of these communities.

Vegetation within the developed area includes various grasses, rushes, sedges and ruderal, weedy herbs. The herbaceous community within the developed area is limited in height due to periodic mowing which also prevents the growth of shrubs or trees. Because of this site maintenance limiting the flora and the industrial use of the property, the fauna of this community is expected to be limited. Terrestrial wildlife that may use this area includes but is not limited to rodents, birds, reptiles, and amphibians. Wild boar, whitetail deer, fox, bobcat and other animals that reside in the planted pines or swamp community may periodically visit this area to feed. Aquatic wildlife that may occur within the ditches include but are not limited to minnows, tadpoles, and insects.

The swamp community within the property extends along Mill Creek and includes densely forested wetlands, bottomland hardwood forest and the open waters of Lower Sunset Lake and the Gator Pond. The forest canopy within Mill Creek is dominated by tupelo but also includes cypress, whereas the upland portions are dominated by pine, maple, and oak. Periodic flooding of this area deposits nutrient rich soil across the entire community. Due to this, there is an abundance of flora within the floodplain and this area is highly suitable for its former use as farmland. Subsequently, this area hosts a wide variety of birds, mammals, reptiles, amphibians and obligately aquatic animals such as fish, tadpoles, crayfish and insects.

There are five federal and five state species listed as threatened and endangered species within Richland County based on information from the South Carolina Heritage Trust website in conjunction with the South Carolina Department of Natural Resources. Information on this website was last updated on February 16, 2022. None of the federally or state-listed species known to occur in Richland County have been observed at the CFFF facility. Based on the known ranges and the habitat requirements of these species, their occurrence on or adjacent to the facility is unlikely except for two species which have a moderate potential for occurrence. These species are the Rafinesque's big-eared bat and the spotted turtle.

5. Remedial Investigation Results

This section of the report presents the analytical results of the multi-media assessment of historical impacts.

5.1 Soil Investigation Results

During Phase I of the RI, soil samples were collected in accessible potential source areas for Tc-99 analysis. Some areas of the site are not accessible for sample collection due to site infrastructure such as overhead and underground utilities, above ground storage tank containment, and wastewater treatment lagoons. In Phase II of the RI, a passive soil gas survey was conducted in the area with the greatest CVOC impact in groundwater to assess where to collect CVOC samples for laboratory analysis and to evaluate the potential presence of a residual source zone.

The soil gas survey indicated two potential areas of interest beneath the roadway west of the plant building (**Appendix G**). Based on the results of the passive soil gas survey, soil samples were collected in these two areas for laboratory analysis of CVOCs. The results of these soil sampling campaigns are discussed below.

5.1.1 Technetium-99

Soil samples were collected for Tc-99 analysis at 14 locations (SS-1 through SS-14) in potential Tc-99 source areas as documented in **Table 2**. No Tc-99 was detected in the soil samples above the laboratory's minimum detectible concentration (MDC).

One field duplicate sample (SS-13 5-7 ft BLS) exceeded the Residential Use Screening Level (RUSL, [NUREG, 2006]), albeit at a concentration below the MDC. Concentrations below the MDC cannot be relied upon because they cannot be distinguished from the instrument's background value. RUSLs are based upon a residential, light farming exposure modeling scenario (including ingestion of homegrown produce) where a full-time resident spends 200 days/year (yr) indoors, 70 days/yr outdoors and 4 days/yr gardening for a total time of direct exposure of 274 days/yr, 24 hours/day for a dose equivalent of 25 millirem per year (mRem/yr).

These screening levels are highly conservative and are not representative of an industrial worker exposure scenario (e.g. active contact with the soil containing these concentrations by CFFF employees). Even these conservative assumptions result in only a low dose (25 mRem/yr) of radiation exposure. According to the NRC website, the average person's dose equivalent exposure to radiation per year from natural and manmade sources is approximately 620 mRem/yr (NRC, 2020). For reference, the National Council on Radiation Protection and Measurements (NCRP) reports that the radiation dosage of a full body Computed Tomography (CT) scan is approximately 1,000 mrem/exam and a CT scan of the head is approximately 200 mrem/exam (NCRP, 2009).

Analytical results for Tc-99 are summarized in **Table 8** and soil sampling locations are displayed on **Figure 6**. Soil analytical results are in **Appendix Q**.

5.1.2 CVOCs

Based on the results of the soil gas survey, soil samples were collected for CVOC analysis at 13 locations (SS-17 through SS-29). Two samples were collected from each location: one sample at the depth interval with the highest OVA PID reading and one sample from the total depth interval of 7-8 ft BLS which is approximately one foot above the top of the water table.

Soil from four borings (SS-20, SS-21, SS-27 and SS-28, **Figure 6**) contained concentrations of PCE, TCE, and/or cis-1,2-Dichloroethene (cis-1,2-DCE) concentrations in the shallower sample intervals. Soil samples at the total depth of each boring (7-8 ft BLS) did not contain detectable concentrations of CVOCs; therefore, it can be concluded that impacted soil would not continue to be a source for groundwater impact and further assessment was not necessary.

Analytical results for CVOCs are summarized in **Table 8** and are displayed on **Figure 21**. Soil laboratory analytical results are located in **Appendix Q**.

5.1.3 Grain Size

During Phase II of the RI, surface to near surface soils were collected for grain size with hydrometer analysis from borings across the site to document near surface soil properties. These borings are: L-28, L-31, L-35, L-42, L-45, L-58, L-59, and W-101. Sample depths are shown in **Table 2**, sample locations are shown on **Figure 7**, grain size analytical results are in **Appendix R** and the results are summarized below.

Sample ID	% Gravel	% Sand	% Silt	% Clay
L-28 0-2'	0.1	70.5	8.5	20.8
L-28 2-5'	0	35.5	19.6	44.9
L-31 0-3'	0	4.3	66.9	28.8
L-31 3-5'	0	5.9	64.3	29.8
L-35 0-3'	0	11.7	66	22.3
L-35 3-5'	0	54.6	33	12.4
L-42 0-2'	0	8.7	65.1	26.2
L-45 0-1'	9.8	64	18.4	7.8
L-45 1-2'	0.4	48.9	41.5	9.2
L-45 2-5'	0	9	74.4	16.6
L-58 0-2'	0	20.4	46.7	32.9
L-59 0-2'	0	29.4	42.4	28.2
W-101 0-2'	0	32.6	31.3	36.1

5.2 Groundwater Investigation Results

Based on previous groundwater assessment activities, COPCs in groundwater are CVOCs, nitrate, fluoride, U, and Tc-99. As discussed herein, no evidence of additional COPCs or ongoing releases of COPCs has been identified. The extensive groundwater assessment discussed below has been conducted to delineate the extent of the known COPCs. Groundwater samples collected during this RI included:

- various depths in 50 direct push technology (DPT)/Sonic screening borings (121 total samples),
- 118 permanent monitoring wells (October 2021 only), and
- four private water supply wells.

Groundwater sample locations are displayed on **Figures 3, 7, and 8**. A summary of DPT/sonic groundwater screening analytical results is displayed in **Table 9**, a summary of groundwater analytical results is displayed in **Table 10**, and private water supply well groundwater analytical results are displayed in **Table 11**. Laboratory analytical data sheets are in **Appendix S**. **Table T1** contains groundwater analytical results for the entire list of analytes from the RI, **Table T2** contains the groundwater stabilization parameter data, and both tables are in **Appendix T**.

5.2.1 Groundwater Screening Results

Groundwater screening borings were completed in three general site areas (**Figure 7**):

- The west and north sides of the plant building;
- South of Upper Sunset Lake and Lower Sunset Lake; and
- South of the plant building extending south toward Lower Sunset Lake.

The screening was performed during in four phases: August 2019, November through December 2020, February through March 2021, and May 2021. Prior to each phase of screening, sample locations were pre-selected for screening of specific COPCs. Sample locations were based on evaluation of data gaps preventing adequate horizontal and vertical delineation of that corresponding COPC within the site groundwater in the approximate and

anticipated direction of groundwater flow. After each phase of groundwater screening, the data was plotted on site maps, analyzed, and presented to DHEC. As the groundwater screening progressed, plume delineations were refined, and the screening data were used to decide where to install permanent monitoring wells.

Groundwater screening samples were analyzed for CVOCs and select samples were also analyzed for nitrate, fluoride, and/or Tc-99 in areas with known impact by these COPCs (**Table 2**). Analytical results were compared to the maximum contaminant level (MCL) for each COPC. Groundwater sample collection records are included in **Appendix H**.

PCE concentrations exceeded its MCL of 5 micrograms per liter (µg/l) in 24 screening samples from 14 borings at concentrations ranging from 6.5 µg/L to 360 µg/L. TCE concentrations exceeded the MCL in five screening samples at concentrations ranging from 5.9 µg/L to 96 µg/L. Vinyl chloride (VC) concentrations exceeded the MCL in five screening samples at concentrations ranging from 2.1 ug/L to 5.8 µg/L (**Table 9**). CVOCs detected in groundwater screening samples are displayed on **Figure 22.**

Previous assessments did not identify a source of CVOCs that would explain their presence at monitoring well W-19B. This area was previously referred to as the Western Groundwater AOC and the plume in this area was referred to as the "Western Groundwater AOC plume". Groundwater screening results from borings L-21 through L-28, and L-45 through L-62 revealed that there is a preferential groundwater flow path from the western portion of the developed area of the facility that allows groundwater impacted with CVOCs to migrate to the former Western Groundwater AOC. As discussed in the *2020/2021 Annual Groundwater Monitoring Report* (AECOM, 2021), the plume in this western area is part of the main plume.

Nitrate was analyzed in groundwater screening samples from nine borings (L-8, L-9, L-10, L-19, L-20, L-35, L-36, L-37, and L-38) and was detected in screening samples from each boring (**Figure 22**). These borings were located on a gently sloping portion of the bluff (L-20) or in the floodplain downgradient of the known extent of nitrate in groundwater. The nitrate MCL of 10 milligrams per liter (mg/L) was exceeded in one groundwater sample collected from the surficial aquifer - upper zone in screening boring L-20 at a concentration of 11 mg/L. This boring is located within the floodplain near the bluff and immediately south of the developed area of the site.

Fluoride was analyzed in groundwater screening samples from nine borings (L-8, L-9, L-10, L-19, L-35, L-36, L-37, L-38, and L-42) and was detected in at least one screening sample from eight of the nine borings (**Figure 22**). These borings were located in the floodplain downgradient of known extent of fluoride in groundwater. The fluoride MCL of (4 mg/L) was exceeded in one groundwater sample collected from the surficial aquifer - upper zone in screening boring L-19 at a concentration of 7.8 mg/L. Boring L-19 is located within the floodplain near the bluff and immediately south of the developed area of the site.

Tc-99 was analyzed in groundwater screening samples from 10 borings (L-20 and L-35 through L-43) east of the known extent of TC-99 above its MCL, on a gently sloping portion of the bluff (L-20), and in the floodplain downgradient of known Tc-99 extent in groundwater. The samples were analyzed for total and dissolved Tc-99 to assess the effects of turbidity on Tc-99 results. Total and dissolved Tc-99 were detected above the MDC, but below the MCL (900 picocuries per liter [pCi/L]) in surficial aquifer - lower zone samples from screening borings L-39 and L-43 (**Figure 22**). The screening sample from boring L-39 contained total and dissolved Tc-99 at concentrations of 10.9 pCi/L and 9.98 pCi/L, respectively. The screening sample from boring L-43 contained total and dissolved Tc-99 at concentrations of 39.4 pCi/L and 31.1 pCi/L, respectively (**Table 9**). Tc-99 results were below the MDC in the remaining eight borings.

5.2.2 Monitoring Well Results

At the beginning of the RI, 61 monitoring wells existed at the site. During the RI work, 57 additional monitoring wells were installed in four phases as knowledge of COPC extent was gained from the DPT groundwater screening discussed in **Section 4.2.1**, resulting in a total of 118 monitoring wells at the site (**Figure 3**). Four of the monitoring wells (W-3A, W-49, W-50 and W-71) are screened in the Black Creek Aquifer (**Table 1**).

Groundwater sampling from the monitoring well network that existed at the time of the groundwater sampling campaign has been performed on a semi-annual basis since October 2019. Semi-annual groundwater sampling campaigns in October 2019 and April 2020 are summarized in the *2019/2020 Annual Groundwater Monitoring Report*

(AECOM, 2020d). Results from October 2020, February 2021, and April 2021 are summarized in the *2020/2021 Annual Groundwater Monitoring Report* (AECOM, 2021).

Groundwater sample results from the October 2021 monitoring well sampling campaign are discussed in this report and are summarized in **Table 10**. Groundwater analytical results for the entire list of analytes from the RI are in **Table T1** in **Appendix T**. Groundwater sample collection records are in **Appendix I** and laboratory analytical reports are included in **Appendix S**. The following sections include discussions of the plumes of each COPC in groundwater.

5.2.2.1 Chlorinated Volatile Organic Compounds

Four CVOCs (PCE, TCE, cis-1,2-DCE, and VC) were detected in the upper and lower zones of the surficial aquifer. TCE, cis-1,2-DCE, and VC are breakdown products of the dechlorination of PCE as discussed in **Section 6.2**. The PCE plume has the highest concentrations with the TCE plume having a similar configuration but lower concentrations. The VC plumes are comparatively small and occur in two floodplain wells downgradient of the PCE/TCE plumes. No samples contained cis-1,2-DCE above its MCL; therefore, a cis-1,2-DCE plume does not exist at CFFF. CVOCs were not detected in the groundwater samples collected from the Black Creek aquifer monitoring wells (W-3A, W-49, W-50, and W-71). As discussed in **Section 5.2.1**, the CVOC plumes are contained onsite.

PCE

PCE was detected in groundwater at concentrations at or above its MCL of 5 µg/L in 27 of the 114 surficial aquifer monitoring wells in October 2021 (**Table 10**). There are two PCE plumes at CFFF. These CVOC plumes are referred to as the main plume and the southern plume and are displayed on **Figures 23 and 24**, respectively. As described in **Section 4.2.1**, the main plume and the former Western Groundwater AOC are connected, thereby making this area of impact part of the main plume. PCE concentrations in the surficial aquifer upper and lower zones are discussed below.

PCE in the Surficial Aquifer – Upper Zone

Figure 23 displays the PCE concentrations in the surficial aquifer - upper zone during the October 2021 sampling period. PCE was detected above the MCL in groundwater samples from monitoring wells W-39, W-41R, W-66, W-118, W-119, and W-121 in the main plume in the surficial aquifer - upper zone. The PCE concentrations exceeding the MCL in the surficial aquifer - upper zone wells in the main PCE plume ranged from 74 µg/L to 270 µg/L. PCE was detected at concentrations below the MCL in samples from two monitoring wells in the main plume and the inferred non-detect boundary of the west plume is shown by a dashed line on **Figure 23**.

PCE was detected in the surficial aquifer – upper zone in the southern PCE plume in samples from monitoring wells W-13R, W-15, W-67, and W-97 at concentrations ranging from 5.6 µg/L to 41 µg/L. PCE was detected at concentrations below the MCL in samples from five monitoring wells in the southern plume and the inferred non-detect boundary of the southern plume is shown by a dashed line on **Figure 23**.

PCE in the Surficial Aquifer – Lower Zone

Figure 24 displays the PCE concentrations in the surficial aquifer – lower zone during the October 2021 sampling period. The main PCE plume is the only plume present in the surficial aquifer – lower zone and was observed directly west of the facility in the same area as the main PCE plume observed in the surficial aquifer – upper zone, but with a greater aerial extent. PCE was detected above the MCL in groundwater samples from 17 monitoring wells in the surficial aquifer – lower zone. The PCE concentrations exceeding the MCL in the surficial aquifer – lower zone ranged from 11 µg/L to 340 µg/L. PCE was detected at concentrations below the MCL in samples from seven monitoring wells in the main plume and the inferred non-detect boundary of the southern plume is shown by a dashed line on **Figure 24**.

TCE

TCE was detected in groundwater at concentrations at or above its MCL of 5 µg/L from 11 of the 114 surficial aquifer monitoring wells in October 2021 (**Table 10**). The extent of TCE is similar to PCE but at lower concentrations. There are three TCE plumes at CFFF in the surficial aquifer, referred to as the main plume, the northern plume, and the southern plume. The northern TCE plume exists as a TCE only plume near the southwestern corner of the plant building. These plumes are displayed on **Figures 25 and 26**. TCE in the surficial aquifer – upper and lower zones is discussed below.

TCE in the Surficial Aquifer – Upper Zone

The main TCE plume in the surficial aquifer – upper zone is located in the vicinity of monitoring well W-41R, where TCE exceeded the MCL in the groundwater sample from monitoring well W-41R at a concentration of 8.5 µg/L. TCE was detected at concentrations below the MCL in five wells and the inferred non-detect boundary of the main plume is shown by a dashed line on **Figure 25**.

The northern TCE plume is located near the southwestern corner of the plant building. TCE exceeded the MCL in groundwater from monitoring well W-76 in the northern TCE plume at a concentration of 26 µg/L. TCE was detected at concentrations below the MCL in two wells (W-38 and W-30) located near W-76 and the inferred non-detect boundary of the northern plume is shown by a dashed line on **Figure 25**.

The southern TCE plume in the surficial aquifer – upper zone is located in the vicinity of monitoring well W-67 near the southern extent of the developed area at the bluff. TCE exceeded the MCL in groundwater from monitoring well W-67 in the southern TCE plume at a concentration of 7.4 µg/L. TCE was detected at concentrations below the MCL in seven wells in the southern TCE plume and the inferred non-detect boundary of the southern plume is shown by a dashed line on **Figure 25.**

TCE in the Surficial Aquifer – Lower Zone

In the surficial aquifer – lower zone, TCE exceeded the MCL in groundwater samples from monitoring wells W-33, W-65, W-87, W-120, and W-RW2 in the main TCE plume at concentrations ranging from 6.6 µg/L to 41 µg/L. TCE exceeded the MCL in the northern TCE plume in groundwater from monitoring well W-102 at a concentration of 6.4 µg/L. TCE exceeded the MCL in groundwater samples from monitoring wells W-103 and W-123 in the southern TCE plume at concentrations of 5.2 µg/L and 7.7 µg/L, respectively. TCE was detected below the MCL in nine wells (W-6, W-11, W-17, W-19B, W-48, W-63, W-68, W-74, and W-93). The inferred non-detect boundary of the TCE plumes is encompassed by a dashed line on **Figure 26**.

Cis-1,2-Dichloroethene

Concentrations of cis-1,2 DCE did not exceed the MCL of 70 µg/L in groundwater within the monitoring well network in October 2021 (**Table 10**). Cis-1,2-DCE was detected at concentrations ranging from 1.0 µg/L to 13 µg/L in groundwater from 19 of the 114 surficial aquifer monitoring wells during the October 2021 sampling period.

Vinyl Chloride

Groundwater from monitoring wells W-95 and W-107 contained VC at concentrations of 4.2 and 3.7 µg/L, respectively during the October 2021 sampling period, which exceeds the VC MCL of 2 µg/L (**Table 10**). VC concentrations for the October 2021 sampling along with the inferred non-detect boundary of the VC plumes is displayed on **Figure 27**. Both monitoring well locations are on the southern side of Upper and Lower Sunset Lakes.

5.2.2.2 Semivolatile Organic Compounds

During the Phase I of the RI investigation period, groundwater samples from the monitoring wells were analyzed for SVOCs. Groundwater analytical results demonstrated that SVOCs are not a COPC at the site. SVOC removal from the analyte list for Phase II of the RI was approved by DHEC in the *Phase II Remedial Investigation Work Plan* (AECOM, 2020c).

5.2.2.3 Nitrate

Nitrate was detected in groundwater at concentrations above its MCL of 10 mg/L from 25 of the 114 surficial aquifer monitoring wells in October 2021 ranging in concentration from 14 to 550 mg/L (**Table 10**). Nitrate concentrations for the October 2021 sampling along with the inferred non-detect boundary of the nitrate plume are displayed on **Figure 28**. Nitrate was not detected in groundwater from Black Creek Aquifer monitoring wells (W-3A, W-49, W-50, and W-71) during the October 2021 sampling event (**Table 10**).

5.2.2.4 Fluoride

Fluoride was detected at concentrations at or above its MCL of 4 mg/L in groundwater from 13 of the 114 surficial aquifer monitoring wells in October 2021 (**Table 10**) at concentrations ranging from 4.09 mg/L to 14.8 mg/L. Fluoride concentrations for October 2021 sampling along with the inferred non-detect boundary of the fluoride plume is displayed on **Figure 29**.

Fluoride was detected in groundwater from the four Black Creek Aquifer monitoring wells (W-3A, W-49, W-50, and W-71) during the October 2021 sampling below its MCL at estimated concentrations (J flagged by the analytical laboratory) ranging from 0.01 mg/L to 0.0860 mg/L (**Table 10**). As discussed in **Section 5.2.3**, fluoride is a naturally occurring element and these detections in the Black Creek Aquifer are naturally occurring.

5.2.2.5 Uranium

Total U was detected in groundwater at concentrations at or above its MCL of 30 µg/L from 3 of the 114 surficial aquifer monitoring wells in October 2021 (**Table 10**) at concentrations ranging from 121 to 143 µg/L. Total U concentrations along with the inferred non-detect boundary of the U plumes are displayed on **Figure 30**. The exceedance of the MCL for U is localized to two areas adjacent to the plant building: one area on the west side of the building near the southwest corner (monitoring wells W-55 and W-56) and another area on the south side of the building (monitoring well W-77). The plume associated with monitoring wells W-55 and W-56 is referred to as the northern U plume and the plume associated with monitoring well W-77 is referred to as the southern U plume.

U isotope U-238 was detected in groundwater from the four Black Creek Aquifer monitoring wells at concentrations below the laboratory reporting limit (J flagged estimated concentrations) ranging from 0.0700 µg/L to 0.180 µg/L. As discussed in **Section 5.2.4**, U is a naturally occurring element, with U-238 being the most prevalent naturally occurring isotope, and these detections in the Black Creek Aquifer are naturally occurring.

5.2.2.6 Technetium-99

Tc-99 was detected above its MCL of 900 pCi/L in groundwater from surficial aquifer – lower zone monitoring wells W-6 and W-11 in October 2021 (**Table 10**) at concentrations of 2,500 pCi/L and 1,230 pCi/L, respectively. Tc-99 concentrations along with the inferred non-detect boundary are displayed on **Figure 31**. Tc-99 was not detected in groundwater samples from the four Black Creek monitoring wells.

The lateral extent of groundwater impacts for the COPCs exceeding their respective MCLs at CFFF are displayed on **Figure 32**.

5.2.3 Private Water Supply Well Results

Groundwater samples were collected during the period from October 15 through October 24, 2019, from four private water supply wells (WSW-01 through WSW-04) located west northwest, southwest, and south of CFFF (**Figure 8**). Three of the four private water supply wells are located within the 1-mile private water supply well search radius of the site property boundary as specified in the *Final Remedial Investigation Work Plan* (AECOM, 2019). The fourth private water supply well is between the southern edge of this radius and the Congaree River. These private water supply wells are located side gradient to downgradient of the known extent of groundwater impact. The closest private water supply well, WSW-03, is approximately 3,000 ft (over 1/2 mile) downgradient of the known extent of COPC impact and is likely screened in the Black Creek Aquifer.

Groundwater samples from the four private water supply wells did not contain CFFF COPCs above their respective MCLs (**Table 11**). Of the COPCs, CVOCs and Tc-99 were not detected in groundwater samples from the four private wells. Concentrations of nitrate, fluoride, and/or the U isotope U-238 were detected in at least two of the water well samples at the following concentrations:

- Nitrate was detected in private water supply wells WSW-01 and WSW-04 at concentrations of 0.020 mg/L and 0.067 mg/L, respectively. These nitrate concentrations are greater than 100 times below the MCL of 10 mg/L.

- Fluoride was detected in the private water supply wells at concentrations ranging from 0.013 mg/L to 0.103 mg/L. These fluoride concentrations are greater than 40 times below the MCL of 4 mg/L.

- The U-238 isotope of U was the only isotope detected and it was reported in three of the private wells at concentrations ranging from 0.272 µg/L to 0.776 µg/L. The total U concentrations are greater than 30 times below the MCL of 30 µg/L.

As discussed in the COPC specific subsections in **Section 5**, these compounds, elements, and isotopes occur naturally. The detected concentrations are indicative of naturally occurring concentrations and are not indicative of

impacts from the facility. The downgradient water supply wells are likely screened within the Black Creek Aquifer which is not impacted by historical operations of CFFF.

5.3 Surface Water Investigation Results

During Phase I of the RI, surface water samples were collected from 12 locations within the stormwater ditches, Gator Pond, Upper Sunset Lake and Lower Sunset Lake. One location within the Middle Ditch (SW-15) was dry during the sample collection campaign; therefore, a surface water sample was unable to be collected. Surface water sample locations and detections above background concentrations are displayed on **Figure 33**. As documented in **Appendix E**, background concentrations were calculated as two times the mean background concentration. A summary of surface water analytical results is displayed in **Table 12** and calculated background concentrations are displayed in **Table 13**. **Table T3** contains surface water analytical results for the entire list of analytes from the RI and is in **Appendix T**. Laboratory analytical data sheets are in **Appendix U.**

5.3.1 Gator Pond

Surface water from the Gator Pond contained concentrations of ammonia, fluoride, various metals, nitrate, Tc-99, and U-238. The surface water sample from the Gator Pond (SW-23) contained fluoride above its MCL of 4 mg/L at a concentration of 4.94 mg/L. The remaining detections did not exceed their respective MCLs. Concentrations of COPCs in the surface water sample from the Gator Pond indicate that this surface water body has been impacted by the historical operations of the facility. The Gator Pond is an isolated surface water body that is not in direct connection with the other surface water bodies.

5.3.2 Stormwater Ditches

Surface water from the stormwater ditches contained concentrations of ammonia, CVOCs, fluoride, various metals, nitrate, Tc-99, and U. Surface water samples SW-11 and SW-12 (**Figure 9**) are considered to be background samples for the stormwater ditches because they are far enough upstream to not have the potential to be impacted by facility operations. Surface water samples SW-17 and SW-18 contained PCE above its MCL of 5 µg/L at concentrations of 16 and 14 µg/L, respectively. The remaining detections did not exceed their respective MCLs. Concentrations of COPCs in surface water samples above background concentrations from the stormwater ditches indicate that these surface water bodies have been impacted by the historical operations of the facility in a localized area (**Figure 33**).

5.3.3 Mill Creek

Two surface water samples were collected in both Upper Sunset Lake (SW-19 and SW-20) and Lower Sunset Lake (SW-21 and SW-22), part of Mill Creek. Surface water from the Upper and Lower Sunset Lakes contained concentrations of ammonia, fluoride, various metals, and U. Concentrations of these COPCs did not exceed their respective MCLs.

Fluoride concentrations in Mill Creek (Upper and Lower Sunset Lakes) ranged from 0.154 mg/L to 0.494 mg/L versus a background concentration in the stormwater ditches of 0.422 mg/L. This comparison indicates little to no fluoride impact to surface water in Upper and Lower Sunset Lakes from facility operations. Moreover, the fluoride concentrations reported in Mill Creek are roughly an order of magnitude below fluoride's MCL of 4 mg/L.

Surface water samples SW-19 and SW-20 collected in the Upper Sunset Lake portion of Mill Creek contained estimated U-235 concentrations of 0.174 and 0.274 µg/L, respectively. These surface water samples also contained U-238 at concentrations of 0.507 and 1.11 µg/L, respectively. Surface water samples from Lower Sunset Lake (SW-21 and SW-22) did not contain U-235 and the estimated (J flagged by the laboratory) U-238 concentrations were 0.16 and 0.199 ug/L, respectively. Although U was detected in surface water in Sunset Lakes, these U concentrations are greater than an order of magnitude below the total U MCL of 30 µg/L.

5.3.4 Routine Surface Water Sampling

Surface water samples are obtained monthly by CFFF personnel from the Gator Pond, the Eastern Ditch at the confluence with the Middle Ditch, Upper Sunset Lake Dike, Lower Sunset Lake, the Lower Sunset Lake Dike, and Mill Creek at both the Entrance and Exit Dikes (**Figures 2 and 3**). Per CFFF's nomenclature, the Eastern Ditch sample is

known as Roadway, the Upper Sunset Lake Dike sample is known as Causeway, Lower Sunset Lake is known as Lower, and the Lower Sunset Lake Dike sample is known as Spillway. These samples are analyzed for gross alpha, gross beta, isotopic U, Tc-99, pH, ammonia, and fluoride. Additionally, weekly surface samples are taken from the Eastern Ditch, Upper Sunset Lake Dike and Lower Sunset Lake Dike. These surface samples are analyzed for pH, ammonia, and fluoride. Per the facility's SNM -1107 license from the NRC, surface water samples are taken from the Congaree River on a quarterly basis at the following locations: 1) the Blossom Street Bridge, 2) 500 yards upstream of the WWTP discharge, 3) 500 yards downstream of the WWTP discharge, and 4) Mill Creek where it converges with the Congaree River. Per the license, these samples are analyzed for gross alpha; however, the facility also analyzes these samples for gross beta, isotopic U, and Tc-99.

Routine surface water sample results confirm that the fluoride concentrations are above the MCL in the Gator Pond. This is the only COPC detected above MCL in CFFF's routine surface water samples. These results confirm that surface water is not being impacted outside of the property boundary.

5.4 Sediment Investigation Results

During the RI, 172 sediment samples were collected from the Gator Pond, the stormwater ditches, and Mill Creek (including Upper and Lower Sunset Lakes). Additionally, four sludge samples (SED-25 through SED-28) were collected during Phase I of the RI: two from the Sanitary Lagoon and two from the former East Lagoon. Sample locations are displayed on **Figure 9** and analytical results are summarized in **Table 14**. **Table T4** contains analytical results for the entire list of analytes from the RI and is in **Appendix T**. The laboratory analytical results are in **Appendix U**. Sediment samples SED-11 and SED-12 and sediment samples SED-51 through SED-59 are considered background samples for the ditches and Mill Creek, respectively. Background sediment concentrations are displayed in **Table 13**.

5.4.1 Gator Pond

Sediment from the Gator Pond contained concentrations of acetone, ammonia, fluoride, nitrate, various metals, Tc-99, and U. As discussed in **Section 5.4.1**, 2-butanone (also known as methyl ethyl ketone), acetone, ammonia, fluoride, nitrate and metals, including U occur naturally. COPC impacts of sediment in the Gator Pond are displayed on **Figure 34.**

Ammonia concentrations in Gator Pond sediment samples ranged from 70.5 to 1170 milligrams per kilogram (mg/kg). Fluoride concentrations in sediment from the Gator Pond ranged from 24.9 to 152 mg/kg. Nitrate concentrations in sediment from the Gator Pond ranged from 0.20 to 6.3 mg/kg. The RUSL for Tc-99 (19 picocuries per gram [pCi/g]), as described in **Section 4.1.1**, was exceeded in sediment from the six sampling locations within the Gator Pond at concentrations ranging from 22.9 pCi/g to 312 pCi/g. Sediment from multiple sample intervals also contained Tc-99 below the RUSL.

U is a naturally occurring, radioactive metal as discussed in **Section 5.3.4**. As displayed in **Table 13**, U-233/234, U-235/236, and U-238 background sediment activity in the stormwater ditches and Mill Creek ranged from 2.07 to 3.64 pCi/g, 0.25 to 0.285 pCi/g, and 1.91 to 3.26 pCi/g; respectively. Although the Gator Pond is not directly connected to the other surface water bodies, these background concentrations provide site-specific U data for sediment at the facility. U activity in sediment from the Gator Pond is within the background sediment activity range (**Table 14**) and do not exceed the RUSL.

Sediment within the Gator Pond has been impacted by historical facility operations. Based upon data from both the RI and routine surface water sampling, groundwater impacted with fluoride, nitrate, and Tc-99 is discharging through the sediment into the Gator Pond.

5.4.2 Stormwater Ditches

Sediment from the stormwater ditches contained concentrations of ammonia, acetone, fluoride, nitrate, various SVOCs, metals, PCE, Tc-99, and U. COPC impacts of sediment in the stormwater ditches are displayed on **Figure 34**.

Ammonia and acetone concentrations in the stormwater ditch sediment were below background concentrations.

Fluoride impacts above background concentrations in stormwater ditch sediment occurred in locations SED-16, SED-60 and SED-61 located in the southern end of the Middle Ditch. Nitrate impacts in stormwater ditch sediment above background concentrations were from locations SED-16, SED-17 and SED-61 located in the southern end of the Middle Ditch and downstream (SED-17) in the Eastern Ditch where groundwater is also impacted with nitrate. Sediment from sample location SED-17 contained PCE at a concentration of 5.5 micrograms per kilogram (µg/kg). This sample was collected at the same location as surface water sample SW-17 which contained PCE above its MCL.

Several SVOCs were detected in sediment from sample location SED-13 and to a lesser extent in sediment from sample location SED-14 which is downstream from SED-13. As discussed in **Section 5.4**, these SVOCs are the result of runoff from the primary parking lot. Minimal impact to sediment with SVOCs is confined to the area of the Eastern Ditch near SED-13 and SED-14.

Concentrations of Tc-99 and U were limited to sediment from the southern end of the Middle Ditch. Tc-99 concentrations were below the RUSL and ranged from below the MDC to 8.28 pCi/g. Concentrations below the MDC cannot be relied upon because they cannot be distinguished from the instrument's background value. Concentrations of U isotope 233/234 exceeded its RUSL (13 pCi/g) in sediment from sample locations SED-16, SED-60, and SED-61 at concentrations ranging from 14.9 to 67.2 pCi/g.

Impacts by multiple COPCs in sediment above background concentrations indicate sediment in localized areas of the Middle and Eastern Ditches have been impacted by historical operations of the facility as displayed on **Figure 34**.

5.4.3 Mill Creek

As documented in **Section 3.3**, Mill Creek within the CFFF property contains multiple structures that influence flow. These structures include the man-made canal, Canal Dike, Entrance Dike, Upper Sunset Lake Dike, Lower Sunset Lake Dike, and Exit Dike.

5.4.3.1 Southwest of the Entrance Dike

During Phase I of the RI, sediment samples were collected from two transects (SED-51 through SED-53 and SED-54 through SED-56) across Mill Creek southwest of the Entrance Dike to provide background sediment data (**Figure 9**, **Table 13**). Based upon questions from DHEC about whether U concentrations in the samples from this area represented background concentrations due to the flow dynamics in Mill Creek, sediment samples were collected from a third transect (SED-57 through SED-59) across Mill Creek upstream of the man-made canal during Phase II of the RI. As documented in the Leidos Technical Basis Document ([TBD], Leidos, 2022) in **Appendix V**, U concentrations in the transect upstream of the canal were similar to the U concentrations downstream of the canal; therefore, data from the three transects represent background sediment data. The background sediment contained concentrations of ammonia, acetone, fluoride, nitrate, various metals, 2-butanone (also known as methyl ethyl ketone or MEK), and U.

5.4.3.2 Upper Sunset Lake

Sediment samples from Upper Sunset Lake contained concentrations of acetone, ammonia, fluoride, nitrate, various metals, Tc-99, and U.

Except for two sediment samples, acetone concentrations were within or closely comparable to the background acetone concentrations (Table 14). Acetone concentrations of 370 and 410 µg/kg in sediment samples SED-47 and SED-50 (both 0-6 inches) exceed the background acetone concentration of 250 µg/kg. Although these concentrations minimally exceed background, they are likely naturally occurring.

Ammonia concentrations in sediment from Upper Sunset Lake ranged from 54.7 to 1,980 mg/kg, whereas background ammonia concentration was calculated to be 825 mg/kg.

Fluoride concentrations in sediment from Upper Sunset Lake ranged from a concentration of 1.86 to 120 mg/kg whereas background fluoride concentration in sediment was calculated to be 2.73 mg/kg.

Nitrate concentrations in sediment from Upper Sunset Lake ranged from a concentration of below detection limit to 6.1 mg/kg whereas background nitrate concentrations in sediment was calculated to be 0.91 mg/kg.

Concentrations of Tc-99 in sediment from Upper Sunset Lake range from below MDC to 23.7 pCi/g, whereas background Tc-99 sediment concentrations were below MDC. Sediment samples from two locations (SED-B1 and SED-B2, both 0-6 inches) exceeded Tc-99's RUSL of 19 pCi/g at concentrations of 19.1 and 23.7 pCi/g.

Concentrations of U in sediment from Upper Sunset Lake exceeded its RUSL in 14 locations (SED-19, SED-20, SE-43, SED-44, SED-66, SED-67 and SED-B1 through SED-B8) for U-233/234, U-235/236 (SED-44 only), and/or U-238 (SED-20 and SED-44). U concentrations in sediment samples collected from location SED-44 in Upper Sunset Lake during Phase II of the RI exceeded the sum of fractions (SOF) calculation under the industrial use scenario.

SOF is used to assess the cumulative potential dose of radiation exposure of the U isotopes and Tc-99 by adding the fractions of individual U isotopes and Tc-99 divided by their screening levels (RUSL or Industrial Use Screening Level). An RUSL sum greater than 1 indicates that the permissible dose limit established under 10 CFR 20.1402 (radiological criteria for unrestricted use) has been exceeded and a sum less than 1 indicates that the dose limit has not been exceeded. A SOF equal to 1 is equivalent to a dose of 25 mRem/yr under the residential use scenario as discussed in **Section 4.1.1**.

The SED-44 results prompted additional investigation per CFFF's risk-based procedure *RA-433 Environmental Remediation* (Westinghouse, 2020a). The investigation area consisted of a ten square meter bounding box with sediment sample location SED-44 at its center. Sediment samples were collected at the corners of both a three-meter square and a ten- meter square. One additional sediment sample (SED-B1 0-6 inch) from the three meter square bounding box exceeded the industrial SOFs. After the additional samples were collected, a dose risk assessment was conducted to assess if the impacted sediment posed a risk to site workers. This dose risk assessment concluded that even under the worst-case scenario of extreme drought conditions (where the normal cover of water shielding a site worker or trespasser from exposure to radiation), the sediment did not pose a risk to site workers because the potential exposure remained less than 25 mRem/yr. Additional details about the bounding samples and the dose risk assessment are included in the Leidos TBD (Leidos, 2022) in **Appendix V**.

Concentrations of COPCs above background concentrations and/or RUSLs indicate that sediment in Upper Sunset Lake has been impacted by historic operations of the facility. Sediment impacts in Upper Sunset Lake are displayed on **Figures 35 through 37**.

5.4.3.3 Lower Sunset Lake

Sediment samples from Upper Sunset Lake contained concentrations of ammonia, acetone, fluoride, nitrate, various metals, Tc-99, and U.

Acetone concentrations in Lower Sunset Lake were similar to the concentration range of Upper Sunset Lake and are likely naturally occurring.

Ammonia concentrations in sediment from Lower Sunset Lake ranged from 37.2 to 2,110 mg/kg, whereas ammonia's background concentration was calculated to be 825 mg/kg.

Fluoride concentrations in sediment from Lower Sunset Lake ranged from an estimated concentration of 0.668 to 26.5 mg/kg whereas fluoride's background concentration was calculated to be 2.73 mg/kg.

Nitrate concentrations in sediment from Lower Sunset Lake ranged from a concentration of below detection limit to 3.7 mg/kg whereas background nitrate concentrations in sediment was calculated to be 0.91 mg/kg.

Tc-99 was detected in Lower Sunset Lake in four locations at concentrations ranging from 1.12 pCi/g to 2.13 pCi/g, below its RUSL (19 pCi/g).

Concentrations of U-233/234 in sediment from Lower Sunset Lake exceeded its RUSL (13 pCi/g) in sediment from sample locations SED-21, SED-22, SED-38, SED-41, and SED-42 (0-6 inch sample interval in all five) at concentrations ranging from 17 to 117 pCi/g. Sediment from these locations also contained U-235/236 and U-238 at concentrations below RUSL.

In general, COPC concentrations in Lower Sunset Lake were lower than COPC concentrations in Upper Sunset Lake. These concentrations indicate that sediment in Lower Sunset Lake has been impacted by historic operations of the facility. COPC impacts of sediment in the Lower Sunset Lake are displayed on **Figures 35 through 37**.

5.4.3.4 East of the Lower Sunset Lake Dike

Sediment samples from Mill Creek east of the Lower Sunset Lake Dike contained concentrations of ammonia, acetone, fluoride, nitrate, various metals, Tc-99, and U.

Concentrations of ammonia and acetone in sediment from within Mill Creek east of the Lower Sunset Lake Dike were below background concentrations and are likely naturally occurring. One sediment sample (SED-32 0-6 inches) contained nitrate above but comparable to background concentrations (1.1 mg/kg versus a background concentration of 0.91 mg/kg). Because the sediment samples upstream and downstream from the SED-32 location did not contain nitrate or were below background concentrations for nitrate, the nitrate concentration in SED-32 is likely naturally occurring.

Fluoride concentrations in sediment from Mill Creek east of the Lower Sunset Lake Dike ranged from an estimated concentration of 0.858 to 6.63 mg/kg whereas fluoride's background concentration was calculated to be 2.73 mg/kg. Sediment from 6 sampling locations (SED-30 through SED-35) exceeded the background fluoride concentration (**Figure 36**).

Neither the RUSLs for individual U isotopes for U-233/234, U-235/236, and U-238 nor the SOFs were exceeded in any of the samples, except for one sample as documented in the Leidos TBD (Leidos, 2020) contained in **Appendix W**. Sediment sample SED-32 6-12 inches contained radionuclide concentrations that resulted in a SOF of 1.06.

COPC concentrations east of the Lower Sunset Lake Dike are considerably lower than those in Lower Sunset Lake indicating that sediment in Mill Creek east of the Lower Sunset Lake Dike has been minimally impacted by historic operations of the facility.

5.4.4 Grain Size

Five aliquots of sediment samples from the RI Phase II sediment sampling were submitted to Schnabel Engineering for grain size with hydrometer analysis. These samples included one sample from the Middle Ditch (SED-16 0-1'), one from Mill Creek upstream of the canal (SED-57 1-1.5'), one from Upper Sunset Lake (SED-20 0-1'), and two from Lower Sunset Lake (SED- 21 1-2' and SED-40 0-1'). Sample locations are shown on **Figure 9**, grain size analytical results are in **Appendix R**, and the grain size results are summarized below.

Sample ID	Location	% Gravel	% Sand	% Silt	% Clay
SED-16 0-1'	Middle Ditch	1.3	84.8	13	0.9
SED-20 0-1'	Upper Sunset Lake	0	3	53.4	43.6
SED-21 1-2'	Lower Sunset Lake	0	42.7	42.8	14.5
SED-40 0-1'	Lower Sunset Lake	0.7	26.3	66	7
SED-57 1-1.5'	Mill Creek	0	6.7	57	36.3

6. Source, Nature, and Extent Assessment

This section of the RI Report discusses the source(s) or source area(s), nature, and extent of historical impacts in terms of their occurrence and distribution at CFFF as required by the CA. Work conducted during the RI did not find evidence of an ongoing release(s) of COPCs into the environment; therefore, impacts discussed below are the result of historic releases during the greater than 50 years of operation of CFFF.

6.1 Soil

As discussed in **Section 4.1**, soil samples were collected in Phase I of the RI in potential source areas of Tc-99 and in Phase II for CVOCs. No residual sources of COPCs were identified.

6.1.1 Tc-99

Tc-99 occurs naturally in very small amounts in the earth's crusty but is primarily a man-made radionuclide, therefore detections of Tc-99 at CFFF above the MDC are the result of impact by historical operations of the facility. Tc-99 analytical results of the soil samples (**Table 8**) that were collected in potential Tc-99 source areas did not identify the presence of Tc-99 above the MDC. Concentrations below the MDC cannot be relied upon because they cannot be distinguished from the instrument's background value. These samples were collected within accessible areas where historical operations indicated the greatest likelihood for a surficial release of Tc-99. These findings indicate that no evidence of impacts from a surficial release into vadose zone soils has been found at this time.

6.1.2 CVOCs

During Phase II of the RI, a passive soil gas survey covering approximately 69,000 square ft (ft^2) was conducted in soil overlying the greatest CVOC impact in groundwater to assess whether a vadose zone source that could continue to impact groundwater currently exists. The passive soil gas survey identified two areas of interest with comparatively elevated levels of CVOCs in soil gas. Soil sample analytical results (**Table 8**) from these areas of interest indicated minimal concentrations of CVOCs in the upper 2 ft of the subsurface and no CVOCs in deeper samples. These minimal impacts were bounded laterally and vertically by soil samples that did not contain CVOCs. PCE in the soil has already begun to degrade into daughter products and the absence of both parent and daughter products at depth does not suggest the minimal impact could migrate to groundwater.

6.1.3 East Lagoon Closure

As documented in **Appendix B**, subliner soils that contained COPCs (CVOCs, fluoride, nitrate, U and Tc-99) above their RUSL and/or EPA Soil Screening Level in Westinghouse's risk-based procedure *RA-433 Environmental Remediation* (Westinghouse, 2020a) were removed to the maximum extent practical (e.g. remove as much soil as possible without causing damage to existing structures or excavating below the water table). As documented in the *East Lagoon Closure Certification* (GEL, 2021), the "as left" RUSL SOFs were exceeded in six locations.

A metal's affinity for adsorbing to soil is known as equilibrium distribution coefficient (K_d), and U has a high affinity for adsorbing to soil. Based on published data (Sheppard and Thibault, 1990), four soil types have the following K_d ranges for uranium: Sand – 0.03 to 2,200 cubic centimeters per gram (cm^3/g, mean 35); Loam – 0.22 to 4,500 cm^3/g (mean 15); Clay – 46 to 395,100 cm^3/g (mean 1,600); and Organic – 33 to 7,350 cm^3/g (mean 410). The higher the K_d value, the greater the affinity for uranium to adsorb to the soil versus migrating in groundwater.

Site-specific K_d values have not been determined for the subsurface soils at the facility but, previous assessment work involving the Contaminated Wastewater Line (AECOM, 2018) indicates subsurface soils have a high K_d. Therefore, impacted soils remaining in place below the former East Lagoon do not likely represent a potential source for groundwater impact by infiltrating precipitation. This conclusion is supported by the absence of elevated U in groundwater samples collected proximal to the East Lagoon.

6.2 Groundwater

As discussed in **Section 4.2**, groundwater beneath the facility has been impacted with concentrations of CVOCs, nitrate, fluoride, U and Tc-99 above their respective MCLs. The areas of these impacts are well defined and occur

only on the CFFF property. Groundwater impacts in this report are from the October 2021 monitoring period and are discussed below.

6.2.1 CVOCs

PCE and its degradation products (TCE, cis-1,2-DCE, and VC, details pertaining to this breakdown are discussed in **Section 6.2**) occur in well-defined plumes of limited extent in site groundwater. Relevant points pertaining to each CVOC include the following:

- CFFF made process modifications to eliminate the use of CVOCs in 2020. Therefore, future CVOC impact to groundwater is not possible.
- TCE, cis-1,2-DCE, and VC in groundwater result from reductive dechlorination of PCE. None of these CVOCs are known to have been used in facility operations and the plumes are in the same locations and/or are downgradient of the primary PCE plume.
- No CVOCs were detected in groundwater samples from the four Black Creek Aquifer monitoring wells (W-3A, W-49, W-50, and W-71). Therefore, the Black Creek confining unit effectively prevents CVOCs from migrating to the Black Creek Aquifer.
- No CVOCs were detected in the four private water supply wells (**Figure 8**). These wells are located approximately 3,000 ft (greater than ½ mile) beyond the extent of CVOCs in groundwater at the site.

6.2.1.1 PCE

As described in Section **4.2.2.1**, there are two PCE plumes in the upper zone of the surficial aquifer referred as the main and southern plumes (**Figure 23**). The main plume is the only PCE plume in the surficial aquifer – lower zone (**Figure 24**). The RI has fully delineated the extent of PCE in groundwater in the surficial aquifer. As discussed in **Sections 4.1.2 and 5.1.2**, no residual source of CVOCs has been identified in soil that could impact groundwater in the future.

The main PCE plume in the surficial aquifer – upper and lower zones is located within an area between West Lagoon II (WLII) and the plant building and extends to areas west, southwest, and south-southeast (lower zone only). The main PCE plume appears to have originated in the Western Storage Area OU between WLII and the plant building. (**Figures 4 and 23**).

The western portion of the main plume extends to an area beneath Upper Sunset Lake. The middle portion of the main plume in the surficial aquifer – lower zone is located closer to the developed area of the site and initially flows southwest before turning south and extends to Upper Sunset Lake near the Upper Sunset Lake Dike. A third eastern portion of the main plume extends from the area of the southwestern corner of the plant building to the south-southeast into the floodplain.

The southern PCE plume in the surficial aquifer – upper zone is located from the southern extent of the developed area at the bluff and extends to the southeast below the bluff barely into the floodplain near monitoring well W-97 (**Figure 23**). PCE was not formerly used in the vicinity of these wells. It is believed that the PCE in the southern plume in the surficial aquifer - upper zone near the bluff may be part of the PCE plume in the surficial aquifer – lower zone, rather than the result of a source in the southern area of the plant near the bluff.

The lateral extent of PCE MCL exceedances is well defined and is contained within the CFFF property boundary. In the downgradient direction, the plume is approximately 2,700 ft from the southern CFFF property boundary (**Figure 32**).

6.2.1.2 TCE

TCE was detected in groundwater at concentrations at or above its MCL of 5 µg/L from 11 of the 114 surficial aquifer monitoring wells. There are three TCE plumes at CFFF in the surficial aquifer, referred to as the main plume, the northern plume, and the southern plume (**Figures 25 and 26**). As with PCE, a specific TCE source was not identified and is likely a natural breakdown daughter product of PCE (reductive dechlorination) as discussed in **Section 6.2**.

The surficial aquifer – upper and lower zones main and southern TCE plumes are in the same general locations as the corresponding PCE plumes but encompass a smaller aerial extent (**Figure 25**). Similar to the southern PCE plume, it is believed that the TCE detections in the southern plume in the surficial aquifer - upper zone are actually

part of the TCE plume in the surficial aquifer – lower zone, rather than the result of a source in the southern area of the plant. While outside of the main TCE plumes, TCE was also detected in two monitoring wells (W-19B and W-68) at concentrations below the MCL. These monitoring wells are within the area of the western-most PCE MCL exceedances (**Figures 25 and 26**) and is evidence of TCE's source being the natural breakdown of PCE.

The northern TCE plume exists emanates from the southwestern corner of the plant building downgradient of where the solvent extraction area (SOLX) is located within the plant building. TCE concentrations in this area are likely the result of reductive dechlorination, as discussed in **Section 6.2**, of PCE beneath the plant building. TCE was detected in three wells in this area, W-30, W-38, and W-76, with the MCL being exceeded only in monitoring well W-76. TCE was detected above its MCL in the sample from surficial aquifer – lower zone monitoring well W-102, which is located approximately 150 ft downgradient of SOLX. These plumes are displayed on **Figures 25 and 26.**

The lateral extent of TCE MCL exceedances is contained within the CFFF property boundary and, in the downgradient direction, is approximately 3,200 ft from the southern CFFF property boundary (**Figure 32**).

6.2.1.3 Cis-1,2-DCE

Concentrations of cis-1,2-DCE did not exceed the MCL of 70 µg/L in groundwater within the monitoring well network (**Table 10**). Cis-1,2-DCE was detected at concentrations ranging from 1.0 µg/L to 13 µg/L in groundwater from 19 of the 115 surficial aquifer monitoring wells. Cis-1,2 DCE is a natural breakdown product of PCE.

6.2.1.4 VC

VC detected in surficial aquifer – lower zone monitoring wells W-95, W-107, and W-108 indicates that reductive dechlorination is occurring within the floodplain. These wells are located across Upper Sunset Lake and Lower Sunset Lake from the two PCE/TCE sub-plumes of the main plume (**Figure 27**). VC is a natural breakdown product of PCE.

The lateral extent of VC MCL exceedances is contained within the CFFF property boundary and, in the downgradient direction, is approximately 2,100 ft from the southern CFFF property boundary (**Figure 32**).

6.2.2 Nitrate

Nitrate was detected in groundwater at concentrations at or above its MCL of 10 mg/L from 23 of the 114 surficial aquifer monitoring wells (**Table 10**). Nitrate concentrations are displayed on **Figure 28**. The aerial extent of the nitrate plume is primarily around the source areas of nitrate, which is the area of the facility WWTP and West Lagoon II, and extends to areas to the west, southwest, and southeast. Nitrate concentrations exceeding the MCL are in monitoring wells above the bluff. Detected concentrations below the bluff are significantly lower than the MCL. Nitrate in wells south of Upper Sunset Lake and Lower Sunset Lake range from 1-2 orders of magnitude below the MCL to non-detect. In the surficial aquifer, natural attenuation of nitrate and/or denitrification is occurring at or just beyond the bluff. The lateral extent of nitrate MCL exceedances is contained within the CFFF property boundary and, in the downgradient direction, is approximately 2,800 ft from the southern CFFF property boundary (**Figure 32**).

During network-wide monitoring well sampling since 2019, nitrate has occasionally been detected in groundwater from Black Creek Aquifer monitoring wells W-49, W-50, and W-71 below its MCL of 10 mg/L at concentrations ranging from 0.021 mg/L to 0.13 mg/L. Nitrate was not detected in groundwater from Black Creek Aquifer monitoring wells in October 2021.

Nitrate was detected in private water supply wells WSW-01 and WSW-04 at concentrations of 0.020 mg/L and 0.067 mg/L, respectively. These nitrate concentrations are 100 times or more below the MCL of 10 mg/L. The private water supply wells are located 5,500 ft or greater beyond the extent of nitrate in groundwater at the site.

Nitrate occurs naturally in groundwater. According to the EPA, nitrate concentrations greater than 3 mg/L indicate nitrate impact (EPA, 2021 and Madison and Brunette, 1985). A study published in 2010 indicated that nitrate concentrations greater than 1 mg/L indicate human activity (Dubrovsky et al, 2010). The detected concentrations in the Black Creek Aquifer monitoring wells and the private water supply wells are orders of magnitude below the MCL Based on the locations of these wells relative to the surficial aquifer impact and the detected concentrations, the nitrate at these locations is naturally occurring and not a result of facility operations.

6.2.3 Fluoride

Fluoride was detected at concentrations at or above its MCL of 4 mg/L in groundwater from 13 of the 114 surficial aquifer monitoring wells in October 2021 (**Table 10**). **Figure 29** displays the fluoride concentrations for October 2021.

The greatest fluoride concentrations were detected in the groundwater from surficial aquifer - upper zone wells W-13R, W-30, W-77, and W-78 located at the south end of the plant building and the WWTP during the October 2021 sampling period. The fluoride plume exceeding the MCL in the surficial aquifer is primarily south of the plant building and in the vicinity of the WWTP. The potential sources for fluoride are the WWTP and the plant area north of well W-77, including uranium hexafluoride storage areas and operations in the Chemical Storage Area OU. The lateral extent of fluoride MCL exceedances is contained within the CFFF property boundary and, in the downgradient direction, is approximately 3,100 ft from the southern CFFF property boundary (**Figure 32**).

Fluoride was detected in groundwater from the four Black Creek Aquifer monitoring wells during the October 2021 sampling period and was detected in the private water supply wells at concentrations ranging from of 0.013 mg/L to 0.103 mg/L. These fluoride concentrations are one to two orders of magnitude below its MCL and are naturally occurring.

Fluoride occurs naturally in groundwater. A recent United States Geological Survey (USGS) study concluded that fluoride concentrations in private wells exceeded the MCL in only 1.6% of the wells in the study (USGS, 2020). Fluoride impacts at CFFF exist within the surficial aquifer only, do not extend beyond the property boundary where the private water supply wells are located and most, if not of all, of the private wells are screened deeper than the surficial aquifer within the Black Creek Aquifer. Therefore, the fluoride detections in the Black Creek Aquifer monitoring wells and the private water supply wells are naturally occurring and are not a result of facility operations.

6.2.4 Uranium

Total U was detected at concentrations above its MCL of 30 µg/L in groundwater from 3 of the 114 surficial aquifer monitoring wells in October 2021 (**Table 10**). Total U concentrations are displayed on **Figure 30**. Total U exceeding the MCL is localized to two areas adjacent to the plant building, one area on the west side of the building near the southwest corner (monitoring wells W-55 and W-56) and another area on the south side of the building (monitoring well W-77). The plume associated with monitoring wells W-55 and W-56 is referred to as the northern plume, and the plume associated with monitoring well W-77 is referred to as the southern plume. The lateral extent of U MCL exceedances is contained within the CFFF property boundary and, in the downgradient direction, is approximately 3,900 ft from the southern CFFF property boundary (**Figure 32**).

In the northern U plume, the highest total U concentrations ranged from 121 µg/L to 143 µg/L in groundwater from monitoring wells W-55 and W-56, respectively. Groundwater from monitoring well W-73, located approximately 50 ft downgradient from monitoring wells W-55 and W-56, contained total U at an estimated concentration of 0.133 µg/L. In the southern U plume, the highest total U concentration of 133 µg/L was detected in groundwater from monitoring well W-77. Groundwater from monitoring well W-28 located approximately 50 ft downgradient from monitoring well W-77 contained total U at a concentration of 2.08 µg/L.

Potential sources for the northern and southern U plumes include historical 2008/2011 underground line breaches, SOLX operations, and the plant area north of well W-77, including uranyl nitrate storage and off-loading, uranium hexafluoride storage areas and the HF Spiking Stations #1 and 2. The extent of the northern and southern U plumes above the MCL in groundwater is limited to localized areas adjacent to the plant building. The aerial extent of U above its MCL is the smallest of the COPCs at the CFFF site.

U isotope U-238 was detected in groundwater from the four Black Creek Aquifer monitoring wells at estimated concentrations ranging from 0.180 µg/L to 0.0700 µg/L. U-238 was also the only isotope detected in three of the four private water supply wells at concentrations ranging from 0.272 µg/L (estimated) to 0.776 µg/L. These total U concentrations are greater than 30 times below the MCL. The private water supply wells are located at least 3,800 ft beyond the extent of U in groundwater at the site.

The U-238 detected in groundwater from the Black Creek Aquifer monitoring wells at the site and the four private water supply wells is typical of regional background concentrations and is not a result of facility operations. Total U occurs naturally in groundwater in South Carolina. A study performed in the Aiken, SC and Augusta, GA area reported

an average background groundwater U concentration from private water supply wells of 0.35 µg/L (Evans A.G. et al, 1992). Another study of state-wide groundwater from private water supply wells used statistical analysis to predict an average background groundwater U concentration of 1.26 µg/L (Wagner S.E. et al, 2011). Private water supply wells are typically installed in the aquifer below the surficial aquifer (e.g. the Black Creek Aquifer at CFFF).

6.2.5 Technetium-99

Tc-99 is primarily a man-made radionuclide, so detections at CFFF of Tc-99 above the MDC are the result of impact by historical operations of the facility. Tc-99 was detected above its MCL of 900 pCi/L in groundwater from surficial aquifer – lower zone monitoring wells W-6 and W-11 in October 2021 (**Table 10**) at concentrations of 2,500 pCi/L and 1,230 pCi/L, respectively. Tc-99 concentrations are displayed on **Figure 31**. The aerial extent of the Tc-99 exceeding the MCL is within the Wastewater Treatment Area and the Southern Storage Area. The aerial extent of the Tc-99 plume at concentrations below the MCL extends from the Wastewater Treatment Area toward the west, southwest, and southeast.

The Wastewater Treatment Area OU and/or uranyl nitrate spills in the area north of W-77 (including the Chemical Area OU) are believed to be the source area(s) for Tc-99 impacts to groundwater. Current site operations do not have the potential to introduce significant quantities of Tc-99 into the environment and attempting to relate current Tc-99 groundwater conditions to a specific historic event would be speculative (Westinghouse, 2020b). Tc-99 was introduced into the commercial nuclear fuel cycle in 1956 when high-enriched U from U.S. Government military reactors was re-processed (e.g., down-blended) into low-enriched U fuel. Reprocessed U was used in the commercial nuclear fuel cycle until 1977. The lateral extent of Tc-99 MCL exceedances is contained within the CFFF property boundary and, in the downgradient direction, is approximately 3,200 ft from the southern CFFF property boundary (**Figure 32**).

Tc-99 was not detected in groundwater samples from the four Black Creek aquifer monitoring wells or the four private water supply wells.

6.3 Surface Water

As discussed in **Section 4.3**, surface water has been impacted by COPCs in limited areas within the CFFF property. The RI surface water data and the facility's routine surface monitoring data as discussed in **Section 4.3.4** indicate that no offsite impacts to surface water are occurring.

Metals occur naturally in the Earth's crust. Groundwater and surface water is in contact with rocks and soils containing metals which results in concentrations of naturally occurring metals concentrations in water. Elevated concentrations of metals were not identified in Phase I of the RI, and those that were identified were not related to facility operations. Therefore, metals were not analyzed in Phase II of the RI as approved by DHEC in the *Phase II Remedial Investigation Work Plan* (AECOM, 2020c).

6.3.1 CVOCs

Surface water samples collected from the western, deeply incised portion of the Eastern Ditch in July 2019 contained PCE at concentrations of 16 µg/L and 14 µg/L exceeding PCE's MCL of 5 µg/L at sample locations SW-17 and SW-18, respectively (**Figure 33**). Surface water sample SW-17 was collected in the ditch near the location of monitoring well W-41R, and sample SW-18 is downstream from the SW-17 location. Groundwater in monitoring well W-41R contained PCE concentrations ranging from 190 to 200 µg/L during the groundwater sampling campaigns before (January 2019) and after (August 2019) collection of this surface water sample. Surface water from location SW-17 also contained TCE at a concentration of 1 µg/L which is below its MCL of 5 µg/L.

Groundwater containing CVOCs discharges to the Eastern Ditch in this deeply incised portion because the base of the ditch is below the water table. No other CVOCs were detected in surface water during the RI, including in Upper Sunset Lake where the Eastern Ditch discharges.

6.3.2 Nitrate

Concentrations of nitrate below its MCL of 10 mg/L were detected in the Eastern Ditch, the Middle Ditch and in the Gator Pond as shown on **Figure 33**. The highest concentration of nitrate was detected in surface water from the

Gator Pond (7.3 mg/L) with the deeply incised portion of the Eastern Ditch containing the second and third highest concentrations (5.7 and 3.8 mg/L). Groundwater at CFFF has been impacted with nitrate by historical facility operations. The nitrate in surface water indicates that impacted groundwater is discharging to the surface water bodies in these locations at concentrations below its MCL.

6.3.3 Fluoride

Although fluoride occurs naturally, some of the fluoride detected in surface water samples is indicative of impacted groundwater discharging to surface water. In particular, surface water in the Gator Pond contained fluoride at a concentration of 4.94 mg/L which is above its MCL of 4 mg/L as shown on **Figure 33**. Another surface water sample (SW-16) in the Middle Ditch near its confluence with the Eastern Ditch contained a fluoride concentration of 1.69 mg/L. The remaining detected fluoride concentrations in surface water were below the calculated background concentration (0.442 mg/L) which is approximately an order of magnitude below the MCL.

6.3.4 Uranium

U occurs naturally in the Earth's crust and U-238 constitutes more than 99% of the U on Earth. Concentrations of U-238 were detected in every surface water sample except for one (background sample SW-12). Concentrations of U-238 (ranging from an estimated concentration of 0.673 µg/L to 1.11 µg/L) in the surface water samples were over an order of magnitude below the total U MCL of 30 µg/L and are likely naturally occurring.

Estimated concentrations (J-flagged by the laboratory) of U-235 ranging from 0.0174 µg/L to 0.0682 µg/L were detected in Middle Ditch sample SW-16 and in Upper Sunset Lake samples SW-19 and SW-20. Sediment in these locations also contains U-235 and the surface water bodies in these locations are very shallow suggesting that the U-235 is possibly the result of sediment particles in the samples. Surface water samples downstream from these locations did not contain U-235. This data is shown in **Table T3**.

6.3.5 Technetium-99

Tc-99 was not detected in the RI surface water samples, but it has been detected in CFFF's routine surface water samples from the Gator Pond at concentrations that are an order of magnitude or more below the MCL. Tc-99 is a predominantly man-made radionuclide, so detections of Tc-99 above the MDC are the result of impact by historical operations of the facility. This indicates that groundwater impacted with Tc-99 is discharging to the Gator Pond.

6.4 Sediment

As described in **Section 4.4**, sediment at CFFF has been impacted by historical facility operations. The impacts are limited to specific areas and are entirely contained on the site as discussed below.

6.4.1 Background Sediment Concentrations

Sediment samples collected near Bluff Road (SED-11 and SED-12) and west of the Entrance Dike (SED-51 through SED-59) are considered to be unaffected by facility operations and therefore represent natural, background analyte concentrations. These background sediment samples contained concentrations 2-butanone (also known as methyl ethyl ketone), acetone, ammonia, fluoride, nitrate and metals, including U. Calculated background sediment concentrations are summarized in **Table 13** and the methodology used to calculate these values is briefly described in **Appendix E**.

2-butanone, a metabolic byproduct of plants and animals, is released into the atmosphere by volcanoes and forest fires and is commonly found in food such as fruits and vegetables (NIH, 2020). 2-butanone sediment background concentrations are 193 µg/kg to 180 µg/kg for the stormwater ditches and Mill Creek, respectively. A 2-butanone concentration of 190 µg/kg in sediment location SED-50 exceeded the background concentration range and is also likely naturally occurring.

Acetone occurs naturally in plants, trees, forest fires, vehicle exhaust and in the metabolic breakdown of fats in animals (NIH, 2020). Acetone sediment background concentrations are 142 µg/kg and 251 µg/kg for the stormwater ditches and Mill Creek, respectively. Several sediment samples from Upper Sunset Lake, Lower Sunset Lake and Mill Creek southeast of the Lower Sunset Lake Dike exceeded the background acetone concentration range at

concentrations ranging from 350 to 530 µg/kg. The locations of the samples are in thicker forested portions of Mill Creek and are likely the result of naturally occurring processes.

According to the EPA Water Quality Criteria website, "Natural sources of ammonia include the decomposition or breakdown of organic waste matter, gas exchange with the atmosphere, forest fires, animal and human waste, and nitrogen fixation processes." Ammonia concentrations in background sediment samples ranged from 196 to 854 mg/kg. Ammonia concentrations above background were detected in the Gator Pond (SED-24, 1070 to 1170 mg/kg), in eight locations in Upper Sunset Lake and four locations in Lower Sunset Lake. The detection of ammonia above background in the Gator Pond is likely the result of groundwater impacted with ammonia discharging into the Gator Pond and/or the decomposition of organic matter. Ammonia concentrations above background in Sunset Lakes ranged from 896 to 2110 mg/kg. The detection of ammonia above background in Sunset Lakes is likely the result of the decomposition of organic matter and/or nitrogen fixation processes.

Metals detected in sediment are naturally occurring in soil and sediment in South Carolina with the Piedmont Province of South Carolina having higher average metals concentrations (except for calcium) than the Coastal Plain Province (Canova, 1999). As discussed in **Section 3.7**, the fall line that separates the Piedmont from the Coastal Plain occurs in the Congaree River just upstream from CFFF. Sediment comprising the CFFF site were washed downstream from the Piedmont Province by the Congaree River with a short distance of the river's course being within the Coastal Plain. Therefore, the majority of the soil and sediment within the CFFF property are derived from sources with the Piedmont Province of South Carolina. Samples were analyzed for metals during Phase I of the RI only. Concentrations of metals in these samples are naturally occurring and are not the result of historical operations of the facility; therefore, they are not a COPC at CFFF. Metals removal from the analyte list for Phase II of the RI was approved by DHEC in the *Phase II Remedial Investigation Work Plan* (AECOM, 2020c).

6.4.2 CVOCs

Sediment from sample location SED-17 in the deeply incised portion of the Eastern Ditch contained PCE at a concentration of 5.5 µg/kg (**Figure 34**). This sediment sample was collected at the same location where surface water contained PCE above its MCL which indicates that PCE impacted groundwater is discharging to the ditch in this area. Pore spaces within the sediment through which impacted groundwater migrates to discharge to the surface water resulted in the detection of PCE at this location. The remaining sediment samples did not contain any VOCs.

6.4.3 Nitrate

Calculated background sediment concentrations of nitrate for the stormwater ditches and Mill Creek are 0.57 mg/L and 0.91 mg/L, respectively. Concentrations of nitrate were detected above background concentrations in the Middle Ditch, in the deeply incised portion of the Eastern Ditch, in Upper Sunset Lake, and in Lower Sunset Lake. The nitrate is related to either impacted groundwater discharges or a historical releases, including the West Lagoon I (WLI) rupture in 1971.

In 1971 shortly after the facility began operations, WL I ruptured releasing an estimated 1.25 million gallons of wastewater and suspended solids containing nitrate, fluoride, U, and Tc-99. This lagoon is located adjacent to the Middle Ditch. Water and suspended solids flowing from WL I would have flowed into the Middle Ditch with the force of water temporarily pushing the suspended solids and water both to the north and the south within the ditch due to the relatively flat nature of this ditch. As the water in the ditch receded, some of the suspended solids remained in the Middle Ditch and became part of the matrix of sediment/soil (dry areas) of the ditch proximal to the release area and downstream in the ditch.

Sediment sample SED-17, located in the deeply incised portion of the Eastern Ditch where groundwater is impacted with nitrate above its MCL, contained nitrate above background concentrations. As discussed in **Sections 5.3.1** and **5.3.2,** groundwater discharges into this portion of the Eastern Ditch. Impact to sediment in SED-17 is the likely result of nitrate impacted groundwater migrating through sediment before discharging into the ditch. Nitrate above background concentration was not found in other samples collected in the Eastern Ditch.

Sediment in Sunset Lakes contained nitrate concentrations indicative of impact by historical operations (**Figure 35**). This impact extends from near the location where the Eastern Ditch discharges into Upper Sunset Lake (SED-19 and SED-50) to near the Lower Sunset Lake Dike. Suspended solids and wastewater from the 1971 WL I rupture flowed down the Eastern Ditch which empties into the middle part of Upper Sunset Lake. Some suspended solids containing

nitrate likely settled in Upper and Lower Sunset Lakes. It should be noted that field personnel did not encounter a layer indicative of settled suspended solids at any of the sediment sampling locations.

As discussed in **Section 3.3**, most of the Mill Creek flow is diverted from Sunset Lake by the man-made canal. The flow, if any, that continues down Mill Creek plus water from the Western and Eastern Ditches are what flows through Sunset Lakes. As a result, there is very little flow in Sunset Lakes except for during flood events and periods of above average rainfall. As discussed in **Section 6.4**, the impacted sediment is anticipated to remain in place for the foreseeable future because there is no motive force to move the sediment.

6.4.4 Fluoride

Calculated background sediment concentrations of fluoride for the stormwater ditches and Mill Creek are 3.61 mg/L and 2.73 mg/L, respectively. Concentrations of fluoride were detected above background concentrations in the Gator Pond, the Middle Ditch, in Upper Sunset Lake, in Lower Sunset Lake, and in Mill Creek east of the Lower Sunset Lake Dike.

Every sediment sample collected in the Gator Pond contained fluoride concentrations above natural background. These elevated fluoride concentrations (24.9 to 152 mg/kg) result from fluoride-impacted groundwater migrating through sediment before discharging into the Gator Pond and fluoride from impacted surface water adsorbing to sediment. As documented in **Section 5.3.3**, water in the Gator Pond also exceeds the MCL for fluoride. Because this surface water body is fully enclosed, fluoride impacts in sediment are contained within its boundaries.

Sediment in the southern portion of the Middle Ditch (SED-16, SED-60, and SED-61) contained fluoride above background at concentrations ranging from 3.04 to 19.2 mg/kg. Similar to nitrate impacts in sediment in this portion of the ditch discussed in the previous subsection, fluoride impacts to sediment in this area are the result of historical operations. Sediment from the northern portion of the Middle Ditch and the remaining ditch sediment samples did not contain fluoride above background concentrations.

Sediment from Upper Sunset Lake, Lower Sunset Lakes and Mill Creek east of the Lower Sunset Lake Dike contained fluoride above background concentrations. As shown on **Figure 36**, the highest fluoride concentrations (up to 120 mg/kg) were in the transect across Upper Sunset Lake south of where the East Ditch empties (SED-19, SED-45, and SED-46). Fluoride concentrations in sediment in the transect west of the SED-19, SED-45 and SED-46 transect were roughly an order of magnitude lower. In general, fluoride concentrations also decrease going towards and into Lower Sunset Lake and further decrease beyond the Lower Sunset Lake Dike. As discussed in **Section 6.4**, the impacted sediment is anticipated to remain in place for the foreseeable future because there is no motive force to move the sediment.

The vertical sediment profiling suggests that fluoride in the sediment is soluble. This allows the fluoride to diffuse into surface water or adsorb to sediment deeper in the sediment column. Migration of fluoride in the sediment column can be seen in multiple locations with sediment samples as deep as 3 ft into the sediment containing fluoride concentrations above background concentrations (**Figure 36**).

6.4.5 Uranium

U was detected in sediment above RUSLs in the Middle Ditch, in Upper Sunset Lake, and in Lower Sunset Lake.

The Middle Ditch contained sediment impacted with U-233/234 above its RUSL of 13 pCi/g at sample locations SED-16, SED-60, and SED-61 at concentrations ranging from 15.1 pCi/g to 67.2 pCi/g (**Figure 34**). This is the area of the Middle Ditch likely impacted by the rupture of WL I. Sediment from the northern portion of the Middle Ditch and the remaining ditch sediment samples do not contain U-233/234 above RUSL.

The RUSL for U-233/234 was exceeded in sediment from 14 sample locations in Upper Sunset Lake, with eight of those locations being bounding samples from the SED-44 study area, and in 5 sample locations in Lower Sunset Lake. The RUSL for U-235/236 was only exceeded in sediment sample SED-44 0-6” in Upper Sunset Lake. The RUSL for U-238 was exceeded in sediment from two sample locations in both Upper Sunset Lake and Lower Sunset Lake. Exceedances of RUSLs in sediment in Upper and Lower Sunset Lakes are displayed on **Figure 37**. There were no U RUSL exceedances in the westernmost transect in Upper Sunset Lake or in the transects in Mill Creek southeast of the Lower Sunset Lake Dike, therefore sediment impact with U is contained with Sunset Lakes. As

documented in the previous two subsections, most COPC impacts to sediment within Upper and Lower Sunset Lakes are likely the result of the WL I rupture. As discussed in **Section 6.4**, the impacted sediment is anticipated to remain in place for the foreseeable future because there is no motive force to move the sediment.

6.4.6 Technetium-99

Tc-99 is a predominantly man-made radionuclide, so detections of Tc-99 above the MDC are the result of impact by historical operations of the facility. Tc-99 above MDC was detected in sediment from the Gator Pond, the Middle Ditch, Upper Sunset Lake, and Lower Sunset Lake.

At least one sediment sample from each of the six sediment sampling locations in the Gator Pond contained Tc-99 above the MDC. Tc-99 concentrations in the Gator Pond ranged from 0.785 to 312 pCi/g (**Figure 34**). Impacts to sediment in Gator Pond is the result of Tc-99 impacted groundwater discharging into the Gator Pond.

The southernmost portion of the Middle Ditch (SED-16, SED-61, **Figure 34**) contained Tc-99 concentrations above the MDC. This is the same portion of the Middle Ditch impacted with fluoride, nitrate and U. Groundwater in this area is also impacted with Tc-99, albeit below the MCL. Sediment impacts in this area are the result of the historical operations and/or discharge of impacted groundwater through the sediment into the ditch, especially in the deeper sediment samples (6-12 inches and 12-18 inches) at location SED-61. Increasing Tc-99 concentrations as the depth of the sediment samples increases indicates that the effect is likely from impacted groundwater.

Concentrations of Tc-99 above the MDC within the upper foot (0-12 inches) of sediment in Upper Sunset Lake (16 samples) ranged from 0.937 to 23.7 pCi/g and from 1.12 to 2.13 pCi/g in Lower Sunset Lake (4 samples). Sediment at these locations also contained U concentrations above the RUSL. Two sediment samples (SED-B1 and SED-B2, **Figure 37**) located within the 10 meter box of the SED-44 study area (as described in **Section 4.4.3.2**) of Upper Sunset Lake exceeded the Tc-99 RUSL. Based upon the Leidos dose and risk evaluation of sediment in this area (Leidos, 2022), the U and Tc-99 in sediment in Sunset Lakes does not pose a risk of excessive radiation exposure (more than 25 mRem/yr) even under a worst case scenario of extreme drought whereby Mill Creek dries up thereby removing the shielding of the water typically above these sediments. No other sediment samples exceeded the RUSL for Tc-99 in Sunset Lakes.

The westernmost sediment transect in Upper Sunset Lake and the sediment samples east of the Lower Sunset Lake Dike did not contain Tc-99; therefore the extent of sediment minimally impacted with Tc-99 is limited to the eastern third of Upper Sunset Lake and, to a lesser extent, Lower Sunset Lake. These impacts are the result of historical facility operations (e.g. the 1971 rupture of WL I). As discussed in **Section 6.4**, the impacted sediment is anticipated to remain in place for the foreseeable future because there is no motive force to move the sediment.

6.4.7 SVOCs

SVOCs were detected in sediment from sampling locations SED-13 and SED-14 in the Eastern Ditch (**Table T4**). The SVOC concentrations in sediment from the downstream SED-14 location were lower than those detected in sediment from SED-13. A portion of the Eastern Ditch is located underground beneath the facility's primary parking lot. Stormwater drains in the parking lot are connected to the Eastern Ditch. Sediment sample locations SED-13 and SED-14 are approximately 800 and 2,000 ft downstream from where the portion of the Eastern Ditch that is beneath the parking lot intersects with the primary portion of the Eastern Ditch. Stormwater runoff from the parking lot contains SVOCs originating from cars parked in the lot (e.g. drips of motor oil) and degradation of asphalt. These compounds likely adsorbed to sediment within the ditch. The sediment sample from locations SED-11 upstream in the Eastern Ditch and SED-17 downstream in the Eastern Ditch did not contain SVOCs.

7. Conceptual Site Model

This section describes the mechanisms and processes by which historical impacts documented in previous sections came to exist in their current state.

7.1 Sources and Release Mechanisms

Impacts to CFFF from historical operations have been documented in groundwater, surface water and sediment. Although there have been historical impacts to soil, these impacts have either attenuated over time (e.g. low concentrations of PCE in shallow soils that are no longer a source for impact of groundwater) or are in inaccessible areas of the property (e.g. U beneath the plant building that will be removed during decommissioning). Groundwater impact concentrations often act as a tracer back to the source of the impact because the highest concentrations of impacted groundwater are typically measured close to or beneath a source or source area. Thus, groundwater plume locations and COPC concentrations are used to determine the likely source area(s) of each COPC as discussed below.

CFFF began operations in 1969, and the Resource Conservation and Recovery Act (RCRA) was enacted in 1976. RCRA is the primary law that governs disposal of solid and hazardous waste. Prior to the enactment of RCRA, liquids containing hazardous substances or the hazardous substance itself were managed to different standards to what they are today. The most likely source areas for PCE impacts to groundwater are in the Western Storage Area OU, including the Former Oil Houses along the west side of the building and Chemical Area OU, including the SOLX area,

Chlorinated solvents can migrate through concrete floors, mostly through cracks, into the soil beneath the floor and eventually impact groundwater. This release mechanism appears to be the case with the small PCE and the TCE plume emanating from the southwestern corner of the plant building. As discussed in **Section 6.2**, TCE, cis-1,2-DCE, and VC in groundwater result from the reductive dechlorination of PCE. None of these CVOCs are known to have been used in facility operations, and the plumes are in the same locations and/or are downgradient of the PCE plumes.

The Wastewater Treatment Area OU has historically been a source area for U, nitrate, and ammonia based on documented historical spill records and groundwater indicates possible Tc-99 and fluoride releases within the OU as well. The former East Lagoon, the North Lagoon and the South Lagoon are lined lagoons, and the Sanitary Lagoon is unlined. Liners in these lagoons have been replaced as documented in **Appendix A**. Prior to their replacement, failures of these liners may have resulted in the release of wastewater containing these COPCs to the groundwater. Due to the bottoms of these lagoons being near the water table, groundwater beneath them would be impacted.

Additionally, WL II is identified as a source of nitrate impact based on groundwater impact around it. The release mechanism for nitrate from WL II is the same as the other lagoons.

Fluoride impact emanates from the plant area north of monitoring well W-77. This area is inaccessible due to the plant building and facility infrastructure. Presumably, releases of fluoride containing substances migrated through unsaturated soils to the water table. Upon contact with groundwater, fluoride dissolved into groundwater which migrated downgradient to monitoring well W-77.

Similarly, source areas for U impacts to groundwater are located in the plant area north of monitoring well W-77 resulting in a small groundwater plume of U within the Chemical Area OU. Because Tc-99 is associated with U, this area may also be the source of Tc-99 impact in groundwater. A second small U plume is also located along the western side of the plant building with its source area being beneath the Chemical Area OU where there have been historical releases of U as discussed in **Section 5.2.4**. Fluids impacted with U migrated through the unsaturated zone to the water table where U went into solution and impacted groundwater in the vicinity of monitoring wells W-55, W-56, and W-77. Although historical release documents identify the Wastewater Treatment OU as a potential area for U impacts, U does not appear to be emanating or migrating to groundwater within this area.

Groundwater discharges into portions of the Eastern Ditch, the Western Ditch and the Gator Pond. Groundwater that discharges to the Western Ditch has not been impacted by historical operations of the facility, but portions of both the Eastern Ditch and Gator Pond receive discharges of impacted groundwater. The impacted groundwater locally affects sediment that it is migrating through and the surface water that it discharges to in these surface water bodies.

In 1971, WL I ruptured releasing an estimated 1.25 million gallons of wastewater and COPC impacted suspended solids. Wastewater and suspended solids flowed into the Middle Ditch then into the Eastern Ditch and eventually emptied into Upper Sunset Lake. The low flow, low energy environment of Sunset Lakes caused these surface water bodies to act as settling ponds for the COPC impacted suspended solids. Field personnel did not observe a distinct layer resulting from the settling of suspended solids. Impacts to sediment by the 1971 WL I rupture are discussed further in **Section 6.5**.

7.1.1 Migration Pathways

COPCs at CFFF migrate only via groundwater. Underground utilities commonly act as preferential migratory pathways for vapors from CVOCs and COPCs in groundwater; however, there is minimal CVOC impact remaining in soil and CFFF's underground utilities are above the water table. Therefore, underground utilities at CFFF do not act as preferential migratory pathways for COPCs.

Groundwater at CFFF primarily flows to the south southwest with components of flow to the west and south. As discussed in **Section 6.3.6.3**, groundwater flow around the Gator Pond is influenced by the constant head in this surface water body.

During Phase II of the RI, CVOC impacts were discovered north of their source area (resulting in a connection of the main plume to the Western Storage Area). Based upon CVOC data collected from temporary wells, groundwater in the northern portion of the CVOC plume flows north (upgradient) before continuing to migrate to the west and eventually turning back to the south. This migration pattern of CVOCs in an upgradient direction before making the turn west explains the CVOC impact in the Western Groundwater AOC.

This "upgradient" flow can be explained by observations made during installation of the temporary wells. During collection of groundwater screening samples at locations L-24 and L-47 (north of WL II), direct push tooling had to be left in the ground overnight at both locations to collect groundwater samples from the lower zone of the surficial aquifer due to slow rate of groundwater recharge related to apparently low hydraulic conductivities in the surficial aquifer – lower zone at these locations. The elevation of the top of the confining clay is higher in this area than in areas to the north, east and west. Although subtle, there is a north-south trending "ridge" in the confining clay from the southern end of the sanitary lagoon through boring L-47. This topographic high combined with the low conductivity of the lower zone of the surficial aquifer creates a hydraulic barrier to flow in the lower zone in this portion of the property. As displayed on **Figure 19**, groundwater flow in the surficial aquifer - lower zone in this area has a westerly flow direction. As groundwater pushes against the hydraulic barrier, it is forced to flow both north and south along the barrier. When groundwater flowing north reaches the northern extent of the hydraulic barrier, it flows westward and eventually turns to the south.

7.1.2 COPC Properties

Inorganic and organic COPCs have various properties which relate to their fate and transport within both unsaturated and saturated media. Some of these properties include density, molecular weight, water solubility, n-Octanol/water partitioning coefficient, vapor pressure, Henry's Law Constant, and organic carbon partitioning coefficient. These properties for each COPC are listed in **Table 15**. These properties were sourced from the EPA Regional Screening Level Chemical-specific Parameters Supporting Table (EPA, May 2022).

Density is defined as the mass of a given substance per unit volume in its pure form. The density of a COPC is important to compare to the density of water which is roughly one gram per cubic centimeter. COPCs, such as petroleum fuels, with densities less than 1 will tend to float (especially as a light non-aqueous phase liquid) and migrate near the water table (but may migrate downward with natural groundwater flow), whereas COPCs with densities greater than 1 (such as chlorinated solvents) will tend to migrate downward until they encounter a confining unit and be prevalent in deeper portions of the aquifer. Note, however, that the tendency to float or sink applies to COPCs in pure form or in mixtures. As discussed below, once individual COPCs solubilize in water, the COPC molecules will migrate with groundwater flow. No light or dense non-aqueous phase liquids have been identified, and there is no data that suggests their presence.

Water solubility is a measure of how much of a COPC can dissolve in water at a given temperature. In general, COPCs with higher molecular weight are less soluble and vice versa. Tc-99 has a lower molecular weight than U, therefore it solubilizes into groundwater more readily than U. Another example of these COPC properties is the

migration of fluoride and nitrate in the sediment column in Sunset Lakes, whereas U impacts remains within the upper foot of the sediment. Fluoride and nitrate have molecular weights that are approximately 4 times less and 6 times less, respectively, than U.

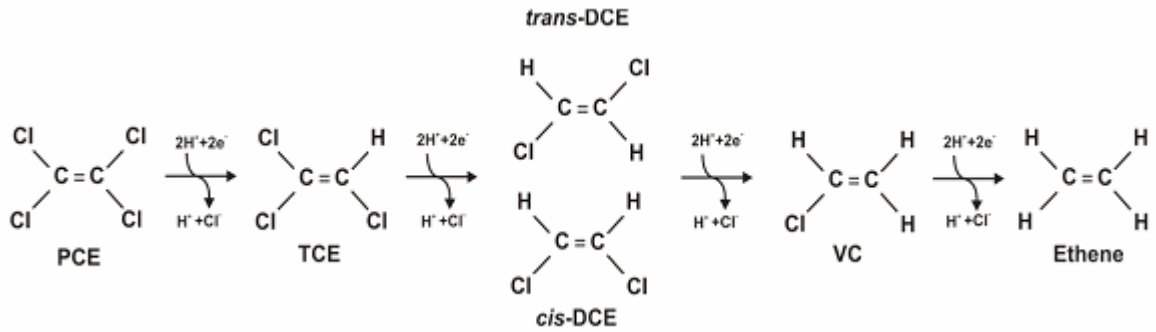
n-Octanol/water partitioning coefficient ($logK_{ow}$) is defined as the ratio of a COPC in n-octanol and water at equilibrium at a specific temperature. This coefficient is a relative indicator of the tendency of an organic compound to adsorb to soil or an organism, is inversely related to water solubility, and directly proportional to molecular weight. COPCs with higher n-Octanol/water partitioning coefficients will tend to adsorb to organic materials in soils or sediment and have a low tendency to remain in solution. Although a $logK_{ow}$ value was not listed by the EPA for U and Tc-99, the inverse relationship of water solubility and $logK_{ow}$ means that U would tend to adsorb to soil as discussed in **Section 5.1.3**.

Vapor pressure is defined as the pressure exerted by a vapor in equilibrium with its solid or liquid phases at 25 degrees Celsius in a closed system and is a measure of a COPC's volatility. The higher the vapor pressure of a COPC, the greater the volatility and vice versa. Henry's Law Constant (HLC) measures the concentration of a COPC in air divided by its concentration in water and represents a COPC's tendency to volatilize from groundwater. COPCs with high HLCs will volatilize from water into pore spaces within the unsaturated zone while COPCs with low HLCs will tend to remain in solution or may be adsorbed onto soil or sediment. Of the CVOCs detected at CFFF, VC is the most volatile and PCE is the least volatile based upon their vapor pressures.

COPCs with a low organic carbon partitioning coefficient (K_{oc}) are less likely to bind with organic carbon in soil whereas those with a high organic carbon partitioning coefficient have a stronger tendency to adsorb to organic matter than remain in solution. Inversely to vapor pressure in the previous paragraph, VC has the highest affinity to bind with organic carbon while PCE has the least.

7.2 Transformation Reactions of Chlorinated Ethenes

Chlorinated ethenes such as PCE can undergo biotic (biological) and abiotic (physical) transformations under both aerobic and anaerobic conditions. Natural, biotic degradation of PCE to produce daughter products at CFFF follows the reductive dechlorination pathway. This pathway is as follows:



(Source: Parsons Corporation, 2004)

In this pathway, only TCE can be dechlorinated into two different DCEs (cis- and trans-). It should be noted that trans-1,2- DCE was only detected in one groundwater screening sample and has not been detected in groundwater from the monitoring well network at CFFF. Multiple bacteria are known to dechlorinate chlorinated ethenes with dehalococcoides being the most prominent. Dehalococcoides is capable of dechlorinating PCE through ethene whereas other bacteria can only dechlorinate PCE to cis-1,2-DCE.

The COPCs detected in groundwater in the floodplain indicate that the reductive dechlorination pathway shown above is occurring at CFFF, dehalococcoides are likely present at CFFF, and the conditions for natural degradation of PCE are present. Optimal conditions for reductive dechlorination are anaerobic conditions (DO <0.5 mg/L), sulfate concentrations less than 50 mg/L, nitrate concentrations less than 1 mg/L, and a pH range of 6 to 8.

7.3 Groundwater Fate and Transport Assessment

Groundwater fate and transport is a complex process driven by the groundwater flow regime within the surficial aquifer as well as physical and chemical processes that affect the flux of COPCs as they flow through the aquifer. Physical processes such as advection and dispersion affect the concentration and flow within the system. Sorption, volatilization, and biochemical reactions also affect concentrations through space and time as dissolved COPCs flow with groundwater through the aquifer. These processes occur at every site for every COPC.

Each of these factors are unique and vary by location based on a range of factors, including but not limited to micro-scale and meso-scale heterogeneities in the aquifer, effective porosity of the soils/aquifer, tortuosity (measure of the actual length of the groundwater flow path divided by the straight line distance of the end points of that path) of the porous network, chemicals under consideration, in situ redox conditions, and microbial populations and their stratification within the matrix.

7.3.1 Advection and Sorption Processes

Advection is a process by which COPCs are transported by flowing groundwater. Most simply, the rate of COPC transport is equal to the average linear velocity of groundwater flowing through the aquifer. However, the rate of COPC transport is often less than the rate of groundwater flow because of various factors. This assumes that the transport of the COPC does not influence the pattern of flow, such as large chain compounds inhibiting the pore spaces of an aquifer.

As groundwater flows through the matrix, dissolved COPCs can undergo sorption, wherein physical and chemical processes promote attachment of the COPC to the soil matrix, thereby reducing groundwater concentrations. Sorption typically occurs through absorption (incorporation of the COPC by the aquifer solids), adsorption (physical adherence or ion bonding onto the matrix), or ion exchange. Sorption dynamics are site-specific phenomena controlled by the geochemistry of the host matrix and the groundwater flowing through the system.

Uranium readily adsorbs to soil as evidenced by the short distance that it has migrated in groundwater (**Figures 30 and 32**) whereas PCE's adsorption capacity is less as evidenced by the distance it has migrated since its release (**Figure 32**)

7.3.2 Dispersion and Diffusion Processes

Dispersion is a naturally occurring process where COPC impacted groundwater mixes with unimpacted groundwater thereby reducing the COPC concentration. This process is the result of mechanical mixing and molecular diffusion in groundwater flow. Diffusion occurs as a process where the COPCs in groundwater moves from areas of higher concentration to areas of lower concentration as the natural system attempts to achieve equilibrium. As the COPCs move through the groundwater matrix, not all the COPCs move at the same speed as the average linear velocity.

Dispersion and diffusion are sometimes incorrectly interchanged in discussions of groundwater concentrations spreading out in space and through time as flow continues through the aquifer/matrix. Simplified, dispersion is a macroscale process caused by non-ideal flow patterns (tortuosity, scalar flow issues, etc.), whereas diffusion is a microscopic process resulting from random molecular motions in the matrix.

The density of Tc-99 combined with downward flow gradients may have caused it to sink to the confining unit where most of the Tc-99 mass remains, but dispersion and diffusion causes lower concentrations to migrate laterally in groundwater. Nitrate and fluoride, however both readily disperse throughout the surficial aquifer.

7.3.3 Volatilization from Groundwater

Volatilization occurs when volatile COPCs that are dissolved in groundwater, or present as nonaqueous phase liquids (of which none have been identified at CFFF), change to a gas phase. This is more commonly associated with organic compounds in saturated and unsaturated zones in aquifer matrices. The volatilization process is controlled by the vapor pressure of the COPC and its state of equilibrium relative to the matrix and groundwater temperature. COPCs will volatilize more readily with increased temperature in the groundwater matrix increasing its vapor pressure. Off gassing of organic compounds (CVOCs at CFFF) results in decreasing COPC concentration in soil and groundwater.

7.3.4 Plume Degradation and Attenuation Processes

Groundwater concentrations in plumes will decrease over time and distance for a variety of reasons, including but not limited to dispersion and diffusion, sorption, volatilization, chemical reaction, and biochemical reactions driven by microbial populations. Concentrations may also be diluted over time and space as a result of further infiltration and groundwater recharge, effectively providing a means for dilution of the plume. As defined by the EPA, natural attenuation of the plume may occur as a variety of physical, chemical, and/or biological process that, under favorable conditions and without human intervention, may reduce the mass, toxicity, mobility, volume, or concentrations of COPCs in soil or groundwater. Monitored natural attenuation is a commonly applied approach for groundwater remediation and is often used in combination with active remediation including physical (e.g., pump and treat, barrier walls, etc.), biological or chemical (e.g., injection, permeable reactive barriers, etc.) treatment that are deemed unnecessary to achieve concentration targets/objectives at designated boundaries.

Microbes such as nitrogen fixing bacteria, methanogens, and dehalococcoides can naturally metabolize various COPCs as their food source depending upon groundwater chemistry. Nitrogen fixing bacteria prefer oxidizing conditions whereas methanogens require reducing conditions to use nitrate as a food source. Similar to methanogenesis, reductive dechlorination discussed in **Section 6.2** requires reducing conditions. In general, oxidizing conditions are greater in the upper zone of the surficial aquifer and above the bluff and reducing conditions are greater in the lower zone of the surficial aquifer and in the floodplain (**Table T2**).

7.3.5 Vertical Migration Potential

As discussed in **Appendix P**, vertical hydraulic gradients in the surficial aquifer at CFFF are primarily downward and low conductivity and low moisture content of the Black Creek confining clay does not allow migration of groundwater from the surficial aquifer to the Black Creek Aquifer. The Black Creek Aquifer has not been impacted by historical operations of CFFF. In the surficial aquifer there is high potential for COPCs to migrate from the upper zone to the lower zone of the surficial aquifer. This potential is evidenced by impacts of COPCs in the lower zone of the surficial aquifer, in particular PCE and Tc-99. Once in the lower zone, these COPCs will continue to migrate laterally in the primary and secondary groundwater flow directions.

7.3.6 Groundwater to Surface Water Pathway

There are three areas of CFFF where groundwater can interact with surface water. These are: the stormwater ditches, the Gator Pond, and Mill Creek (including Upper Sunset Lake, Lower Sunset Lake, and the man-made canal).

7.3.6.1 Stormwater Ditches

Groundwater discharges to the ditches in three deeply incised sections as follows:

- In the Eastern Ditch, the deeply incised section of the ditch extends westward from near the intersection with the Middle Ditch. The portion of the Eastern Ditch west of the dirt roadway (**Figure 3**) is the most deeply incised with an elevation approximately 10 ft deeper west of this road.
- Only the most southern portion of the Middle Ditch consistently receives groundwater discharge.
- The southern portion of the Western Ditch consistently receives groundwater discharge.

Depending on the elevation of the water table as it rises and falls, the remaining portions of the stormwater ditches are either intermittently gaining (receiving groundwater discharge) or are consistently losing streams (dry except for stormwater runoff during precipitation events). The northern reach of the Eastern Ditch receives surface water from wetlands on the north side of Bluff Road (**Figure 10**). Although this ditch flows nearly year- round (upstream of the deeply incised portions of the ditch), this water is the from the wetlands and not the result of groundwater discharge.

7.3.6.2 Pressure Transducer Network

Beginning in March 2021, pressure transducers (In-Situ Inc. Level TROLL 500) were attached to staff gages to monitor surface water elevations with one in the Gator Pond and six in Mill Creek (Canal, Entrance, Upper 2, Upper, Lower and Gator; **Figure 2**). Pressure transducers were also placed in 13 monitoring wells (W-4R, W-15, W-16, W-27, W-60, W-61, W-92, W-96, W-104, W-105, W-124, W-125, and W-126; **Figure 3**) and one piezometer (PZ-1; **Figure 3**) to gather groundwater elevation data. Readings were recorded hourly and used to assess the interaction of

surface water and groundwater in these areas. Some of the wells in the floodplain north of Lower Sunset Lake were installed during Phase II of the RI so data in these wells (W-104, W-124, W-125, W-126, and PZ-1) has been collected for a shorter time.

During the nearly yearlong monitoring period, groundwater levels and surface water levels were periodically obtained by field personnel to compare to the transducer data in order to verify that the transducer data represented actual groundwater and surface water elevations. As needed, elevation correction factors were applied to the data sets to accurately (within 0.10 foot) correlate the transducer elevations with those measured in the field. Pressure transducer data download methodology is included in **Appendix E**. Hydrographs of the pressure transducer data and rainfall amounts as measured by the on-site rain gauge (rainfall amounts prior to 5/19/21 are publicly available data from the Columbia Metropolitan Airport located approximately 12 miles west northwest of CFFF) are included in **Appendix X**.

7.3.6.3 Gator Pond

For the evaluation of the groundwater surface water interaction in the Gator Pond, transducers were installed in monitoring wells W-4R (replacement for well W-4), W-15, W-16, W-27, W-60, W-61, and W-92 and a transducer was attached to the Gator Pond staff gage (**Figure 3**). Data obtained from the pressure transducer in well W-4 showed a close correlation to rainfall indicating that the well seal leaked and precipitation had a preferential pathway via the borehole to the water table. Therefore, this well was replaced with W-4R on July 23, 2021 so that accurate water table elevations and groundwater quality data could be collected at this location. Additionally, a small amount of precipitation was getting into the casing of monitoring well W-16, so repairs were made to this well on September 16, 2021, to prevent this from occurring. Surficial aquifer data collected prior to this replacement and repair do not accurately represent the elevation of the water table and are not used in this evaluation.

The man-made Gator Pond was constructed prior to the plant by excavating soil between the present operational area of the site and Lower Sunset Lake, located approximately 115 ft south of the Gator Pond. During construction, less permeable overbank deposit soil (as evidenced by soils encountered during the installation of monitoring wells W-92 and W-4R) was excavated and used to construct a berm (essentially a secondary bluff) on the southern side of the excavated area to impound groundwater discharging from the water table into the excavation, thereby creating the Gator Pond. The low permeability soil in the berm also impedes surface water from infiltrating into the water table along the southern side of the Gator Pond as evidenced by fluoride exceeding its MCL in the surface water in the Gator Pond and not exceeding its MCL in surficial aquifer monitoring wells (W-4R, W-27, and W-92) south of the Gator Pond. The lower portion of the excavation encountered the higher permeability, coarsening downward sands of the water table aquifer, thereby allowing groundwater to readily fill the pond and maintain its surface level.

The berm's low point is in the southeastern corner at an elevation of 117.7 ft above MSL. A sluice in the pond's southwestern corner that allowed drainage into Lower Sunset Lake was removed and backfilled in 1980. This sluice was replaced with a PVC pipe in nearly the same location. This pipe is fitted with a valve that is shut, but still allows a trickle of water to discharge onto the bluff between the Gator Pond and Lower Sunset Lake.

When precipitation fills the Gator Pond above the low point of this berm, surface water slowly runs out of the southeast corner of the pond and onto the land surface. Depending upon the amount of flow, this water either seeps into surficial soils or flows into a man-made ditch that leads into Lower Sunset Lake. Vegetation such as cattails growing along this low point impedes but does not stop flow out of the Gator Pond in this area. Backup at this discharge point allows the water level in the Gator Pond to temporarily exceed the elevation of the low point.

The variation in surface water elevation in the Gator Pond (highest elevation = 117.85 ft above MSL, lowest elevation = 117.33 ft above MSL) was a total of 0.52 ft over the entire monitoring period (March 2021 through March 2022). This stable elevation is the result of the influx of groundwater and the partially impounded low point of the berm allowing the pond to fill higher than its elevation during precipitation events. Groundwater flows into the Gator Pond along the portions of the northern and eastern sides where water table heads are higher than the surface water elevation. Surface water in the Gator Pond flows back into the water table along its eastern flank, western flank, and its bottom. This flow system fits the classic hydrologic model of a flow-through pond.

Influx of surface water into the water table around the Gator Pond creates a groundwater mound that affects the migration of COPCs and thus the configuration of plumes in this area. Groundwater naturally flows from higher heads to lower heads along the path(s) of least resistance. The mounded groundwater creates resistance to the natural flow of upgradient groundwater and deflects its flow around this mounded area. Groundwater in the monitoring well W-16 area has a higher head than the Gator Pond and would therefore discharge into the Gator Pond, whereas the water

table head in monitoring well W-15 is lower than the surface water elevation. This would cause groundwater flow in the area near W-15 to deflect around the western side of the Gator Pond. This deflection is evidenced by the shape of the groundwater plumes in this area.

During precipitation events, the water table typically begins to rise before the surface of the Gator Pond. This indicates that precipitation is infiltrating through surficial soils causing the water table to rise. For the monitoring wells on the southern side of the Gator Pond, the rise in the water table may be the result of additional pressure from surface water as precipitation and overland flow fill the pond. The elevation of the surface water in the Gator Pond remained unchanged until the precipitation rate exceeded the rate of influx into the groundwater.

Areas above the bluff have a slower and smaller response to precipitation as evidenced in monitoring well pair W-60/W-61 hydrographs.

7.3.6.4 Mill Creek

For the evaluation of the groundwater surface water interaction in Mill Creek, transducers were installed in monitoring wells W-96, W-104, W-105, W-124, W-125 and W-126, and piezometer PZ-1 near Lower Sunset Lake and a transducer was attached to the Lower staff gage (**Figure 3**). Because the distance of well pair W-27/W-92 is approximately 75 ft from Lower Sunset Lake, albeit on the man-made bluff of the Gator Pond, surficial aquifer elevations in these wells were also included in the Mill Creek groundwater surface water interaction evaluation. There are transducers attached to other staff gages within Mill Creek, but those staff gages are too far from the monitoring well network to be used in the evaluation.

Infiltration of precipitation into groundwater on and/or near the bluff is the driving force on the water table in the floodplain. This observation is particularly evident in the rise in the water table typically starting before the rise of the water level in Lower Sunset Lake. Because the bluff is a relict cut bank created by the Congaree River, the thickness of overbank deposits on the bluff are likely thinner, more permeable, and/or may not be present in some areas on the bluff. The man-made ditch near the bluff north of Lower Sunset Lake removed most, if not all, of the overbank deposit when it was excavated thereby creating a preferential location for infiltration of precipitation in this area.

Grain size analyses of sediment aliquots indicate that sediment lining the bottom of Mill Creek is primarily silt and clay. The low permeability sediment lining Mill Creek has the characteristics of an aquitard, separating surface water in Mill Creek from the surficial aquifer below. In contrast to the higher permeability sediment in the base of the Gator Pond, this aquitard prevents significant interaction between surface water in Mill Creek and groundwater in the more permeable upper surficial aquifer underlying the Creek.

The potentiometric maps (**Figures 18 and 19**) show that the water table on both sides of the Sunset Lakes is several ft below the surface water elevation. As a result, during normal water level conditions, a small amount of surface water may slowly seep into the water table. The water table upgradient of Sunset Lakes is not affected by this seepage under normal water level conditions, whereas the water table downgradient is affected by the seepage as illustrated in higher water table elevations south of Sunset Lakes.

The overall hydraulic gradient on both sides of Sunset Lakes remains towards the Congaree River as illustrated by lower water levels in both the upper and lower zone of the surficial aquifer south of Sunset Lakes. Groundwater mounding around (and beneath) Sunset Lakes appears to deflect COPC migration to the east along Lower Sunset Lake for COPCs migrating east of the Gator Pond. In areas further west, groundwater in the surficial aquifer – lower zone flows beneath the Sunset Lakes, based on trace amounts of cis-1,2-DCE and VC detected in monitoring wells south of the Sunset Lakes.

When surface water levels rise (greater head pressure), the surface area of soil/sediment in contact with surface water and the amount of water being transmitted through these sediments increases. The effects on the water table upgradient of Mill Creek have been observed in the hydrographs; however, this effect is typically localized to areas close to Mill Creek because of the groundwater hydraulic gradient pushing against it. The effects of the increased influx of surface water into the water table due to an increased pressure head was recorded by the transducers during Congaree River flood events on March 26, 2021 and August 22, 2021.

At the start of the March 26 flood, transducers had been placed in the surface water locations (Mill Creek and Gator Pond), but transducers were not installed until March 31st in monitoring wells W-15, W-27 and W-92 around the Gator Pond. This flood resulted from heavy rainfall in the upstate which caused the Congaree River to flood and push water

up Mill Creek eventually overtopping the Lower Sunset Lake Dike (elevation = 109.19 ft above MSL) from the downstream side of the dike. The surface water level in Lower Sunset Lake increased 3.20 ft (119.27 ft above MSL to 122.47 ft above MSL) over four days during this flood.

Although the transducers in the monitoring wells were not installed until March 31, 2021, the signal within the water table of this flood is still readily apparent, particularly in well pair W-27/W-92 which is approximately 75 ft from the edge of Lower Sunset Lake (albeit on the man-made bluff of the Gator Pond above Lower Sunset Lake). The water level elevations in both wells were the highest recorded over the one-year monitoring period. Because there was little rain at CFFF preceding the March flood event, the water table upgradient had not risen due to infiltration of precipitation into the water table. This allowed the pressure signal of the influx of surface water into the water table to be observed as far upgradient as monitoring well W-15 located approximately 320 ft upgradient of Lower Sunset Lake. The rise in the water table at W-15 was significantly less (0.13 ft versus what was likely 4-5 ft in well W-92) than in the well pair of W-27/W-92 and the peak of the response in monitoring well W-15 was delayed by 25 hours versus the time when the water table began to fall in the well pair. This delay is the result of the distance that this pressure signal had to travel through the surficial aquifer to cause the rise of the water table elevation in monitoring well W-15.

The August 22nd flood event differs from the March 26th flood event because it was the result of a 4.76 inch precipitation event (the greatest during a 24 hour period over the one-year monitoring period) at CFFF. This flood event was also preceded by 1.02 inches of rain on August 19th. During both precipitation events, the water table rose before either the Gator Pond or Lower Sunset Lake. This flood was also different from the March 26th flood because the surface water elevation in the Gator Pond rose which resulted in a rise in the water table elevation in the wells south of the Gator Pond (W-4R, W-27, and W-92). The water table upgradient of Lower Sunset Lake both above and below the bluff rose prior to the surface water level which increased the pressure head of the water table against surface water infiltrating from Lower Sunset Lake. The surface water elevation rise in the Gator Pond also added to the increased pressure head against water infiltration from Lower Sunset Lake for the wells around the Gator Pond.

The distance between the southern edge of the Gator Pond and the northern edge of Lower Sunset Lake is approximately 115 ft near the W-27/W-92 monitoring well pair. When precipitation events occur which cause both Sunset Lakes and the Gator Pond to rise, groundwater in this area receives surface water infiltration from both bodies. Monitoring well W-92 is screened within the higher conductivity sands of the lower zone of the surficial aquifer on top of the confining clay. Because of the greater hydraulic conductivity in the lower zone, the response of the water table in this zone to both flooding events was greater than the upper zone.

7.3.6.5 Mill Creek – Below the Lower Sunset Lake Dike and Canal

Because Mill Creek below the Lower Sunset Lake Dike spillway is not impounded, there are likely times when the water table is higher than the surface water elevation in Mill Creek and vice versa. Monitoring well W-25 (**Figure 3**) is approximately 120 ft from Mill Creek and 360 ft from the man-made canal. As evidenced by the grain size analysis of the sediment aliquot from Mill Creek prior to reaching the man-made canal (SED-57 1-1.5 ft) and field personnel observation during sediment sample collection, low permeability sediment that acts as an aquitard is present in Mill Creek across the entire CFFF property. Being man-made, excavation of the man-made canal removed the lower permeability overbank deposits at the surface and exposed the coarsening downward, permeable sands.

The low permeability sediment (aquitard) lining the bottom of the undisturbed portions of Mill Creek minimizes, if not precludes, significant interaction between groundwater and surface water. Alternatively, the canal, like Gator Pond, would be a gaining stream or a losing stream depending upon the groundwater and surface water elevations due to the direct interaction of surface water with the coarsening downward, permeable sands of the surficial aquifer.

7.4 Sediment Fate and Transport

Sediment impact occurs in localized, well-defined areas of the Middle Ditch, the Eastern Ditch, the Gator Pond, and Upper and Lower Sunset Lakes. Impacts to sediment in the Gator Pond and Eastern Ditch (except for SVOCs as discussed in **Section 5.4.7**) result from discharge of impacted groundwater to the sediment. Therefore, these impacts are directly related to the fate and transport of impacted groundwater, and sediment in these areas is not subject to sediment fate and transport. SVOC impact to Eastern Ditch sediment is the result of stormwater runoff from the parking lot.

Sediment impacts in the Middle Ditch and Sunset Lakes are the primarily the result of the 1971 rupture of WL I that released an estimated 1.25 million gallons of wastewater and suspended solids into the stormwater ditch system.

Some of the sediment impact in the middle ditch is partly attributed to discharge of impacted groundwater. Sediment analytical results indicated the suspended solids contained fluoride, nitrate, U, and Tc-99. Some of the impacted suspended solids settled in the Middle Ditch while the remaining suspended solids flowed down the Eastern Ditch into Upper Sunset Lake. Upper Sunset Lake is a low flow, low energy surface water body that is part of naturally meandering Mill Creek.

The low flow in Upper Sunset Lake is primarily attributed to diversion of most of the flow of Mill Creek by the man-made canal that has created swamp-like conditions including a thick forest growing in the lake as well as numerous submerged or partially submerged fallen trees. The full impoundment of Lower Sunset Lake created both swamp-like conditions in shallower areas and open water in the main channel along the Lake's northern edge. The predominant flow direction in Sunset Lakes is west to east but, as documented in **Appendix L**, this flow direction can reverse under occasional flood conditions in the Congaree River or heavy precipitation events where discharge from the Eastern and Western Ditches can result in flow to the east and west.

The distribution of COPCs (fluoride, nitrate, U, and Tc-99) in sediment in Upper and Lower Sunset Lakes (**Figures 35 through 37**), suggests that the predominant surface water flow direction within the lakes appears to have been west to east when the 1971 WL I rupture occurred. Wastewater and suspended solids flowing down the Eastern Ditch would have emptied into the middle section of Upper Sunset Lake and flowed towards the Upper Sunset Lake Dike. Most of the suspended solids settled within Upper Sunset Lake with lesser amounts remaining in suspension and flowing into Lower Sunset Lake where the remainder of the impacted suspended solids settled out due to the low flow, nearly stagnant conditions in this portion of Mill Creek. As noted previously, a distinct layer of suspended solids was not observed by field personnel during sediment sample collection. Essentially Upper and Lower Sunset Lakes acted as settling ponds for the suspended solids put into suspension by the rupture of the WL I.

Because of the low flow, low energy depositional environment of Mill Creek, sediment that is deposited or formed by the decomposition of organic materials consists primarily of silt and clay. The impacted suspended solids were incorporated into and buried by additional sediment deposition over the last 50 plus years. Even during flooding events, turbid flow in Sunset Lakes is localized around trees with the large majority of the flow being non-turbid. Because of the cohesive nature of silt and clay, sediment within Mill Creek is resistant to resuspension. This combined with the gentle flow in Sunset Lakes even during flood events resulted in impacted sediment remaining in place for more than 50 years. The impacted sediment is anticipated to remain in place for the foreseeable future because there is no motive force to move the sediment.

Due to the chemical properties (e.g. molecular weight, partitioning coefficients) of fluoride, nitrate, and U, these COPCs have behaved differently since their deposition. U is tightly adsorbed to sediment and has remained within the top foot of sediment (**Figure 37**, **Table 13**). Based upon vertical sediment quality data, fluoride and nitrate (**Figure 35 and 36**) are soluble, not as strongly adsorbed to the sediment, and have migrated downward with the small amount of surface water migrating through the sediment to the water table.

Fluoride and nitrate have gone through cycles of dissolution and adsorption since they were deposited as they equilibrate with both surface water and sediment. Some of the dissolved fluoride and nitrate also likely dissolves into the surface water of Sunset Lakes, albeit at concentrations below MCLs. Routine surface water sampling in Mill Creek by CFFF as a requirement of their NRC operating license as discussed in **Section 4.3.4** has not detected fluoride or nitrate above MCL in the surface water of Sunset Lakes.

8. Baseline Risk Assessment

A BRA is an integral part of EPA programs designed to protect human health and ecological resources from current and potential future threats from chemicals in the environment. EPA defines baseline risks as risks that might exist if no remediation or institutional controls are applied at a site. This BRA for CFFF includes a Human Health Risk Assessment (HHRA) and an Ecological Risk Assessment (ERA) and was submitted to DHEC in August 2022 (AECOM, 2022). The HHRA was conducted in accordance with EPA guidance, principally the *Risk Assessment Guidance for Superfund (RAGS), Volume I, Human Health Evaluation Manual* (Parts A, D, E, and F) (EPA, 1989, 2001a, 2004, and 2009), and *Region 4 Human Health Risk Assessment Supplemental Guidance* (EPA, 2018a). The ERA was conducted in accordance with the *Ecological Risk Assessment Guidance for Superfund*, *Process for Designing and Conducting Ecological Risk Assessments* (EPA, 1997), *The Role of Screening-Level Risk Assessments and Refining Contaminants of Concern in Baseline Ecological Risk Assessments* (EPA, 2001b), and *USEPA Region 4 Ecological Risk Assessment Supplemental Guidance* (EPA, 2018b).

This BRA was based on site-specific data collected since 2018. Previous risk assessments at the CFFF included a 2014 Preliminary HHRA based on data collected at the facility between 2008 and 2013 and a 2019 Phase 2 Preliminary HHRA based on data collected in 2018. Human health risks for this updated evaluation were considered for both current and potential future exposure scenarios based on current chemical concentrations detected in environmental media. Media sampled included groundwater, soil, surface water, sediment, vegetation, and fish tissue. Samples were collected as part of this RI of the site as well as the ongoing radiological monitoring program. Concentrations of chemicals in the air due to soil particles (dust) and due to volatile chemicals entering indoor air from groundwater were estimated using simple models.

8.1 Human Health Risk Assessment

In the initial phase of the HHRA, maximum detected concentrations in potential exposure media were compared to conservative screening levels, and background levels if available. Chemicals that exceeded screening values and background values were identified as chemicals of potential concern (COPCs) for human health. The HHRA then calculated current and future cancer risks and noncancer hazards to human receptors from potentially complete exposure pathways for the COPCs identified in soil and surface water. Risk and hazard from groundwater consumption was not calculated because DHEC considers groundwater exceedances of drinking water standards to indicate a potentially significant impact. The chemicals with groundwater exceedances, all of which were within the central area of the site, were identified as COPCs and retained as chemicals of concern (COCs). In addition, risk was calculated for inhalation of chemicals in shallow groundwater that could enter indoor air as a result of vapor intrusion (VI). Most sediment was not evaluated in the HHRA because sediments in the water bodies on the site are covered by surface water, which prevents substantial human exposure. In the shallow ditch within the facility, sediment could be exposed during dry periods, so it was also evaluated as soil.

Receptors evaluated under both current and future conditions included a groundskeeper, ditch maintenance worker, construction worker, indoor worker, and fisher. Receptors evaluated under future conditions included adult, child, and adolescent residents, assumed to live on the site. No COCs were identified for any receptor based on the risk and hazard calculations.

8.2 Ecological Risk Assessment

In the initial phase of the ERA, maximum detected concentrations in exposure media (soil, surface water, sediment, vegetation, and fish tissue) were compared to conservative, ecological screening values to calculate hazard quotients. If the hazard quotient was greater than or equal to 1, the chemical was identified as a constituent of potential ecological concern (COPEC) for that medium and exposure area. The conservative, initial screening identified preliminary COPECs in surface water and sediment. No preliminary COPECs were identified in soil, vegetation, or fish tissue.

In surface water, the preliminary COPECs identified in Upper Sunset Lake, Lower Sunset Lake, Gator Pond, and facility ditches were one or more of the following inorganics: aluminum, fluoride, iron, manganese, nickel, and zinc. In sediment, the preliminary COPECs identified in Upper Sunset Lake, Lower Sunset Lake, Mill Creek, Gator Pond, and facility ditches were one or more of the following: acetone, benzaldehyde, polycyclic aromatic hydrocarbons, PCE,

aluminum, barium, beryllium, calcium, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, sodium, vanadium, and zinc.

The preliminary COPECs identified in the initial, conservative screening were further evaluated in the next phase, a refinement screening that used a generally less conservative approach to focus on those chemicals in each exposure area and medium that may have a greater potential to pose a risk to the ecological assessment endpoints at the site. The refined COPECs in surface water initially selected by the screening were iron in Upper Sunset Lake and iron, nickel, and zinc in the ditches within the facility. No refined COPECs were identified in sediment of any of the water bodies.

The refined COPECs in surface water initially selected by the refinement screening were then evaluated further using readily available lines of evidence. Bioaccumulative chemicals in sediment were also evaluated for their ability to pose risk to upper-trophic-level wildlife. This evaluation determined that the refined COPECs initially identified in surface water, and potentially bioaccumulative chemicals in sediment, do not have the potential to pose significant risk to ecological receptors. Accordingly, none of the chemicals in surface water or sediment at the CFFF were found to warrant retention as final COPECs, and further evaluation of ecological risk in the ERA was determined not to be needed.

9. Summary and Conclusions

9.1 Summary

From June 2019 through October 2021, the source, nature, and extent of impacts from historical operations of CFFF were assessed in soil, groundwater, surface water and sediment. During the RI,

- 91 soil and/or lithologic borings were completed;
- 103 soil samples were collected;
- a private water supply well survey was conducted within 1 mile of the property boundary;
- four private water supply wells were sampled;
- 120 groundwater samples were collected from temporary wells;
- 57 additional permanent monitoring wells were installed;
- permanent monitoring wells were sampled semi-annually, including 118 wells in October 2021;
- 12 surface water samples were collected;
- 172 sediment samples were collected;
- five aliquots of sediment and 13 soil samples were analyzed for grain size;
- six locations within CFFF's surface water bodies had pressure transducers installed on staff gages to continuously monitor surface water elevations;
- 13 monitoring wells and one piezometer had pressure transducers installed to continuously monitor groundwater elevations;
- 21 slug tests were conducted in 21 monitoring wells;
- bathymetric surveys of the Gator Pond, Upper Sunset Lake, and Lower Sunset Lake were performed; and
- the borings, new wells, staff gage locations and portions of the stormwater ditches were surveyed.

This data and historical facility information were used to determine the source, nature, and extent of COPCs, create a conceptual site model, and prepare a BRA.

9.1.1 Source, Nature, and Extent Assessment

Historical impacts at CFFF occur in five categories: 1) operations within the Chemical Area OU, 2) operations with the Western Storage Area OU, 3) operations within the CFFF's wastewater treatment system areas (Wastewater Treatment Area and West Lagoons Area OUs), 3) the 1971 rupture of WL I, and 4) discharge of groundwater impacted with site COPCs to surface water.

Soil samples collected in locations where Tc-99 could potentially have been released indicate that a vadose zone source for Tc-99 does not exist. Concentrations of CVOCs in soil are minimal (**Table 8**), occur only in the shallow subsurface (1-2 ft BLS) and will continue to attenuate. Because deeper (7-8 ft BLS) CVOC soil samples did not contain detectable concentrations of CVOCs in the highest areas of CVOC impact to groundwater and the highest areas of CVOCs in soil gas, a vadose source for leaching (source area) of CVOCs to groundwater does not exist within accessible areas. CFFF has discontinued use of PCE, so possible future impact has been eliminated. Soil beneath the Chemical Area OU will be removed during site decommissioning, regardless of the presence of CVOCs.

Groundwater at CFFF is impacted with CVOCs, nitrate, fluoride, U and Tc-99 above their respective MCLs (**Figures 23 through 31**). The groundwater plumes at CFFF are in the central portion of the site with the CVOC plumes having the largest footprint (**Figure 32**). Currently, there is approximately 2,100 ft from the farthest downgradient extent of the COPC plumes to the nearest property boundary.

The primary source of CVOC groundwater impact was in the Western Storage Area OU, but, as noted above, there is no remaining source within this OU. The SOLX area of the Chemical Area OU is a secondary source of CVOC impact to groundwater. Sources of impact of nitrate in groundwater are the Wastewater Treatment Area OU and WL II. Fluoride source areas are the Wastewater Treatment Area OU and the plant area (Chemical Area OU) north of monitoring well W-77. Sources for groundwater impact with U include areas of known impact beneath the plant building in the Chemical Area OU (2008/2011 wastewater line breaches, SOLX) and the plant area north of monitoring well W-77. The Wastewater Treatment Area OU and/or chemical operations involving uranium in the area north of W-77 (including the Chemical Area OU) are potential source areas for Tc-99 impacts to groundwater, however; current site operations do not have the potential to introduce significant quantities of Tc-99 into the

environment. Attempting to relate current Tc-99 groundwater conditions to a specific historic event would be speculative (Westinghouse, 2020b).

Surface water within the Gator Pond is impacted with fluoride above its MCL and nitrate below its MCL from discharge of impacted groundwater (**Figure 33**). Surface water in the deeply incised portion of the Eastern Ditch is impacted with PCE above its MCL and TCE and nitrate below their MCL by the discharge of impacted groundwater (**Figure 33**).

Sediment in the Gator Pond is impacted with nitrate, fluoride, and Tc-99 (**Figure 34**) due to impacted groundwater discharging through the sediment into the Gator Pond. Sediment in the remaining areas of the pond is subsequently impacted by COPCs settling out from surface water (Tc-99) and adsorption of COPCs (fluoride and nitrate) from surface water onto sediment. Sediment in the southern portion of the Middle Ditch (**Figure 34**) and in Sunset Lakes is impacted with nitrate, fluoride, U, and minimally with Tc-99 (**Figures 35 through 37**) from the discharge (ditches only) of impacted groundwater and/or historical facility operations. Similar to sediment in the Gator Pond, COPCs migrating in surface water in the Eastern Ditch can adsorb to sediment in Sunset Lakes.

9.1.2 Conceptual Site Model

The shallow subsurface of CFFF consists of overbank deposits underlain by a coarsening downward sand comprising the surficial aquifer both above and below the bluff, thereby forming one continuous surficial aquifer with differing ages of deposition. These sediments were deposited by the Congaree River which is currently located approximately 3 miles southwest of the site. The Black Creek Aquifer confining clay underlies the coarsening downwards sands across the entire site.

Groundwater beneath the site generally flows to the south southwest with components of flow to the west, south, and southeast. Groundwater near WL II flows both north and south in the lower zone of the surficial aquifer as a result of a hydraulic barrier created by a ridge in the confining clay and lower than typical permeability of the aquifer sands. Historical releases that occurred in the operational areas of CFFF impacted groundwater, but the vadose zone sources of these impacts are either so depleted that they no longer can impact groundwater or are in inaccessible areas of the site (e.g. beneath the plant building). Inaccessible, potential vadose zone sources for groundwater impact will be removed during the decommissioning of CFFF. These groundwater impacts are confined to the surficial aquifer only.

The Gator Pond and Mill Creek deflects the migration of COPCs in groundwater. The Gator Pond receives discharge of impacted groundwater in the northeastern portion of the pond with the remainder of the pond recharging the water table with surface water due to its excavation into the permeable subsurface sands. The near constant head in the Gator Pond causes most of the groundwater flowing in its vicinity to migrate around it to the east or the west due to groundwater mounding.

Mill Creek is lined with a low permeability clayey silt that acts as an aquitard to the migration between surface water and groundwater. Impoundment of Mill Creek has resulted in the surface water elevation being consistently above that of the water table upstream of the Lower Sunset Lake Dike. The surface water that does seep through the aquitard causes minimal groundwater mounding beneath Mill Creek (Upper and Lower Sunset Lakes) that locally deflects groundwater migration to the east.

Below the Lower Sunset Lake Dike, Mill Creek is not impounded. The aquitard lining Mill Creek would inhibit, if not prevent, discharge of groundwater to Mill Creek if/when the water table elevation is higher than surface water and vice versa. Because the canal was excavated, the surface water in the canal is in direct contact with the water table. Groundwater discharges to the canal when its elevation is higher than the surface water in the canal and vice versa.

The hydraulic gradient in the floodplain is much lower than the hydraulic gradient above the bluff. This inhibits the overall rate of groundwater migration and increases the deflection effect of COPC migration in the area north of Lower Sunset Lake.

Discharge of groundwater to the deeply incised, westernmost portion of the Eastern Ditch causes groundwater in the upper zone of the surficial aquifer to migrate more westerly than the lower zone of the surficial aquifer. Groundwater in this area is impacted with CVOCs and nitrate. Surface water in this portion of the Eastern Ditch contains PCE above its MCL and TCE and nitrate below their respective MCLs.

Conditions within the floodplain beneath Upper and Lower Sunset Lakes are ideal for naturally occurring, reductive dechlorination of CVOCs. In less than 1,200 linear ft, as portions of the main PCE plume flows beneath these surface water bodies, PCE is dechlorinated as demonstrated by the detection and subsequent decrease of the daughter compound vinyl chloride to below detection limits in wells downgradient of the lakes.

Impacted groundwater will remain within the property boundary as a result of:

- the slow groundwater flow velocity in the floodplain,
- the groundwater fate and transport properties of the COPCs such as diffusion, adsorption, and advection,
- the natural breakdown of CVOCs in the floodplain, and
- the distance to the closest property boundary.

Sediment in the Middle Ditch and Sunset Lakes are impacted with fluoride, nitrate, U, and minimally with Tc-99 by historical operations (e.g. the 1971 rupture of WL I). The low flow, low energy swamp in Sunset Lakes combined with the cohesive properties of the clayey silt sediment, and the deposition of additional clayey silt sediment over time on top of the impacted sediment will prevent migration of impacted sediment.

A visual, 3-dimensional CSM using data collected during previous investigations and during the RI was developed. The CSM evolves through site investigation and remediation life cycles. At different stages in the investigation and remedy analysis, CSMs serve different purposes. CFFF has completed the assessment of the source, nature, and extent of COPCs. The purpose of the investigation CSM is to support the decision process, leading to interim remedial action if necessary (based on the data assessed in this report, there are no interim remedial actions at CFFF), remedial investigation, feasibility analysis, and selection of a site remedy. Incorporation of the data collected during the RI into the CSM reshaped the CSM into a more effective decision-making tool. Selected outputs of the current CSM, known as Rev. 4, are contained in **Appendix Y**.

9.1.3 Baseline Risk Assessment

The Baseline Risk Assessment indicates that historical impacts of various media do not represent a current risk to human health or the environment. Future risk associated with the highly conservative residential-use scenario will be addressed during facility decommissioning.

9.2 Conclusions

Over 50 years of operations at CFFF have resulted in limited impacts to various media. The source, nature and extent of these impacts have been well defined by the RI, remain within the facility property boundary and are anticipated to remain within the property boundary. The impacts to groundwater are attenuating through various natural processes documented in **Section 6.3**. The BRA indicates that the impacts pose no risk to human health or the environment.

9.3 Recommendations

The following are recommendations based on the data collected during the RI:

- a groundwater fate and transport model should be developed to predict when the COPCs in groundwater will attenuate and/or remain in a steady state condition, and
- a feasibility study should be conducted to determine the most appropriate methods to remediate the identified impacts as necessary.

Preparation of the groundwater fate and transport model is part of the feasibility study and will be used to assess which remedial options are appropriate for CFFF.

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Tables

Table 1 - Monitoring Well Construction Details
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

Well Number	Northing	Easting	Date Installed	Ground Surface Elevation (ft msl)	Top of Casing Elevation (ft msl)	Casing Stickup (ft)	Well Diameter (in)	Casing Type	Total Depth (ft bgs)	Screen Length (ft)	Screen Interval (ft bgs)	Classification
W-RW-1	745689.8390	2024255.5150	4/1/1995	136.00	136.95	0.95	4.0	Steel	32.17	10	22-32	Surficial - Lower Zone
W-RW2	745325.1547	2023458.2190	3/10/1995	136.98	139.93	2.95	4.0	Steel	28.40	10	18.5-28.5	Surficial - Lower Zone
W-3A	744340.2273	2023926.2926	6/11/1985	117.64	120.08	2.44	2.0	PVC	82.86	10	73-83	Black Creek
W-4R	744339.0788	2023932.0410	7/23/2021	117.27	119.82	2.55	2.0	PVC	14.55	10	4.5-14.5	Surficial - Upper Zone
W-6	744963.2941	2024109.6154	5/15/1980	136.96	136.46	-0.50	2.0	PVC	27.80	5	23-28	Surficial - Lower Zone
W-7A	744907.4275	2023872.2237	2/19/1992	132.94	135.06	2.12	2.0	PVC	17.95	5	13-18	Surficial - Upper Zone
W-10	744897.8502	2023659.8964	5/14/1980	136.89	136.81	-0.08	2.0	PVC	22.31	5	17.5-22.5	Surficial - Upper Zone
W-11	744743.0468	2023914.5566	5/14/1980	138.45	140.76	2.31	2.0	PVC	24.97	3	22-25	Surficial - Upper Zone
W-13R	744648.7070	2024279.2522	10/8/2010	136.38	136.13	-0.25	2.0	PVC	20.53	5	15.5-20.5	Surficial - Upper Zone
W-14	744603.1956	2024478.6507	5/4/1988	136.22	137.83	1.61	2.0	PVC	28.91	5	24-29	Surficial - Upper Zone
W-15	744663.4226	2023716.7929	5/15/1980	126.67	127.90	1.23	2.0	PVC	20.71	5	15.5-20.5	Surficial - Upper Zone
W-16	744602.3196	2024060.2560	5/15/1980	125.50	125.96	0.46	2.0	PVC	14.15	3	11-14	Surficial - Upper Zone
W-17	745055.2186	2023785.3818	5/30/1980	137.57	139.27	1.70	2.0	PVC	27.97	5	23-28	Surficial - Lower Zone
W-18R	745012.6889	2023939.2527	Unknown	137.15	136.71	-0.44	2.0	PVC	27.60	5	22.5-27.5	Surficial - Lower Zone
W-19B	746172.6764	2022552.9543	3/17/1995	140.58	142.85	2.27	4.0	PVC	40.67	10	30.5-40.5	Surficial - Lower Zone
W-20	743739.6310	2022975.3834	7/10/1980	113.27	116.16	2.89	2.0	PVC	15.61	5	10.5-15.5	Surficial - Upper Zone
W-22	744960.9243	2024116.3963	7/12/1980	137.08	136.51	-0.57	2.0	PVC	15.10	5	10-15	Surficial - Upper Zone
W-23R	744674.7363	2024851.2620	7/22/2011	137.45	140.47	3.02	2.0	PVC	20.93	5	16-21	Surficial - Upper Zone
W-24	746742.5552	2027344.7554	7/9/1980	139.83	141.94	2.11	2.0	PVC	14.99	5	10-15	Surficial - Upper Zone
W-25	742114.3330	2022728.9859	7/9/1980	114.98	115.88	0.90	2.0	PVC	27.37	5	22.5-27.5	Surficial - Upper Zone
W-26	744855.2926	2023417.6899	7/11/1980	140.59	142.21	1.62	2.0	PVC	30.65	5	25.5-30.5	Surficial - Upper Zone
W-27	744383.9028	2023708.2286	7/13/1980	120.22	121.87	1.65	2.0	PVC	14.77	5	10-15	Surficial - Upper Zone
W-28	745121.7794	2024317.4127	7/13/1980	136.98	138.88	1.90	2.0	PVC	15.30	5	10-15	Surficial - Upper Zone
W-29	745182.7704	2024101.6410	7/12/1980	136.96	138.61	1.65	2.0	PVC	13.96	5	9-14	Surficial - Upper Zone
W-30	745095.1563	2024150.8369	7/11/1980	136.87	138.81	1.94	2.0	PVC	14.83	5	10-15	Surficial - Upper Zone
W-32	744742.1011	2023919.8088	7/15/1980	138.33	140.34	2.01	2.0	PVC	21.89	5	17-22	Surficial - Upper Zone
W-33	745402.9946	2023548.6640	7/15/1980	138.06	139.33	1.27	2.0	PVC	19.86	5	15-20	Surficial - Lower Zone
W-35	745716.6972	2024227.9328	2/18/1992	136.59	139.07	2.48	2.0	PVC	20.38	5	15.5-20.5	Surficial - Upper Zone
W-36	746084.8252	2024573.1745	2/19/1992	134.16	136.29	2.13	2.0	PVC	19.80	5	15-20	Surficial - Upper Zone
W-37	745407.3901	2024230.7318	2/11/1992	136.58	139.04	2.46	2.0	PVC	20.41	5	15.5-20.5	Surficial - Upper Zone
W-38	745250.3065	2024192.9679	2/18/1992	136.71	136.51	-0.20	2.0	PVC	20.15	5	15-20	Surficial - Upper Zone
W-39	745587.4130	2023656.6724	1/27/1994	139.08	141.15	2.07	2.0	PVC	23.04	10	13-23	Surficial - Upper Zone
W-40	745646.5324	2024112.4795	7/18/1984	136.42	139.26	2.84	2.0	PVC	14.38	10	4.5-14.5	Surficial - Upper Zone
W-41R	745372.8885	2023252.5925	Unknown	131.02	133.81	2.79	2.0	PVC	24.34	10	14.5-24.5	Surficial - Upper Zone
W-42	745072.3463	2023203.3177	1/27/1994	137.83	140.96	3.13	2.0	PVC	29.89	10	20-30	Surficial - Upper Zone
W-43	745904.3053	2023600.1186	1/27/1994	138.09	141.33	3.24	2.0	PVC	21.01	10	11-21	Surficial - Upper Zone

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Well Number	Northing	Easting	Date Installed	Ground Surface Elevation (ft msl)	Top of Casing Elevation (ft msl)	Casing Stickup (ft)	Well Diameter (in)	Casing Type	Total Depth (ft bgs)	Screen Length (ft)	Screen Interval (ft bgs)	Classification
W-44	745579.8931	2022950.1077	2/1/1994	131.93	134.86	2.93	2.0	PVC	27.04	10	17-27	Surficial - Lower Zone
W-45	745644.0322	2024296.0965	7/18/1984	137.20	140.02	2.82	2.0	PVC	15.38	10	5.5-15.5	Surficial - Upper Zone
W-46	745154.5936	2023494.4570	3/27/1995	132.39	134.74	2.35	4.0	PVC	25.85	10	16-26	Surficial - Lower Zone
W-47	744633.7657	2023515.8706	3/31/1995	140.70	141.90	1.20	4.0	PVC	45.60	10	34.5-44.5	Surficial - Lower Zone
W-48	744913.2226	2023290.4438	3/30/1995	139.74	142.56	2.82	4.0	PVC	41.68	10	31.5-41.5	Surficial - Lower Zone
W-49	745073.2286	2023192.6302	3/15/1995	137.82	140.25	2.43	2.0	PVC	117.77	10	108-118	Black Creek
W-50	745637.2219	2024107.3993	3/21/1995	136.79	139.58	2.79	2.0	PVC	125.01	10	115-125	Black Creek
W-51	745583.8582	2024270.8300	9/19/2018	136.67	136.51	-0.16	2.0	PVC	14.71	5	9.5-14.5	Surficial - Upper Zone
W-52	745542.3624	2024260.1657	9/19/2018	136.71	136.19	-0.52	2.0	PVC	15.52	5	10.5-15.5	Surficial - Upper Zone
W-53	745495.9968	2024247.5619	9/19/2018	136.83	136.54	-0.29	2.0	PVC	15.75	5	11-16	Surficial - Upper Zone
W-54	745442.5511	2024229.9796	9/19/2018	136.79	136.52	-0.27	2.0	PVC	15.82	5	11-16	Surficial - Upper Zone
W-55	745397.6509	2024214.0049	9/20/2018	136.90	136.63	-0.27	2.0	PVC	15.24	5	10-15	Surficial - Upper Zone
W-56	745351.3097	2024203.7460	9/20/2018	136.83	136.68	-0.15	2.0	PVC	15.13	5	10-15	Surficial - Upper Zone
W-57	745307.4270	2024190.7853	9/20/2018	136.90	136.73	-0.17	2.0	PVC	15.12	5	10-15	Surficial - Upper Zone
W-58	745254.0864	2024176.3347	9/18/2018	136.85	136.37	-0.48	2.0	PVC	15.47	5	10.5-15.5	Surficial - Upper Zone
W-59	745219.3681	2024165.8802	9/18/2018	136.10	136.42	0.32	2.0	PVC	14.65	5	9.5-14.5	Surficial - Upper Zone
W-60	745835.5835	2023286.8131	10/8/2018	137.25	140.20	2.95	2.0	PVC	37.87	5	33-38	Surficial - Lower Zone
W-61	745829.2570	2023288.2599	10/9/2018	137.34	140.60	3.26	2.0	PVC	23.50	10	13.5-23.5	Surficial - Upper Zone
W-62	745485.4613	2022726.0792	10/9/2018	125.63	128.38	2.75	2.0	PVC	24.85	5	20-25	Surficial - Lower Zone
W-63	745098.1342	2023019.4184	10/10/2018	138.78	141.02	2.24	2.0	PVC	41.90	5	37-42	Surficial - Lower Zone
W-64	744643.8030	2023511.3331	10/10/2018	140.15	142.75	2.60	2.0	PVC	31.60	10	21.5-31.5	Surficial - Upper Zone
W-65	745693.7040	2024027.4543	10/12/2018	138.17	140.95	2.78	2.0	PVC	31.69	5	26.5-31.5	Surficial - Lower Zone
W-66	745687.8186	2024027.1699	10/12/2018	138.01	140.91	2.90	2.0	PVC	22.35	10	12.5-22.5	Surficial - Upper Zone
W-67	744459.5852	2024485.7938	10/15/2018	132.60	135.26	2.66	2.0	PVC	31.81	10	22-32	Surficial - Upper Zone
W-68	745329.2457	2022496.2174	11/1/2018	113.40	116.53	3.13	2.0	PVC	18.14	5	13-18	Surficial - Lower Zone
W-69	745726.9177	2026064.2900	6/11/2019	137.67	140.64	2.97	2.0	PVC	18.08	10	8-18	Surficial - Upper Zone
W-70	745719.2209	2026062.8740	6/20/2019	138.02	141.00	2.98	2.0	PVC	48.92	5	44-49	Surficial - Lower Zone
W-71	745716.6462	2026052.3340	9/19/2019	137.96	140.72	2.77	2.0	PVC	102.83	10	93-103	Black Creek
W-72	745450.2503	2024162.6920	6/30/2019	136.81	136.29	-0.53	2.0	PVC	15.01	10	5-15	Surficial - Upper Zone
W-73	745339.3056	2024166.2500	6/30/2019	136.85	136.45	-0.40	2.0	PVC	16.00	10	6-16	Surficial - Upper Zone
W-74	745325.1257	2024067.1720	9/17/2019	136.64	139.93	3.29	2.0	PVC	30.60	5	25.5-30.5	Surficial - Lower Zone
W-75	745317.2335	2024064.7580	9/17/2019	136.60	139.85	3.25	2.0	PVC	15.33	10	5.5-15.5	Surficial - Upper Zone
W-76	745181.1851	2024223.5230	6/29/2019	137.04	136.85	-0.19	2.0	PVC	15.14	10	5-15	Surficial - Upper Zone
W-77	745158.9297	2024346.1090	9/18/2019	136.85	136.53	-0.32	2.0	PVC	15.62	10	5.5-15.5	Surficial - Upper Zone
W-78	745117.7529	2024371.0300	9/19/2019	136.75	136.31	-0.44	2.0	PVC	15.57	10	5.5-15.5	Surficial - Upper Zone
W-79	745200.3957	2024450.2660	6/29/2019	136.49	136.12	-0.38	2.0	PVC	15.67	10	5.5-15.5	Surficial - Upper Zone

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W-80	745024.3899	2024414.6850	6/29/2019	136.34	135.87	-0.47	2.0	PVC	15.75	10	5.5-15.5	Surficial - Upper Zone
W-81	744938.6049	2024469.8490	6/29/2019	136.81	136.43	-0.39	2.0	PVC	15.69	10	5.5-15.5	Surficial - Upper Zone
W-82	744895.9297	2024594.1720	6/29/2019	136.57	136.23	-0.34	2.0	PVC	15.62	10	5.5-15.5	Surficial - Upper Zone
W-83	744975.0629	2024667.4890	6/29/2019	136.22	135.81	-0.41	2.0	PVC	26.43	10	16.5-26.5	Surficial - Upper Zone
W-84	745177.2489	2024721.4980	6/30/2019	136.66	135.99	-0.67	2.0	PVC	20.97	10	11-21	Surficial - Upper Zone
W-85	745079.7122	2025107.6820	6/11/2019	135.74	138.69	2.95	2.0	PVC	44.82	5	40-45	Surficial - Lower Zone
W-86	745082.2852	2025100.8040	6/11/2019	135.68	138.77	3.09	2.0	PVC	35.08	10	25-35	Surficial - Upper Zone
W-87	745952.7641	2024385.8120	6/30/2019	136.66	136.39	-0.27	2.0	PVC	33.15	5	28-33	Surficial - Lower Zone
W-88	746574.7739	2022883.9580	6/17/2019	140.06	143.10	3.04	2.0	PVC	41.38	5	36.5-41.5	Surficial - Lower Zone
W-89	746583.3384	2022888.2490	6/13/2019	140.12	142.82	2.70	2.0	PVC	25.53	10	15.5-25.5	Surficial - Upper Zone
W-90	745981.1215	2022011.5510	6/13/2019	140.23	143.33	3.10	2.0	PVC	39.99	5	35-40	Surficial - Lower Zone
W-91	745976.3596	2022016.7650	6/13/2019	139.57	142.81	3.24	2.0	PVC	25.07	10	15-25	Surficial - Upper Zone
W-92	744382.4699	2023714.9210	6/12/2019	120.11	123.33	3.22	2.0	PVC	33.78	5	29-34	Surficial - Lower Zone
W-93	745162.2579	2024346.8430	9/18/2019	136.87	136.49	-0.38	2.0	PVC	35.36	5	30.5-35.5	Surficial - Lower Zone
W-94	744728.0254	2021983.5560	9/17/2019	115.28	118.04	2.76	2.0	PVC	29.48	5	24.5-29.5	Surficial - Lower Zone
W-95	744375.6603	2022553.4620	9/17/2019	113.53	116.40	2.86	2.0	PVC	33.43	5	28.5-33.5	Surficial - Lower Zone
W-96	743746.7835	2024643.8120	9/17/2019	113.65	116.46	2.81	2.0	PVC	29.96	5	25-30	Surficial - Upper Zone
W-97	744244.0503	2024547.7590	9/17/2019	113.92	116.93	3.01	2.0	PVC	18.94	5	14-19	Surficial - Upper Zone
W-98	745190.4186	2022894.5358	1/29/2021	135.52	138.65	3.13	2.0	PVC	26.72	10	17-27	Surficial - Upper Zone
W-99	745123.5105	2023640.5364	1/27/2021	129.78	133.84	4.06	2.0	PVC	19.77	5	16-21	Surficial - Lower Zone
W-100	745126.2199	2023636.3622	1/28/2021	129.47	133.47	4.00	2.0	PVC	11.07	5	7-12	Surficial - Upper Zone
W-102	745090.1200	2024124.4415	12/9/2020	137.08	136.86	-0.22	2.0	PVC	33.72	5	28.5-33.5	Surficial - Lower Zone
W-103	744466.6874	2024483.1317	1/27/2021	132.56	134.87	2.32	2.0	PVC	39.41	5	34.5-39.5	Surficial - Lower Zone
W-104	744154.7155	2024875.5065	1/25/2021	115.45	118.48	3.03	2.0	PVC	17.37	10	7.5-17.5	Surficial - Upper Zone
W-105	743843.4667	2024138.0034	1/26/2021	114.80	117.57	2.77	2.0	PVC	24.13	10	14-24	Surficial - Upper Zone
W-106	744431.5527	2023371.3176	2/15/2021	115.68	118.69	3.01	2.0	PVC	29.66	5	24.5-29.5	Surficial - Lower Zone
W-107	744034.1147	2023252.1811	1/25/2021	112.27	115.23	2.96	2.0	PVC	34.39	5	29-34	Surficial - Lower Zone
W-108	743611.3486	2023295.2256	1/28/2021	111.93	115.41	3.49	2.0	PVC	32.35	5	27-32	Surficial - Lower Zone
W-109	743731.8238	2022981.0635	1/28/2021	112.81	115.68	2.87	2.0	PVC	32.15	5	27-32	Surficial - Lower Zone
W-110	744051.9526	2022508.2574	1/27/2021	113.21	116.42	3.21	2.0	PVC	33.69	5	29-34	Surficial - Lower Zone
W-111	744378.2719	2022564.9340	1/26/2021	113.68	116.92	3.24	2.0	PVC	81.16	5	76-81	Surficial - Lower Zone
W-112	744101.6181	2022027.5127	1/27/2021	112.93	116.07	3.14	2.0	PVC	33.76	5	29-34	Surficial - Lower Zone
W-113	746811.1979	2024004.2673	7/28/2021	135.66	138.55	2.89	2.0	PVC	36.16	5	31-36	Surficial - Lower Zone
W-114	746806.0447	2024001.4779	7/29/2021	135.54	138.75	3.21	2.0	PVC	20.34	10	10-20	Surficial - Upper Zone
W-115	746784.3022	2023435.7961	7/27/2021	139.06	141.71	2.66	2.0	PVC	45.69	5	40.5-45.5	Surficial - Lower Zone
W-116	746778.9455	2023433.2473	7/26/2021	138.99	141.91	2.92	2.0	PVC	20.25	10	10-20	Surficial - Upper Zone

Table 1 - Monitoring Well Construction Details
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

Well Number	Northing	Easting	Date Installed	Ground Surface Elevation (ft msl)	Top of Casing Elevation (ft msl)	Casing Stickup (ft)	Well Diameter (in)	Casing Type	Total Depth (ft bgs)	Screen Length (ft)	Screen Interval (ft bgs)	Classification
W-117	746432.6567	2023237.7007	7/27/2021	140.82	143.76	2.94	2.0	PVC	43.79	5	39-44	Surficial - Lower Zone
W-118	746437.2354	2023241.0797	7/28/2021	140.78	143.74	2.96	2.0	PVC	29.49	10	19.5-29.5	Surficial - Upper Zone
W-119	746515.7592	2023805.6944	7/23/2021	139.48	142.24	2.75	2.0	PVC	30.25	5	25-30	Surficial - Upper Zone
W-120	745967.1436	2024014.3529	7/29/2021	139.26	142.34	3.08	2.0	PVC	33.80	5	29-34	Surficial - Lower Zone
W-121	745966.7263	2024008.0883	7/29/2021	139.12	142.24	3.11	2.0	PVC	22.12	10	12-22	Surficial - Upper Zone
W-122	746087.7639	2024559.8114	7/20/2021	134.29	136.84	2.55	2.0	PVC	30.60	5	25-30	Surficial - Lower Zone
W-123	744647.8048	2024283.6868	7/20/2021	136.30	136.05	-0.25	2.0	PVC	34.23	5	29-34	Surficial - Lower Zone
W-124	744153.4184	2024882.8990	7/22/2021	115.26	117.73	2.47	2.0	PVC	30.91	5	26-31	Surficial - Lower Zone
W-125	743837.3108	2024142.2790	7/21/2021	114.65	117.84	3.19	2.0	PVC	45.01	5	40-45	Surficial - Lower Zone
W-126	743747.3364	2024650.4112	7/22/2021	113.53	115.89	2.36	2.0	PVC	42.48	5	37.5-42.5	Surficial - Lower Zone
PZ-1	743745.6668	2024637.1258	7/21/2021	113.54	116.27	2.74	2.0	PVC	16.75	10	7-17	Surficial - Upper Zone
Gator SG	744600.5136	2023820.4020	7/16/2019	NS	120.31	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Canal SG	743544.9360	2019700.8031	3/26/2021	NS	110.01	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Entrance SG	745852.1977	2020536.5766	3/26/2021	NS	112.57	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Upper SG	744292.2317	2023220.4190	7/16/2019	NS	112.41	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Upper 2 SG	745845.6181	2020600.6309	4/20/2021	NS	112.56	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lower SG	743333.8536	2024092.0010	7/16/2019	NS	112.39	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Creek SG	743263.2548	2024076.8640	7/16/2019	NS	109.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Notes:
ft = feet
in = inches
ft msl = feet above mean sea level
ft bgs = feet below ground surface
NS - not surveyed
N/A - not applicable
SG - staff gauge
Top of casing and ground surface elevations surveyed by AECOM during November 2018, November 2019, April 2021 and August 2021.
Horizontal coordinates are referenced to the State Plane Coordinate System and the North American Datum of 1983 (NAD 83).
Vertical locations are referenced to the North American Vertical Datum of 1988 (NAVD 88).

Table 2 - Remedial Investigation Sample Summary
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

Environmental Media	Sample Location	Sample Depth (Feet BLS)	Site Location	Figure	Rationale	Analyses
Soil	SS-1	0-1, 1-3, 3-5, 5-7	Adjacent to calcium fluoride storage pad	6	Potential source evaluation based upon facility knowledge of where Tc-99 may have been historically released	Tc-99
	SS-2	0-1, 1-3, 3-5, 5-7	Adjacent to calcium fluoride storage pad		Potential source evaluation based upon facility knowledge of where Tc-99 may have been historically released	Tc-99
	SS-3	0-1, 1-3, 3-5, 5-7	Southern Storage Area		Potential source evaluation based upon facility knowledge of where Tc-99 may have been historically released	Tc-99
	SS-4	0-1, 1-3, 3-5, 5-7	Southern Storage Area		Potential source evaluation based upon facility knowledge of where Tc-99 may have been historically released	Tc-99
	SS-5	0-1, 1-3, 3-5, 5-7	Southern Storage Area		Potential source evaluation based upon facility knowledge of where Tc-99 may have been historically released	Tc-99
	SS-6	0-1, 1-3, 3-5, 5-7	Southern Storage Area		Potential source evaluation based upon facility knowledge of where Tc-99 may have been historically released	Tc-99
	SS-7	0-1, 1-3, 3-5, 5-7	Adjacent to the uranium hexafluoride cylinder recertification building		Potential source evaluation based upon facility knowledge of where Tc-99 may have been historically released	Tc-99
	SS-8	0-1, 1-3, 3-5, 5-7	Adjacent to the uranium hexafluoride cylinder recertification building		Potential source evaluation based upon facility knowledge of where Tc-99 may have been historically released	Tc-99
	SS-9	0-1, 1-3, 3-5, 5-7	Adjacent to the uranium hexafluoride cylinder recertification building		Potential source evaluation based upon facility knowledge of where Tc-99 may have been historically released	Tc-99
	SS-10	0-1, 1-3, 3-5, 5-7	Adjacent to the uranium hexafluoride cylinder recertification building		Potential source evaluation based upon facility knowledge of where Tc-99 may have been historically released	Tc-99
	SS-11	0-1, 1-3, 3-5, 5-7	Vicinity of uranyl nitrate bulk storage dike outer wall		Potential source evaluation based upon facility knowledge of where Tc-99 may have been historically released	Tc-99
	SS-12	0-1, 1-3, 3-5, 5-7	Vicinity of uranyl nitrate bulk storage dike outer wall		Potential source evaluation based upon facility knowledge of where Tc-99 may have been historically released	Tc-99
	SS-13	0-1, 1-3, 3-5, 5-7	Vicinity of uranyl nitrate bulk storage dike outer wall		Potential source evaluation based upon facility knowledge of where Tc-99 may have been historically released	Tc-99
	SS-14	0-1, 1-3, 3-5, 5-7	Southern end of uranyl nitrate offloading area		Potential source evaluation based upon facility knowledge of where Tc-99 may have been historically released	Tc-99
	SS-17	3-4, 7-8	Western Storage Area		Potential CVOC source evaluation based upon soil gas survey results	CVOCs
	SS-18	2-3, 7-8	Western Storage Area		Potential CVOC source evaluation based upon soil gas survey results	CVOCs
	SS-19	6-7, 7-8	Western Storage Area		Potential CVOC source evaluation based upon soil gas survey results	CVOCs
	SS-20	1-2, 7-8	Western Storage Area		Potential CVOC source evaluation based upon soil gas survey results	CVOCs
	SS-21	1-2, 7-8	Western Storage Area		Potential CVOC source evaluation based upon soil gas survey results	CVOCs
	SS-22	6-7, 7-8	Western Storage Area		Potential CVOC source evaluation based upon soil gas survey results	CVOCs
	SS-23	6-7, 7-8	Western Storage Area		Potential CVOC source evaluation based upon soil gas survey results	CVOCs
	SS-24	3-4, 7-8	Western Storage Area		Potential CVOC source evaluation based upon soil gas survey results	CVOCs
	SS-25	5-6, 7-8	Western Storage Area		Potential CVOC source evaluation based upon soil gas survey results	CVOCs
	SS-26	3-4, 7-8	Western Storage Area		Potential CVOC source evaluation based upon soil gas survey results	CVOCs
	SS-27	1-2, 7-8	Western Storage Area		Potential CVOC source evaluation based upon soil gas survey results	CVOCs
	SS-28	1-2, 7-8	Western Storage Area		Potential CVOC source evaluation based upon soil gas survey results	CVOCs
	SS-29	4-5, 7-8	Western Storage Area		Potential CVOC source evaluation based upon soil gas survey results	CVOCs
	L-28	0-2, 2-5	West of the operational area	7	Assessment of near-surface soil properties	Grain size
	L-31	0-3, 3-5	South of Upper Sunset Lake		Assessment of near-surface soil properties	Grain size
	L-35	0-3, 3-5	South of Upper Sunset Lake		Assessment of near-surface soil properties	Grain size
	L-42	0-2	North of Lower Sunset Lake		Assessment of near-surface soil properties	Grain size
	L-45	0-1, 1-2, 2-5	Northern Storage Area		Assessment of near-surface soil properties	Grain size
	L-58	0-2	West of the operational area		Assessment of near-surface soil properties	Grain size
	L-59	0-2	West of the operational area		Assessment of near-surface soil properties	Grain size
	W-101	0-2	Southern Storage Area		Assessment of near-surface soil properties	Grain size

Table 2 - Remedial Investigation Sample Summary
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

Environmental Media	Sample Location	Sample Depth (Feet BLS)	Site Location	Figure	Rationale	Analyses
Groundwater	L-1	10-15, 28-33, 48-53, 63-68, 78-83	Floodplain	7	Assess the surficial aquifer south of Upper Sunset Lake for COPC migration	CVOCs
	L-2	NA	Upper Sunset Lake Dike		Assess the lithology of the floodplain	NA
	L-3	NA	Upper Sunset Lake Dike		Assess the lithology of the floodplain	NA
	L-4	NA	Upper Sunset Lake Dike		Assess the lithology of the floodplain	NA
	L-5	NA	Floodplain		Assess the lithology of the floodplain	NA
	L-6	NA	Floodplain		Assess the lithology of the floodplain	NA
	L-7	NA	Floodplain		Assess the lithology of the floodplain	NA
	L-8	8-13, 17-22, 25-30, 41-46	Floodplain		Assess the surficial aquifer north of Lower Sunset Lake for COPC migration	CVOCs, Nitrate, Flouride
	L-9	10-15, 23-28, 32-37	Floodplain		Assess the surficial aquifer north of Lower Sunset Lake for COPC migration	CVOCs, Nitrate, Flouride
	L-10	9-14, 18-23, 28-33	Floodplain		Assess the surficial aquifer north of Lower Sunset Lake for COPC migration	CVOCs, Nitrate, Flouride
	L-11	NA	West Lagoons Area		Assess the depth to the Black Creek confining clay to understand if W-39 is screened in the upper or lower zone of the surficial aquifer	CVOCs, Nitrate, Flouride
	L-12	NA	West of the operational area		Assess the lithology of the area between the operational area and the western portion of the site	CVOCs, Nitrate, Flouride
	L-13	NA	West of the operational area		Assess the lithology of the area between the operational area and the western portion of the site	CVOCs, Nitrate, Flouride
	L-14	NA	West of the operational area		Assess lithology between the plant and the western portion of the site to attempt to identify a preferential flow path for CVOC impact in monitoring well W-19B	CVOCs, Nitrate, Flouride
	L-15	NA	West of the operational area		Assess lithology between the plant and the western portion of the site to attempt to identify a preferential flow path for CVOC impact in monitoring well W-19B	CVOCs, Nitrate, Flouride
	L-16	NA	West of the operational area		Assess lithology between the plant and the western portion of the site to attempt to identify a preferential flow path for CVOC impact in monitoring well W-19B	CVOCs, Nitrate, Flouride
	L-17	15-20, 25-30	Floodplain		Assess the surficial aquifer south of Upper Sunset Lake for COPC migration	CVOCs, Nitrate, Flouride
	L-18	15-20, 24-29	Floodplain		Assess the surficial aquifer south of Upper Sunset Lake for COPC migration	CVOCs, Nitrate, Flouride
	L-19	7-12, 21-26	Floodplain		Assess the surficial aquifer north of Lower Sunset Lake for COPC migration	CVOCs, Nitrate, Flouride
	L-20	12-16, 20-28	On the bluff south of the operational area		Groundwater COPC delineation east of well W-67	CVOCs, nitrate, total and dissolved Tc-99
	L-21	28-32	Western Storage Area		Assess the extent of CVOC impact upgradient of monitoring well W-87	CVOCs
	L-22	8-12, 26-30	Western Storage Area		Assess the upgradient extent of CVOC impact	CVOCs
	L-23	12-16, 20-24	West Lagoons Area		Assess the upgradient extent of CVOC impact	CVOCs
	L-24	11-15, 25-29	West Lagoons Area		Assess the upgradient extent of CVOC impact	CVOCs
	L-25	21.5-25.5, 38-42	West of the operational area		Assess the preferential flow path between the plant and the western portion of the site	CVOCs
	L-26	25-29, 39-43	West of the operational area		Assess the preferential flow path between the plant and the western portion of the site	CVOCs
	L-27	23-27, 30-34, 39-43	West of the operational area		Assess the preferential flow path between the plant and the western portion of the site	CVOCs
	L-28	18-22, 27-31, 36-40	West of the operational area		Assess the preferential flow path between the plant and the western portion of the site	CVOCs
	L-29	13-17, 26-30	Floodplain		Assess the surficial aquifer south of Upper Sunset Lake for COPC migration	CVOCs
	L-30	12-16, 22-26, 29-34	Floodplain		Assess the surficial aquifer south of Upper Sunset Lake for COPC migration	CVOCs
	L-31	13-17, 22-26, 30-34	Floodplain		Assess the surficial aquifer south of Upper Sunset Lake for COPC migration	CVOCs
	L-32	8-12, 19-23, 31-35	Floodplain		Assess the surficial aquifer south of Upper Sunset Lake for COPC migration	CVOCs
	L-33	13-17, 24-28	Floodplain		Assess the surficial aquifer south of Upper Sunset Lake for COPC migration	CVOCs
	L-34	14-18, 26-30	Floodplain		Assess the surficial aquifer south of Upper Sunset Lake for COPC migration	CVOCs
	L-35	11-15, 21-25, 30-34	Floodplain		Assess the surficial aquifer south of Upper Sunset Lake for COPC migration	CVOCs, nitrate, flouride, total and dissolved Tc-99
	L-36	18-22, 27.5-31.5	Floodplain		Assess the surficial aquifer south of Lower Sunset Lake for COPC migration	CVOCs, nitrate, flouride, total and dissolved Tc-99
	L-37	17-21,26-30	Upper Sunset Lake Dike		Assess the groundwater quality beneath Upper and Lower Sunset Lakes	CVOCs, nitrate, flouride, total and dissolved Tc-99
	L-38	17-21, 26-30	Upper Sunset Lake Dike		Assess the groundwater quality beneath Upper and Lower Sunset Lakes	CVOCs, nitrate, flouride, total and dissolved Tc-99
	L-39	31-35	Southern Storage Area		Delineate the eastern extent of Tc-99 impact in the lower zone of the surficial aquifer	CVOCs, total and dissolved Tc-99
	L-40	33-37	Southern Storage Area		Delineate the eastern extent of Tc-99 impact in the lower zone of the surficial aquifer	CVOCs, total and dissolved Tc-99
	L-41	31-35	Chemical Area		Delineate the eastern extent of Tc-99 impact in the lower zone of the surficial aquifer	CVOCs, total and dissolved Tc-99
	L-42	24-28, 36-40	Floodplain		Delineate fluoride in the floodplain downgradient of boring L-19 and upgradient of Lower Sunset Lake	Flouride, total and dissolved Tc-99
	L-43	29.5-33.5	Wastewater Treatment Area		Delineate the upgradient extent of Tc-99 impact in the lower zone of the surficial aquifer	Total and dissolved Tc-99
	L-44	27-31	Western Storage Area		Delineate CVOC impact upgradient of monitoring well W-93	CVOCs
	L-45	11-15, 20-24, 29-33	Northern Storage Area		Assess the upgradient extent of CVOC impact	CVOCs
	L-46	14-18, 22-26, 31-35	Northern Storage Area		Assess the upgradient extent of CVOC impact	CVOCs
	L-47	16-20, 29-29	North of the West Lagoons Area		Assess the upgradient extent of CVOC impact	CVOCs
	L-48	16-20, 30-34, 40.5-44.5	Northern Storage Area		Assess the upgradient extent of CVOC impact	CVOCs
	L-49	15-19, 29-33, 37.5-41.5	North of the West Lagoons Area		Assess the upgradient extent of CVOC impact	CVOCs
	L-50	20-24, 46-50	West of the operational area		Assess the preferential flow path between the plant and the western portion of the site	CVOCs
	L-51	21-25, 41-45	West of the operational area		Assess the preferential flow path between the plant and the western portion of the site	CVOCs
	L-52	18-22, 30-34, 39-43	West of the operational area		Assess the extent of CVOC impact in the western portion of the site	CVOCs
	L-53	18-22, 30-34, 44.5-48.5	West of the operational area		Assess the extent of CVOC impact in the western portion of the site	CVOCs
	L-54	24-28	West of the operational area		Assess the extent of CVOC impact in the western portion of the site	CVOCs
	L-55	18-22, 31-35, 40-44	West of the operational area		Assess the extent of CVOC impact in the western portion of the site	CVOCs
	L-56	22-26, 33-37, 41-45	West of the operational area		Assess the extent of CVOC impact in the western portion of the site	CVOCs
	L-57	26-30, 42-46	West of the operational area		Assess the extent of CVOC impact in the western portion of the site	CVOCs
	L-58	23-27, 31-35, 40-44	West of the operational area		Assess the extent of CVOC impact in the western portion of the site	CVOCs
	L-59	16-20, 31-35, 46-50	West of the operational area		Assess the preferential flow path between the plant and the western portion of the site	CVOCs
	L-60	16-20, 26-30, 36-40	West of the operational area		Assess the upgradient extent of CVOC impact	CVOCs
	L-61	15-19, 25-29, 35-39	North of the Northern Storage Area		Assess the upgradient extent of CVOC impact	CVOCs
	L-62	26-30	Northern Storage Area		Assess the extent of CVOC impact upgradient of monitoring well W-87	CVOCs

Table 2 - Remedial Investigation Sample Summary
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

Environmental Media	Sample Location	Sample Depth (Feet BLS)	Site Location	Figure	Rationale	Analyses
Groundwater	W-69	See Table 1 for screened interval	Northeast of the operational area	3	Background concentrations in the surficial aquifer	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-70	See Table 1 for screened interval	Northeast of the operational area		Background concentrations in the surficial aquifer	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-71	See Table 1 for screened interval	Northeast of the operational area		Background concentrations in the Black Creek Aquifer	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-72	See Table 1 for screened interval	West of the plant building		Assess the horizontal extent of U impact	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-73	See Table 1 for screened interval	West of the plant building		Assess the horizontal extent of U impact	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-74	See Table 1 for screened interval	West of the plant building		Assess the vertical extent of U impact	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-75	See Table 1 for screened interval	West of the plant building		Assess the horizontal extent of U impact	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-76	See Table 1 for screened interval	South of the plant building		Sentinel well around the plant building	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-77	See Table 1 for screened interval	South of the plant building		Sentinel well around the plant building	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-78	See Table 1 for screened interval	South of the plant building		Sentinel well around the plant building	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-79	See Table 1 for screened interval	South of the plant building		Sentinel well around the plant building	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-80	See Table 1 for screened interval	South of the plant building		Sentinel well around the plant building	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-81	See Table 1 for screened interval	South of the plant building		Sentinel well around the plant building	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-82	See Table 1 for screened interval	South of the plant building		Sentinel well around the plant building	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-83	See Table 1 for screened interval	East of the plant building		Sentinel well around the plant building	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-84	See Table 1 for screened interval	East of the plant building		Sentinel well around the plant building	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-85	See Table 1 for screened interval	East of the plant building		Assess groundwater quality in an area without existing monitorng wells	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-86	See Table 1 for screened interval	East of the plant building		Assess groundwater quality in an area without existing monitorng wells	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-87	See Table 1 for screened interval	Northwest cornern of the plant building		Assess the extent of CVOCs upgradient of known impact in W-65	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-88	See Table 1 for screened interval	Western portion of the site		Assess the horizontal extent of CVOCs upgradient of known impact in W-19B	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-89	See Table 1 for screened interval	Western portion of the site		Assess the vertical extent of CVOCs upgradient of known impact in W-19B	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-90	See Table 1 for screened interval	Western portion of the site		Assess the horizontal extent of CVOCs side gradient of known impact in W-19B	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-91	See Table 1 for screened interval	Western portion of the site		Assess the vertical extent of CVOCs side gradient of known impact in W-19B	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-92	See Table 1 for screened interval	South of the Gator Pond		Assess the vertical extent of COPC impacts near the Gator Pond	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-93	See Table 1 for screened interval	South of the plant building		Assess the vertical extent of COPC impacts near the plant building and wastewater lagoons.	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-94	See Table 1 for screened interval	Floodplain		Assess the downgradient extent of CVOC impact	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-95	See Table 1 for screened interval	Floodplain		Assess the downgradient extent of CVOC impact	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-96	See Table 1 for screened interval	Floodplain		Assess the downgradient extent of COPC impact	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-97	See Table 1 for screened interval	Floodplain		Assess the downgradient extent of COPC impact	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-98	See Table 1 for screened interval	South of Denley Cemetery		Assess the downgradient extent of CVOC impact	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-99	See Table 1 for screened interval	West of the Sanitary Lagoon		Assess groundwater quality near the Sanitary Lagoon	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-100	See Table 1 for screened interval	West of the Sanitary Lagoon		Assess groundwater quality near the Sanitary Lagoon	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-102	See Table 1 for screened interval	Between the East and North Lagoons		Assess the upgradient extent of Tc-99 impact	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-103	See Table 1 for screened interval	Top of the bluff, south of the operational area		Assess the vertical, downgradient extent of CVOCs of known impact	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-104	See Table 1 for screened interval	Floodplain		Assess the horizontal, sidegradient extent of known COPC impact	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-105	See Table 1 for screened interval	Floodplain		Assess the horizontal, downgradient extent of known COPC impact	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-106	See Table 1 for screened interval	Upper Sunset Lake Dike		Assess groundwater quality beneath Sunset Lakes	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-107	See Table 1 for screened interval	Floodplain		Assess groundwater quality south of Lower Sunset Lake	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-108	See Table 1 for screened interval	Floodplain		Assess groundwater quality south of Lower Sunset Lake	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-109	See Table 1 for screened interval	Floodplain		Assess groundwater quality south of Lower Sunset Lake	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-110	See Table 1 for screened interval	Floodplain		Assess groundwater quality south of Upper Sunset Lake	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-111	See Table 1 for screened interval	Floodplain		Assess groundwater quality south of Upper Sunset Lake	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-112	See Table 1 for screened interval	Floodplain		Assess groundwater quality south of Upper Sunset Lake	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-113	See Table 1 for screened interval	North of the operational area		Assess the vertical, upgradient extent of CVOC impact	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-114	See Table 1 for screened interval	North of the operational area		Assess the horizontal, upgradient extent of CVOC impact	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-115	See Table 1 for screened interval	West of the operational area		Assess the vertical, upgradient extent of CVOC impact	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-116	See Table 1 for screened interval	West of the operational area		Assess the horizontal, upgradient extent of CVOC impact	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-117	See Table 1 for screened interval	West of the operational area		Longterm monitoring of CVOC impact	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-118	See Table 1 for screened interval	West of the operational area		Longterm monitoring of CVOC impact	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-119	See Table 1 for screened interval	West of the operational area		Longterm monitoring of CVOC impact	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-120	See Table 1 for screened interval	West of the operational area		Longterm monitoring of CVOC impact	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-121	See Table 1 for screened interval	West of the operational area		Longterm monitoring of CVOC impact	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-122	See Table 1 for screened interval	North of the plant building		Assess the vertical extent of CVOCs upgradient of known impact in W-87	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-123	See Table 1 for screened interval	South of the operational area		Assess the vertical extent of CVOC and Tc-99 impact	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-124	See Table 1 for screened interval	Floodplain		Assess the vertical, sidegradient extent of known COPC impact	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-125	See Table 1 for screened interval	Floodplain		Assess the horizontal, downgradient extent of known COPC impact	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	W-126	See Table 1 for screened interval	Floodplain		Assess the horizontal, downgradient extent of known COPC impact	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	MW-4R	See Table 1 for screened interval	South of the Gator Pond		Replacement well for monitoring well W-4	VOCs, fluoride, nitrate, ammonia, isotopic U, Tc-99, gross alpha, gross beta
	PZ-1	See Table 1 for screened interval	Floodplain		Screened in the uppermost sand to assist in the groundwater - surface water evaluation	NA

Table 2 - Remedial Investigation Sample Summary
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

Environmental Media	Sample Location	Sample Depth (Feet BLS)	Site Location	Figure	Rationale	Analyses
Surface Water	SW-11	NA	Eastern Ditch	9	Assess background stormwater quality upstream of the facility	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99
	SW-12	NA	Eastern Ditch		Assess background stormwater quality upstream of the facility	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99
	SW-13	NA	Eastern Ditch		Asssess surface water quality upstream of the operational area	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99
	SW-14	NA	Eastern Ditch		Asssess surface water quality downstream of the operational area	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99
	SW-16	NA	Middle Ditch		Asssess surface water quality within the Middle Ditch upstream of the Eastern Ditch	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99
	SW-17	NA	Eastern Ditch		Asssess surface water quality within the deeply incised portion of the Eastern Ditch	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99
	SW-18	NA	Eastern Ditch		Asssess surface water quality within the Eastern Ditch before it empties into Upper Sunset Lake	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99
	SW-19	NA	Upper Sunset Lake		Asssess surface water quality within Upper Sunset Lake	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99
	SW-20	NA	Upper Sunset Lake		Asssess surface water quality within Upper Sunset Lake	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99
	SW-21	NA	Lower Sunset Lake		Asssess surface water quality within Lower Sunset Lake	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99
	SW-22	NA	Lower Sunset Lake		Asssess surface water quality within Lower Sunset Lake	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99
	SW-23	NA	Gator Pond		Asssess surface water quality within the Gator Pond	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99
Sediment	SED-11	0-0.5	Eastern Ditch	9	Assess background sediment quality upstream of the facility	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99
	SED-12	0-0.5	Eastern Ditch		Assess background sediment quality upstream of the facility	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99
	SED-13	0-0.5	Eastern Ditch		Asssess sediment quality upstream of the operational area	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99
	SED-14	0-0.5	Eastern Ditch		Asssess sediment quality downstream of the operational area	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99
	SED-15	0-0.5	Middle Ditch		Asssess sediment quality within the Middle Ditch	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99
	SED-16	0-0.5, 0-0.5, 0.5-1	Middle Ditch		Asssess sediment quality within the Middle Ditch	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99
	SED-17	0-0.5, 0-0.5, 0.5-1	Eastern Ditch		Asssess sediment quality within the deeply incised portion of the Eastern Ditch	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99
	SED-18	0-0.5	Eastern Ditch		Asssess sediment quality within the Eastern Ditch before it empties into Upper Sunset Lake	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99
	SED-19	0-0.5, 0-0.5, 0.5-1, 1-1.5	Upper Sunset Lake		Asssess sediment quality within Upper Sunset Lake	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99*
	SED-20	0-0.5, 0-0.5, 0.5-1, 1-2, 2-3	Upper Sunset Lake		Asssess sediment quality within Upper Sunset Lake	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99*
	SED-21	0-0.5, 0-0.5, 0.5-1, 1-2, 2-3	Lower Sunset Lake		Asssess sediment quality within Lower Sunset Lake	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99*
	SED-22	0-0.5, 0-0.5, 0.5-1, 1-2, 2-3	Lower Sunset Lake		Asssess sediment quality within Lower Sunset Lake	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99*
	SED-23	0-0.5, 0-0.5, 0.5-1, 1-2, 2-3	Gator Pond		Asssess sediment quality within the Gator Pond	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99*
	SED-24	0-0.5, 0-0.5, 0.5-1, 1-1.5	Gator Pond		Asssess sediment quality within the Gator Pond	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99*
	SED-25	0-0.5	Sanitary Lagoon		Asssess sludge quality within the Sanitary Lagoon	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, isotopic U, and Tc-99
	SED-26	0-0.5	Sanitary Lagoon		Asssess sludge quality within the Sanitary Lagoon	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, isotopic U, and Tc-99
	SED-27	0-0.5	East Lagoon		Asssess sludge quality within the East Lagoon	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, isotopic U, and Tc-99
	SED-28	0-0.5	East Lagoon		Asssess sludge quality within the East Lagoon	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, isotopic U, and Tc-99
	SED-29	0-0.5, 0-0.5, 0.5-1, 1-1.5	Mill Creek below the Lower Sunset Lake Dike		Asssess sediment quality within Mill Creek downstream of the Lower Sunset Lake Dike	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99
	SED-30	0-0.5, 0.5-1, 1-1.33	Mill Creek below the Lower Sunset Lake Dike		Asssess sediment quality within Mill Creek downstream of the Lower Sunset Lake Dike	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99
	SED-31	0-0.5, 0.5-1	Mill Creek below the Lower Sunset Lake Dike		Asssess sediment quality within Mill Creek downstream of the Lower Sunset Lake Dike	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99
	SED-32	0-0.5, 0.5-1	Mill Creek below the Lower Sunset Lake Dike		Asssess sediment quality within Mill Creek downstream of the Lower Sunset Lake Dike	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99
	SED-33	0-0.5, 0.5-1, 1-1.33	Mill Creek below the Lower Sunset Lake Dike		Asssess sediment quality within Mill Creek downstream of the Lower Sunset Lake Dike	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99
	SED-34	0-0.5, 0.5-1	Mill Creek below the Lower Sunset Lake Dike		Asssess sediment quality within Mill Creek downstream of the Lower Sunset Lake Dike	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99
	SED-35	0-0.5, 0.5-1	Mill Creek below the Lower Sunset Lake Dike		Asssess sediment quality within Mill Creek downstream of the Lower Sunset Lake Dike	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99
	SED-36	0-0.5, 0.5-1	Mill Creek below the Lower Sunset Lake Dike		Asssess sediment quality within Mill Creek downstream of the Lower Sunset Lake Dike	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99
	SED-37	0-0.5, 0.5-1	Mill Creek below the Lower Sunset Lake Dike		Asssess sediment quality within Mill Creek downstream of the Lower Sunset Lake Dike	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99
	SED-38	0-0.5, 0-0.5, 0.5-1, 1-2, 2-3	Lower Sunset Lake		Asssess sediment quality within Lower Sunset Lake	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99*
	SED-39	0-0.5, 0-0.5, 0.5-1, 1-2, 2-3	Lower Sunset Lake		Asssess sediment quality within Lower Sunset Lake	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99*
	SED-40	0-0.5, 0-0.5, 0.5-1, 1-2, 2-3	Lower Sunset Lake		Asssess sediment quality within Lower Sunset Lake	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99*
	SED-41	0-0.5, 0-0.5, 0.5-1, 1-2, 2-3	Lower Sunset Lake		Asssess sediment quality within Lower Sunset Lake	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99*
	SED-42	0-0.5, 0-0.5, 0.5-1, 1-2, 2-3	Lower Sunset Lake		Asssess sediment quality within Lower Sunset Lake	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99*
	SED-43	0-0.5, 0-0.5, 0.5-1	Upper Sunset Lake		Asssess sediment quality within Upper Sunset Lake	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99*
	SED-44	0-0.5, 0-0.5, 0.5-1, 1-1.5	Upper Sunset Lake		Asssess sediment quality within Upper Sunset Lake	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99*
	SED-45	0-0.5, 0-0.5, 0.5-1	Upper Sunset Lake		Asssess sediment quality within Upper Sunset Lake	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99*
	SED-46	0-0.5, 0-0.5, 0.5-1	Upper Sunset Lake		Asssess sediment quality within Upper Sunset Lake	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99*
	SED-47	0-0.5, 0-0.5, 0.5-1	Upper Sunset Lake		Asssess sediment quality within Upper Sunset Lake	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99*
	SED-48	0-0.5, 0-0.5, 0.5-1	Upper Sunset Lake		Asssess sediment quality within Upper Sunset Lake	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99*
	SED-49	0-0.5, 0-0.5, 0.5-1	Upper Sunset Lake		Asssess sediment quality within Upper Sunset Lake	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99*
	SED-50	0-0.5, 0-0.5, 0.5-1, 1-2	Upper Sunset Lake		Asssess sediment quality within Upper Sunset Lake	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99*
	SED-51	0-0.5, 0.5-1	Between the Canal and the Entrance Dike		Asssess background sediment quality within Mill Creek	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99*
	SED-52	0-0.5, 0.5-1	Between the Canal and the Entrance Dike		Asssess background sediment quality within Mill Creek	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99*
	SED-53	0-0.5, 0.5-1	Between the Canal and the Entrance Dike		Asssess background sediment quality within Mill Creek	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99*
	SED-54	0-0.5, 0.5-1	Between the Canal and the Entrance Dike		Asssess background sediment quality within Mill Creek	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99*
	SED-55	0-0.5, 0.5-1	Between the Canal and the Entrance Dike		Asssess background sediment quality within Mill Creek	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99*
	SED-56	0-0.5, 0.5-1	Between the Canal and the Entrance Dike		Asssess background sediment quality within Mill Creek	Ammonia, fluoride, nitrate, TAL metals, TCL SVOCs, TCL VOCs, isotopic U, and Tc-99*
	SED-57	0-0.5, 0.5-1, 1-1.5	Mill Creek upstream of the Canal		Asssess background U concentrations within Mill Creek	Isotopic U
	SED-58	0-0.5, 0.5-1	Mill Creek upstream of the Canal		Asssess background U concentrations within Mill Creek	Isotopic U
	SED-59	0-0.5, 0.5-1	Mill Creek upstream of the Canal		Asssess background U concentrations within Mill Creek	Isotopic U
	SED-60	0-0.5, 0.5-1	Middle Ditch		Assess COPC impact to the Middle Ditch in the vicinity of SED-16	Fluoride, nitrate, CVOCs, isotopic U, and Tc-99
	SED-61	0-0.5, 0.5-1, 1-1.5	Middle Ditch		Assess COPC impact to the Middle Ditch in the vicinity of SED-16	Fluoride, nitrate, CVOCs, isotopic U, and Tc-99
	SED-62	0-0.5, 0.5-1	Gator Pond		Assess COPC impact in the Gator Pond	Fluoride, nitrate, CVOCs, isotopic U, and Tc-99
	SED-63	0-0.5, 0.5-1	Gator Pond		Assess COPC impact in the Gator Pond	Fluoride, nitrate, CVOCs, isotopic U, and Tc-99
	SED-64	0-0.5, 0.5-1	Gator Pond		Assess COPC impact in the Gator Pond	Fluoride, nitrate, CVOCs, isotopic U, and Tc-99
	SED-65	0-0.5, 0.5-1	Gator Pond		Assess COPC impact in the Gator Pond	Fluoride, nitrate, CVOCs, isotopic U, and Tc-99

Table 2 - Remedial Investigation Sample Summary
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

Environmental Media	Sample Location	Sample Depth (Feet BLS)	Site Location	Figure	Rationale	Analyses
Sediment (continued)	SED-66	0-0.5, 0.5-1, 1-2	Upper Sunset Lake	9	Assess COPC impact near the Lower Sunset Lake Dike	Fluoride, nitrate, TCL VOCs, isotopic U, and Tc-99
	SED-67	0-0.5, 0.5-1, 1-2	Upper Sunset Lake		Assess COPC impact near the Lower Sunset Lake Dike	Fluoride, nitrate, TCL VOCs, isotopic U, and Tc-99
	SED-68	0-0.5, 0.5-1, 1-2	Upper Sunset Lake		Assess COPC impact near the Lower Sunset Lake Dike	Fluoride, nitrate, TCL VOCs, isotopic U, and Tc-99
	B-1**	0-0.5, 0.5-1	Upper Sunset Lake		Assess radiological impact to Upper Sunset Lake in the vicinity of SED-44	Isotopic U, Tc-99
	B-2**	0-0.5, 0.5-1	Upper Sunset Lake		Assess radiological impact to Upper Sunset Lake in the vicinity of SED-44	Isotopic U, Tc-99
	B-3**	0-0.5, 0.5-1	Upper Sunset Lake		Assess radiological impact to Upper Sunset Lake in the vicinity of SED-44	Isotopic U, Tc-99
	B-4**	0-0.5, 0.5-1	Upper Sunset Lake		Assess radiological impact to Upper Sunset Lake in the vicinity of SED-44	Isotopic U, Tc-99
	B-5**	0-0.5, 0.5-1	Upper Sunset Lake		Assess radiological impact to Upper Sunset Lake in the vicinity of SED-44	Isotopic U, Tc-99
	B-6**	0-0.5, 0.5-1	Upper Sunset Lake		Assess radiological impact to Upper Sunset Lake in the vicinity of SED-44	Isotopic U, Tc-99
	B-7**	0-0.5, 0.5-1	Upper Sunset Lake		Assess radiological impact to Upper Sunset Lake in the vicinity of SED-44	Isotopic U, Tc-99
	B-8**	0-0.5, 0.5-1	Upper Sunset Lake		Assess radiological impact to Upper Sunset Lake in the vicinity of SED-44	Isotopic U, Tc-99
	SED-16	0-1	Middle Ditch		Assess grain size distribution in sediment	Grain size
	SED-20	0-1	Upper Sunset Lake		Assess grain size distribution in sediment	Grain size
	SED-21	1-2	Lower Sunset Lake		Assess grain size distribution in sediment	Grain size
	SED-40	0-1	Lower Sunset Lake		Assess grain size distribution in sediment	Grain size
	SED-57	1-1.5	Mill Creek upstream of the Canal		Assess grain size distribution in sediment	Grain size

Notes:
BLS - below land surface
Tc-99 - technetium-99
CVOCs - chlorinated volatile organic compounds
NA - not applicable
TAL - target analyte list
TCL - target compund list
SVOCs - semivolatile organic compounds
VOCs - volatile organic compounds
U - uranium
* - Phase II sediment samples analyzed for fluoride, nitrate, CVOCs, isotopic U and Tc-99
** - B-1 through B-8 sediment sample locations shown on the Leidos Technical Basis Document in Appenidx H

Table 3 - Private Water Supply Well Survey Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

Map ID	Address/Designation	Latitude	Longitude	Richland County Tax Map ID #
1	150 Hopkins Park Road	-	-	R21400-01-11
2	7028 Lower Richland Blvd	-	-	R21400-01-27
3	7040 Lower Richland Blvd	-	-	R21400-01-39
4	7048 Lower Richland Blvd	-	-	R21400-01-16
5	7064 Lower Richland Blvd	-	-	R21400-01-30
6	7071 Lower Richland Blvd	-	-	R21400-02-65
7	7072 Lower Richland Blvd	-	-	R21400-01-17
8	7131 Lower Richland Blvd	-	-	R21400-02-61
9	7152 Lower Richland Blvd	-	-	R21400-01-24
10	5943 Bluff Road	-	-	R21400-03-09
11	6001 Bluff Road	-	-	R21400-03-02
12	6041 Bluff Road	-	-	R21400-03-05
13	6045 Bluff Road	-	-	R21400-03-06
14	1012 Coley Road	-	-	R18705-01-05
15	1109 Coley Road	-	-	R18800-02-18B
16	1113 Coley Road	-	-	R18700-03-04
17	1122 Coley Road	-	-	R18705-01-08
18	1243 Coley Road	-	-	R18706-02-02
19	1249 Coley Road	-	-	R18706-02-03
20	1249 Coley Road	-	-	R18706-02-04
21	109 Nicie Byrd Way	-	-	R18800-02-19
22	117 Nicie Byrd Way	-	-	R18800-02-50
23	125 Nicie Byrd Way	-	-	R18800-02-49
24	133 Nicie Byrd Way	-	-	R18800-02-48
25	100 Pincushion Road	-	-	R18700-04-09
26	WSW-01	33.8892625	-80.93917313	R15900-01-06
27	IWSW-01	33.88717942	-80.92577294	R15900-01-06
28	IWSW-02	33.88875406	-80.92383756	R15900-01-06
29	WSW-02	33.85836279	-80.9297476	R18500-01-02
30	WSW-03	33.87559353	-80.94351638	R15700-01-01
31	WSW-04	33.84324651	-80.93413056	R15600-01-02

Table 4 - Groundwater Levels and Elevations
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

Well/ Gage	Date	Screen Interval (ft BLS)	TOC Elevation (ft)	Depth To Water (ft BTOC)	Water Elevation (ft)
W-RW1	10/4/2021	22 - 32	136.95	8.73	128.22
W-RW2	10/4/2021	18.5 - 28.5	139.93	18.37	121.56
W-3A	10/4/2021	73 - 83	120.08	6.78	113.30
W-4R	10/4/2021	4.5 - 14.5	119.82	11.18	108.64
W-6	10/4/2021	23 - 28	136.46	10.33	126.13
W-7A	10/4/2021	13 - 18	135.06	11.57	123.49
W-10	10/4/2021	17.5 - 22.5	136.81	15.79	121.02
W-11	10/4/2021	22 - 25	140.76	18.23	122.53
W-13R	10/4/2021	15 - 20	136.13	12.40	123.73
W-14	10/4/2021	24 - 29	137.83	16.67	121.16
W-15	10/4/2021	15.5 - 20.5	127.90	11.93	115.97
W-16	10/4/2021	11 - 14	125.96	4.02	121.94
W-17	10/4/2021	23 - 28	139.27	14.12	125.15
W-18R	10/4/2021	22.5 - 27.5	136.71	14.07	122.64
W-19B	10/4/2021	30.5 - 40.5	142.85	24.62	118.23
W-20	10/4/2021	10.5 - 15.5	116.16	8.78	107.38
W-22	10/4/2021	10 - 15	136.51	10.80	125.71
W-23R	10/4/2021	16 - 21	140.47	18.61	121.86
W-24	10/4/2021	10 - 15	141.94	9.72	132.22
W-25	10/4/2021	22.5 - 27.5	115.88	9.56	106.32
W-26	10/4/2021	25.5 - 30.5	142.21	25.38	116.83
W-27	10/4/2021	10 - 15	121.87	10.40	111.47
W-28	10/4/2021	10 - 15	138.88	11.72	127.16
W-29	10/4/2021	9 - 14	138.61	11.49	127.12
W-30	10/4/2021	10 - 15	138.81	11.83	126.98
W-32	10/4/2021	17 - 22	140.34	18.80	121.54
W-33	10/4/2021	15 - 20	139.33	15.59	123.74
W-35	10/4/2021	15.5 - 20.5	139.07	10.87	128.20
W-36	10/4/2021	15 - 20	136.29	7.68	128.61
W-37	10/4/2021	15.5 - 20.5	139.04	11.11	127.93
W-38	10/4/2021	15 - 20	136.51	9.20	127.31
W-39	10/4/2021	13 - 23	141.15	15.74	125.41
W-40	10/4/2021	4.5 - 14.5	139.26	11.04	128.22
W-41R	10/4/2021	14.5 - 24.5	133.81	15.46	118.35
W-42	10/4/2021	20 - 30	140.96	25.37	115.59
W-43	10/4/2021	11 - 21	141.33	14.62	126.71
W-44	10/4/2021	17 - 27	134.86	17.99	116.87
W-45	10/4/2021	5.5 - 15.5	140.02	11.90	128.12
W-46	10/4/2021	16 - 26	134.74	13.73	121.01
W-47	10/4/2021	34.5 - 44.5	141.90	26.02	115.88
W-48	10/4/2021	31.5 - 41.5	142.56	26.26	116.30
W-49	10/4/2021	108 - 118	140.25	28.96	111.29
W-50	10/4/2021	115 - 125	139.58	23.37	116.21
W-51	10/4/2021	9.5 - 14.5	136.51	8.35	128.16
W-52	10/4/2021	10.5 - 15.5	136.19	8.32	127.87
W-53	10/4/2021	11 - 16	136.54	8.53	128.01
W-54	10/4/2021	11 - 16	136.52	8.62	127.90
W-55	10/4/2021	10 - 15	136.63	8.80	127.83
W-56	10/4/2021	10 - 15	136.68	8.77	127.91
W-57	10/4/2021	10 - 15	136.73	9.03	127.70
W-58	10/4/2021	10.5 - 15.5	136.37	9.18	127.19
W-59	10/4/2021	9.5 - 14.5	136.42	9.17	127.25
W-60	10/4/2021	33 - 38	140.20	21.55	118.65
W-61	10/4/2021	13.5 - 23.5	140.60	17.98	122.62
W-62	10/4/2021	20 - 25	128.38	13.00	115.38
W-63	10/4/2021	37 - 42	141.02	26.53	114.49
W-64	10/4/2021	21.5 - 31.5	142.75	26.26	116.49
W-65	10/4/2021	26.5 - 31.5	140.95	13.23	127.72
W-66	10/4/2021	12.5 - 22.5	140.91	12.89	128.02
W-67	10/4/2021	22 - 32	135.26	17.70	117.56
W-68	10/4/2021	13 - 18	116.53	6.67	109.86
W-69	10/4/2021	8 - 18	140.64	8.50	132.14
W-70	10/4/2021	44 - 49	141.00	12.55	128.45
W-71	10/4/2021	93 - 103	140.72	24.10	116.62
W-72	10/4/2021	5 - 15	136.29	8.40	127.89
W-73	10/4/2021	6 - 16	136.45	8.68	127.77
W-74	10/4/2021	25.5 - 30.5	139.93	12.62	127.31
W-75	10/4/2021	5.5 - 15.5	139.85	12.23	127.62
W-76	10/4/2021	5 - 15	136.85	9.53	127.32
W-77	10/4/2021	5.5 - 15.5	136.53	8.97	127.56
W-78	10/4/2021	5.5 - 15.5	136.31	10.13	126.18
W-79	10/4/2021	5.5 - 15.5	136.12	8.17	127.95
W-80	10/4/2021	5.5 - 15.5	135.87	9.47	126.40
W-81	10/4/2021	5.5 - 15.5	136.43	11.25	125.18
W-82	10/4/2021	5.5 - 15.5	136.23	11.80	124.43
W-83	10/4/2021	16.5 - 26.5	135.81	12.73	123.08

Table 4 - Groundwater Levels and Elevations
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

Well/ Gage	Date	Screen Interval (ft BLS)	TOC Elevation (ft)	Depth To Water (ft BTOC)	Water Elevation (ft)
W-84	10/4/2021	11 - 21	135.99	6.25	129.74
W-85	10/4/2021	40 - 45	138.69	24.22	114.47
W-86	10/4/2021	25 - 35	138.77	19.12	119.65
W-87	10/4/2021	28 - 33	136.39	7.55	128.84
W-88	10/4/2021	36.5 - 41.5	143.10	22.61	120.49
W-89	10/4/2021	15.5 - 25.5	142.82	21.10	121.72
W-90	10/4/2021	35 - 40	143.33	26.64	116.69
W-91	10/4/2021	15 - 25	142.81	26.48	116.33
W-92	10/4/2021	29 - 34	123.33	16.05	107.28
W-93	10/4/2021	30.5 - 35.5	136.49	9.45	127.04
W-94	10/4/2021	24.5 - 29.5	118.04	10.13	107.91
W-95	10/4/2021	28.5 - 33.5	116.40	8.87	107.53
W-96	10/4/2021	25 - 30	116.46	9.40	107.06
W-97	10/4/2021	14 - 19	116.93	5.89	111.04
W-98	10/4/2021	17 - 27	138.65	24.33	114.32
W-99	10/4/2021	16 - 21	133.84	12.38	121.46
W-100	10/4/2021	7 - 12	133.47	10.55	122.92
W-102	10/4/2021	28.5 - 33.5	136.86	10.13	126.73
W-103	10/4/2021	34.5 - 39.5	134.87	18.46	116.41
W-104	10/4/2021	7.5 - 17.5	118.48	7.61	110.87
W-105	10/4/2021	14 - 24	117.57	10.51	107.06
W-106	10/4/2021	24.5 - 29.5	118.69	11.32	107.37
W-107	10/4/2021	29 - 34	115.23	7.97	107.26
W-108	10/4/2021	27 - 32	115.41	8.27	107.14
W-109	10/4/2021	27 - 32	115.68	8.47	107.21
W-110	10/4/2021	29 - 34	116.42	8.98	107.44
W-111	10/4/2021	76 - 81	116.92	6.10	110.82
W-112	10/4/2021	29 - 34	116.07	8.45	107.62
W-113	10/4/2021	31 - 36	138.55	10.54	128.01
W-114	10/4/2021	10 - 20	138.75	10.00	128.75
W-115	10/4/2021	40.5 - 45.5	141.71	17.89	123.82
W-116	10/4/2021	10 - 20	141.91	17.37	124.54
W-117	10/4/2021	39 - 44	143.76	21.89	121.87
W-118	10/4/2021	19.5 - 29.5	143.74	19.71	124.03
W-119	10/4/2021	25 - 30	142.24	15.28	126.96
W-120	10/4/2021	29 - 34	142.34	14.00	128.34
W-121	10/4/2021	12 - 22	142.24	14.03	128.21
W-122	10/4/2021	25 - 30	136.84	8.32	128.52
W-123	10/4/2021	29 - 34	136.05	13.82	122.23
W-124	10/4/2021	26 - 31	117.73	10.62	107.11
W-125	10/4/2021	40 - 45	117.84	10.79	107.05
W-126	10/4/2021	37.5 - 42.5	115.89	8.85	107.04
PZ-1	10/4/2021	7 - 17	116.27	8.99	107.28
Canal SG	10/4/2021	NA	110.01	1.73	107.74
Entrance SG	10/4/2021	NA	112.57	0.75	109.31
Upper 2 SG	10/4/2021	NA	112.56	0.90	109.47
Upper SG	10/4/2021	NA	112.41	1.06	109.47
Lower SG	10/4/2021	NA	112.39	0.89	109.28
Creek SG	10/4/2021	NA	109.05	NM	NM
Gator SG	10/4/2021	NA	120.31	1.46	117.77

Notes:
ft BLS - feet below land surface
ft - feet
ft BTOC - feet below top of casing
NA - not applicable
NM - not measured

Table 5 - Hydraulic Conductivity Summary
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

Well Number	Zone	Test Type	Hydraulic Conductivity (K)		Average Hydraulic Cond. (K)	
			cm/sec	ft/day	cm/sec	ft/day
W-RW1	Lower	Pump	4.51E-03	12.80	4.51E-03	12.80
W-RW2	Lower	Pump	1.76E-04	0.50	1.76E-04	0.50
W-6	Lower	Falling	2.15E-04	0.61	1.78E-04	0.51
		Rising	1.41E-04	0.4		
W-11	Lower	Falling	2.22E-05	0.06	2.08E-05	0.06
		Rising	1.94E-05	0.06		
W-13R	Upper	Falling	3.46E-03	9.80	3.51E-03	9.95
		Rising	3.56E-03	10.09		
W-15	Upper	Falling	1.96E-03	5.56	1.96E-03	5.55
		Rising	1.95E-03	5.53		
W-19B	Lower	Falling	3.05E-03	8.65	2.98E-03	8.44
		Rising	2.90E-03	8.23		
W-26	Upper	Falling	4.90E-04	1.39	4.90E-04	1.39
W-33	Lower	Rising	2.10E-04	0.60	2.10E-04	0.60
W-35	Upper	Falling	5.30E-03	15.03	5.30E-03	15.03
W-39	Upper	Rising	1.17E-03	3.33	1.08E-03	3.06
		Falling	9.80E-04	2.78		
W-41R	Upper	Rising	3.70E-03	10.49	3.70E-03	10.49
W-48	Lower	Falling	2.12E-04	0.60	1.97E-04	0.56
		Rising	1.83E-04	0.52		
W-60	Lower	Falling	4.71E-02	133.70	4.41E-02	125.20
		Rising	4.11E-02	116.70		
W-61	Upper	Falling	1.79E-03	5.09	1.81E-03	5.12
		Rising	1.82E-03	5.15		
W-65	Lower	Falling	8.78E-04	2.49	7.05E-04	2.00
		Rising	5.32E-04	1.51		
W-67	Upper	Falling	6.81E-04	1.93	6.24E-04	1.77
		Rising	5.68E-04	1.61		
W-68	Lower	Falling	1.64E-03	4.64	1.75E-03	4.96
		Rising	1.86E-03	5.28		
W-94	Lower	Falling	1.65E-03	4.67	1.87E-03	5.31
		Rising	2.09E-03	5.94		
W-95	Lower	Falling	2.11E-02	59.84	1.51E-02	42.95
		Rising	9.19E-03	26.05		
W-96	Upper	Falling	1.45E-02	41.19	2.07E-02	58.58
		Rising	2.68E-02	75.97		
W-97	Upper	Falling	2.75E-02	78.00	2.84E-02	80.45
		Rising	2.92E-02	82.89		
W-98	Upper	Falling	3.70E-04	1.05	3.67E-04	1.04
		Rising	3.63E-04	1.03		
W-103	Lower	Falling	4.31E-03	12.23	4.27E-03	12.10
		Rising	4.22E-03	11.97		
W-117	Lower	Falling	4.68E-03	13.27	3.66E-03	10.37
		Rising	2.63E-03	7.47		
W-118	Upper	Falling	2.21E-03	6.27	2.08E-03	5.91
		Rising	1.95E-03	5.54		
W-119	Upper	Falling	1.29E-02	36.52	8.47E-03	24.02
		Rising	4.06E-03	11.51		
W-120	Lower	Falling	1.54E-03	4.37	1.44E-03	4.08
		Rising	1.33E-03	3.78		
W-126	Lower	Falling	1.02E-02	28.91	8.48E-03	24.05
		Rising	6.76E-03	19.18		
				Average Conductivity	5.80E-03	16.44

Notes: cm/sec - centimeters per second
ft/day - feet per day

Table 6 - Summary of Horizontal Hydraulic Gradients
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

Date	Zone	Location	Well ID	WL Elev (ft)	Well ID	WL Elev (ft)	distance (ft)	dWL (ft)	HG (ft/ft)
10/4/2021	Upper Surficial	Above the bluff	W-35	128.20	W-67	117.56	1283	10.64	0.00829
10/4/2021	Upper Surficial	Above the bluff	W-36	128.61	W-42	115.59	1704	13.02	0.00764
10/4/2021	Upper Surficial	Above the bluff	W-69	132.14	W-89	121.72	3289	10.42	0.00317
10/4/2021	Lower Surficial	Above the bluff	W-70	128.45	W-123	122.23	2077	6.22	0.00299
10/4/2021	Lower Surficial	Above the bluff	W-113	128.01	W-19B	118.23	1586	9.78	0.00617
10/4/2021	Lower Surficial	Above the bluff	W-115	123.82	W-62	115.38	1480	8.44	0.00570
10/4/2021	Lower Surficial	Above the bluff	W-122	128.52	W-11	122.53	1492	5.99	0.00401
10/4/2021	Upper Surficial	Near the bluff	W-16	121.94	W-4R	108.64	293	13.3	0.0454
10/4/2021	Upper Surficial	Near the bluff	W-32	121.54	W-27	111.47	418	10.07	0.0241
10/4/2021	Upper Surficial	Near the bluff	W-67	117.56	W-97	111.04	224	6.52	0.0291
10/4/2021	Lower Surficial	Near the bluff	W-11	122.53	W-92	107.28	412	15.25	0.0370
10/4/2021	Lower Surficial	Near the bluff	W-47	115.88	W-106	107.37	249	8.51	0.0342
10/4/2021	Lower Surficial	Near the bluff	W-62	115.38	W-68	109.86	278	5.52	0.0199
10/4/2021	Lower Surficial	Near the bluff	W-123	122.23	W-124	107.11	777	15.12	0.0195
10/4/2021	Upper Surficial	Below the bluff	W-20	107.38	W-25	106.32	1644	1.06	0.000645
10/4/2021	Upper Surficial	Below the bluff	W-105	107.06	W-25	106.32	2231	0.74	0.000332
10/4/2021	Lower Surficial	Below the bluff	W-94	107.91	W-112	107.62	628	0.29	0.000462
10/4/2021	Lower Surficial	Below the bluff	W-106	107.37	W-108	107.14	824	0.23	0.000279
10/4/2021	Lower Surficial	Below the bluff	W-124	107.11	W-126	107.04	468	0.07	0.000150

Notes:
WL Elev - water level elevation
ft - feet
dWL - difference in water level elevation
HG - horizontal gradient

Table 7 - Summary of Vertical Hydraulic Gradients
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

Surficial Aquifer

Well #	1						2						Gradient			
Well ID	Date	Zone	TOS (ft BGS)	MOS (ft BGS)	BOS (ft BGS)	WL Elev (ft)	Zone	Well ID	TOS (ft BGS)	MOS (ft BGS)	BOS (ft BGS)	WL Elev (ft)	dZ (ft)	dWL (ft)	VG (ft/ft)	Direction
W-13R	10/4/2021	Upper Surficial	15.5	18.00	20.5	123.73	Lower Surficial	W-123	29.00	31.50	34.00	122.23	13.5	-1.5	-0.111	Downward
W-20	4/1/2021	Upper Surficial	10.50	13.00	15.50	111.88	Lower Surficial	W-109	27.00	29.50	32.00	111.68	16.5	-0.2	-0.012	Downward
W-20	10/4/2021	Upper Surficial	10.50	13.00	15.50	107.38	Lower Surficial	W-109	27.00	29.50	32.00	107.21	16.5	-0.17	-0.010	Downward
W-22	10/14/201	Upper Surficial	10.00	12.50	15.00	124.83	Lower Surficial	W-6	23.00	25.50	28.00	125.24	13	0.41	0.032	Upward
W-22	4/6/2020	Upper Surficial	10.00	12.50	15.00	126.61	Lower Surficial	W-6	23.00	25.50	28.00	126.81	13	0.2	0.015	Upward
W-22	10/1/2020	Upper Surficial	10.00	12.50	15.00	126.33	Lower Surficial	W-6	23.00	25.50	28.00	126.48	13	0.15	0.012	Upward
W-22	4/1/2021	Upper Surficial	10.00	12.50	15.00	126.86	Lower Surficial	W-6	23.00	25.50	28.00	127.08	13	0.22	0.017	Upward
W-22	10/4/2021	Upper Surficial	10.00	12.50	15.00	125.71	Lower Surficial	W-6	23.00	25.50	28.00	126.13	13	0.42	0.032	Upward
W-27	10/14/201	Upper Surficial	10.00	12.50	15.00	110.59	Lower Surficial	W-92	29.00	31.50	34.00	105.56	19	-5.03	-0.265	Downward
W-27	4/6/2020	Upper Surficial	10.00	12.50	15.00	112.15	Lower Surficial	W-92	29.00	31.50	34.00	109.05	19	-3.1	-0.163	Downward
W-27	10/1/2020	Upper Surficial	10.00	12.50	15.00	111.90	Lower Surficial	W-92	29.00	31.50	34.00	108.43	19	-3.47	-0.183	Downward
W-27	4/1/2021	Upper Surficial	10.00	12.50	15.00	113.32	Lower Surficial	W-92	29.00	31.50	34.00	111.61	19	-1.71	-0.090	Downward
W-27	10/4/2021	Upper Surficial	10.00	12.50	15.00	111.47	Lower Surficial	W-92	29.00	31.50	34.00	107.28	19	-4.19	-0.221	Downward
W-30	4/1/2021	Upper Surficial	10.00	12.50	15.00	127.58	Lower Surficial	W-102	28.50	31.00	33.50	127.32	18.5	-0.26	-0.014	Downward
W-30	10/4/2021	Upper Surficial	10.00	12.50	15.00	126.98	Lower Surficial	W-102	28.50	31.00	33.50	126.73	18.5	-0.25	-0.014	Downward
W-32	10/14/201	Upper Surficial	17.00	19.50	22.00	120.75	Upper Surficial	W-11	22.00	23.50	25.00	121.74	4	0.99	0.247	Upward
W-32	4/6/2020	Upper Surficial	17.00	19.50	22.00	122.22	Upper Surficial	W-11	22.00	23.50	25.00	123.51	4	1.29	0.323	Upward
W-32	10/1/2020	Upper Surficial	17.00	19.50	22.00	121.78	Upper Surficial	W-11	22.00	23.50	25.00	123.88	4	2.1	0.525	Upward
W-32	4/1/2021	Upper Surficial	17.00	19.50	22.00	122.29	Upper Surficial	W-11	22.00	23.50	25.00	123.48	4	1.19	0.297	Upward
W-32	10/4/2021	Upper Surficial	17.00	19.50	22.00	121.54	Upper Surficial	W-11	22.00	23.50	25.00	122.53	4	0.99	0.247	Upward
W-36	10/4/2021	Upper Surficial	15.00	17.50	20.00	128.61	Lower Surficial	W-122	25.00	27.50	30.00	128.52	10	-0.09	-0.009	Downward
W-61	10/14/201	Upper Surficial	13.50	18.50	23.50	121.64	Lower Surficial	W-60	33.00	35.50	38.00	118.08	17	-3.56	-0.209	Downward
W-61	4/6/2020	Upper Surficial	13.50	18.50	23.50	124.01	Lower Surficial	W-60	33.00	35.50	38.00	119.43	17	-4.58	-0.269	Downward
W-61	10/1/2020	Upper Surficial	13.50	18.50	23.50	122.63	Lower Surficial	W-60	33.00	35.50	38.00	118.72	17	-3.91	-0.230	Downward
W-61	4/1/2021	Upper Surficial	13.50	18.50	23.50	124.27	Lower Surficial	W-60	33.00	35.50	38.00	119.58	17	-4.69	-0.276	Downward
W-61	10/4/2021	Upper Surficial	13.50	18.50	23.50	122.62	Lower Surficial	W-60	33.00	35.50	38.00	118.65	17	-3.97	-0.234	Downward
W-64	10/14/201	Upper Surficial	21.50	26.50	31.50	115.50	Lower Surficial	W-47	34.50	39.50	44.50	114.91	13	-0.59	-0.045	Downward
W-64	4/6/2020	Upper Surficial	21.50	26.50	31.50	117.54	Lower Surficial	W-47	34.50	39.50	44.50	116.89	13	-0.65	-0.050	Downward
W-64	10/1/2020	Upper Surficial	21.50	26.50	31.50	116.54	Lower Surficial	W-47	34.50	39.50	44.50	115.96	13	-0.58	-0.045	Downward
W-64	4/1/2021	Upper Surficial	21.50	26.50	31.50	117.69	Lower Surficial	W-47	34.50	39.50	44.50	117.15	13	-0.54	-0.042	Downward
W-64	10/4/2021	Upper Surficial	21.50	26.50	31.50	116.49	Lower Surficial	W-47	34.50	39.50	44.50	115.88	13	-0.61	-0.047	Downward
W-66	10/14/201	Upper Surficial	12.50	17.50	22.50	127.19	Lower Surficial	W-65	26.50	29.00	31.50	126.88	11.5	-0.31	-0.027	Downward
W-66	4/6/2020	Upper Surficial	12.50	17.50	22.50	129.16	Lower Surficial	W-65	26.50	29.00	31.50	128.80	11.5	-0.36	-0.031	Downward
W-66	10/1/2020	Upper Surficial	12.50	17.50	22.50	128.33	Lower Surficial	W-65	26.50	29.00	31.50	128.04	11.5	-0.29	-0.025	Downward
W-66	4/1/2021	Upper Surficial	12.50	17.50	22.50	129.09	Lower Surficial	W-65	26.50	29.00	31.50	128.95	11.5	-0.14	-0.012	Downward
W-66	10/4/2021	Upper Surficial	12.50	17.50	22.50	128.02	Lower Surficial	W-65	26.50	29.00	31.50	127.72	11.5	-0.3	-0.026	Downward
W-67	4/1/2021	Upper Surficial	22.00	27.00	32.00	119.81	Lower Surficial	W-103	34.50	37.00	39.50	118.67	10	-1.14	-0.114	Downward
W-67	10/4/2021	Upper Surficial	22.00	27.00	32.00	117.56	Lower Surficial	W-103	34.50	37.00	39.50	116.41	10	-1.15	-0.115	Downward
W-69	10/14/201	Upper Surficial	8.00	13.00	18.00	130.89	Lower Surficial	W-70	44.00	46.50	49.00	126.12	33.5	-4.77	-0.142	Downward
W-69	4/6/2020	Upper Surficial	8.00	13.00	18.00	133.10	Lower Surficial	W-70	44.00	46.50	49.00	130.54	33.5	-2.56	-0.076	Downward
W-69	10/1/2020	Upper Surficial	8.00	13.00	18.00	132.94	Lower Surficial	W-70	44.00	46.50	49.00	128.98	33.5	-3.96	-0.118	Downward
W-69	4/1/2021	Upper Surficial	8.00	13.00	18.00	133.90	Lower Surficial	W-70	44.00	46.50	49.00	130.96	33.5	-2.94	-0.088	Downward
W-69	10/4/2021	Upper Surficial	8.00	13.00	18.00	132.14	Lower Surficial	W-70	44.00	46.50	49.00	128.45	33.5	-3.69	-0.110	Downward
W-75	10/14/201	Upper Surficial	5.50	10.50	15.50	126.79	Lower Surficial	W-74	25.50	28.00	30.50	126.47	17.5	-0.32	-0.018	Downward
W-75	4/6/2020	Upper Surficial	5.50	10.50	15.50	128.45	Lower Surficial	W-74	25.50	28.00	30.50	128.05	17.5	-0.4	-0.023	Downward
W-75	10/1/2020	Upper Surficial	5.50	10.50	15.50	127.82	Lower Surficial	W-74	25.50	28.00	30.50	127.53	17.5	-0.29	-0.017	Downward
W-75	4/1/2021	Upper Surficial	5.50	10.50	15.50	128.55	Lower Surficial	W-74	25.50	28.00	30.50	128.19	17.5	-0.36	-0.021	Downward
W-75	10/4/2021	Upper Surficial	5.50	10.50	15.50	127.62	Lower Surficial	W-74	25.50	28.00	30.50	127.31	17.5	-0.31	-0.018	Downward

Table 7 - Summary of Vertical Hydraulic Gradients
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

Surficial Aquifer

Well #	1						2						Gradient			
W-86	10/14/201	Upper Surficial	25.00	30.00	35.00	118.18	Lower Surficial	W-85	40.00	42.50	45.00	116.68	12.5	-1.5	-0.120	Downward
W-86	4/6/2020	Upper Surficial	25.00	30.00	35.00	121.01	Lower Surficial	W-85	40.00	42.50	45.00	119.84	12.5	-1.17	-0.094	Downward
W-86	10/1/2020	Upper Surficial	25.00	30.00	35.00	120.15	Lower Surficial	W-85	40.00	42.50	45.00	118.85	12.5	-1.3	-0.104	Downward
W-86	4/1/2021	Upper Surficial	25.00	30.00	35.00	121.53	Lower Surficial	W-85	40.00	42.50	45.00	120.38	12.5	-1.15	-0.092	Downward
W-86	10/4/2021	Upper Surficial	25.00	30.00	35.00	119.65	Lower Surficial	W-85	40.00	42.50	45.00	114.47	12.5	-5.18	-0.414	Downward
W-89	10/14/201	Upper Surficial	15.50	20.50	25.50	120.72	Lower Surficial	W-88	36.50	39.00	41.50	119.68	18.5	-1.04	-0.056	Downward
W-89	4/6/2020	Upper Surficial	15.50	20.50	25.50	122.78	Lower Surficial	W-88	36.50	39.00	41.50	121.68	18.5	-1.1	-0.059	Downward
W-89	10/1/2020	Upper Surficial	15.50	20.50	25.50	121.53	Lower Surficial	W-88	36.50	39.00	41.50	120.53	18.5	-1	-0.054	Downward
W-89	4/1/2021	Upper Surficial	15.50	20.50	25.50	122.91	Lower Surficial	W-88	36.50	39.00	41.50	121.82	18.5	-1.09	-0.059	Downward
W-89	10/4/2021	Upper Surficial	15.50	20.50	25.50	121.72	Lower Surficial	W-88	36.50	39.00	41.50	120.49	18.5	-1.23	-0.066	Downward
W-91	10/14/201	Upper Surficial	15.00	20.00	25.00	115.25	Lower Surficial	W-90	35.00	37.50	40.00	115.95	17.5	0.7	0.040	Upward
W-91	4/6/2020	Upper Surficial	15.00	20.00	25.00	117.11	Lower Surficial	W-90	35.00	37.50	40.00	117.49	17.5	0.38	0.022	Upward
W-91	10/1/2020	Upper Surficial	15.00	20.00	25.00	116.38	Lower Surficial	W-90	35.00	37.50	40.00	116.76	17.5	0.38	0.022	Upward
W-91	4/1/2021	Upper Surficial	15.00	20.00	25.00	117.36	Lower Surficial	W-90	35.00	37.50	40.00	117.76	17.5	0.4	0.023	Upward
W-91	10/4/2021	Upper Surficial	15.00	20.00	25.00	116.33	Lower Surficial	W-90	35.00	37.50	40.00	116.69	17.5	0.36	0.021	Upward
W-95	4/1/2021	Lower Surficial	28.50	31.00	33.50	111.86	Lower Surficial	W-111	76.00	78.50	81.00	114.63	47.5	2.77	0.058	Upward
W-95	10/4/2021	Lower Surficial	28.50	31.00	33.50	107.53	Lower Surficial	W-111	76.00	78.50	81.00	110.82	47.5	3.29	0.069	Upward
W-104	10/4/2021	Upper Surficial	7.50	12.50	17.50	110.87	Lower Surficial	W-124	26.00	28.50	31.00	107.11	16	-3.76	-0.235	Downward
W-105	10/4/2021	Upper Surficial	14.00	19.00	24.00	107.06	Lower Surficial	W-125	40.00	42.50	45.00	107.05	23.5	-0.01	0.000	Downward
W-114	10/4/2021	Upper Surficial	10.00	15.00	20.00	128.75	Lower Surficial	W-113	31.00	33.50	36.00	128.01	18.5	-0.74	-0.040	Downward
W-116	10/4/2021	Upper Surficial	10.00	15.00	20.00	124.54	Lower Surficial	W-115	40.50	43.00	45.50	123.82	28	-0.72	-0.026	Downward
W-118	10/4/2021	Upper Surficial	19.50	24.50	29.50	124.03	Lower Surficial	W-117	39.00	41.50	44.00	121.87	17	-2.16	-0.127	Downward
W-121	10/4/2021	Upper Surficial	12.00	17.00	22.00	128.21	Lower Surficial	W-120	29.00	31.50	34.00	128.34	14.5	0.13	0.009	Downward
W-96	10/4/2021	Upper Surficial	25.00	27.50	30.00	107.06	Lower Surficial	W-126	37.50	40.00	42.50	107.04	12.5	-0.02	-0.002	Downward

Surficial Aquifer to Black Creek Aquifer

Well #	1						2						Gradient			
Well ID	Date	Zone	TOS (ft BGS)	MOS (ft BGS)	BOS (ft BGS)	WL Elev (ft)	Zone	Well ID	TOS (ft BGS)	MOS (ft BGS)	BOS (ft BGS)	WL Elev (ft)	dZ (ft)	dWL (ft)	VG (ft/ft)	Direction
W-4R	10/4/2021	Upper Surficial	4.50	9.50	14.50	108.64	Black Creek	W-3A	73.00	78.00	83.00	113.30	68.5	4.66	0.068	Upward
W-40	10/14/201	Upper Surficial	4.50	9.50	14.50	127.31	Black Creek	W-50	115.00	120.00	125.00	114.31	110.5	-13	-0.118	Downward
W-40	4/6/2020	Upper Surficial	4.50	9.50	14.50	129.26	Black Creek	W-50	115.00	120.00	125.00	118.06	110.5	-11.2	-0.101	Downward
W-40	10/1/2020	Upper Surficial	4.50	9.50	14.50	128.46	Black Creek	W-50	115.00	120.00	125.00	116.55	110.5	-11.91	-0.108	Downward
W-40	4/1/2021	Upper Surficial	4.50	9.50	14.50	128.44	Black Creek	W-50	115.00	120.00	125.00	119.20	110.5	-9.24	-0.084	Downward
W-40	10/4/2021	Upper Surficial	4.50	9.50	14.50	128.22	Black Creek	W-50	115.00	120.00	125.00	116.21	110.5	-12.01	-0.109	Downward
W-42	10/14/201	Upper Surficial	20.00	25.00	30.00	114.64	Black Creek	W-49	108.00	113.00	118.00	109.18	88	-5.46	-0.062	Downward
W-42	4/6/2020	Upper Surficial	20.00	25.00	30.00	116.41	Black Creek	W-49	108.00	113.00	118.00	113.10	88	-3.31	-0.038	Downward
W-42	10/1/2020	Upper Surficial	20.00	25.00	30.00	115.90	Black Creek	W-49	108.00	113.00	118.00	111.96	88	-3.94	-0.045	Downward
W-42	4/1/2021	Upper Surficial	20.00	25.00	30.00	116.63	Black Creek	W-49	108.00	113.00	118.00	114.96	88	-1.67	-0.019	Downward
W-42	10/4/2021	Upper Surficial	20.00	25.00	30.00	115.59	Black Creek	W-49	108.00	113.00	118.00	111.29	88	-4.3	-0.049	Downward
W-69	10/14/201	Upper Surficial	8.00	13.00	18.00	130.89	Black Creek	W-71	93.00	98.00	103.00	114.74	85	-16.15	-0.190	Downward
W-69	4/6/2020	Upper Surficial	8.00	13.00	18.00	133.10	Black Creek	W-71	93.00	98.00	103.00	118.45	85	-14.65	-0.172	Downward
W-69	10/1/2020	Upper Surficial	8.00	13.00	18.00	132.94	Black Creek	W-71	93.00	98.00	103.00	116.93	85	-16.01	-0.188	Downward
W-69	4/1/2021	Upper Surficial	8.00	13.00	18.00	133.90	Black Creek	W-71	93.00	98.00	103.00	119.55	85	-14.35	-0.169	Downward
W-69	10/4/2021	Upper Surficial	8.00	13.00	18.00	132.14	Black Creek	W-71	93.00	98.00	103.00	116.62	85	-15.52	-0.183	Downward

Notes: TOS - top of screen
MOS - middle of screen
BOS - bottom of screen
ft bgs - feet below ground surface
WL Elev - water level elevation
ft - feet
dZ - difference in depth of the middle of the well screens
dWL - difference in water level elevation
VG - vertical gradient

Table 8 - Soil Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

			Analyte	Technetium-99	1,1-Dichloroethene	1,2-Dichloroethane	cis-1,2-Dichloroethene	Tetrachloroethene	trans-1,2-Dichloroethene	Trichloroethene	Vinyl chloride
			Unit	pCi/g	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Residential Use Screening Level				19							
Industrial Use Screening Level				89,400							
Location	Type	Depth	Date								
SS-1	N	0 - 1 ft	8/15/2019	0.171 #	NA	NA	NA	NA	NA	NA	NA
SS-1	N	1 - 3 ft	8/15/2019	4.39 #	NA	NA	NA	NA	NA	NA	NA
SS-1	N	3 - 5 ft	8/15/2019	0 ##	NA	NA	NA	NA	NA	NA	NA
SS-1	N	5 - 7 ft	8/15/2019	0 ##	NA	NA	NA	NA	NA	NA	NA
SS-2	N	0 - 1 ft	8/14/2019	0 ##	NA	NA	NA	NA	NA	NA	NA
SS-2	N	1 - 3 ft	8/14/2019	9.60 #	NA	NA	NA	NA	NA	NA	NA
SS-2	N	3 - 5 ft	8/14/2019	4.78 #	NA	NA	NA	NA	NA	NA	NA
SS-2	N	5 - 7 ft	8/14/2019	4.02 #	NA	NA	NA	NA	NA	NA	NA
SS-3	N	0 - 1 ft	8/14/2019	12.9 #	NA	NA	NA	NA	NA	NA	NA
SS-3	N	1 - 3 ft	8/14/2019	4.83 #	NA	NA	NA	NA	NA	NA	NA
SS-3	N	3 - 5 ft	8/14/2019	0 ##	NA	NA	NA	NA	NA	NA	NA
SS-3	N	5 - 7 ft	8/14/2019	3.12 #	NA	NA	NA	NA	NA	NA	NA
SS-3	FD	5 - 7 ft	8/14/2019	1.35 #	NA	NA	NA	NA	NA	NA	NA
SS-4	N	0 - 1 ft	8/14/2019	2.35 #	NA	NA	NA	NA	NA	NA	NA
SS-4	N	1 - 3 ft	8/14/2019	16.1 #	NA	NA	NA	NA	NA	NA	NA
SS-4	N	3 - 5 ft	8/14/2019	7.72 #	NA	NA	NA	NA	NA	NA	NA
SS-4	N	5 - 7 ft	8/14/2019	0 ##	NA	NA	NA	NA	NA	NA	NA
SS-5	N	0 - 1 ft	8/14/2019	0.637 #	NA	NA	NA	NA	NA	NA	NA
SS-5	N	1 - 3 ft	8/14/2019	0 ##	NA	NA	NA	NA	NA	NA	NA
SS-5	N	3 - 5 ft	8/14/2019	4.46 #	NA	NA	NA	NA	NA	NA	NA
SS-5	N	5 - 7 ft	8/14/2019	0.843 #	NA	NA	NA	NA	NA	NA	NA
SS-6	N	0 - 1 ft	8/14/2019	7.58 #	NA	NA	NA	NA	NA	NA	NA
SS-6	N	1 - 3 ft	8/14/2019	0 ##	NA	NA	NA	NA	NA	NA	NA
SS-6	N	3 - 5 ft	8/14/2019	0 ##	NA	NA	NA	NA	NA	NA	NA
SS-6	N	5 - 7 ft	8/14/2019	0 ##	NA	NA	NA	NA	NA	NA	NA
SS-7	N	0 - 1 ft	8/13/2019	8.60 #	NA	NA	NA	NA	NA	NA	NA
SS-7	N	1 - 3 ft	8/13/2019	0 ##	NA	NA	NA	NA	NA	NA	NA
SS-7	N	3 - 5 ft	8/13/2019	0 ##	NA	NA	NA	NA	NA	NA	NA
SS-7	N	5 - 7 ft	8/13/2019	0 ##	NA	NA	NA	NA	NA	NA	NA
SS-8	N	0 - 1 ft	8/13/2019	0 ##	NA	NA	NA	NA	NA	NA	NA
SS-8	N	1 - 3 ft	8/13/2019	5.52 #	NA	NA	NA	NA	NA	NA	NA
SS-8	N	3 - 5 ft	8/13/2019	1.09 #	NA	NA	NA	NA	NA	NA	NA
SS-8	N	5 - 7 ft	8/13/2019	0 ##	NA	NA	NA	NA	NA	NA	NA
SS-9	N	0 - 1 ft	8/13/2019	0 ##	NA	NA	NA	NA	NA	NA	NA
SS-9	N	1 - 3 ft	8/13/2019	0 ##	NA	NA	NA	NA	NA	NA	NA
SS-9	N	3 - 5 ft	8/13/2019	0.572 #	NA	NA	NA	NA	NA	NA	NA
SS-9	N	5 - 7 ft	8/13/2019	18.1 #	NA	NA	NA	NA	NA	NA	NA
SS-10	N	0 - 1 ft	8/13/2019	0 ##	NA	NA	NA	NA	NA	NA	NA
SS-10	N	1 - 3 ft	8/13/2019	0 ##	NA	NA	NA	NA	NA	NA	NA
SS-10	N	3 - 5 ft	8/13/2019	0 ##	NA	NA	NA	NA	NA	NA	NA
SS-10	N	5 - 7 ft	8/13/2019	0 ##	NA	NA	NA	NA	NA	NA	NA
SS-11	N	0 - 1 ft	8/12/2019	9.64 #	NA	NA	NA	NA	NA	NA	NA
SS-11	N	1 - 3 ft	8/12/2019	0 ##	NA	NA	NA	NA	NA	NA	NA
SS-11	N	3 - 5 ft	8/12/2019	14.3 #	NA	NA	NA	NA	NA	NA	NA
SS-11	N	5 - 7 ft	8/12/2019	17.3 #	NA	NA	NA	NA	NA	NA	NA
SS-12	N	0 - 1 ft	8/12/2019	8.88 #	NA	NA	NA	NA	NA	NA	NA
SS-12	N	1 - 3 ft	8/12/2019	8.02 #	NA	NA	NA	NA	NA	NA	NA
SS-12	N	3 - 5 ft	8/12/2019	10.0 #	NA	NA	NA	NA	NA	NA	NA
SS-12	N	5 - 7 ft	8/12/2019	6.76 #	NA	NA	NA	NA	NA	NA	NA
SS-13	N	0 - 1 ft	8/12/2019	5.42 #	NA	NA	NA	NA	NA	NA	NA
SS-13	N	1 - 3 ft	8/12/2019	11.0 #	NA	NA	NA	NA	NA	NA	NA
SS-13	N	3 - 5 ft	8/12/2019	2.05 #	NA	NA	NA	NA	NA	NA	NA
SS-13	N	5 - 7 ft	8/12/2019	3.31 #	NA	NA	NA	NA	NA	NA	NA
SS-13	FD	5 - 7 ft	8/12/2019	21.6 #	NA	NA	NA	NA	NA	NA	NA

Table 8 - Soil Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

			Analyte	Technetium-99	1,1-Dichloroethene	1,2-Dichloroethane	cis-1,2-Dichloroethene	Tetrachloroethene	trans-1,2-Dichloroethene	Trichloroethene	Vinyl chloride
			Unit	pCi/g	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
			Residential Use Screening Level	19							
			Industrial Use Screening Level	89,400							
Location	Type	Depth	Date								
SS-14	N	0 - 1 ft	8/13/2019	4.80 #	NA	NA	NA	NA	NA	NA	NA
SS-14	N	1 - 3 ft	8/13/2019	1.57 #	NA	NA	NA	NA	NA	NA	NA
SS-14	N	3 - 5 ft	8/13/2019	4.99 #	NA	NA	NA	NA	NA	NA	NA
SS-14	N	5 - 7 ft	8/13/2019	0 ##	NA	NA	NA	NA	NA	NA	NA
SS-14	FD	5 - 7 ft	8/13/2019	9.42 #	NA	NA	NA	NA	NA	NA	NA
SS-17	N	3 - 4 ft	5/29/2021	NA	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
SS-17	N	7 - 8 ft	5/29/2021	NA	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6
SS-18	N	2 - 3 ft	5/29/2021	NA	< 4.4	< 4.4	< 4.4	< 4.4	< 4.4	< 4.4	< 4.4
SS-18	N	7 - 8 ft	5/29/2021	NA	< 5.1	< 5.1	< 5.1	< 5.1	< 5.1	< 5.1	< 5.1
SS-19	N	6 - 7 ft	5/29/2021	NA	< 4.4	< 4.4	< 4.4	< 4.4	< 4.4	< 4.4	< 4.4
SS-19	N	8 - 8 ft	5/29/2021	NA	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9
SS-20	N	1 - 2 ft	5/29/2021	NA	< 4.3	< 4.3	< 4.3	21	< 4.3	17	< 4.3
SS-20	N	7 - 8 ft	5/29/2021	NA	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
SS-21	N	1 - 2 ft	5/29/2021	NA	< 4.6	< 4.6	< 4.6	5.8	< 4.6	< 4.6	< 4.6
SS-21	N	7 - 8 ft	5/29/2021	NA	< 5.1	< 5.1	< 5.1	< 5.1	< 5.1	< 5.1	< 5.1
SS-22	N	6 - 7 ft	5/29/2021	NA	< 5.2	< 5.2	< 5.2	< 5.2	< 5.2	< 5.2	< 5.2
SS-22	N	7 - 8 ft	5/29/2021	NA	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
SS-22	FD	7 - 8 ft	5/29/2021	NA	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
SS-23	N	6 - 7 ft	5/29/2021	NA	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9
SS-23	N	7 - 8 ft	5/29/2021	NA	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
SS-24	N	3 - 4 ft	5/29/2021	NA	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6
SS-24	N	7 - 8 ft	5/29/2021	NA	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
SS-25	N	5 - 6 ft	5/29/2021	NA	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
SS-25	N	7 - 8 ft	5/29/2021	NA	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
SS-26	N	3 - 4 ft	5/29/2021	NA	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
SS-26	N	7 - 8 ft	5/29/2021	NA	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8	< 4.8
SS-27	N	1 - 2 ft	5/29/2021	NA	< 4.3	< 4.3	11	< 4.3	< 4.3	8.1	< 4.3
SS-27	N	7 - 8 ft	5/29/2021	NA	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6	< 4.6
SS-27	FD	7 - 8 ft	5/29/2021	NA	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
SS-28	N	1 - 2 ft	5/29/2021	NA	< 4.7	< 4.7	< 4.7	9.3	< 4.7	12	< 4.7
SS-28	N	7 - 8 ft	5/29/2021	NA	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9
SS-29	N	4 - 5 ft	5/29/2021	NA	< 4.4	< 4.4	< 4.4	< 4.4	< 4.4	< 4.4	< 4.4
SS-29	N	7 - 8 ft	5/29/2021	NA	< 4.4	< 4.4	< 4.4	< 4.4	< 4.4	< 4.4	< 4.4

Notes:
pCi/g - picocuires per gram
ug/kg - micrograms per kilogram
Detected concentrations in shaded cells exceed their RUSL
N - normal sample
FD - field duplicate sample
Bold concentrations indicate detections
NA - not analyzed
- value is below minimum detectable activity
- value shown as zero reported by analytical laboratory as a negative number

Table 9 - Vertical Groundwater Profiling Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

				Analyte	Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	Vinyl chloride	Nitrate as N	Fluoride	Technetium-99
				MCL	5	5	70	2	10	4	900
				Units	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	pCi/L
Well	Depth	Date	Type	Total or Dissolved							
L-1	10 - 15 ft	8/14/2019	N	T	< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA
L-1	28 - 33 ft	8/14/2019	N	T	< 1.0	< 1.0	3.8	2.7	NA	NA	NA
L-1	48 - 53 ft	8/14/2019	N	T	< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA
L-1	63 - 68 ft	8/15/2019	N	T	< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA
L-1	78 - 83 ft	8/15/2019	N	T	< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA
L-1	78 - 83 ft	8/15/2019	FD	T	< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA
L-8	8 - 13 ft	8/20/2019	N	T	NA*	NA*	NA*	NA*	0.081	0.26	NA
L-8	17 - 22 ft	8/21/2019	N	T	< 1.0	< 1.0	< 1.0	< 1.0	< 0.020	< 0.10	NA
L-8	25 - 30 ft	8/21/2019	N	T	2.2	2.1	< 1.0	< 1.0	< 0.020	< 0.10	NA
L-8	41 - 46 ft	8/21/2019	N	T	< 1.0	< 1.0	< 1.0	< 1.0	< 0.020	0.14	NA
L-9	10 - 15 ft	8/21/2019	N	T	6.5	3.0	< 1.0	< 1.0	5.4	0.48	NA
L-9	23 - 28 ft	8/21/2019	N	T	< 1.0	< 1.0	< 1.0	< 1.0	< 0.020	< 0.10	NA
L-9	23 - 28 ft	8/21/2019	FD	T	< 1.0	< 1.0	< 1.0	< 1.0	< 0.020	< 0.10	NA
L-9	32 - 37 ft	8/21/2019	N	T	< 1.0	< 1.0	< 1.0	< 1.0	< 0.020	< 0.10	NA
L-10	9 - 14 ft	8/19/2019	N	T	< 1.0	< 1.0	< 1.0	< 1.0	1.1	< 0.10	NA
L-10	18 - 23 ft	8/20/2019	N	T	< 1.0	< 1.0	< 1.0	< 1.0	0.18	< 0.10	NA
L-10	28 - 33 ft	8/20/2019	N	T	< 1.0	< 1.0	< 1.0	< 1.0	0.19	< 0.10	NA
L-17	15 - 20 ft	8/16/2019	N	T	< 1.0	< 1.0	6.2	< 1.0	NA	NA	NA
L-17	25 - 30 ft	8/16/2019	N	T	< 1.0	< 1.0	5.4	< 1.0	NA	NA	NA
L-18	15 - 20 ft	8/19/2019	N	T	< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA
L-18	24 - 29 ft	8/19/2019	N	T	< 1.0	< 1.0	1.2	1.1	NA	NA	NA
L-19	7 - 12 ft	8/20/2019	N	T	< 1.0	< 1.0	1.0	< 1.0	0.092	7.8	NA
L-19	21 - 26 ft	8/20/2019	N	T	< 1.0	< 1.0	< 1.0	< 1.0	0.10	0.16	NA
L-20	12 - 16 ft	11/23/2020	N	T	< 1	< 1	< 1	< 1	11	NA	3.89 #
L-20	12 - 16 ft	11/23/2020	N	D	NA	NA	NA	NA	NA	NA	1.53 #
L-20	24 - 28 ft	11/23/2020	N	T	< 1	< 1	< 1	< 1	2.4	NA	1.30 #
L-20	24 - 28 ft	11/23/2020	N	D	NA	NA	NA	NA	NA	NA	1.33 #
L-21	28 - 32 ft	11/18/2020	N	T	4.7	< 1	< 1	< 1	NA	NA	NA
L-22	8 - 12 ft	11/19/2020	N	T	< 1	< 1	< 1	< 1	NA	NA	NA
L-22	8 - 12 ft	11/19/2020	FD	T	< 1	< 1	< 1	< 1	NA	NA	NA
L-22	26 - 30 ft	11/18/2020	N	T	150	96	< 1	< 1	NA	NA	NA
L-23	12 - 16 ft	11/20/2020	N	T	< 1	< 1	< 1	< 1	NA	NA	NA
L-23	20 - 24 ft	11/19/2020	N	T	89	2.8	< 1	< 1	NA	NA	NA
L-23	31 - 35 ft	11/19/2020	N	T	360	83	4.5	< 1	NA	NA	NA
L-24	11 - 15 ft	11/20/2020	N	T	< 1	< 1	< 1	< 1	NA	NA	NA
L-24	25 - 29 ft	11/23/2020	N	T	< 1	< 1	< 1	< 1	NA	NA	NA
L-25	21.5 - 25.5 ft	12/8/2020	N	T	2.2	< 1	< 1	< 1	NA	NA	NA
L-25	38 - 42 ft	12/9/2020	N	T	48	2	< 1	< 1	NA	NA	NA
L-26	25 - 29 ft	12/9/2020	N	T	31	2	< 1	< 1	NA	NA	NA
L-26	39 - 43 ft	12/9/2020	N	T	< 1	< 1	< 1	< 1	NA	NA	NA
L-27	23 - 27 ft	12/29/2020	N	T	24	3.8	< 1	< 1	NA	NA	NA
L-27	30 - 34 ft	12/29/2020	N	T	27	4.1	< 1	< 1	NA	NA	NA
L-27	39 - 43 ft	12/30/2020	N	T	13	< 1	< 1	< 1	NA	NA	NA
L-28	18 - 22 ft	12/30/2020	N	T	22	< 1	< 1	< 1	NA	NA	NA
L-28	27 - 31 ft	12/30/2020	N	T	10	< 1	< 1	< 1	NA	NA	NA
L-28	36 - 40 ft	12/30/2020	N	T	22	< 1	< 1	< 1	NA	NA	NA
L-29	13 - 17 ft	12/4/2020	N	T	< 1.0	< 1.0	1.0	5.8	NA	NA	NA
L-29	26 - 30 ft	12/4/2020	N	T	< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA
L-30	12 - 16 ft	12/8/2020	N	T	< 1	< 1	< 1	< 1	NA	NA	NA
L-30	22 - 26 ft	12/8/2020	N	T	< 1	< 1	5	< 1	NA	NA	NA
L-30	29 - 34 ft	12/9/2020	N	T	< 1	< 1	3.5	1.8	NA	NA	NA
L-31	13 - 17 ft	12/3/2020	N	T	< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA
L-31	22 - 26 ft	12/3/2020	N	T	< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA
L-31	30 - 34 ft	12/4/2020	N	T	< 1.0	< 1.0	4.7	1.7	NA	NA	NA
L-32	8 - 12 ft	12/2/2020	N	T	< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA

Table 9 - Vertical Groundwater Profiling Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

					Analyte	Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	Vinyl chloride	Nitrate as N	Fluoride	Technetium-99
					MCL	5	5	70	2	10	4	900
					Units	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	pCi/L
L-32	19 - 23 ft	12/2/2020	N	T		< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA
L-32	31 - 35 ft	12/3/2020	N	T		< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA
L-33	13 - 17 ft	12/1/2020	N	T		< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA
L-33	24 - 28 ft	12/2/2020	N	T		< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA
L-34	14 - 18 ft	12/4/2020	N	T		< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA
L-34	26 - 30 ft	12/4/2020	N	T		< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA
L-35	11 - 15 ft	12/4/2020	N	T		< 1.0	< 1.0	< 1.0	< 1.0	0.12	0.039 J	0.879 #
L-35	11 - 15 ft	12/4/2020	N	D		NA	NA	NA	NA	NA	NA	0 ##
L-35	21 - 25 ft	12/4/2020	N	T		< 1.0	< 1.0	3.1	< 1.0	0.15	0.02 J	0 ##
L-35	21 - 25 ft	12/4/2020	N	D		NA	NA	NA	NA	NA	NA	0 ##
L-35	30 - 34 ft	12/4/2020	N	T		< 1.0	< 1.0	1.6	< 1.0	0.08	0.036 J	0 ##
L-35	30 - 34 ft	12/4/2020	N	D		NA	NA	NA	NA	NA	NA	0.404 #
L-36	18 - 22 ft	12/3/2020	N	T		< 1.0	< 1.0	< 1.0	< 1.0	0.025	0.1	0.285 #
L-36	18 - 22 ft	12/3/2020	N	D		NA	NA	NA	NA	NA	NA	0 ##
L-36	27.5 - 31.5 ft	12/3/2020	N	T		< 1.0	< 1.0	< 1.0	3.6	0.12	0.052 J	0.145 #
L-36	27.5 - 31.5 ft	12/3/2020	N	D		NA	NA	NA	NA	NA	NA	0 ##
L-36	27.5 - 31.5 ft	12/3/2020	FD	T		< 1.0	< 1.0	< 1.0	3.0	0.12	0.055 J	0.981 #
L-36	27.5 - 31.5 ft	12/3/2020	FD	D		NA	NA	NA	NA	NA	NA	0 ##
L-36	37 - 41 ft	12/3/2020	N	T		< 1.0	< 1.0	< 1.0	2.1	0.14	0.072 J	0.511 #
L-36	37 - 41 ft	12/3/2020	N	D		NA	NA	NA	NA	NA	NA	0.201 #
L-37	17 - 21 ft	12/8/2020	N	T		< 1	< 1	< 1	< 1	0.13	0.078 J	0 ##
L-37	17 - 21 ft	12/8/2020	N	D		NA	NA	NA	NA	NA	NA	0.924 #
L-37	26 - 30 ft	12/8/2020	N	T		< 1	< 1	< 1	2.3	0.13	0.108	0 ##
L-37	26 - 30 ft	12/8/2020	N	D		NA	NA	NA	NA	NA	NA	0 ##
L-38	17 - 21 ft	12/8/2020	N	T		< 1	< 1	< 1	< 1	0.13	0.133	0 ##
L-38	17 - 21 ft	12/8/2020	N	D		NA	NA	NA	NA	NA	NA	0.00375 #
L-38	26 - 30 ft	12/8/2020	N	T		34	< 1	< 1	< 1	0.14	0.155	0.165 #
L-38	26 - 30 ft	12/8/2020	N	D		NA	NA	NA	NA	NA	NA	0.286 #
L-39	31 - 35 ft	11/16/2020	N	T		10	5.9	1.8	< 1	NA	NA	10.9
L-39	31 - 35 ft	11/16/2020	N	D		NA	NA	NA	NA	NA	NA	9.98
L-40	33 - 37 ft	11/17/2020	N	T		< 1	1.1	< 1	< 1	NA	NA	0 ##
L-40	33 - 37 ft	11/17/2020	N	D		NA	NA	NA	NA	NA	NA	0 ##
L-41	31 - 35 ft	12/4/2020	N	D		NA	NA	NA	NA	NA	NA	0 ##
L-41	31 - 35 ft	12/7/2020	N	T		< 1	2.1	< 1	< 1	NA	NA	0 ##
L-42	24 - 28 ft	11/24/2020	N	T		NA	NA	NA	NA	NA	0.094 J	1.96 #
L-42	24 - 28 ft	11/24/2020	N	D		NA	NA	NA	NA	NA	NA	0.343 #
L-42	36 - 40 ft	11/24/2020	N	T		NA	NA	NA	NA	NA	0.373	3.38 #
L-42	36 - 40 ft	11/24/2020	N	D		NA	NA	NA	NA	NA	NA	4.55 #
L-43	29.5 - 33.5 ft	12/9/2020	N	T		NA	NA	NA	NA	NA	NA	39.4
L-43	29.5 - 33.5 ft	12/9/2020	N	D		NA	NA	NA	NA	NA	NA	31.1
L-44	27 - 31 ft	12/7/2020	N	T		< 1	< 1	< 1	< 1	NA	NA	NA
L-45	11 - 15 ft	5/17/2021	N	T		< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA
L-45	20 - 24 ft	5/17/2021	N	T		3.2	< 1.0	< 1.0	< 1.0	NA	NA	NA
L-45	29 - 33 ft	12/28/2020	N	T		2.6	11	< 1	< 1	NA	NA	NA
L-46	14 - 18 ft	5/14/2021	N	T		52	< 1.0	< 1.0	< 1.0	NA	NA	NA
L-46	22 - 26 ft	5/17/2021	N	T		66	5.0	< 1.0	< 1.0	NA	NA	NA
L-46	31 - 35 ft	12/28/2020	N	T		26	8.6	< 1	< 1	NA	NA	NA
L-46	31 - 35 ft	12/28/2020	FD	T		27	8.9	< 1	< 1	NA	NA	NA
L-47	16 - 20 ft	5/13/2021	N	T		< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA
L-47	25 - 29 ft	12/30/2020	N	T		< 1	< 1	< 1	< 1	NA	NA	NA
L-48	16 - 20 ft	3/17/2021	N	T		< 1	< 1	< 1	< 1	NA	NA	NA
L-48	30 - 34 ft	3/17/2021	N	T		< 1	< 1	< 1	< 1	NA	NA	NA
L-48	40.5 - 44.5 ft	3/17/2021	N	T		< 1	< 1	< 1	< 1	NA	NA	NA
L-49	15 - 19 ft	3/11/2021	N	T		79	1.3	< 1	< 1	NA	NA	NA
L-49	29 - 33 ft	3/11/2021	N	T		210	8.8	< 5	< 5	NA	NA	NA
L-49	29 - 33 ft	3/11/2021	FD	T		230	8	< 5	< 5	NA	NA	NA

Table 9 - Vertical Groundwater Profiling Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

					Analyte	Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	Vinyl chloride	Nitrate as N	Fluoride	Technetium-99
					MCL	5	5	70	2	10	4	900
					Units	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	pCi/L
L-49	37.5 - 41.5 ft	3/11/2021	N	T		< 1	< 1	< 1	< 1	NA	NA	NA
L-50	20 - 24 ft	2/19/2021	N	T		22	< 1	< 1	< 1	NA	NA	NA
L-50	46 - 50 ft	2/19/2021	N	T		9	< 1	< 1	< 1	NA	NA	NA
L-50	46 - 50 ft	2/19/2021	FD	T		8.7	< 1	< 1	< 1	NA	NA	NA
L-51	21 - 25 ft	2/22/2021	N	T		87	2.2	< 1	< 1	NA	NA	NA
L-51	41 - 45 ft	2/22/2021	N	T		110	1.8	< 1	< 1	NA	NA	NA
L-52	18 - 22 ft	3/12/2021	N	T		< 1	< 1	< 1	< 1	NA	NA	NA
L-52	30 - 34 ft	3/15/2021	N	T		< 1	< 1	< 1	< 1	NA	NA	NA
L-52	39 - 43 ft	3/16/2021	N	T		< 1	< 1	< 1	< 1	NA	NA	NA
L-53	18 - 22 ft	3/12/2021	N	T		< 1	< 1	< 1	< 1	NA	NA	NA
L-53	30 - 34 ft	3/12/2021	N	T		< 1	< 1	< 1	< 1	NA	NA	NA
L-53	44.5 - 48.5 ft	3/16/2021	N	T		< 1	< 1	< 1	< 1	NA	NA	NA
L-54	24 - 28 ft	3/16/2021	N	T		69	1.2	< 1	< 1	NA	NA	NA
L-55	18 - 22 ft	3/15/2021	N	T		< 1	< 1	< 1	< 1	NA	NA	NA
L-55	31 - 35 ft	3/15/2021	N	T		< 1	< 1	< 1	< 1	NA	NA	NA
L-55	40 - 44 ft	3/15/2021	N	T		< 1	< 1	< 1	< 1	NA	NA	NA
L-56	22 - 26 ft	2/17/2021	N	T		< 1	< 1	< 1	< 1	NA	NA	NA
L-56	33 - 37 ft	2/17/2021	N	T		< 1	< 1	< 1	< 1	NA	NA	NA
L-56	41 - 45 ft	2/17/2021	N	T		< 1	< 1	< 1	< 1	NA	NA	NA
L-57	26 - 30 ft	2/16/2021	N	T		< 1	< 1	< 1	< 1	NA	NA	NA
L-57	42 - 46 ft	2/17/2021	N	T		< 1	< 1	< 1	< 1	NA	NA	NA
L-58	23 - 27 ft	2/16/2021	N	T		< 1	< 1	< 1	< 1	NA	NA	NA
L-58	31 - 35 ft	2/16/2021	N	T		< 1	< 1	< 1	< 1	NA	NA	NA
L-58	40 - 44 ft	2/16/2021	N	T		< 1	< 1	< 1	< 1	NA	NA	NA
L-59	16 - 20 ft	5/10/2021	N	T		< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA
L-59	31 - 35 ft	5/10/2021	N	T		1.2	< 1.0	< 1.0	< 1.0	NA	NA	NA
L-59	46 - 50 ft	5/10/2021	N	T		< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA
L-60	16 - 20 ft	5/11/2021	N	T		< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA
L-60	26 - 30 ft	5/11/2021	N	T		< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA
L-60	36 - 40 ft	5/11/2021	N	T		< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA
L-61	15 - 19 ft	5/13/2021	N	T		< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA
L-61	25 - 29 ft	5/13/2021	N	T		< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA
L-61	25 - 29 ft	5/13/2021	FD	T		< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA
L-61	35 - 39 ft	5/13/2021	N	T		< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA
L-62	26 - 30 ft	5/14/2021	N	T		< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA

Notes:
MCL - Maximum Contaminant Level
Concentrations in orange shaded cells exceed their MCL
Bold concentrations indicate detections
J - Result below reporting limit
NA - not analyzed
NA* - mistakenly not analyzed by the analytical laboratory
- value is below minimum detectable concentration
- value shown as zero reported by analytical laboratory as a negative number
pCi/L - picocuries per liter
ug/L - micrograms per liter
mg/L - milligrams per liter
N - Normal sample
FD - Field duplicate sample

Table 10 - Groundwater Analytical Results Summary
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

		Analyte	Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	Vinyl chloride	Nitrate as N	Fluoride	Total Uranium Isotopes	Technetium-99
		MCL	5	5	70	2	10	4	30	900
		Units	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	ug/L	pCi/L
Well	Date	Type								
W-RW1	10/14/2021	N	**2.3**	< 1.0	< 1.0	< 1.0	**2.0**	**0.037 J**	< 0.200	0.0163 #
W-RW2	10/21/2021	N	**150**	**9.5**	< 1.0	< 1.0	**16**	**0.125**	**0.0739 J**	**6.40**
W-3A	10/25/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	< 0.020	**0.015 J**	**0.0700 J**	0 ##
W-4R	10/25/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	< 0.020	**0.154**	< 0.200	0.442 #
W-6	10/8/2021	N	**18**	**2.8**	**3.0**	< 1.0	**210**	**0.233**	**0.321**	**2500**
W-7A	10/5/2021	N	**1.3**	< 1.0	< 1.0	< 1.0	**320**	**7.18**	**0.558**	**193**
W-10	10/5/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**22**	**4.09**	**0.138 J**	**98.2**
W-11	10/5/2021	N	**15**	**2.4**	**2.1**	< 1.0	**23**	**0.037 J**	**0.0947 J**	**1230**
W-13R	10/5/2021	N	**27**	**2.5**	< 1.0	< 1.0	**18**	**10.8**	**0.158 J**	**126**
W-14	10/18/2021	N	**2.8**	**1.1**	< 1.0	< 1.0	**0.39**	**0.067 J**	**0.221**	0.299 #
W-15	10/19/2021	N	**10**	**1.9**	**1.1**	< 1.0	**39**	**2.12**	< 0.200	**221**
W-16	10/19/2021	N	**3.1**	**1.1**	< 1.0	< 1.0	**2.0**	**7.35**	**0.0770 J**	**7.37**
W-17	10/12/2021	N	**6.1**	**1.3**	**1.2**	< 1.0	**17**	**1.9**	**0.122 J**	**719**
W-18R	10/8/2021	N	**1.9**	< 1.0	< 1.0	< 1.0	**550**	**6.76**	**2.72**	**143**
W-19B	10/20/2021	N	**89**	**1.6**	< 1.0	< 1.0	**3.7**	**0.015 J**	< 0.200	1.70 #
W-20	10/26/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**0.042**	**0.042 J**	< 0.200	0 ##
W-22	10/8/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**72**	**5.61**	**0.807**	**31.1**
W-23R	10/18/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**0.67**	**0.029 J**	< 0.200	0 ##
W-24	10/21/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	< 0.020	**0.025 J**	< 0.200	0 ##
W-25	10/26/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**0.10**	**0.091 J**	< 0.200	0 ##
W-26	10/19/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**2.4**	**1.44**	< 0.200	**5.60**
W-27	10/22/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	< 0.020	**2.52**	**0.0985 J**	3.49 #
W-28	10/6/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**5.9**	**8.11**	**2.08**	2.14 #
W-29	10/8/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**10**	**4.57**	**1.05**	**8.95**
W-30	10/8/2021	N	**1.8**	**1.5**	< 1.0	< 1.0	**57**	**14.3**	**9.03**	**48.9**
W-32	10/5/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**94**	**5.01**	**0.153 J**	**231**
W-33	10/14/2021	N	**340**	**36**	**5.0**	< 1.0	**18**	**0.084 J**	< 0.200	3.64 #
W-35	10/14/2021	N	**1.9**	< 1.0	< 1.0	< 1.0	**4.2**	**0.026 J**	< 0.200	0.125 #
W-36	10/13/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**0.35**	**0.014 J**	< 0.200	0 ##
W-37	10/11/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**3.3**	**0.038 J**	< 0.200	0.0860 #
W-38	10/7/2021	N	< 1.0	**4.0**	< 1.0	< 1.0	**2.6**	**0.501**	**0.120 J**	1.04 #
W-39	10/18/2021	N	**250**	**3.7**	**8.5**	< 1.0	**57**	**0.027 J**	< 0.200	**10.4**
W-40	10/12/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**4.1**	**0.141**	< 0.200	0.0523 #
W-41R	10/21/2021	N	**160**	**8.5**	**4.2**	< 1.0	**46**	**0.017 J**	< 0.200	**13.5**
W-42	10/20/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**1.6**	**1.27**	< 0.200	2.31 #
W-43	10/18/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**7.4**	**0.023 J**	< 0.200	**39.9**
W-44	10/18/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**1.7**	**0.015 J**	< 0.200	0.648 #
W-45	10/14/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**0.24**	**0.386**	**0.473**	1.47 #
W-46	10/21/2021	N	**2.9**	< 1.0	< 1.0	< 1.0	**7.7**	**0.03 J**	< 0.200	**51.3**
W-47	10/19/2021	N	**1.3**	< 1.0	< 1.0	< 1.0	**33**	**3.97**	**0.0704 J**	**37.9**
W-48	10/19/2021	N	**16**	**4.8**	**2.0**	< 1.0	**5.5**	**0.31**	< 0.200	**14.9**
W-49	10/20/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	< 0.020	**0.01 J**	**0.0826 J**	0 ##
W-50	10/12/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	< 0.020	**0.016 J**	**0.180 J**	0.173 #
W-51	10/13/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**0.11**	**0.224**	< 0.200	0 ##
W-52	10/13/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**0.68**	**1.54**	**0.0922 J**	0 ##
W-53	10/12/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**0.33**	**0.063 J**	< 0.200	0 ##
W-54	10/12/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**2.0**	**0.137**	< 0.200	0 ##
W-55	10/11/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**1.8**	**0.048 J**	**121**	0.449 #
W-56	10/11/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**3.0**	**0.297**	**143**	0.222 #
W-57	10/7/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**2.5**	**0.107**	**0.0988 J**	**15.0**
W-58	10/11/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**2.2**	**0.083 J**	**0.998**	0.985 #
W-59	10/11/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**20**	**2.9**	**9.95**	**7.63**
W-60	10/15/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**0.055**	**0.027 J**	< 0.200	1.43 #
W-61	10/15/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**3.3**	**0.024 J**	< 0.200	0 ##
W-62	10/19/2021	N	**28**	< 1.0	< 1.0	< 1.0	**4.1**	**0.019 J**	< 0.200	0 ##

Table 10 - Groundwater Analytical Results Summary
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

		Analyte	Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	Vinyl chloride	Nitrate as N	Fluoride	Total Uranium Isotopes	Technetium-99
		MCL	5	5	70	2	10	4	30	900
		Units	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	ug/L	pCi/L
Well	Date	Type								
W-63	10/19/2021	N	**1.8**	**1.4**	< 1.0	< 1.0	**4.1**	**0.071 J**	**1.55**	**13.6**
W-64	10/19/2021	N	**1.1**	< 1.0	< 1.0	< 1.0	**35**	**3.64**	**0.0877 J**	**72.9**
W-65	10/18/2021	N	**340**	**41**	**13**	< 5.0	**1.6**	**0.138**	< 0.200	0.363 #
W-66	10/18/2021	N	**270**	**4.9**	**8.6**	< 1.0	**1.3**	**0.031 J**	< 0.200	1.10 #
W-66	10/18/2021	FD	**270**	**4.7**	**8.0**	< 1.0	**1.3**	**0.033 J**	< 0.200	0 ##
W-67	10/18/2021	N	**41**	**7.4**	**1.3**	< 1.0	**14**	**0.023 J**	< 0.200	**69.8**
W-68	10/19/2021	N	**55**	**1.0**	< 1.0	< 1.0	**2.8**	**0.027 J**	< 0.200	0.0281 #
W-69	10/21/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**0.35**	**0.075 J**	< 0.200	0 ##
W-70	10/21/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**1.6**	**0.017 J**	< 0.200	0.570 #
W-71	10/21/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	< 0.020	**0.031 J**	**0.0939 J**	0.0199 #
W-71	10/21/2021	FD	< 1.0	< 1.0	< 1.0	< 1.0	< 0.020	**0.086 J**	**0.0898 J**	0.395 #
W-72	10/12/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**2.4**	**0.406**	**0.266**	0 ##
W-73	10/8/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**1.3**	**0.056 J**	**0.133 J**	2.26 #
W-74	10/12/2021	N	**11**	**3.2**	**1.3**	< 1.0	**5.5**	**0.017 J**	< 0.200	0.0903 #
W-74	10/12/2021	FD	**12**	**3.1**	**1.3**	< 1.0	**5.5**	**0.021 J**	< 0.200	0 ##
W-75	10/12/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**0.21**	**0.116**	< 0.200	0.236 #
W-76	10/7/2021	N	< 1.0	**26**	< 1.0	< 1.0	**13**	**2.66**	**3.23**	0.0261 #
W-77	10/6/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**4.9**	**14.8**	**133**	2.50 #
W-78	10/6/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**3.8**	**13.6**	**0.186 J**	0 ##
W-79	10/6/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**3.9**	**0.978**	< 0.200	0 ##
W-80	10/7/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**9.2**	**0.282**	**0.106 J**	1.17 #
W-81	10/7/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**3.8**	**0.056 J**	**1.42**	0.279 #
W-81	10/7/2021	FD	< 1.0	< 1.0	< 1.0	< 1.0	**4.1**	**0.053 J**	**1.36**	1.20 #
W-82	10/7/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**1.8**	**0.064 J**	< 0.200	1.72 #
W-83	10/7/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**0.85**	**0.115**	< 0.200	1.28 #
W-84	10/7/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**0.091**	**0.092 J**	< 0.200	1.48 #
W-85	10/22/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	< 0.020	**0.152**	**0.0781 J**	0 ##
W-86	10/22/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	< 0.020	**0.377**	< 0.200	0 ##
W-87	10/13/2021	N	**34**	**6.6**	< 1.0	< 1.0	**0.19**	**0.117**	**0.445**	1.05 #
W-88	10/21/2021	N	**2.4**	< 1.0	< 1.0	< 1.0	**3.5**	**0.034 J**	< 0.200	1.74 #
W-89	10/21/2021	N	**1.2**	< 1.0	< 1.0	< 1.0	**2.2**	**0.067 J**	< 0.200	0.544 #
W-90	10/20/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**2.8**	**0.013 J**	< 0.200	0.185 #
W-91	10/20/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**1.2**	**0.014 J**	< 0.200	0.352 #
W-92	10/22/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	< 0.020	**0.12**	< 0.200	2.76 #
W-93	10/6/2021	N	**32**	**4.0**	< 1.0	< 1.0	**4.9**	**0.036 J**	< 0.200	0 ##
W-94	10/26/2021	N	< 1.0	< 1.0	**5.8**	< 1.0	**0.089**	**0.049 J**	< 0.200	0 ##
W-95	10/26/2021	N	< 1.0	< 1.0	**2.4**	**4.2**	**0.076**	**0.233**	< 0.200	0 ##
W-96	10/25/2021	N	**1.3**	**2.0**	< 1.0	< 1.0	< 0.020	**0.092 J**	< 0.200	0 ##
W-97	10/25/2021	N	**5.6**	**1.7**	< 1.0	< 1.0	**4.5**	**0.481**	< 0.200	**14.7**
W-97	10/25/2021	FD	**5.9**	**1.7**	< 1.0	< 1.0	**4.2**	**0.451**	< 0.200	**15.9**
W-98	10/19/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**11**	**0.019 J**	< 0.200	**6.30**
W-99	10/15/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**7.8**	**2.96**	**0.243**	**57.7**
W-100	10/15/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**7.6**	**1.91**	**0.180 J**	**18.0**
W-102	10/8/2021	N	**48**	**6.4**	**5.1**	< 1.0	**95**	**3.74**	**1.81**	**119**
W-103	10/18/2021	N	**24**	**5.2**	< 1.0	< 1.0	**10**	**0.032 J**	< 0.200	**40.2**
W-104	10/25/2021	N	**3.1**	**1.9**	< 1.0	< 1.0	**6.4**	**0.064 J**	< 0.200	1.71 #
W-105	10/25/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**0.089**	**0.376**	< 0.200	0.544 #
W-106	10/18/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**0.084**	**0.154**	< 0.200	2.54 #
W-107	10/26/2021	N	< 1.0	< 1.0	< 1.0	**3.7**	**0.089**	**0.082 J**	< 0.200	0 ##
W-108	10/25/2021	N	< 1.0	< 1.0	**1.5**	< 1.0	< 0.020	**0.098 J**	< 0.200	0 ##
W-108	10/25/2021	FD	< 1.0	< 1.0	**1.6**	**1.0**	< 0.020	**0.087 J**	< 0.200	0 ##
W-109	10/26/2021	N	< 1.0	< 1.0	**1.5**	< 1.0	< 0.020	**0.051 J**	< 0.200	0 ##
W-110	10/26/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	< 0.020	**0.032 J**	**0.0693 J**	0 ##
W-111	10/26/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	< 0.020	**0.012 J**	**0.136 J**	0 ##
W-112	10/26/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**0.077**	**0.076 J**	**0.137 J**	0 ##

Table 10 - Groundwater Analytical Results Summary
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

		Analyte	Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	Vinyl chloride	Nitrate as N	Fluoride	Total Uranium Isotopes	Technetium-99
		MCL	5	5	70	2	10	4	30	900
		Units	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	ug/L	pCi/L
Well	Date	Type								
W-113	10/15/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**2.2**	**0.181**	< 0.200	1.01 #
W-114	10/15/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**1.1**	**0.247**	< 0.200	0.900 #
W-115	10/14/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**3.4**	**0.026 J**	< 0.200	0.0562 #
W-116	10/14/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**5.9**	**0.025 J**	< 0.200	0.927 #
W-117	10/14/2021	N	**2.2**	< 1.0	< 1.0	< 1.0	**2.4**	**0.029 J**	< 0.200	0 ##
W-118	10/14/2021	N	**85**	**2.1**	< 1.0	< 1.0	**3.9**	**0.047 J**	< 0.200	1.61 #
W-119	10/18/2021	N	**74**	**2.3**	< 1.0	< 1.0	**1.5**	**0.016 J**	< 0.200	0 ##
W-120	10/15/2021	N	**340**	**17**	**1.3**	< 1.0	**4.5**	**0.083 J**	**0.623**	1.01 #
W-121	10/15/2021	N	**82**	**2.4**	< 1.0	< 1.0	**2.5**	**0.057 J**	< 0.200	1.62 #
W-122	10/13/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	< 0.020	**0.056 J**	< 0.200	0.494 #
W-123	10/5/2021	N	**23**	**7.7**	**1.9**	< 1.0	**120**	**8.13**	**1.61**	**424**
W-124	10/25/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	< 0.020	**0.056 J**	< 0.200	0 ##
W-125	10/25/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**0.073**	**0.257**	< 0.200	1.15 #
W-126	10/25/2021	N	< 1.0	< 1.0	< 1.0	< 1.0	**0.060**	**0.251**	< 0.200	0 ##

Notes:
MCL - Maximum Contaminant Level
Concentrations in orange shaded cells exceed their MCL
pCi/L - picocuries per liter
ug/L - micrograms per liter
mg/L - milligrams per liter
N - Normal sample
FD - Field duplicate sample
Bold concentrations indicate detections
J - Result below reporting limit
NA - not analyzed
- value is below minimum detectable concentration
- value shown as zero reported by analytical laboratory as a negative number

Table 11 - Private Well Groundwater Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

			Well	WSW-01	WSW-02	WSW-03	WSW-04
			Date	10/15/2019	10/22/2019	10/24/2019	10/24/2019
Group	Analyte	MCL	Units				
Radiological	Alpha particles	15**	pCi/L	< 5.00	< 5.00	3.63	7.11
Radiological	Beta particles	50**	pCi/L	< 5.00	8.80	< 5.00	< 5.00
Radiological	Technetium-99	900	pCi/L	< 50.0	< 50.0	< 50.0	< 50.0
Radiological	Uranium-233/234		pCi/L	< 0.500	< 0.500	< 0.500	< 0.500
Radiological	Uranium-235/236		pCi/L	< 0.500	< 0.500	< 0.500	< 0.500
Radiological	Uranium-238		pCi/L	< 0.500	< 0.500	0.788	0.342
Radiological	Uranium-234		ug/L	< 0.050	< 0.050	< 0.050	< 0.050
Radiological	Uranium-235		ug/L	< 0.070	< 0.070	< 0.070	< 0.070
Radiological	Uranium-238		ug/L	0.272	< 0.200	0.776	0.482
Radiological	Total Uranium Isotopes	30	ug/L	0.272	< 0.200	0.776	0.482
Chemical	Fluoride	4	mg/L	0.023	0.103	0.013	0.013
Chemical	Nitrate as N	10	mg/L	0.020	< 0.020	< 0.020	0.067
Chemical	Ammonia as N		ug/L	0.0639	0.0273	0.0655	0.0166
Metals	Aluminum		ug/L	< 200	< 200	< 200	78.3 J
Metals	Antimony	6	ug/L	< 20.0	5.89 J	< 20.0	< 20.0
Metals	Arsenic	10	ug/L	< 30.0	< 30.0	< 30.0	< 30.0
Metals	Barium	2000	ug/L	3.87 J	27.1	2.78 J	7.43
Metals	Beryllium	4	ug/L	< 5.00	1.26 J	< 5.00	< 5.00
Metals	Cadmium	5	ug/L	< 5.00	< 5.00	< 5.00	< 5.00
Metals	Calcium		ug/L	380	1990	330	288
Metals	Chromium	100	ug/L	< 10.0	< 10.0	< 10.0	< 10.0
Metals	Cobalt		ug/L	1.99 J	< 5.00	4.45 J	3.66 J
Metals	Copper	1300	ug/L	< 20.0	26.3	22.2	33.2
Metals	Iron		ug/L	< 100	7050	< 100	< 100
Metals	Lead	15	ug/L	< 20.0	3.91 J	5.63 J	5.14 J
Metals	Magnesium		ug/L	184 J	970	157 J	190 J
Metals	Manganese		ug/L	3.99 J	106	3.95 J	4.84 J
Metals	Mercury	2	ug/L	< 0.200	< 0.200	< 0.200	< 0.200
Metals	Nickel		ug/L	2.09 J	1.74 J	5.23	5.64
Metals	Potassium		ug/L	687	1020	582	879
Metals	Selenium	50	ug/L	< 30.0	< 30.0	< 30.0	< 30.0
Metals	Silver		ug/L	< 5.00	< 5.00	< 5.00	< 5.00
Metals	Sodium		ug/L	1620	5130	1740	1140
Metals	Thallium	2	ug/L	< 20.0	< 20.0	< 20.0	< 20.0
Metals	Vanadium		ug/L	< 5.00	< 5.00	< 5.00	< 5.00
Metals	Zinc		ug/L	5.83 J	13.4 J	37	116
SVOCs	1,1'-Biphenyl		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	2,4,5-Trichlorophenol		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	2,4,6-Trichlorophenol		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	2,4-Dichlorophenol		ug/L	< 8.0	< 8.0	< 8.0	< 8.0
SVOCs	2,4-Dimethylphenol		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	2,4-Dinitrophenol		ug/L	< 20	< 20	< 20	< 20
SVOCs	2,4-Dinitrotoluene		ug/L	< 8.0	< 8.0	< 8.0	< 8.0
SVOCs	2,6-Dinitrotoluene		ug/L	< 8.0	< 8.0	< 8.0	< 8.0
SVOCs	2-Chloronaphthalene		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	2-Chlorophenol		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	2-Methylnaphthalene		ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	2-Methylphenol		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	2-Nitroaniline		ug/L	< 8.0	< 8.0	< 8.0	< 8.0
SVOCs	2-Nitrophenol		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	3,3'-Dichlorobenzidine		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	3-Nitroaniline		ug/L	< 8.0	< 8.0	< 8.0	< 8.0
SVOCs	4,6-Dinitro-2-methylphenol		ug/L	< 20	< 20	< 20	< 20
SVOCs	4-Bromophenyl phenyl ether		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	4-Chloro-3-methylphenol		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	4-Chloroaniline		ug/L	< 8.0	< 8.0	< 8.0	< 8.0
SVOCs	4-Chlorophenyl phenyl ether		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	4-Methylphenol		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	4-Nitroaniline		ug/L	< 8.0	< 8.0	< 8.0	< 8.0
SVOCs	4-Nitrophenol		ug/L	< 20	< 20	< 20	< 20
SVOCs	Acenaphthene		ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Acenaphthylene		ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Acetophenone		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Anthracene		ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Atrazine	3	ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Benz(a)anthracene		ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Benzaldehyde		ug/L	< 8.0	< 8.0	< 8.0	< 8.0
SVOCs	Benzo(a)pyrene	0.2	ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Benzo(b)fluoranthene		ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Benzo(g,h,i)perylene		ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Benzo(k)fluoranthene		ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Bis(2-chloroethoxy)methane		ug/L	< 4.0	< 4.0	< 4.0	< 4.0

Table 11 - Private Well Groundwater Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

			Well	WSW-01	WSW-02	WSW-03	WSW-04
			Date	10/15/2019	10/22/2019	10/24/2019	10/24/2019
Group	Analyte	MCL	Units				
SVOCs	Bis(2-chloroethyl)ether		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Bis(2-chloroisopropyl)ether		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Bis(2-ethylhexyl)phthalate	6	ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Butyl benzyl phthalate		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Caprolactam		ug/L	< 8.0	< 8.0	< 8.0	< 8.0
SVOCs	Carbazole		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Chrysene		ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Di-n-butyl phthalate		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Di-n-octyl phthalate		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Dibenz(a,h)anthracene		ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Dibenzofuran		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Diethyl phthalate		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Dimethyl phthalate		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Fluoranthene		ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Fluorene		ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Hexachlorobenzene	1	ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Hexachlorobutadiene		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Hexachlorocyclopentadiene	50	ug/L	< 20	< 20	< 20	< 20
SVOCs	Hexachloroethane		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Indeno(1,2,3-cd)pyrene		ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Isophorone		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	N-Nitrosodi-n-propylamine		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	N-Nitrosodiphenylamine		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Naphthalene		ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Nitrobenzene		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Pentachlorophenol	1	ug/L	< 20	< 20	< 20	< 20
SVOCs	Phenanthrene		ug/L	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Phenol		ug/L	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Pyrene		ug/L	< 0.80	< 0.80	< 0.80	< 0.80
VOCs	(1-Methylethyl)-Benzene		ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,1-Trichloroethane	200	ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,2,2-Tetrachloroethane		ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,2-Trichlor-1,2,2-trifluoroethane		ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,2-Trichloroethane	5	ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1-Dichloroethane		ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1-Dichloroethene	7	ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2,4-Trichlorobenzene	70	ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dibromo-3-chloropropane	0.2	ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dibromoethane	0.05	ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dichlorobenzene	600	ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dichloroethane	5	ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dichloropropane	5	ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,3-Dichlorobenzene		ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,4-Dichlorobenzene	75	ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	2-Butanone		ug/L	< 10	< 10	< 10	< 10
VOCs	2-Hexanone		ug/L	< 10	< 10	< 10	< 10
VOCs	4-Methyl-2-pentanone		ug/L	< 10	< 10	< 10	< 10
VOCs	Acetone		ug/L	< 20	< 20	< 20	< 20
VOCs	Benzene	5	ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Bromodichloromethane		ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Bromoform		ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Bromomethane		ug/L	< 2.0	< 2.0	< 2.0	< 2.0
VOCs	Carbon disulfide		ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Carbon tetrachloride	5	ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Chlorobenzene	100	ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Chloroethane		ug/L	< 2.0	< 2.0	< 2.0	< 2.0
VOCs	Chloroform		ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Chloromethane		ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	cis-1,2-Dichloroethene	70	ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	cis-1,3-Dichloropropene		ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Cyclohexane		ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Dibromochloromethane		ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Dichlorodifluoromethane		ug/L	< 2.0	< 2.0	< 2.0	< 2.0
VOCs	Ethylbenzene	700	ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Methyl acetate		ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Methyl tert-butyl ether		ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Methylcyclohexane		ug/L	< 5.0	< 5.0	< 5.0	< 5.0
VOCs	Methylene chloride	5	ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Styrene	100	ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Tetrachloroethene	5	ug/L	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Toluene	1000	ug/L	< 1.0	< 1.0	< 1.0	< 1.0

Table 11 - Private Well Groundwater Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

				Well	WSW-01	WSW-02	WSW-03	WSW-04
				Date	10/15/2019	10/22/2019	10/24/2019	10/24/2019
Group	Analyte	MCL	Units					
VOCs	trans-1,2-Dichloroethene	100	ug/L		< 1.0	< 1.0	< 1.0	< 1.0
VOCs	trans-1,3-Dichloropropene		ug/L		< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Trichloroethene	5	ug/L		< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Trichlorofluoromethane		ug/L		< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Vinyl chloride	2	ug/L		< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Xylenes, Total	10000	ug/L		< 1.0	< 1.0	< 1.0	< 1.0

Notes:
MCL - Maximum Contaminant Level
** - site-specific action level
pCi/L - picocuries per liter
ug/L - micrograms per liter
mg/L - milligrams per liter
SVOCs - semivolatile organic compounds
VOCs - volatile organic compounds
Bold concentrations indicate detections
J - Result below reporting limit

Table 12 - Summary of Surface Water Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

		Analyte	Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	Vinyl chloride	Nitrate as N	Fluoride	Total Uranium Isotopes	Technetium-99
		Unit	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	ug/L	pCi/L
		CFFF-MCL	5	5	70	2	10	4	30	900
Location	Type	Date								
SW-11	N	7/17/2019	< 1.0	< 1.0	< 1.0	< 1.0	< 0.020	0.146	0.365	0 ##
SW-12	N	7/17/2019	< 1.0	< 1.0	< 1.0	< 1.0	< 0.020	0.296	< 0.2	0 ##
SW-13	N	7/17/2019	< 1.0	< 1.0	< 1.0	< 1.0	< 0.020	0.226	0.134	0 ##
SW-14	N	7/17/2019	< 1.0	< 1.0	< 1.0	< 1.0	0.63	0.234	0.297	3.73 #
SW-16	N	7/17/2019	< 1.0	< 1.0	< 1.0	< 1.0	0.48	1.69	1.78	0 ##
SW-17	N	7/18/2019	16	1.0	< 1.0	< 1.0	3.8	0.460	0.246	0 ##
SW-17	FD	7/18/2019	16	1.0	< 1.0	< 1.0	3.8	0.471	0.229	0 ##
SW-18	N	7/16/2019	14	< 1.0	< 1.0	< 1.0	5.7	0.309	0.304	1.29 #
SW-19	N	7/17/2019	< 1.0	< 1.0	< 1.0	< 1.0	< 0.020	0.154	0.524	0 ##
SW-20	N	7/16/2019	< 1.0	< 1.0	< 1.0	< 1.0	< 0.020	0.494	1.14	0 ##
SW-21	N	7/15/2019	< 1	< 1	< 1	< 1	< 0.02	0.433	0.160	NA
SW-21	N	7/17/2019	NA	NA	NA	NA	NA	NA	NA	0 ##
SW-22	N	7/15/2019	< 1	< 1	< 1	< 1	< 0.02	0.432	0.199	NA
SW-22	N	7/17/2019	NA	NA	NA	NA	NA	NA	NA	0 ##
SW-23	N	7/16/2019	< 1.0	< 1.0	< 1.0	< 1.0	7.3	4.94	0.0673	13.6 #

Notes:
MCL - Maximum Contaminant Level
Concentrations in shaded cells exceed their MCL
Bold concentrations indicate detections
NA - not analyzed
- value is below minimum detectable concentration
- value shown as zero reported by analytical laboratory as a negative number
pCi/L - picocuries per liter
ug/L - micrograms per liter
mg/L - milligrams per liter
N - normal sample
FD - field duplicate sample
Surface water sample SW-15 was not collected because the stormwater ditch was dry

Table 13 - Summary of Background Concentrations for Surface Water and Sediment
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

	Surface Water	Sediment	
Constituent	Stormwater Ditches	Stormwater Ditches	Mill Creek
Ammonia	0.77 mg/L	1283 mg/kg	825 mg/kg
Nitrate	0.02 mg/L	0.57 mg/L	0.91 mg/L
Fluoride	0.442 mg/L	3.61 mg/L	2.73 mg/L
Total Uranium Isotopes	0.465 ug/L	NC	NC
Uranium 233/234	0.05 ug/L	2.07 pCi/g	3.64 pCi/g
Uranium 235/236	0.07 ug/L	0.285 pCi/g	0.250 pCi/g
Uranium 238	0.465 ug/L	1.91 pCi/g	3.26 pCi/g
2-Butanone	10 ug/L	193 µg/kg	34 µg/kg
Acetone	20 ug/L	142 µg/kg	251 ug/kg

Notes: Background concentrations above are two-times the mean concentration from background samples
Surface water and sediment background locations for the stormwater ditches are SW-11/SW-12 and SED-11/SED-12, respectively
Sediment background locations for non-radiological constituents in Mill Creek are SED-51 through SED-56
Sediment background locations for uranium isotopes in Mill Creek are SED-51 through SED-59
mg/L - milligrams per liter
mg/kg - milligrams per kilogram
ug/L - micrograms per liter
µg/kg - micrograms per kilogram
pCi/g - picocuries per gram
NC - not calculated

Table 14 - Sediment Analytical Results Summary
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

			Analyte	Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	Vinyl chloride	Nitrate as N	Fluoride	Uranium-233/234	Uranium-235/236	Uranium-238	Technetium-99
			Unit	ug/kg	ug/kg	ug/kg	ug/kg	mg/kg	mg/kg	pCi/g	pCi/g	pCi/g	pCi/g
			RUSL							13	8	14	19
			IUSL							3310	39	179	89400
Location	Depth	Type	Date										
SED-11	0 - 6 in	N	7/17/2019	< 6.3	< 6.3	< 6.3	< 6.3	**0.33**	**1.35 J**	**1.14**	0.00159 #	**0.742**	0 ##
SED-12	0 - 6 in	N	7/17/2019	< 5.6	< 5.6	< 5.6	< 5.6	**0.24**	**2.26 J**	**0.925**	0.0647 #	**1.17**	0 ##
SED-13	0 - 6 in	N	7/17/2019	< 6.1	< 6.1	< 6.1	< 6.1	**0.2**	**1.45 J**	**1.67**	0.156 #	**1.33**	0 ##
SED-14	0 - 6 in	N	7/17/2019	< 4.4	< 4.4	< 4.4	< 4.4	< 0.2	< 1.21	**1.42**	0.0250 #	**0.389**	0.0243 #
SED-15	0 - 6 in	N	7/16/2019	< 3.8	< 3.8	< 3.8	< 3.8	< 0.20	**2.09**	**2.58**	**0.181**	**2.05**	5.62 #
SED-16	0 - 6 in	N	7/17/2019	< 4.1	< 4.1	< 4.1	< 4.1	**2.7**	**8.73**	**14.9**	**0.678**	**2.77**	4.94 #
SED-16	0 - 6 in	N	11/18/2020	< 5.3	< 5.3	< 5.3	< 5.3	**1**	**15.5**	**67.2**	**3.31**	**12.1**	0.614 #
SED-16	6 - 12 in	N	11/18/2020	< 5	< 5	< 5	< 5	**0.38**	**10.3**	**63.7**	**3.18**	**11.8**	**2.62**
SED-16	12 - 24 in	N	11/18/2020	< 4.9	< 4.9	< 4.9	< 4.9	< 0.24	**3.78**	**6.03**	**0.480**	**1.99**	**3.71**
SED-17	0 - 6 in	N	7/18/2019	**5.5**	< 4.8	< 4.8	< 4.8	**2.1**	**0.908 J**	**0.658**	0.0235 #	**0.302**	7.50 #
SED-17	0 - 6 in	FD	7/18/2019	< 4.8	< 4.8	< 4.8	< 4.8	**0.95**	**0.814 J**	**1.07**	0.104 #	**0.354**	0 ##
SED-18	0 - 6 in	N	7/16/2019	< 4.5	< 4.5	< 4.5	< 4.5	< 0.20	< 1.22	**0.219**	0.0173 #	**0.298**	0 ##
SED-19	0 - 6 in	N	7/17/2019	< 5.2	< 5.2	< 5.2	< 5.2	**1.2**	**3.51**	**32.5**	**2.30**	**8.18**	6.28 #
SED-19	0 - 6 in	N	12/2/2020	< 74	< 74	< 74	< 74	**4.2**	**59.7**	**19.1**	**1.02**	**5.15**	0.208 #
SED-19	6 - 12 in	N	12/2/2020	< 60	< 60	< 60	< 60	**3.7**	**28.5**	**27.0**	**1.22**	**6.42**	**1.12**
SED-19	12 - 18 in	N	12/2/2020	< 26	< 26	< 26	< 26	**2.1**	**3.98**	**2.05**	0.0675 #	**1.51**	0 ##
SED-19	12 - 18 in	FD	12/2/2020	< 24	< 24	< 24	< 24	**1.8**	NA	NA	NA	NA	NA
SED-20	0 - 6 in	N	7/16/2019	< 6.5	< 6.5	< 6.5	< 6.5	< 0.20	**15.7**	**62.5**	**3.12**	**14.9**	0 ##
SED-20	0 - 6 in	N	11/19/2020	< 8.2	< 8.2	< 8.2	< 8.2	**0.56**	**6.63**	**1.72**	0.0212 #	**1.67**	0.638 #
SED-20	6 - 12 in	N	11/19/2020	< 7.4	< 7.4	< 7.4	< 7.4	**0.41**	**4.93**	**2.13**	0.0940 #	**1.50**	0.265 #
SED-20	12 - 24 in	N	11/19/2020	< 7	< 7	< 7	< 7	**0.45**	**4.01**	**1.43**	**0.145**	**1.89**	0.208 #
SED-20	24 - 36 in	N	11/19/2020	< 6.4	< 6.4	< 6.4	< 6.4	**0.34**	**8.50**	**1.49**	0.0841 #	**1.40**	0.700 #
SED-21	0 - 6 in	N	7/15/2019	< 6.2	< 6.2	< 6.2	< 6.2	< 0.2	**2.17 J**	**1.86**	0.104 #	**1.96**	4.12 #
SED-21	0 - 6 in	N	11/10/2020	< 54	< 54	< 54	< 54	**3.7**	**13.2**	**13.2**	**0.393**	**3.79**	**1.17**
SED-21	6 - 12 in	N	11/10/2020	< 19	< 19	< 19	< 19	**1.1**	**8.86**	**2.19**	0.131 #	**1.51**	0.528 #
SED-21	12 - 24 in	N	11/10/2020	< 8.9	< 8.9	< 8.9	< 8.9	**1.1**	**4.73**	**1.56**	0.0344 #	**1.07**	0.225 #
SED-21	24 - 36 in	N	11/10/2020	< 15	< 15	< 15	< 15	< 0.6	**4.45**	**1.75**	0 ##	**0.970**	0.0586 #
SED-22	0 - 6 in	N	7/15/2019	< 6.1	< 6.1	< 6.1	< 6.1	< 0.2	**4.64**	**117**	**4.98**	**28.0**	0 ##
SED-22	0 - 6 in	N	11/9/2020	< 34	< 34	< 34	< 34	**0.6**	**9.90**	**6.21**	**0.257**	**2.24**	0.304 #
SED-22	6 - 12 in	N	11/9/2020	< 15	< 15	< 15	< 15	< 0.48	**6.95**	**1.97**	0.192 #	**0.971**	0.0333 #
SED-22	12 - 24 in	N	11/9/2020	< 5.6	< 5.6	< 5.6	< 5.6	< 0.28	**1.79**	**1.09**	0.0350 #	**0.838**	0 ##
SED-22	24 - 36 in	N	11/9/2020	< 7	< 7	< 7	< 7	< 0.27	**3.02**	**1.81**	0.225 #	**1.08**	0 ##
SED-23	0 - 6 in	N	7/16/2019	< 7.1	< 7.1	< 7.1	< 7.1	< 0.20	**38.1**	**1.35**	0.00261 #	**1.69**	**50.8**
SED-23	0 - 6 in	N	11/16/2020	< 25	< 25	< 25	< 25	**1.6**	**89.6**	**1.36**	0.0994 #	**1.36**	**144**
SED-23	6 - 12 in	N	11/16/2020	< 9.9	< 9.9	< 9.9	< 9.9	< 0.42	**55.3**	**1.19**	0.0658 #	**1.29**	**30.6**
SED-23	12 - 24 in	N	11/16/2020	< 5.3	< 5.3	< 5.3	< 5.3	< 0.26	**41.6**	**1.06**	0.0187 #	**1.19**	**1.40**
SED-23	24 - 36 in	N	11/16/2020	< 5.2	< 5.2	< 5.2	< 5.2	< 0.26	**48.5**	**1.11**	0.0379 #	**0.736**	**0.785**
SED-24	0 - 6 in	N	7/16/2019	< 4.2	< 4.2	< 4.2	< 4.2	**0.20**	**49.2**	**1.14**	0.0608 #	**0.944**	**35.8**
SED-24	0 - 6 in	N	11/16/2020	< 58	< 58	< 58	< 58	**4.8**	**152**	**3.12**	0.160 #	**2.13**	**118**
SED-24	6 - 12 in	N	11/16/2020	< 6.5	< 6.5	< 6.5	< 6.5	**6.3**	**135**	**2.63**	0.153 #	**1.67**	**158**
SED-24	12 - 18 in	N	11/16/2020	< 9.9	< 9.9	< 9.9	< 9.9	< 0.36	**62.7**	**1.57**	**0.217**	**1.47**	**33.3**
SED-25	0 - 6 in	N	7/18/2019	NA	NA	NA	NA	**0.27**	**53.3**	**907**	**41.1**	**149**	8.55 #
SED-26	0 - 6 in	N	7/18/2019	NA	NA	NA	NA	**1.4**	**4.61**	**222**	**11.0**	**46.9**	1.68 #
SED-27	0 - 6 in	N	7/18/2019	NA	NA	NA	NA	**0.30**	**171**	**225**	**11.9**	**37.4**	0 ##
SED-28	0 - 6 in	N	7/18/2019	NA	NA	NA	NA	< 0.20	**39.3**	**254**	**12.4**	**44.6**	5.75 #
SED-29	0 - 6 in	N	11/20/2019	< 5.1	< 5.1	< 5.1	< 5.1	< 0.50	**1.14 J**	**6.23**	**0.313**	**2.51**	0 ##
SED-29	6 - 12 in	N	11/20/2019	< 4.5	< 4.5	< 4.5	< 4.5	< 0.50	**2.56**	**1.81**	**0.208**	**1.55**	0 ##
SED-29	12 - 16 in	N	11/20/2019	< 6.0	< 6.0	< 6.0	< 6.0	NA	**2.61**	**1.23**	**0.175**	**1.16**	0 ##
SED-30	0 - 6 in	N	11/21/2019	< 5.3	< 5.3	< 5.3	< 5.3	< 0.50	**2.26**	**5.71**	**0.191**	**2.51**	2.43 #
SED-30	6 - 12 in	N	11/21/2019	< 6.1	< 6.1	< 6.1	< 6.1	< 0.50	**3.43**	**1.41**	0.0337 #	**1.28**	0 ##
SED-31	0 - 6 in	N	11/21/2019	< 4.0	< 4.0	< 4.0	< 4.0	< 0.50	**3.13**	**2.81**	0.0669 #	**1.75**	0.959 #
SED-31	6 - 12 in	N	11/21/2019	< 4.2	< 4.2	< 4.2	< 4.2	< 0.50	**3.07**	**2.96**	0.110 #	**1.69**	0 ##
SED-32	0 - 6 in	N	11/21/2019	< 5.9	< 5.9	< 5.9	< 5.9	**1.1**	**3.88**	**3.71**	0.0970 #	**2.00**	5.06 #
SED-32	6 - 12 in	N	11/21/2019	< 5.4	< 5.4	< 5.4	< 5.4	< 0.50	**4.21**	**10.0**	**0.469**	**3.28**	0 ##

Table 14 - Sediment Analytical Results Summary
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

			Analyte	Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	Vinyl chloride	Nitrate as N	Fluoride	Uranium-233/234	Uranium-235/236	Uranium-238	Technetium-99
			Unit	ug/kg	ug/kg	ug/kg	ug/kg	mg/kg	mg/kg	pCi/g	pCi/g	pCi/g	pCi/g
			RUSL							13	8	14	19
			IUSL							3310	39	179	89400
Location	Depth	Type	Date										
SED-33	0 - 6 in	N	11/21/2019	< 5.0	< 5.0	< 5.0	< 5.0	< 0.50	**1.57 J**	**5.06**	**0.394**	**2.52**	0 ##
SED-33	6 - 12 in	N	11/21/2019	< 5.6	< 5.6	< 5.6	< 5.6	< 0.50	**1.56**	**1.27**	0.0959 #	**1.56**	0 ##
SED-33	12 - 16 in	N	11/21/2019	NA	NA	NA	NA	NA	**6.63**	**1.06**	0.0461 #	**1.09**	0 ##
SED-34	0 - 6 in	N	11/21/2019	< 5.9	< 5.9	< 5.9	< 5.9	**0.62**	**2.20**	**3.13**	0.131 #	**1.81**	0 ##
SED-34	6 - 12 in	N	11/21/2019	< 5.2	< 5.2	< 5.2	< 5.2	< 0.50	**4.26**	**2.93**	0.0487 #	**1.73**	0 ##
SED-35	0 - 6 in	N	11/22/2019	< 4.4	< 4.4	< 4.4	< 4.4	< 0.50	**2.09**	**2.26**	**0.179**	**1.59**	0 ##
SED-35	6 - 12 in	N	11/22/2019	< 4.3	< 4.3	< 4.3	< 4.3	< 0.50	**4.29**	**1.59**	0.0433 #	**1.66**	0 ##
SED-36	0 - 6 in	N	11/22/2019	< 4.4	< 4.4	< 4.4	< 4.4	< 0.50	< 1.44	**4.40**	**0.210**	**2.38**	0 ##
SED-36	6 - 12 in	N	11/22/2019	< 5.0	< 5.0	< 5.0	< 5.0	**0.55**	< 1.32	**1.50**	**0.0881**	**1.05**	0 ##
SED-37	0 - 6 in	N	11/22/2019	< 4.9	< 4.9	< 4.9	< 4.9	< 0.50	**1.35 J**	**4.88**	**0.254**	**1.78**	0 ##
SED-37	6 - 12 in	N	11/22/2019	< 4.5	< 4.5	< 4.5	< 4.5	< 0.50	**1.60**	**2.04**	**0.149**	**1.62**	0 ##
SED-37	6 - 12 in	FD	11/22/2019	< 4.4	< 4.4	< 4.4	< 4.4	< 0.50	**0.858 J**	**2.33**	0.0456 #	**1.38**	0 ##
SED-38	0 - 6 in	N	11/22/2019	< 6	< 6	< 6	< 6	**0.66**	**5.17**	**3.26**	**0.204**	**1.68**	16.5 #
SED-38	0 - 6 in	N	11/10/2020	< 18	< 18	< 18	< 18	**0.95**	**5.56**	**60.9**	**3.12**	**17.0**	**2.13**
SED-38	6 - 12 in	N	11/10/2020	< 22	< 22	< 22	< 22	< 0.68	**5.91**	**4.19**	**0.276**	**2.52**	0.116 #
SED-38	12 - 24 in	N	11/10/2020	< 41	< 41	< 41	< 41	< 0.57	**4.27 J**	**3.01**	**0.188**	**1.71**	0.174 #
SED-38	24 - 36 in	N	11/10/2020	< 8.6	< 8.6	< 8.6	< 8.6	< 0.33	**3.55**	**1.74**	0.0835 #	**1.60**	0.128 #
SED-38	24 - 36 in	FD	11/10/2020	< 9.8	< 9.8	< 9.8	< 9.8	< 0.37	**3.90**	**1.66**	0.0261 #	**1.25**	0.144 #
SED-39	0 - 6 in	N	11/22/2019	< 4.9	< 4.9	< 4.9	< 4.9	< 0.5	**1.90**	**1.86**	0.0122 #	**1.70**	0 ##
SED-39	0 - 6 in	N	11/19/2020	< 8.7	< 8.7	< 8.7	< 8.7	< 0.36	**2.60**	**2.22**	**0.0959**	**1.81**	0.626 #
SED-39	6 - 12 in	N	11/19/2020	< 10	< 10	< 10	< 10	< 0.35	**2.41 J**	**2.37**	0.0929 #	**1.85**	0.732 #
SED-39	12 - 24 in	N	11/19/2020	< 7.1	< 7.1	< 7.1	< 7.1	**0.44**	< 1.43	**1.58**	**0.243**	**1.63**	0.536 #
SED-39	24 - 36 in	N	11/19/2020	< 6.2	< 6.2	< 6.2	< 6.2	< 0.3	**3.75**	**1.86**	**0.181**	**1.96**	0.281 #
SED-40	0 - 6 in	N	11/22/2019	< 5.3	< 5.3	< 5.3	< 5.3	< 0.50	**1.65 J**	**1.90**	**0.131**	**1.24**	0 ##
SED-40	0 - 6 in	N	11/19/2020	< 19	< 19	< 19	< 19	**0.71**	**3.95**	**4.69**	**0.362**	**2.29**	0.400 #
SED-40	6 - 12 in	N	11/19/2020	< 7.3	< 7.3	< 7.3	< 7.3	**0.3**	**0.668 J**	**1.34**	0.0449 #	**1.43**	0.199 #
SED-40	12 - 24 in	N	11/19/2020	< 6.6	< 6.6	< 6.6	< 6.6	< 0.29	**2.09**	**1.17**	0 ##	**1.09**	0.0850 #
SED-40	24 - 36 in	N	11/19/2020	< 5.5	< 5.5	< 5.5	< 5.5	< 0.26	**1.42**	**1.36**	0.0645 #	**1.23**	0.137 #
SED-41	0 - 6 in	N	11/25/2019	< 6.5	< 6.5	< 6.5	< 6.5	**0.63**	**2.68 J**	**1.72**	0.0394 #	**1.41**	0.995 #
SED-41	0 - 6 in	N	11/10/2020	< 74	< 74	< 74	< 74	**3.4**	**14.6**	**17.0**	**0.789**	**3.38**	**1.12**
SED-41	6 - 12 in	N	11/10/2020	< 30	< 30	< 30	< 30	**1.6**	**5.18**	**1.84**	0.0733 #	**1.29**	0.0380 #
SED-41	12 - 24 in	N	11/10/2020	< 12	< 12	< 12	< 12	**0.55**	**2.10 J**	**2.14**	0 ##	**1.87**	0.216 #
SED-41	24 - 36 in	N	11/10/2020	< 22	< 22	< 22	< 22	**1**	**5.77**	**0.806**	0.0600 #	**0.925**	0.185 #
SED-42	0 - 6 in	N	11/25/2019	< 6.8	< 6.8	< 6.8	< 6.8	**0.83**	**5.15 J**	**6.12**	**0.285**	**2.23**	5.94 #
SED-42	0 - 6 in	N	11/11/2020	< 61	< 61	< 61	< 61	**3**	**26.5**	**31.1**	**1.18**	**7.57**	**1.21**
SED-42	6 - 12 in	N	11/11/2020	< 49	< 49	< 49	< 49	**3.3**	**7.98**	**4.34**	0.248 #	**1.68**	0.137 #
SED-42	12 - 24 in	N	11/11/2020	< 21	< 21	< 21	< 21	< 0.63	**2.21 J**	**3.19**	0.135 #	**1.50**	0.0327 #
SED-42	24 - 36 in	N	11/11/2020	< 23	< 23	< 23	< 23	< 0.72	**2.03 J**	**1.57**	0.0342 #	**1.58**	0 ##
SED-43	0 - 6 in	N	11/25/2019	< 7.2	< 7.2	< 7.2	< 7.2	**0.50**	**14.9**	**47.5**	**2.32**	**12.1**	0 ##
SED-43	0 - 6 in	N	12/1/2020	< 41	< 41	< 41	< 41	**1.9**	**2.67 J**	**5.13**	0.211 #	**1.87**	0.226 #
SED-43	6 - 12 in	N	12/1/2020	< 56	< 56	< 56	< 56	**4.9**	**9.10**	**16.0**	**0.873**	**4.50**	0.00633 #
SED-44	0 - 6 in	N	11/25/2019	< 7.2	< 7.2	< 7.2	< 7.2	< 0.50	**3.04 J**	**8.86**	**0.377**	**2.62**	6.23 #
SED-44	0 - 6 in	N	12/1/2020	< 100	< 100	< 100	< 100	**4.6**	**32.3**	**435**	**24.3**	**98.7**	**9.42**
SED-44	6 - 12 in	N	12/1/2020	< 47	< 47	< 47	< 47	**2.1**	**19.3**	**34.0**	**1.57**	**8.74**	**4.33**
SED-44	12 - 18 in	N	12/1/2020	< 6.2	< 6.2	< 6.2	< 6.2	< 0.72	**15.3**	**3.34**	0.0293 #	**2.70**	0 ##
SED-45	0 - 6 in	N	11/25/2019	< 6.1	< 6.1	< 6.1	< 6.1	**0.82**	**7.90**	**5.86**	**0.268**	**2.20**	2.83 #
SED-45	0 - 6 in	N	12/2/2020	< 49	< 49	< 49	< 49	**2.7**	**103**	**6.00**	**0.325**	**1.92**	0 ##
SED-45	6 - 12 in	N	12/2/2020	< 28	< 28	< 28	< 28	**1.4**	< 3.96	**2.95**	0.0545 #	**1.48**	0 ##
SED-46	0 - 6 in	N	11/25/2019	< 6.5	< 6.5	< 6.5	< 6.5	**0.62**	**3.41**	**4.02**	**0.179**	**2.15**	0 ##
SED-46	0 - 6 in	N	12/2/2020	< 74	< 74	< 74	< 74	**5**	**120**	**11.6**	0.251 #	**2.85**	0 ##
SED-46	6 - 12 in	N	12/2/2020	< 36	< 36	< 36	< 36	**1.8**	**20.6**	**10.4**	**0.419**	**3.55**	0.110 #
SED-47	0 - 6 in	N	11/26/2019	< 6.9	< 6.9	< 6.9	< 6.9	**0.59**	**6.02**	**3.18**	**0.232**	**1.46**	0 ##
SED-47	0 - 6 in	N	12/3/2020	< 33	< 33	< 33	< 33	< 4.7	**6.37**	**3.32**	0.0528 #	**1.95**	0 ##
SED-47	6 - 12 in	N	12/3/2020	< 54	< 54	< 54	< 54	< 8.2	**16.5**	**4.86**	0.0999 #	**2.41**	0 ##

Table 14 - Sediment Analytical Results Summary
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

			Analyte	Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	Vinyl chloride	Nitrate as N	Fluoride	Uranium-233/234	Uranium-235/236	Uranium-238	Technetium-99
			Unit	ug/kg	ug/kg	ug/kg	ug/kg	mg/kg	mg/kg	pCi/g	pCi/g	pCi/g	pCi/g
			RUSL							13	8	14	19
			IUSL							3310	39	179	89400
Location	Depth	Type	Date										
SED-48	0 - 6 in	N	11/26/2019	< 5.3	< 5.3	< 5.3	< 5.3	**0.63**	**2.94**	**2.57**	0.0910 #	**1.98**	0 ##
SED-48	0 - 6 in	N	12/3/2020	< 35	< 35	< 35	< 35	< 6.4	**1.86 J**	**2.49**	0.154 #	**2.24**	0 ##
SED-48	0 - 6 in	FD	11/26/2019	< 5.2	< 5.2	< 5.2	< 5.2	**0.70**	**3.46**	**2.43**	0.0144 #	**1.62**	0 ##
SED-48	6 - 12 in	N	12/3/2020	< 7.7	< 7.7	< 7.7	< 7.7	< 1.7	**3.09**	**2.11**	**0.169**	**1.77**	0 ##
SED-48	12 - 18 in	N	12/3/2020	< 7.1	< 7.1	< 7.1	< 7.1	< 1.5	**1.88**	**1.63**	**0.205**	**1.85**	0 ##
SED-49	0 - 6 in	N	11/26/2019	< 7.1	< 7.1	< 7.1	< 7.1	**0.58**	**5.44**	**4.59**	**0.215**	**2.11**	0 ##
SED-49	0 - 6 in	N	12/3/2020	< 40	< 40	< 40	< 40	< 5.6	**9.14**	**5.10**	**0.142**	**2.25**	0 ##
SED-49	6 - 12 in	N	12/3/2020	< 16	< 16	< 16	< 16	< 2.8	**5.78**	**2.85**	0.0436 #	**2.04**	0 ##
SED-50	0 - 6 in	N	11/26/2019	< 6.3	< 6.3	< 6.3	< 6.3	**0.53**	**4.67**	**3.64**	0.104 #	**1.86**	0.910 #
SED-50	0 - 6 in	N	12/3/2020	< 46	< 46	< 46	< 46	< 6.7	**7.00**	**6.83**	**0.351**	**2.65**	0 ##
SED-50	6 - 12 in	N	12/3/2020	< 21	< 21	< 21	< 21	**6.1**	**2.92**	**2.33**	0.152 #	**1.83**	0 ##
SED-50	12 - 24 in	N	12/3/2020	< 25	< 25	< 25	< 25	< 3.8	**2.51 J**	**1.00**	**0.139**	**0.808**	0 ##
SED-51	0 - 6 in	N	11/27/2019	< 6.6	< 6.6	< 6.6	< 6.6	**0.72**	**2.77 J**	**2.10**	0.178 #	**1.42**	0 ##
SED-51	6 - 12 in	N	11/27/2019	< 6.7	< 6.7	< 6.7	< 6.7	**0.51**	**2.96**	**1.27**	0.0695 #	**1.15**	4.89 #
SED-52	0 - 6 in	N	11/27/2019	< 6.2	< 6.2	< 6.2	< 6.2	< 0.50	**1.48 J**	**1.77**	0.308 #	**1.72**	0 ##
SED-52	6 - 12 in	N	11/27/2019	< 6.4	< 6.4	< 6.4	< 6.4	**0.61**	**1.69 J**	**1.88**	0.0494 #	**1.45**	0 ##
SED-53	0 - 6 in	N	11/27/2019	< 5.4	< 5.4	< 5.4	< 5.4	< 0.50	**0.838 J**	**2.15**	**0.194**	**1.45**	0 ##
SED-53	6 - 12 in	N	11/27/2019	< 5.2	< 5.2	< 5.2	< 5.2	< 0.50	**0.607 J**	**2.06**	0.0708 #	**2.34**	0 ##
SED-54	0 - 6 in	N	12/2/2019	< 6.6	< 6.6	< 6.6	< 6.6	**0.63**	**1.93 J**	**1.78**	0.119 #	**1.36**	1.51 #
SED-54	6 - 12 in	N	12/2/2019	< 6.3	< 6.3	< 6.3	< 6.3	**0.68**	**1.01 J**	**1.48**	0.120 #	**1.87**	0 ##
SED-55	0 - 6 in	N	12/2/2019	< 4.9	< 4.9	< 4.9	< 4.9	< 0.50	< 1.88	**2.05**	0 ##	**1.74**	6.19 #
SED-55	6 - 12 in	N	12/2/2019	< 4.9	< 4.9	< 4.9	< 4.9	< 0.50	< 1.76	**1.62**	**0.155**	**1.62**	0 ##
SED-56	0 - 6 in	N	12/2/2019	< 5.2	< 5.2	< 5.2	< 5.2	**0.52**	< 1.89	**2.02**	**0.214**	**1.40**	2.53 #
SED-56	0 - 6 in	FD	12/2/2019	< 4.8	< 4.8	< 4.8	< 4.8	**0.74**	< 1.96	**2.82**	0.115 #	**2.11**	0 ##
SED-56	6 - 12 in	N	12/2/2019	< 3.5	< 3.5	< 3.5	< 3.5	< 0.50	**0.690 J**	**1.89**	0.0276 #	**1.72**	0 ##
SED-57	0 - 6 in	N	12/4/2020	NA	NA	NA	NA	NA	NA	**2.22**	0.110 #	**1.82**	NA
SED-57	6 - 12 in	N	12/4/2020	NA	NA	NA	NA	NA	NA	**1.63**	0.101 #	**1.74**	NA
SED-57	12 - 18 in	N	12/4/2020	NA	NA	NA	NA	NA	NA	**1.49**	0 #	**2.05**	NA
SED-58	0 - 6 in	N	12/4/2020	NA	NA	NA	NA	NA	NA	**1.21**	0.0516 #	**1.37**	NA
SED-58	6 - 12 in	N	12/4/2020	NA	NA	NA	NA	NA	NA	**1.38**	0.0321 #	**1.15**	NA
SED-59	0 - 6 in	N	12/3/2020	NA	NA	NA	NA	NA	NA	**2.09**	0.0517 #	**1.88**	NA
SED-59	6 - 12 in	N	12/3/2020	NA	NA	NA	NA	NA	NA	**1.52**	0.0494 #	**1.27**	NA
SED-60	0 - 6 in	N	11/18/2020	< 4.9	< 4.9	< 4.9	< 4.9	**0.27**	**19.2**	**39.7**	**2.19**	**7.42**	0.433 #
SED-60	6 - 12 in	N	11/18/2020	< 5.1	< 5.1	< 5.1	< 5.1	**0.29**	**14.1**	**44.4**	**1.81**	**8.17**	0.483 #
SED-61	0 - 6 in	N	11/18/2020	< 5.6	< 5.6	< 5.6	< 5.6	**0.93**	**3.47**	**4.29**	0.244 #	**0.818**	**1.20**
SED-61	0 - 6 in	FD	11/18/2020	< 5.7	< 5.7	< 5.7	< 5.7	**0.85**	**3.04**	**15.1**	**0.789**	**3.50**	**1.12**
SED-61	6 - 12 in	N	11/18/2020	< 5	< 5	< 5	< 5	**0.5**	**5.29**	**9.17**	**0.267**	**2.79**	**7.96**
SED-61	12 - 18 in	N	11/18/2020	< 4.4	< 4.4	< 4.4	< 4.4	**0.38**	**15.2**	**3.86**	**0.186**	**1.95**	**8.28**
SED-62	0 - 6 in	N	11/17/2020	< 8.9	< 8.9	< 8.9	< 8.9	**0.51**	**45.7**	**1.21**	0.167 #	**1.73**	**22.9**
SED-62	6 - 12 in	N	11/17/2020	< 5	< 5	< 5	< 5	< 0.26	**43.5**	**1.57**	0.0659 #	**2.00**	**2.89**
SED-62	6 - 12 in	FD	11/17/2020	< 5.1	< 5.1	< 5.1	< 5.1	< 0.26	**34.4**	**1.60**	0.0636 #	**1.35**	**2.98**
SED-62	12 - 24 in	N	11/17/2020	< 5.2	< 5.2	< 5.2	< 5.2	< 0.26	**39.0**	**1.84**	0 ##	**1.12**	**1.08**
SED-63	0 - 6 in	N	11/17/2020	< 5.6	< 5.6	< 5.6	< 5.6	< 0.28	**37.7**	**0.853**	0.148 #	**0.875**	**25.0**
SED-63	6 - 12 in	N	11/17/2020	< 5	< 5	< 5	< 5	< 0.26	**24.9**	**0.760**	0.0985 #	**0.649**	**2.63**
SED-64	0 - 6 in	N	11/17/2020	< 6.6	< 6.6	< 6.6	< 6.6	**0.29**	**49.4**	**1.30**	0.0856 #	**1.18**	**85.8**
SED-64	6 - 12 in	N	11/17/2020	< 4.8	< 4.8	< 4.8	< 4.8	< 0.25	**33.7**	**1.11**	0.0301 #	**1.32**	**5.53**
SED-65	0 - 6 in	N	11/16/2020	< 5.4	< 5.4	< 5.4	< 5.4	**0.47**	**40.6**	**1.01**	0.113 #	**0.726**	**312**
SED-65	6 - 12 in	N	11/16/2020	< 4.6	< 4.6	< 4.6	< 4.6	< 0.26	**33.6**	**1.12**	0 ##	**0.791**	**8.41**
SED-66	0 - 6 in	N	3/9/2021	< 5.9	< 5.9	< 5.9	< 5.9	< 2.5	**20.9**	**14.5**	**0.637**	**4.19**	**2.16**
SED-66	6 - 12 in	N	3/9/2021	< 5.3	< 5.3	< 5.3	< 5.3	< 2.5	**10.4**	**4.75**	**0.265**	**2.46**	**0.770**
SED-66	12 - 24 in	N	3/9/2021	< 5.5	< 5.5	< 5.5	< 5.5	< 0.5	**4.21**	**1.52**	**0.156**	**1.19**	0.184 #
SED-67	0 - 6 in	N	3/8/2021	< 7.1	< 7.1	< 7.1	< 7.1	< 0.5	**30.4**	**14.8**	**0.743**	**4.41**	**1.83**
SED-67	6 - 12 in	N	3/8/2021	< 5.7	< 5.7	< 5.7	< 5.7	< 0.5	**10.5**	**2.78**	0.118 #	**1.39**	0.639 #
SED-67	12 - 24 in	N	3/8/2021	< 6.2	< 6.2	< 6.2	< 6.2	< 0.5	**9.43**	**2.57**	**0.155**	**1.60**	0.461 #

Table 14 - Sediment Analytical Results Summary
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

			Analyte	Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	Vinyl chloride	Nitrate as N	Fluoride	Uranium-233/234	Uranium-235/236	Uranium-238	Technetium-99
			Unit	ug/kg	ug/kg	ug/kg	ug/kg	mg/kg	mg/kg	pCi/g	pCi/g	pCi/g	pCi/g
			RUSL							13	8	14	19
			IUSL							3310	39	179	89400
Location	Depth	Type	Date										
SED-68	0 - 6 in	N	3/8/2021	< 4.6	< 4.6	< 4.6	< 4.6	< 0.5	**4.43**	**1.02**	0.0106 #	**1.45**	0.0815 #
SED-68	6 - 12 in	N	3/8/2021	< 4.2	< 4.2	< 4.2	< 4.2	< 0.5	**4.46**	**1.26**	0.0732 #	**1.08**	0 ##
SED-68	12 - 24 in	N	3/8/2021	< 4.1	< 4.1	< 4.1	< 4.1	< 0.5	**4.53**	**1.23**	0.0471 #	**0.615**	0.0594 #
SED-68	12 - 24 in	FD	3/8/2021	< 4.2	< 4.2	< 4.2	< 4.2	< 0.5	**4.66**	**1.30**	0.0530 #	**0.955**	0.156 #
SED-B1	0 - 6 in	N	3/10/2021	NA	NA	NA	NA	NA	NA	**401**	**26.9**	**95.7**	**23.7**
SED-B1	6 - 12 in	N	3/10/2021	NA	NA	NA	NA	NA	NA	**3.15**	**0.315**	**2.01**	0.295 #
SED-B2	0 - 6 in	N	3/10/2021	NA	NA	NA	NA	NA	NA	**267**	**15.8**	**60.3**	**19.1**
SED-B2	6 - 12 in	N	3/10/2021	NA	NA	NA	NA	NA	NA	**5.45**	**0.405**	**2.30**	0.720 #
SED-B3	0 - 6 in	N	3/9/2021	NA	NA	NA	NA	NA	NA	**47.2**	**2.56**	**13.1**	**4.37**
SED-B3	6 - 12 in	N	3/9/2021	NA	NA	NA	NA	NA	NA	**90.6**	**4.75**	**22.1**	**5.34**
SED-B4	0 - 6 in	N	3/9/2021	NA	NA	NA	NA	NA	NA	**33.6**	**2.25**	**7.78**	**1.05**
SED-B4	6 - 12 in	N	3/9/2021	NA	NA	NA	NA	NA	NA	**10.4**	**0.384**	**3.49**	0.383 #
SED-B5	0 - 6 in	N	3/10/2021	NA	NA	NA	NA	NA	NA	**30.0**	**1.36**	**7.25**	0.565 #
SED-B5	6 - 12 in	N	3/10/2021	NA	NA	NA	NA	NA	NA	**4.43**	0.178 #	**2.29**	**1.40**
SED-B6	0 - 6 in	N	3/10/2021	NA	NA	NA	NA	NA	NA	**30.4**	**1.82**	**6.94**	**1.13**
SED-B6	6 - 12 in	N	3/10/2021	NA	NA	NA	NA	NA	NA	**7.98**	**0.447**	**2.89**	**1.36**
SED-B7	0 - 6 in	N	3/9/2021	NA	NA	NA	NA	NA	NA	**24.7**	**1.13**	**6.32**	**3.71**
SED-B7	6 - 12 in	N	3/9/2021	NA	NA	NA	NA	NA	NA	**5.49**	**0.275**	**3.16**	0.472 #
SED-B8	0 - 6 in	N	3/9/2021	NA	NA	NA	NA	NA	NA	**43.7**	**1.92**	**11.0**	**0.937**
SED-B8	6 - 12 in	N	3/9/2021	NA	NA	NA	NA	NA	NA	**37.6**	**1.92**	**8.65**	**1.40**

Notes:
RUSL - Residential Use Screening Level (NUREG 1757, Volume 2, Revision 1, Appendix H, September 2006)
IUSL - Industrial Use Screening Level (NUREG 1757, Volume 2, Revision 1, Appendix H, September 2006)
N - normal
FD - field duplicate
Concentrations in orange shaded cells exceed their RUSL
Concentrations in blue shaded cells exceed their IUSL
Bold concentrations indicate detections
NA - not analyzed
- value is below minimum detectable concentration
- value shown as zero reported by analytical laboratory as a negative number
pCi/g - picocuires per gram
ug/kg - micrograms per kilogram
mg/kg - milligrams per kilogram
* - sludge sample collected from the Sanitary Lagoon
** - sludge sample collected from the East Lagoon

Table 15 - COPC Chemical Properties
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

Chemical Property/COPC	Density	Molecular Weight	Water Solubility	Henry's Law Constant	Partitioning Coefficient (K_d)	Carbon Partitioning Coefficient (K_{oc})	n-Octanol/Water Partition Coefficient (log K_{ow})	Vapor Pressure	Molecular Diffusion Coefficent
Units	g/cm^3	unitless	mg/L	atm-m3/mole	L/kg	L/kg	unitless	mm Hg	cm^2/s
Tetrachloroethene	1.62	165.83	206	1.77E-02	N/A	94.94	3.4	18.5	9.46E-06
Trichloroethene	1.46	131.39	1280	9.85E-03	N/A	60.7	2.42	69	1.02E-05
cis-1,2-Dichloroethene	1.28	96.944	6410	4.08E-03	N/A	39.6	1.86	200	1.13E-05
Vinyl Chloride	0.91	62.499	8800	2.78E-02	N/A	21.73	1.38	2980	1.20E-05
Nitrate (as nitrogen)	N/A	62	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fluoride	N/A	38	1.69	N/A	N/A	N/A	N/A	N/A	N/A
Uranium	19.1	238.03	N/A	N/A	450	N/A	N/A	0	N/A
Technetium-99	11.5	98.91	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Notes: Source: EPA Regional Screening Level (RSL) Chemical-specific Parameters Supporting Table May 2022

g/cm^3 - grams per cubic centimeter
mg/l - milligrams per liter
atm-m3/mole - atmospheres per cubic meter per mole
L/kg - liters per kilogram
mm Hg - millimeters of mercury
cm2/s - centimeter squared per second
N/A - Not available

Figures



Legend

Locations

- Property Line
- Topographic Quadrangle Boundary

ID	Topographic Quadrangle Name
1	Southwest Columbia
2	Gaston
3	Fort Jackson South
4	Saylors Lake
5	Congaree
6	Gadsden

0 2,000 4,000 Feet

1:48,000

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Data Source: Esri/USGS

N

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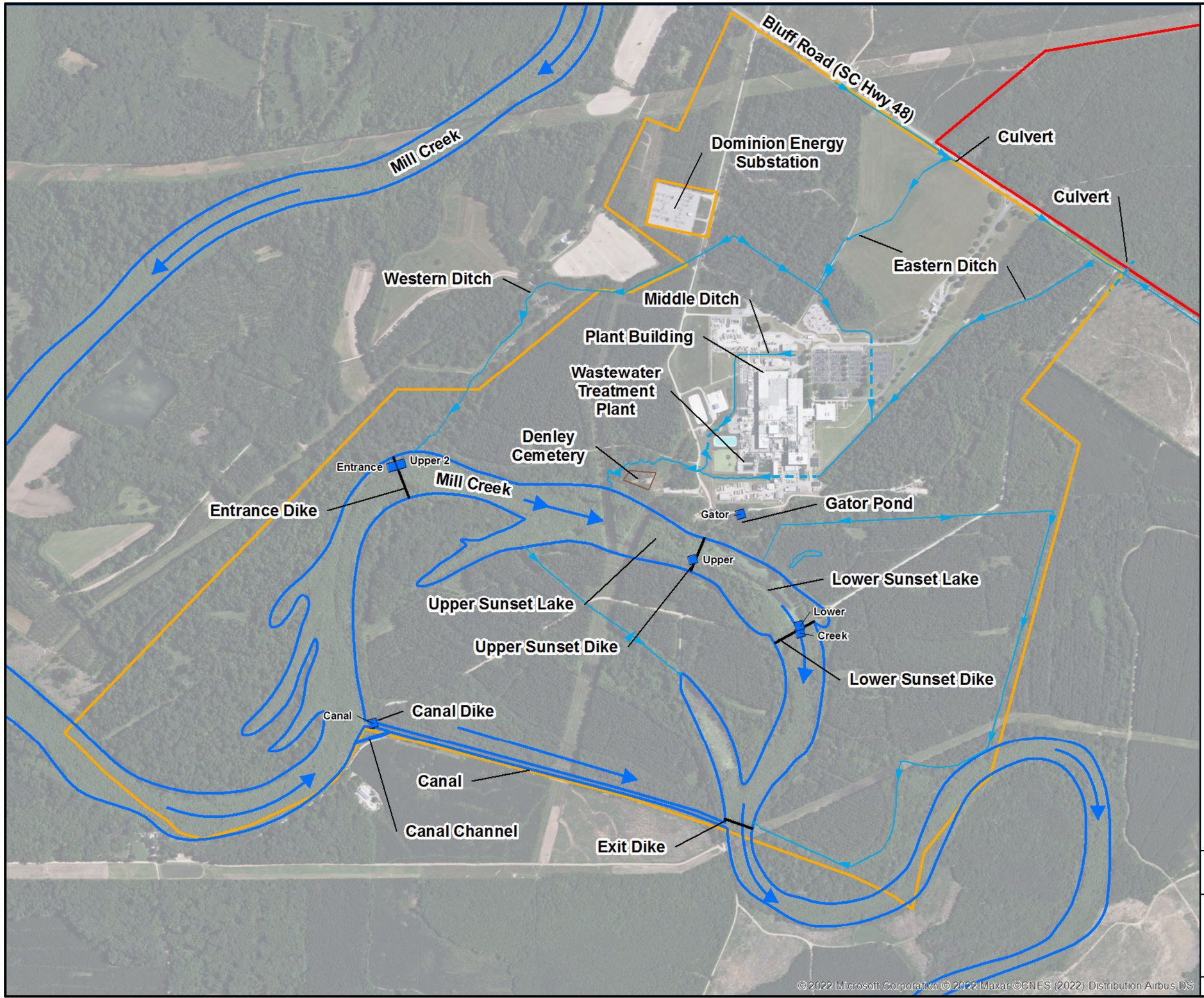
Site Location Map

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60641050	CCS	December 2021	**FIGURE 1**

Path: M:\EnvDataViz\Westinghouse\mxd\2021 RI Report\F1 Site Location Map.mxd



Legend

- Staff Gage Location
- Mill Creek Flow Direction
- Ditch
- Culvert
- Property Line
- SCRDI Bluff Road (Superfund Site)
- Mill Creek
- Dike Location

0 500 1,000 Feet

1:12,000

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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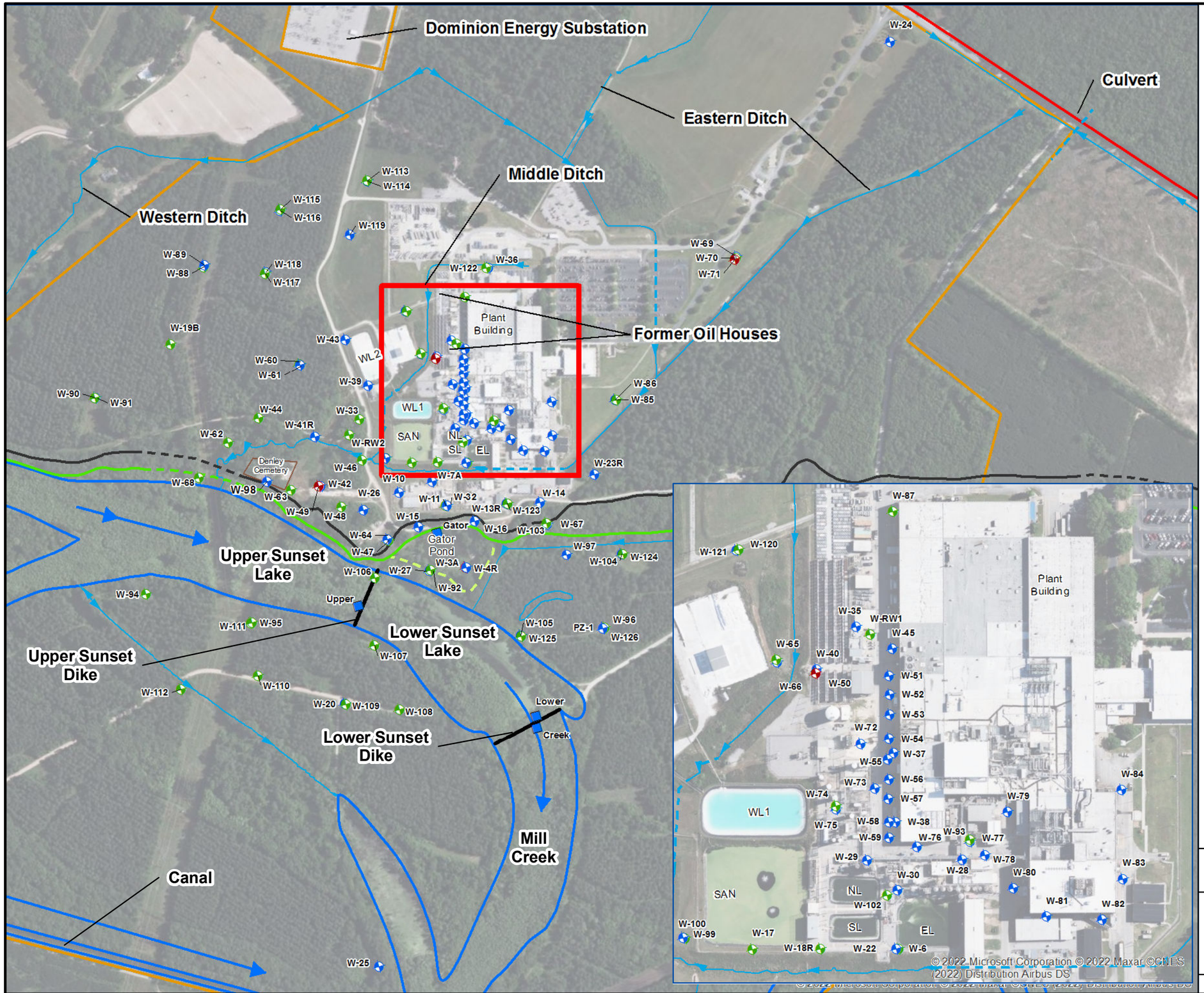
Property Map

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	CCS	March 2022	**FIGURE 2**

Path: M:\EnvDataViz\Westinghouse\mxd\2021 RI Report\F2 Property Map.mxd



Legend

- Surficial Aquifer - Upper Zone Monitoring Well
- Surficial Aquifer - Lower Zone Monitoring Well
- Black Creek Aquifer Monitoring Well
- Staff Gage Location
- Ditch
- Culvert
- Dike Location
- Mill Creek Flow Direction
- Mill Creek
- Property Line
- SCRDI Bluff Road (Superfund Site)
- Top of Bluff
- Inferred Top of Bluff
- Bottom of Bluff
- Inferred Bottom of Bluff
- Secondary Bluff Area

EL	Former East Lagoon
NL	North Lagoon
SL	South Lagoon
SAN	Sanitary Lagoon
WL1	West Lagoon I
WL2	West Lagoon II

0 300 600 Feet

1:7,200

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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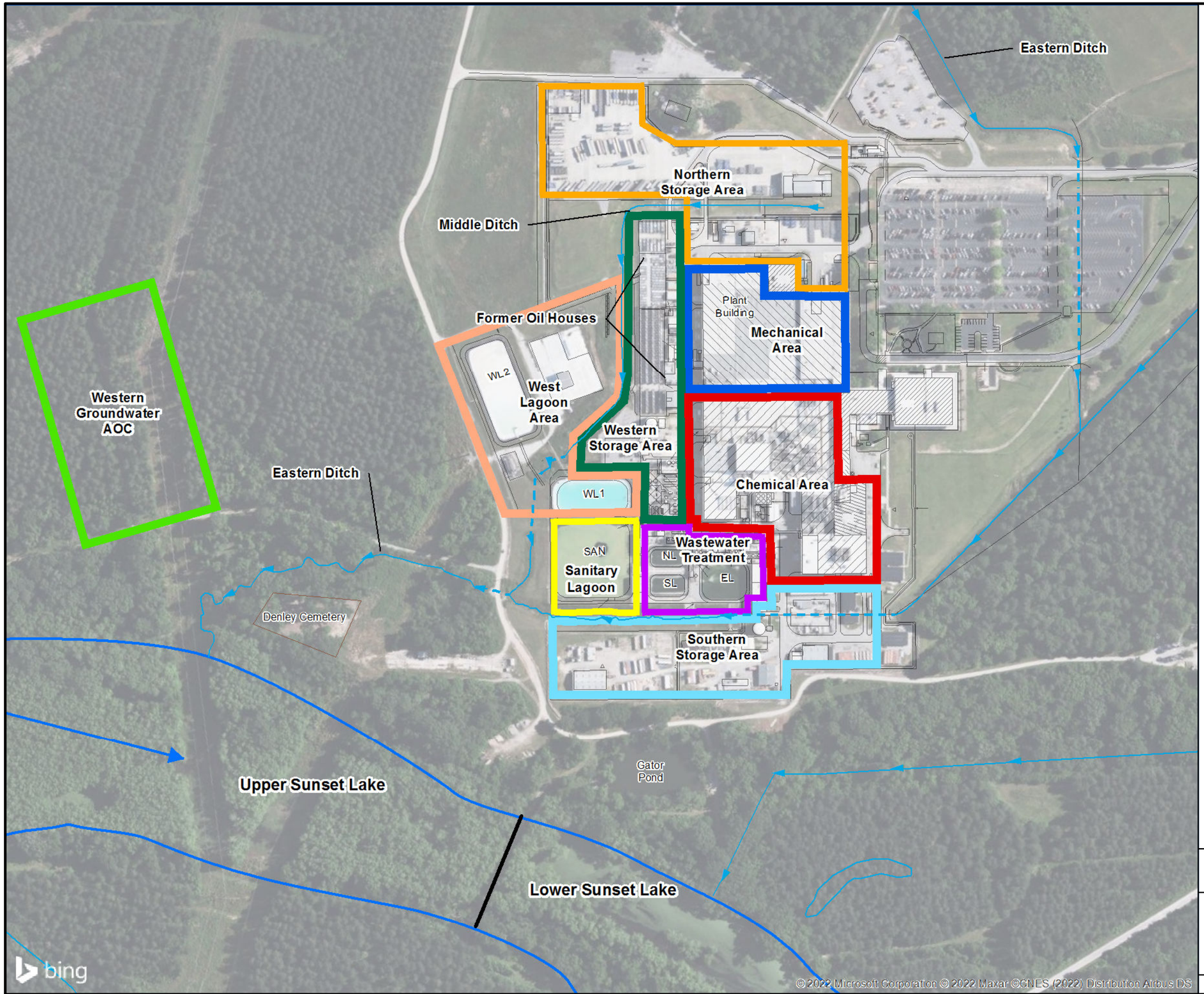
Site Map

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	CCS	July 2022	**FIGURE 3**

Path: M:\EnvDataViz\Westinghouse\mxd\2021 RI Report\F3 SiteMap.mxd



Legend

- Ditch
- Culvert
- Mill Creek Flow Direction
- EL Former East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon I
- WL2 West Lagoon II
- Mill Creek
- Dike Location

Operable Units

- Chemical Area
- Mechanical Area
- Northern Storage Area
- Sanitary Lagoon Area
- Southern Storage Area
- Wastewater Treatment Area
- West Lagoons Area
- Western Storage Area
- Western Groundwater AOC

0 150 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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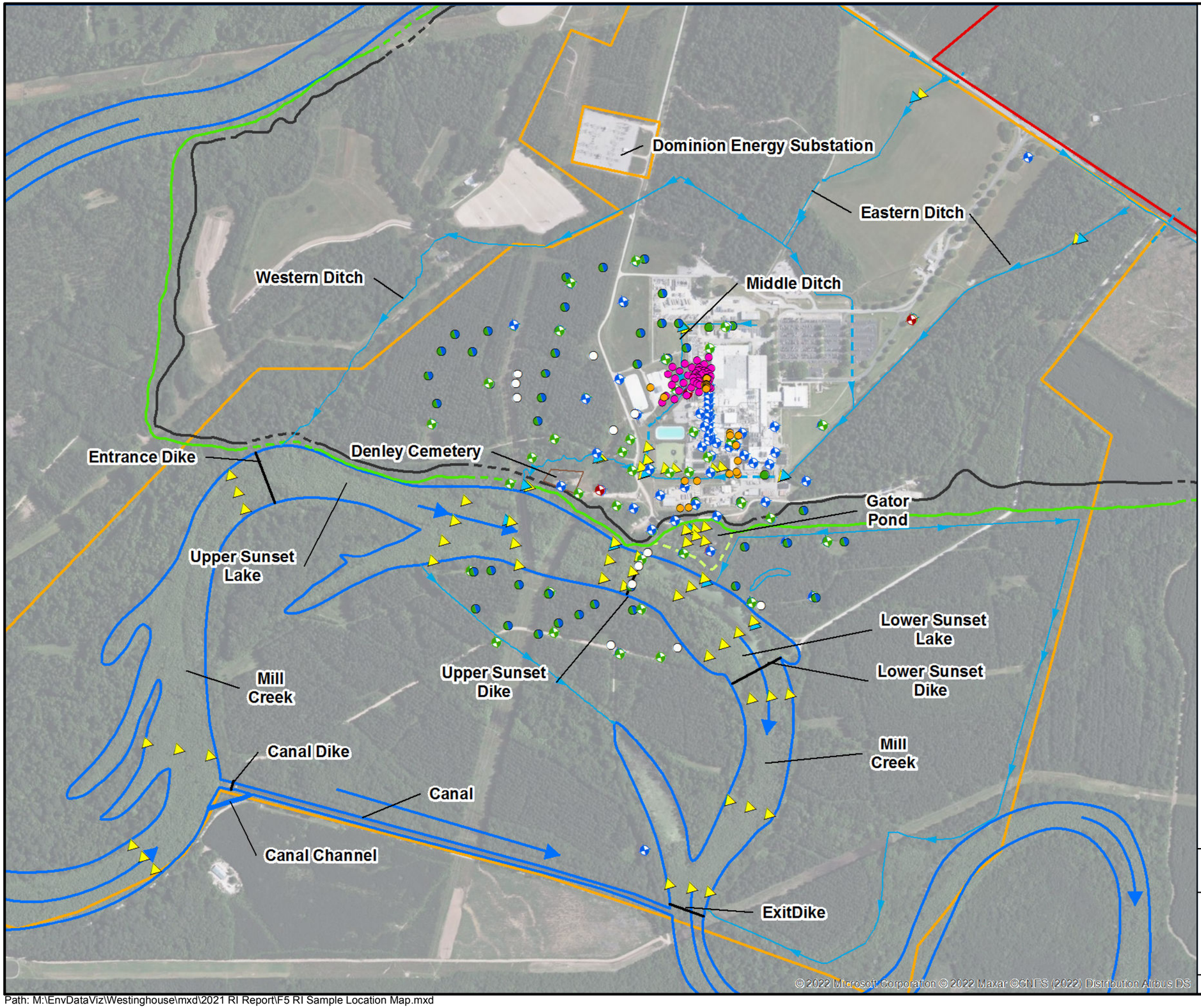
Operational Units Map

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	CCS	July 2022	**FIGURE 4**

Path: M:\EnvDataViz\Westinghouse\mxd\2021 RI Report\F4 Operation Units Map.mxd



Legend

- Soil Gas Sample Location
- Soil Sample Location
- Lithology Only Location
- Surficial Aquifer - Upper Zone Monitoring Well
- Surficial Aquifer - Lower Zone Monitoring Well
- Black Creek Aquifer Monitoring Well
- Surficial Aquifer Groundwater Screening Location - Upper Zone
- Surficial Aquifer Groundwater Screening Location - Lower Zone
- Surficial Aquifer Groundwater Screening Location - Upper and Lower Zones
- Surface Water Sample Location
- Sediment Sample Location
- Ditch
- Culvert
- Mill Creek Flow Direction
- Dike Location
- Mill Creek
- Property Line
- SCRDI Bluff Road (Superfund Site)
- Top of Bluff
- Inferred Top of Bluff
- Bottom of Bluff
- Inferred Bottom of Bluff
- Secondary Bluff Area

0 400 800 Feet

1:9,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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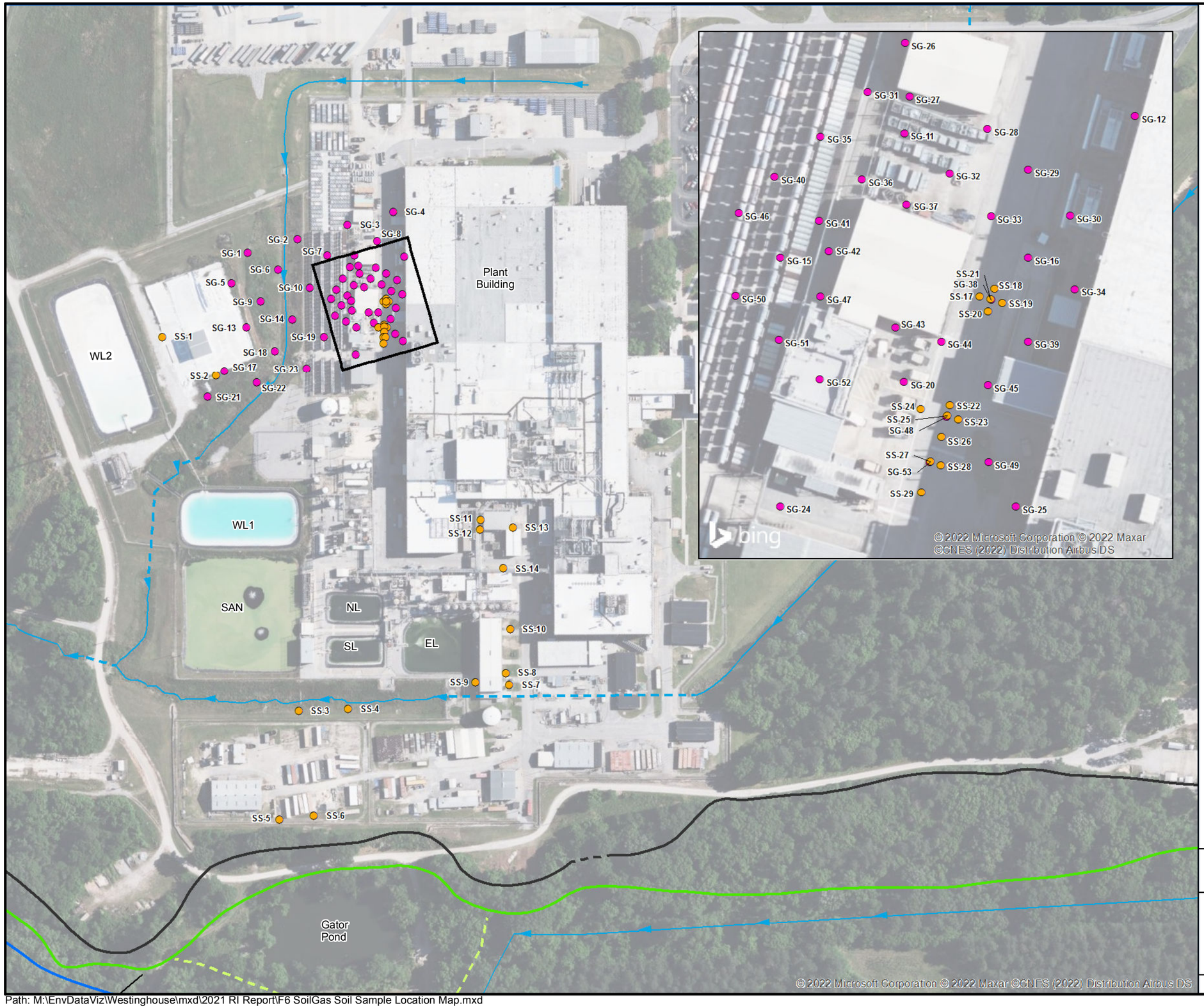
Remedial Investigation Sample Location Map

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	CCS	July 2022	**FIGURE 5**

Path: M:\EnvDataViz\Westinghouse\mxd\2021 RI Report\F5 RI Sample Location Map.mxd



Legend

- Soil Gas Sample Location
- Soil Sample Location
- Ditch
- Culvert
- Top of Bluff
- Inferred Top of Bluff
- Bottom of Bluff
- Inferred Bottom of Bluff
- Secondary Bluff Area
- EL — Former East Lagoon
- NL — North Lagoon
- SL — South Lagoon
- SAN — Sanitary Lagoon
- WL1 — West Lagoon I
- WL2 — West Lagoon II

0 100 200 Feet

1:2,400

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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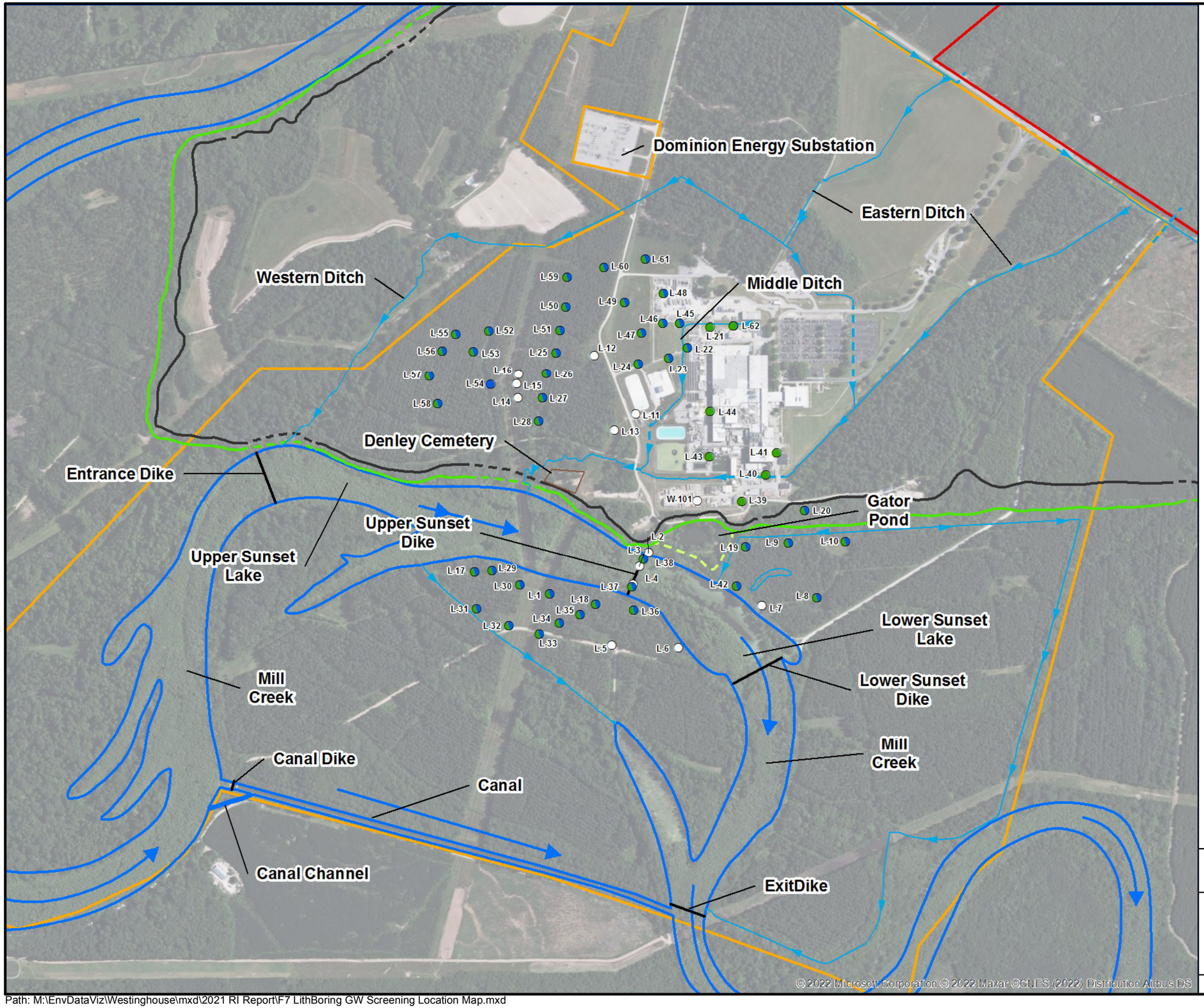
Soil Gas Survey and Soil Sample Location Map

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	CCS	July 2022	**FIGURE 6**

Path: M:\EnvDataViz\Westinghouse\mxd\2021 RI Report\F6 SoilGas Soil Sample Location Map.mxd



Legend

- Lithology Only Location
- L - Surficial Aquifer Groundwater Screening Location - Upper Zone
- L - Surficial Aquifer Groundwater Screening Location - Lower Zone
- L - Surficial Aquifer Groundwater Screening Location - Upper and Lower Zones
- Ditch
- Culvert
- Mill Creek Flow Direction
- Dike Location
- Mill Creek
- Property Line
- SCRDI Bluff Road (Superfund Site)
- Top of Bluff
- Inferred Top of Bluff
- Bottom of Bluff
- Inferred Bottom of Bluff
- Secondary Bluff Area

EL	Former East Lagoon
NL	North Lagoon
SL	South Lagoon
SAN	Sanitary Lagoon
WL1	West Lagoon I
WL2	West Lagoon II

0 400 800 Feet

1:9,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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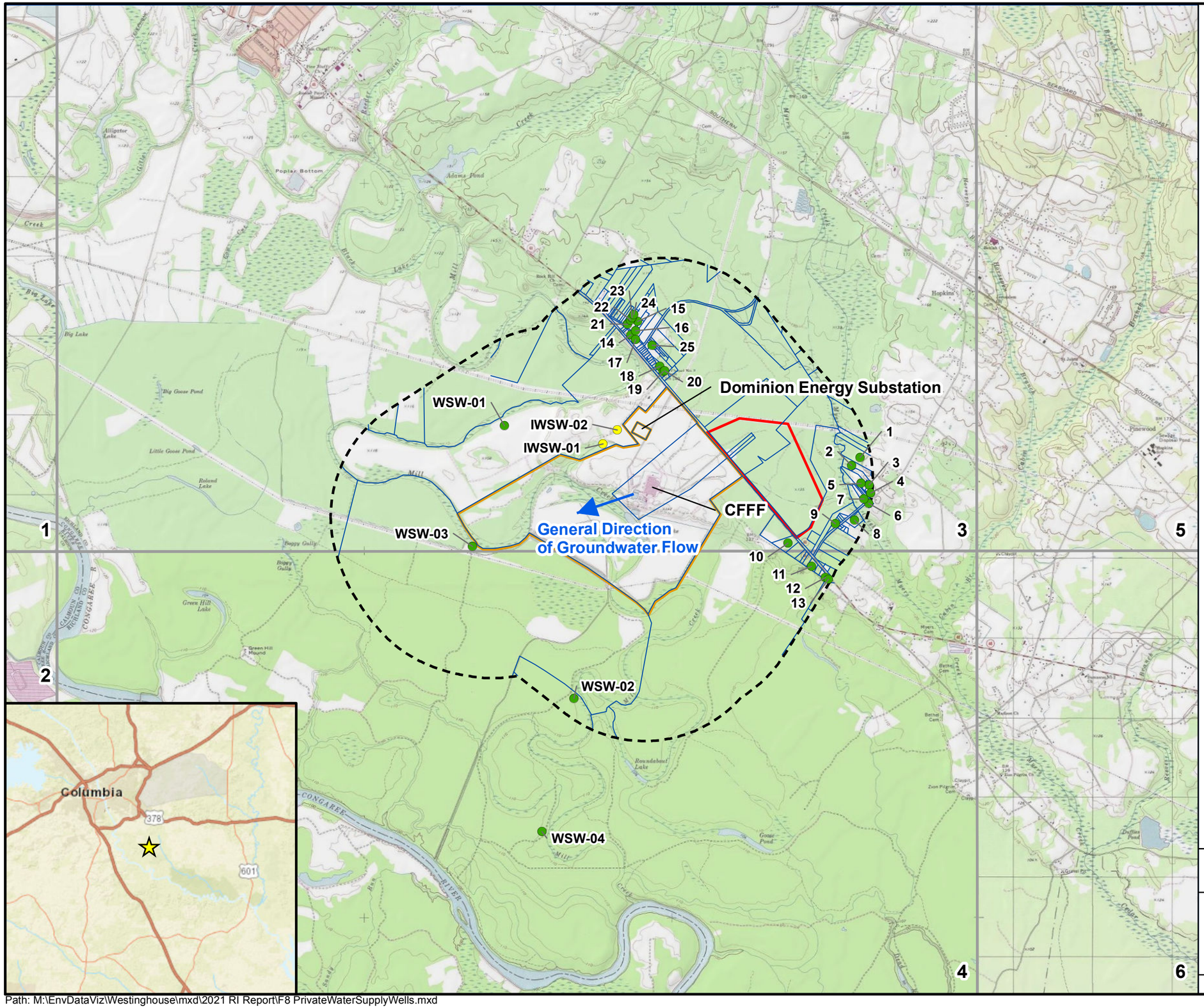
Lithologic Boring and Groundwater Screening Location Map

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	CCS	July 2022	**FIGURE 7**

Path: M:\EnvDataViz\Westinghouse\mxd\2021 RI Report\F7 LithBoring GW Screening Location Map.mxd



Legend

- Inactive Private Wells
- Private Wells
- 1 Mile Buffer of Facility Property Boundary
- ParcelLines_WaterSupplyWellClip
- Property Line
- SCRDI Bluff Road (Superfund Site)
- Topographic Quadrangle Boundary

ID	Topographic Quadrangle Name
1	Southwest Columbia
2	Gaston
3	Fort Jackson South
4	Saylors Lake
5	Congaree
6	Gadsden

0 2,000 4,000 Feet

1:48,000

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Data Source: Esri/USGS

N

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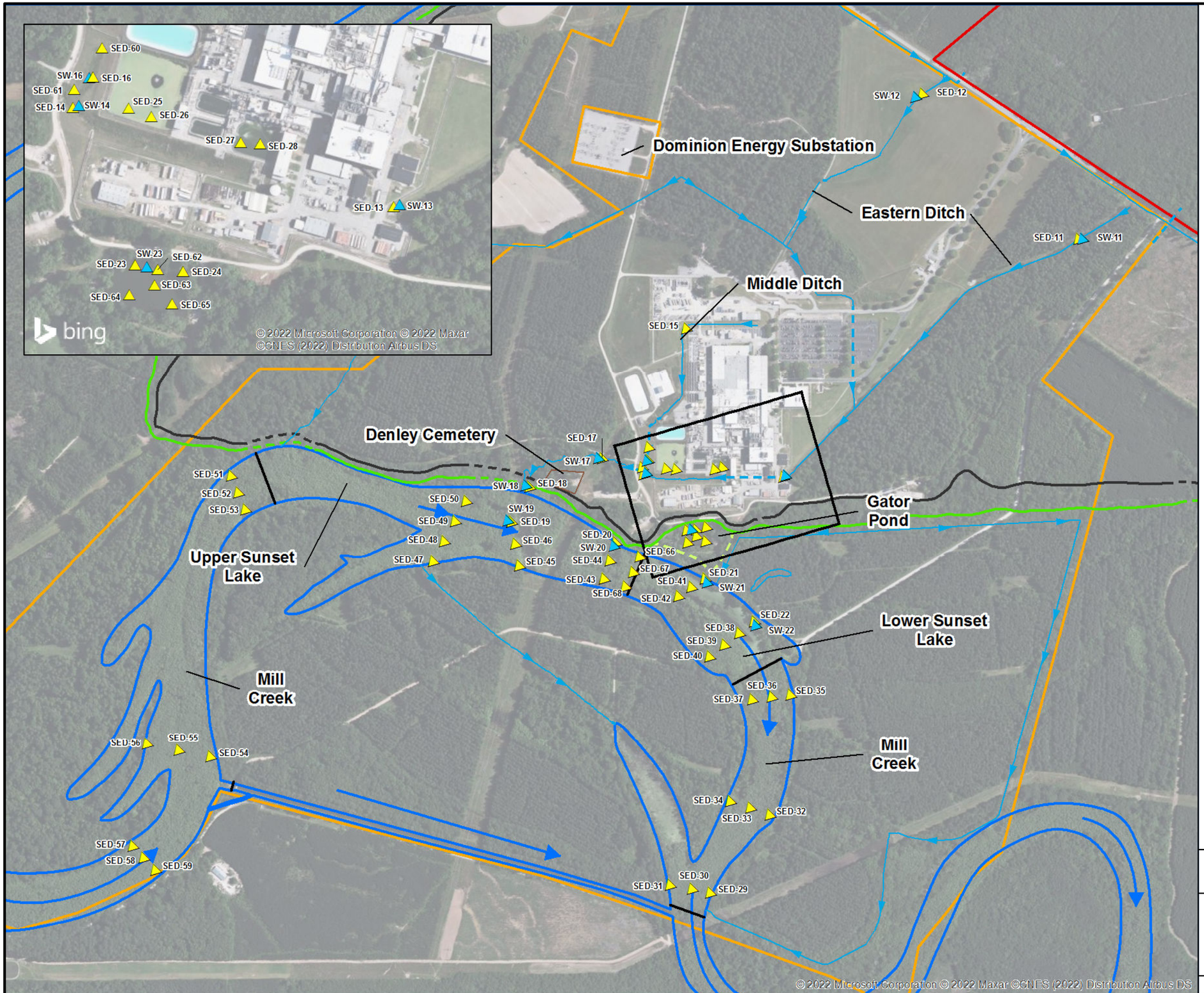
Private Water Supply Well Locations

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	CCS	December 2021	**FIGURE 8**

Path: M:\EnvDataViz\Westinghouse\mxd\2021 RI Report\F8 PrivateWaterSupplyWells.mxd



Legend

- Surface Water Sample Location
- Sediment Sample Location
- Ditch
- Culvert
- Mill Creek Flow Direction
- Dike Location
- Mill Creek
- Property Line
- SCRDI Bluff Road (Superfund Site)
- Top of Bluff
- Inferred Top of Bluff
- Bottom of Bluff
- Inferred Bottom of Bluff
- Secondary Bluff Area

0 400 800 Feet

1:9,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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Sediment and Surface Water Sample Location Map

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

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Path: M:\EnvDataViz\Westinghouse\mxd\2021 RI Report\F9 Sed Surface Water Map.mxd



Legend

- Property Line

Wetlands

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine

NOTE: Ditch systems on this figure come directly from the U.S. Fish and Wildlife Service and may not accurately reflect the actual ditch configuration.

0 500 1,000 Feet

1:12,000

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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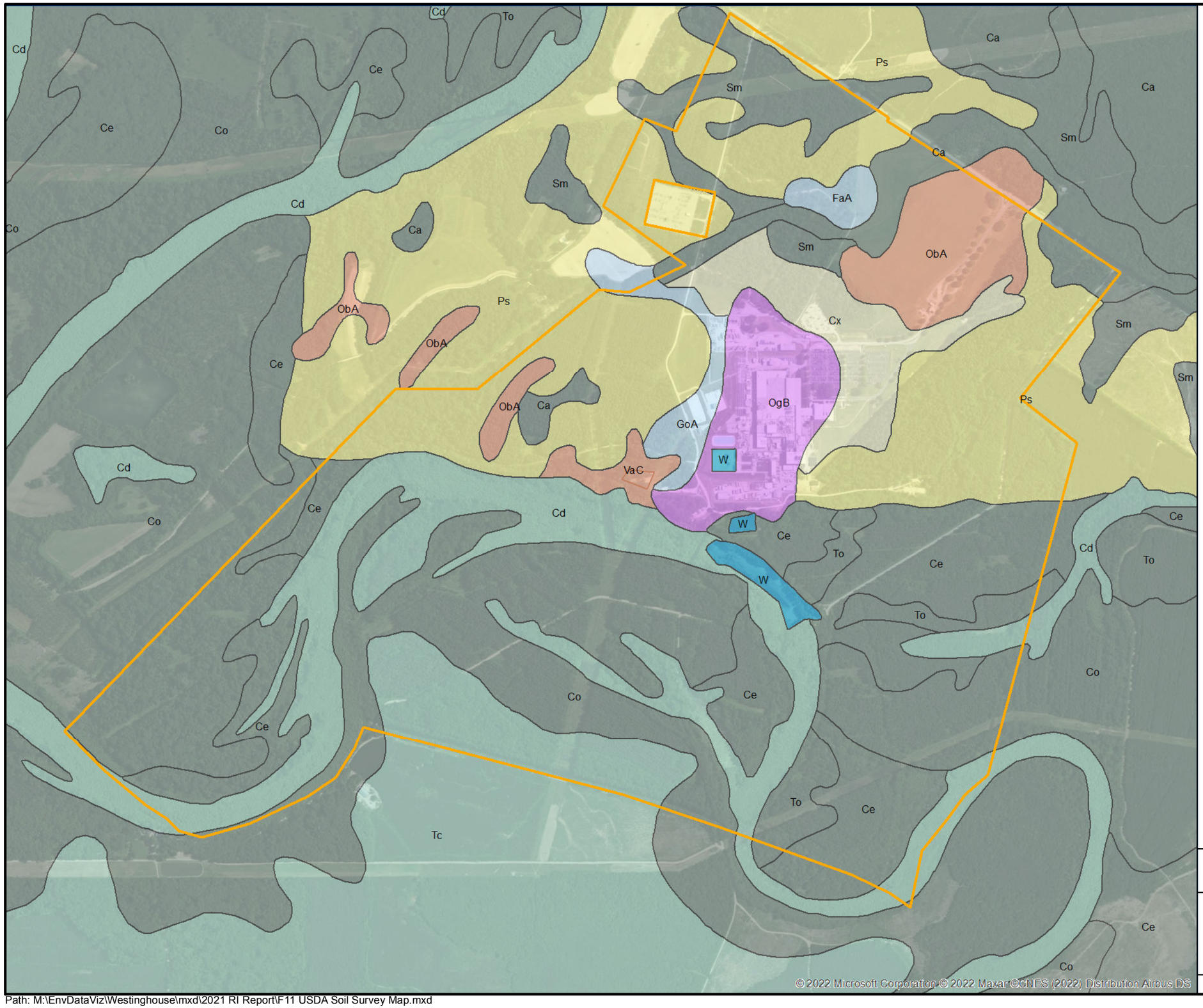
National Wetlands Inventory Map

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	CCS	March 2022	**FIGURE 10**

Path: M:\EnvDataViz\Westinghouse\mxd\2021 RI Report\F10 NWI Map.mxd



Legend

Property Line

Soils

- Loam - Cantley (Ca), Smithboro (Sm), Congaree (Co), Chewcala (Ce), Toccoa (To)
- Silty Clay Loam - Chastain (Cd), TawCas(Tc)
- Fine Sandy Loam - Coxville (Cx)
- Sandy Loam - Faceville (FaA), Goldsboro (GoA)
- Loamy Sand - Orangeburg (ObA), Vaucluse (VaC)
- Very Fine Sandy Loam - Persanti (Ps)
- Orangeburg-Urban Land Complex (OgB)
- Water (W)

0 500 1,000 Feet

1:12,000

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

N

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USDA Soil Survey Map

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	CCS	March 2022	**FIGURE 11**

Path: M:\EnvDataViz\Westinghouse\mxd\2021 RI Report\F11 USDA Soil Survey Map.mxd

VERTICAL EXAGGERATION 2.5X

A North

A' South

W-88 W-89 W-19B W-62 W-68 W-111 W-95 W-110

Lower Sunset Lake

Confining Unit

Black Creek Aquifer

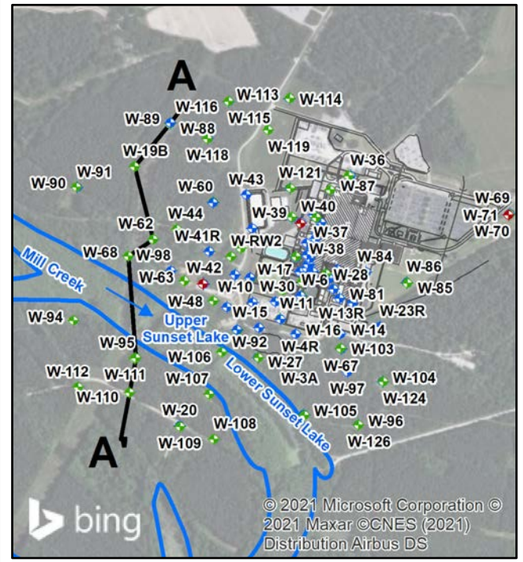
VERTICAL EXAGGERATION 15X

W-88 W-89 W-19B Fluvial Scarp W-62 W-68 W-111 W-95 W-110

Lower Sunset Lake

Confining Unit

Black Creek Aquifer



Legend

Groundwater Monitoring Wells
- Upper Surficial
- Lower Surficial
- Black Creek

Mill Creek

Lithology

Surficial Aquifer
- Silty/Clayey Sand
- Clay
- Silt
- Sand

Confining Unit

Black Creek Aquifer

Well Riser

Well Screen

HORIZONTAL SCALE
0 150 300 Feet
1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Note: Revised in November 2021.
Original figure submitted in July 2020

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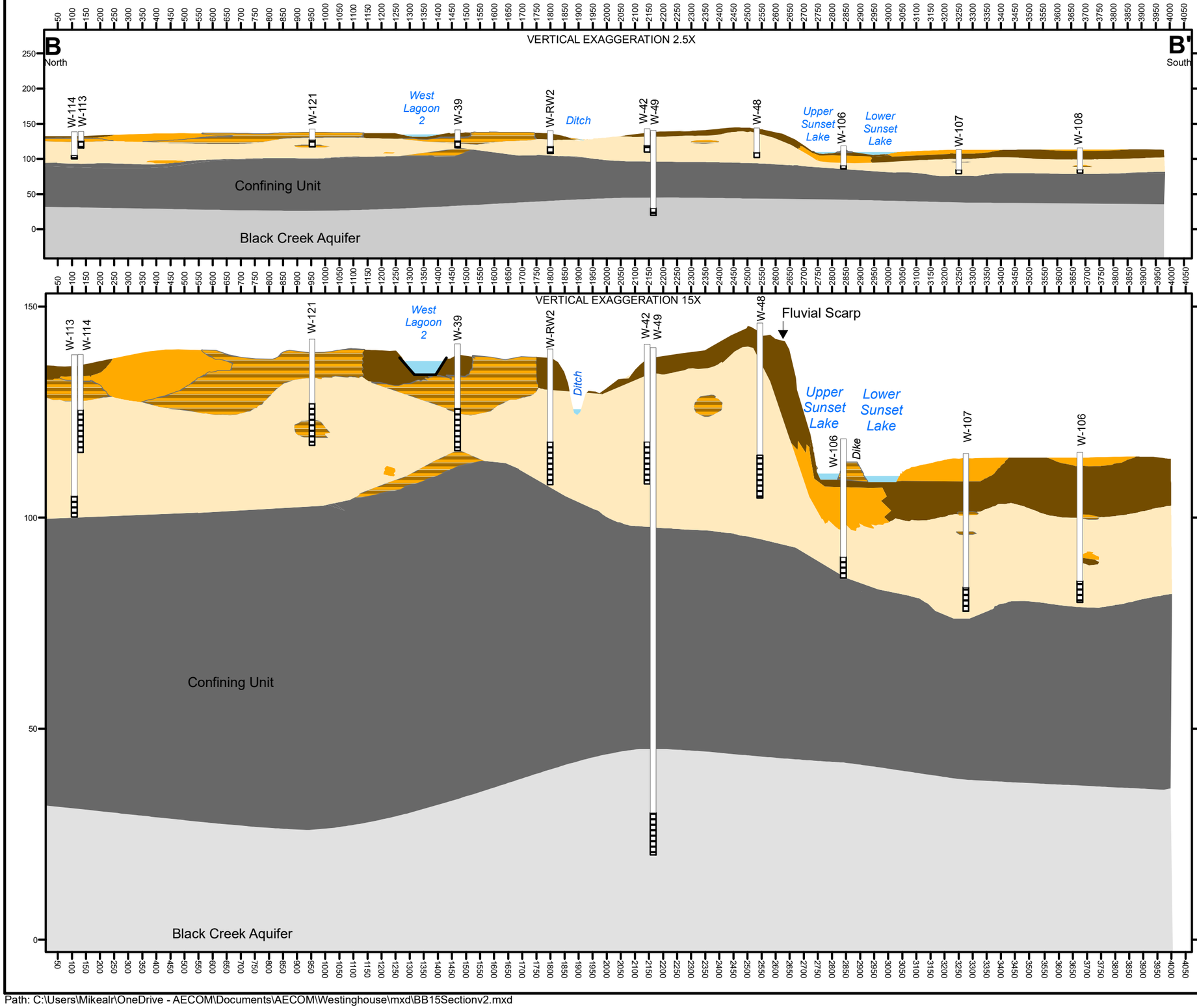
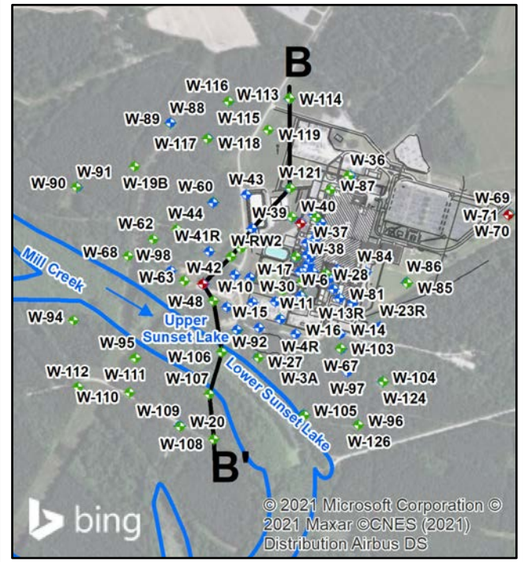
Stratigraphic Cross Section A-A'

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	RGM	December 2021	**FIGURE 12**

Path: C:\Users\Mikealr\OneDrive - AECOM\Documents\AECOM\Westinghouse\mxd\AA15Sectionv2.mxd





Legend

Groundwater Monitoring Wells
- Upper Surficial
- Lower Surficial
- Black Creek

Mill Creek

Lithology

Surficial Aquifer
- Silty/Clayey Sand
- Clay
- Silt
- Sand

Confining Unit

Black Creek Aquifer

Well Riser

Well Screen

HORIZONTAL SCALE
0 175 350
Feet
1:4,200

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Note: Revised in November 2021.
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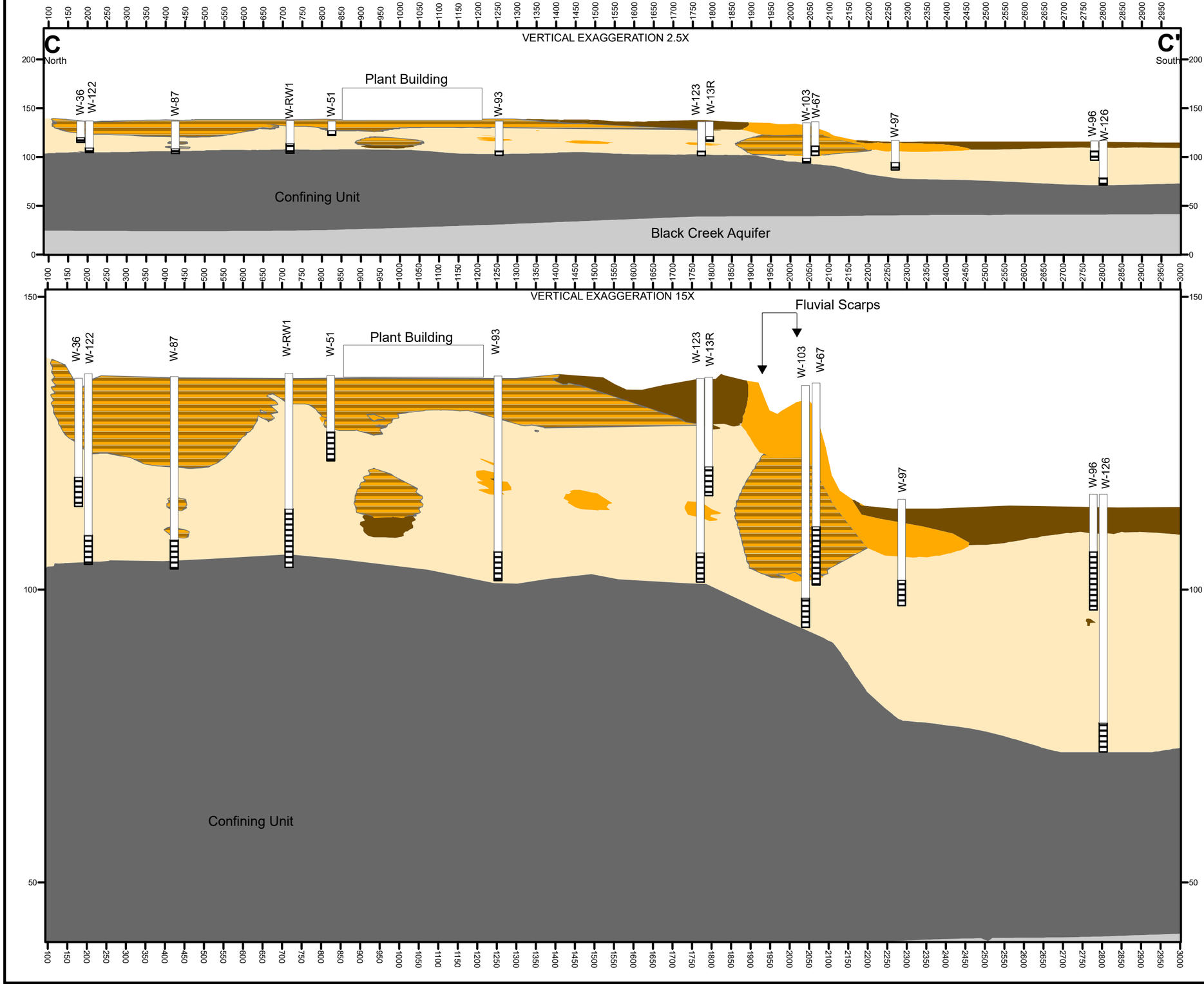
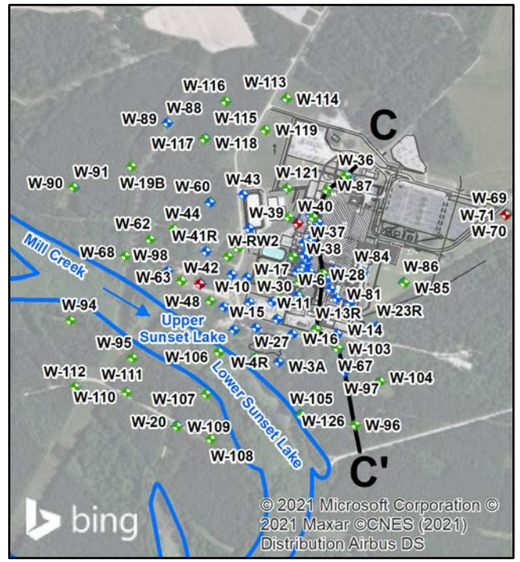
Stratigraphic Cross Section B-B'

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	RGM	December 2021	**FIGURE 13**

Path: C:\Users\Mikealr\OneDrive - AECOM\Documents\AECOM\Westinghouse\mxd\BB15Sectionv2.mxd





Legend

Groundwater Monitoring Wells
- Upper Surficial
- Lower Surficial
- Black Creek

Mill Creek

Lithology

Surficial Aquifer
- Silty/Clayey Sand
- Clay
- Silt
- Sand

Confining Unit

Black Creek Aquifer

Well Riser

Well Screen

HORIZONTAL SCALE
0 125 250 Feet
1:3,000

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Note: Revised in November 2021.
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Stratigraphic Cross Section C-C'

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
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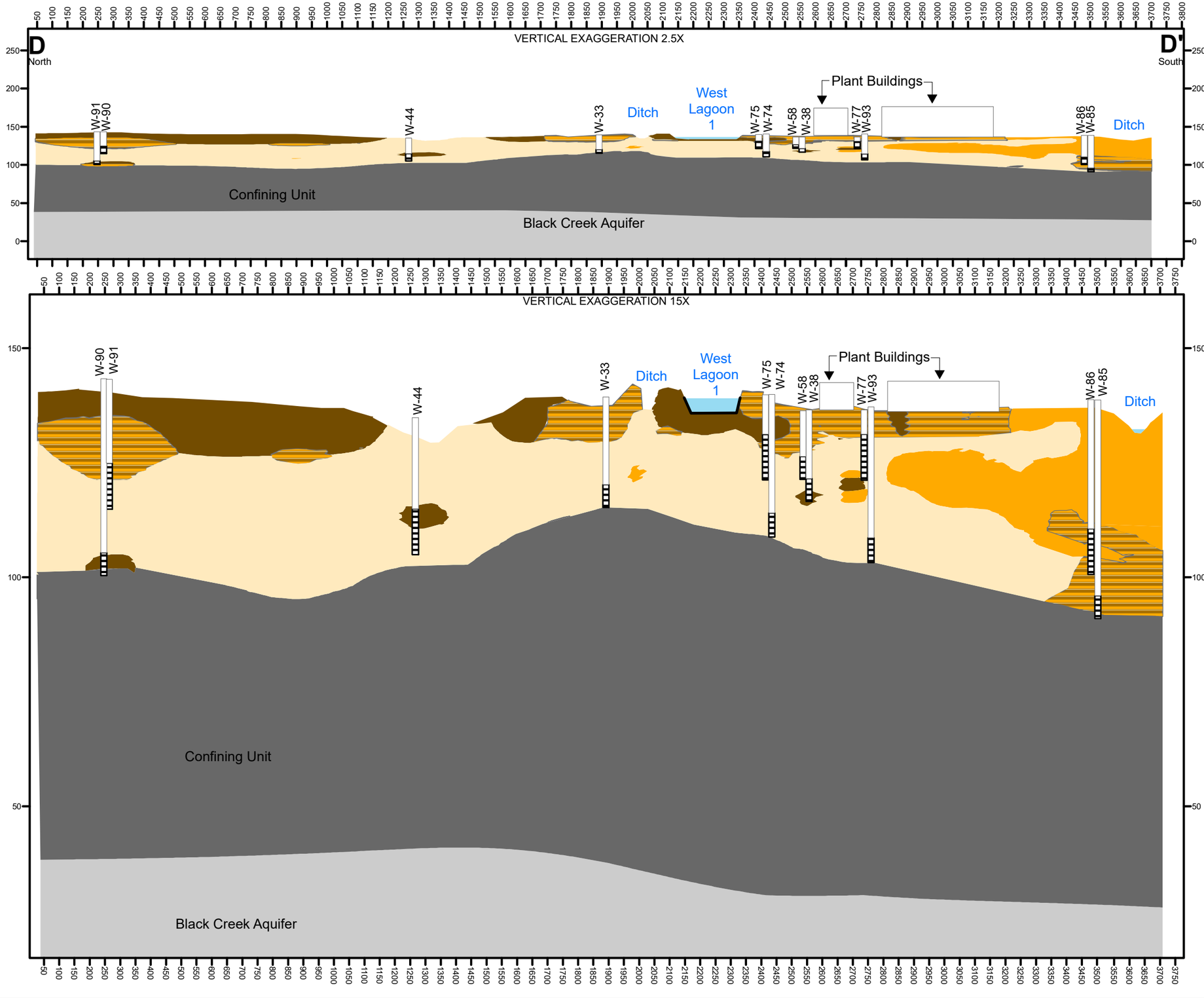
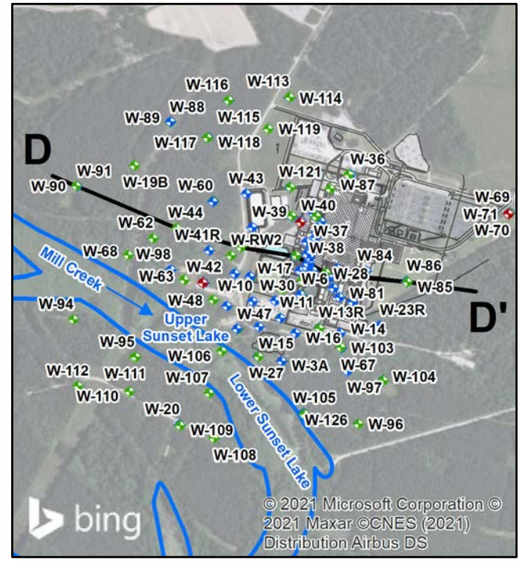
Path: C:\Users\Mikealr\OneDrive - AECOM\Documents\AECOM\Westinghouse\mxd\CC15Sectionv2.mxd





Legend

Groundwater Monitoring Wells
- Upper Surficial
- Lower Surficial
- Black Creek

Mill Creek

Lithology

Surficial Aquifer
- Silty/Clayey Sand
- Clay
- Silt
- Sand

Confining Unit

Black Creek Aquifer

Well Riser

Well Screen

HORIZONTAL SCALE
0 162.5 325
Feet
1:3,900

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet
Datum: North American 1983

Note: Revised in November 2021.
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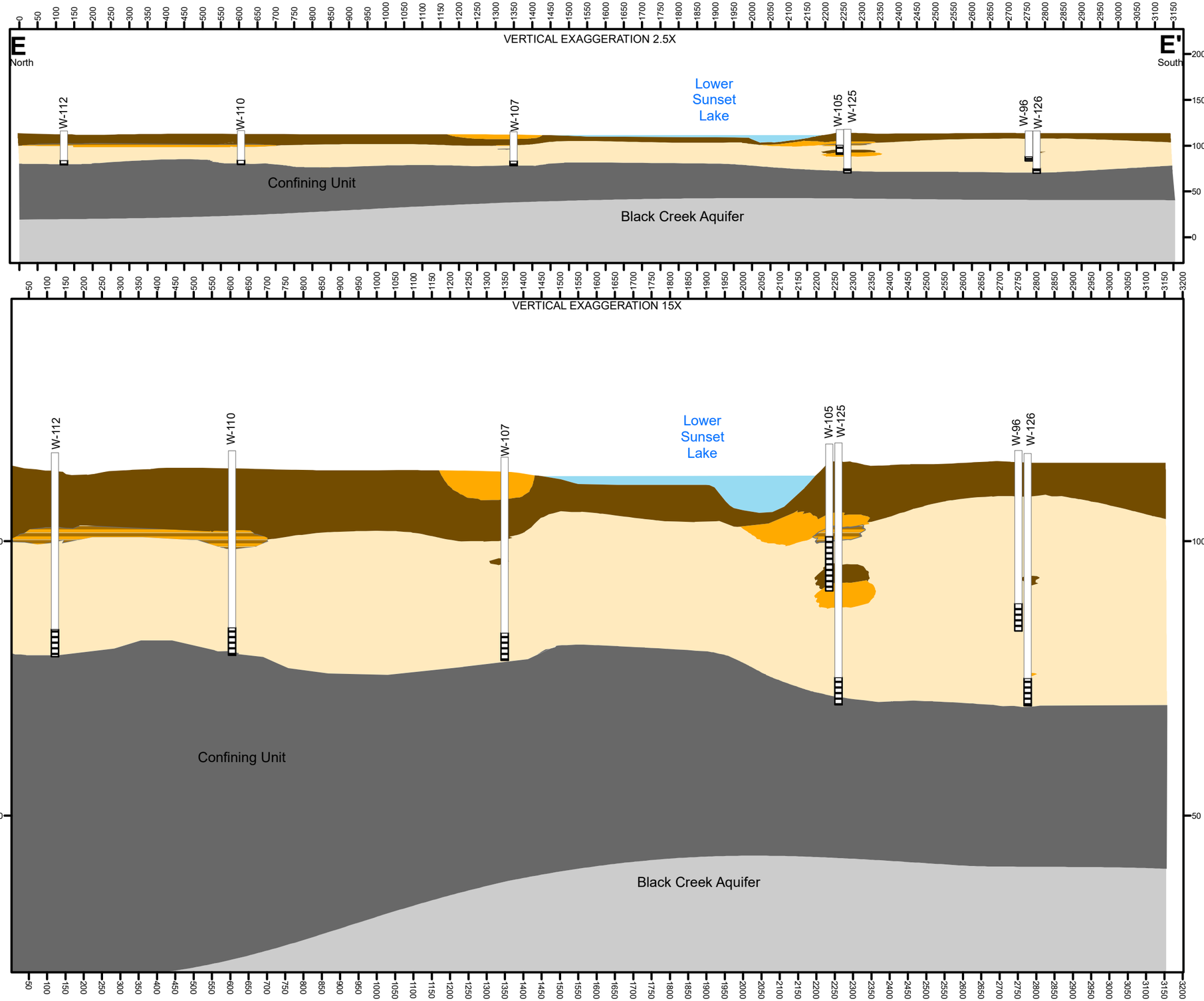
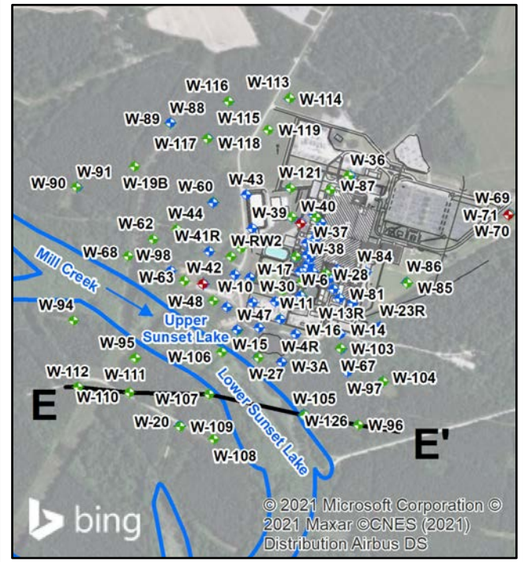
Stratigraphic Cross Section D-D'

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	RGM	December 2021	**FIGURE 15**

Path: C:\Users\Mikealr\OneDrive - AECOM\Documents\AECOM\Westinghouse\mxd\DD15Sectionv2.mxd





Legend

Groundwater Monitoring Wells
- Upper Surficial
- Lower Surficial
- Black Creek

Mill Creek

Lithology

Surficial Aquifer
- Silty/Clayey Sand
- Clay
- Silt
- Sand

Confining Unit

Black Creek Aquifer

Well Riser

Well Screen

HORIZONTAL SCALE
0 137.5 275 Feet
1:3,300

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet
Datum: North American 1983

Note: Revised in November 2021.
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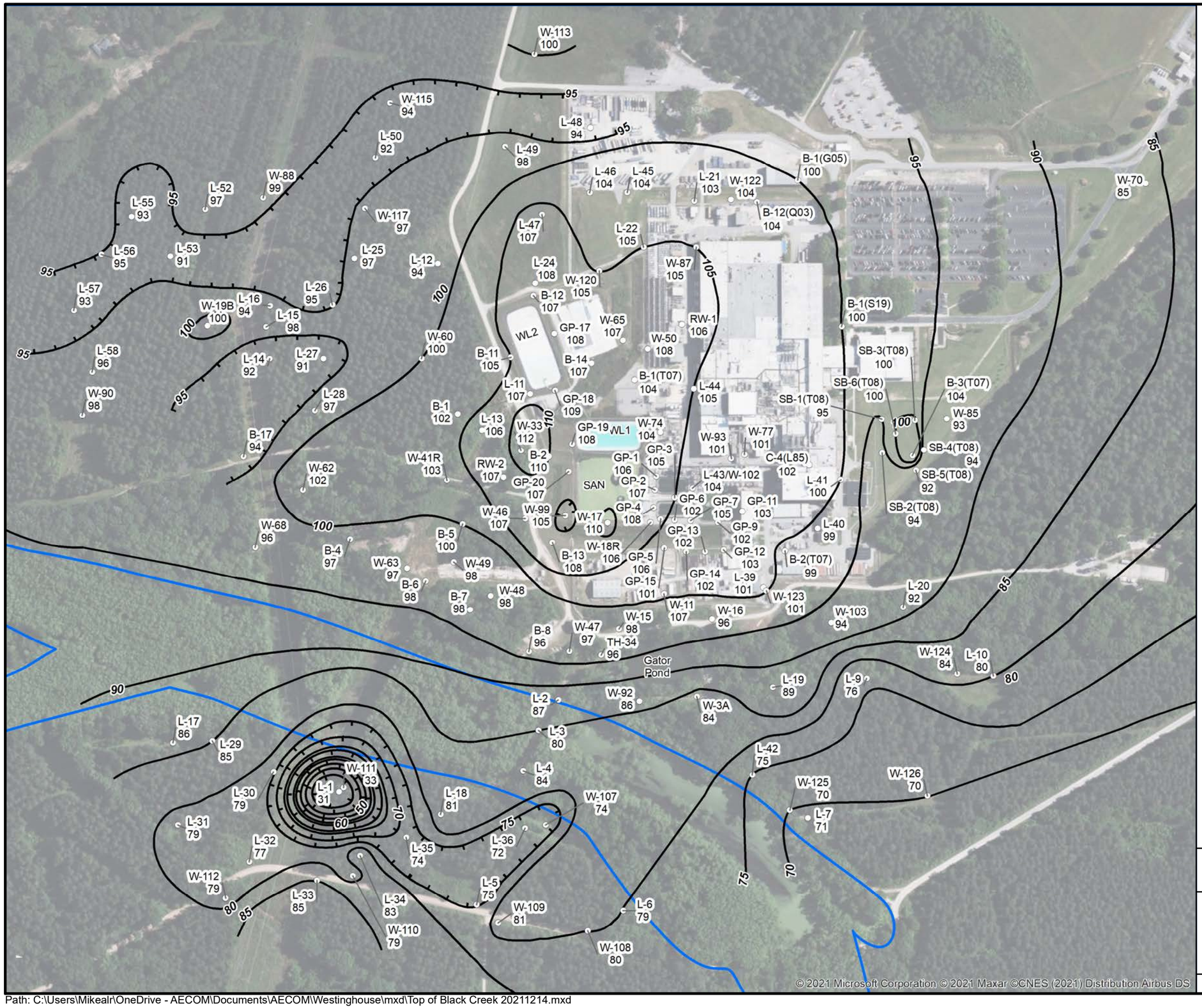
Stratigraphic Cross Section E-E'

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	RGM	December 2021	**FIGURE 16**

Path: C:\Users\Mikealr\OneDrive - AECOM\Documents\AECOM\Westinghouse\mxd\EE15Sectionv2.mxd



Legend

EL	Former East Lagoon
NL	North Lagoon
SL	South Lagoon
SAN	Sanitary Lagoon
WL1	West Lagoon I
WL2	West Lagoon II
	Mill Creek
	Black Creek Clay Elevation (ft-msl)

Elev. Contour of Top of Black Creek Clay (ft-msl)

- Depression 5 ft Contour Interval
- Normal 5 ft Contour Interval

0 180 360 Feet

1:4,337

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Note: Revised in November 2021.
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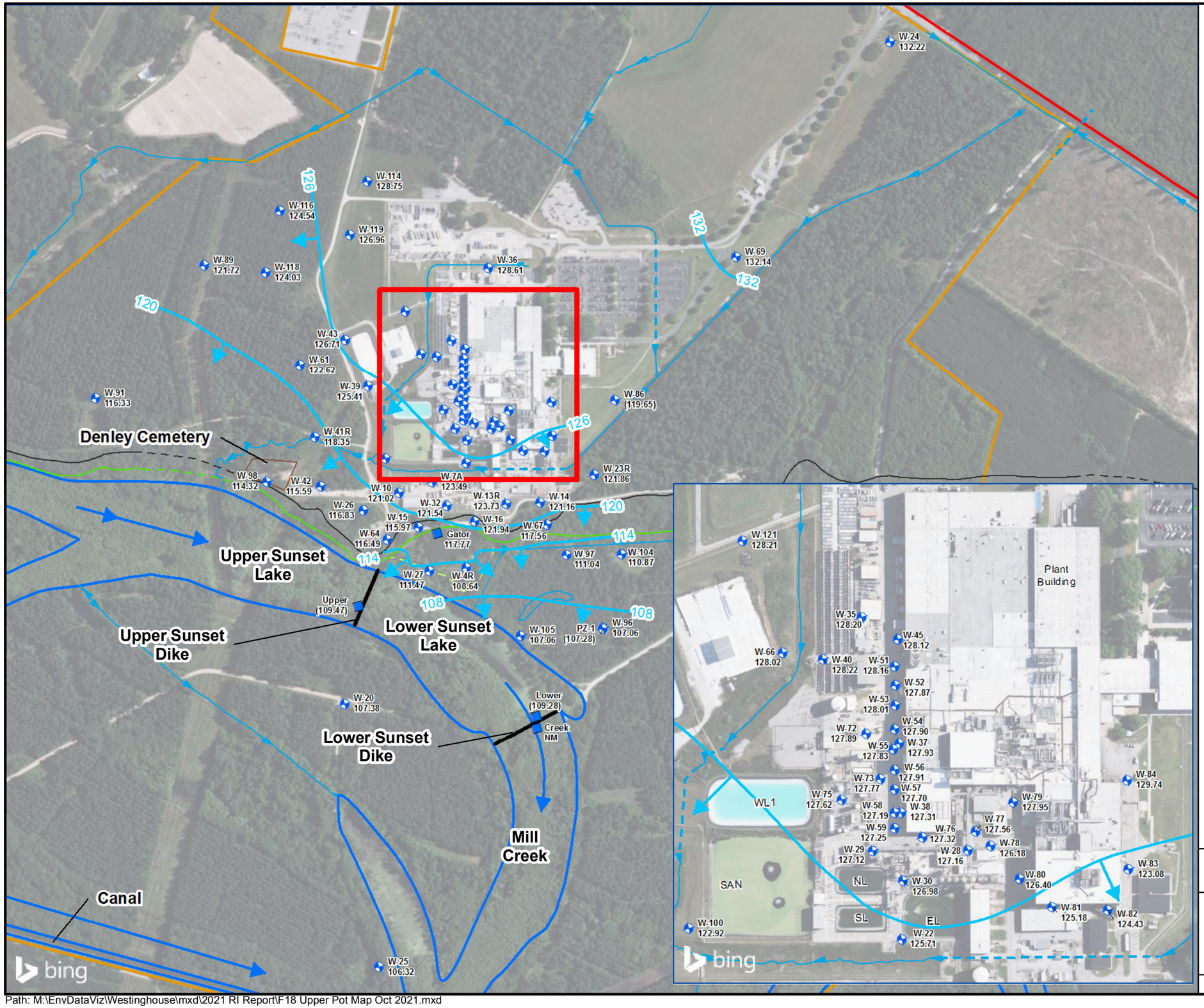
Black Creek Clay Surface Contour Map

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	RGM	November 2021	**FIGURE 17**

Path: C:\Users\Mikealr\OneDrive - AECOM\Documents\AECOM\Westinghouse\mxd\Top of Black Creek 20211214.mxd



Legend

- Surficial Aquifer - Upper Zone Monitoring Well
- Mill Creek
- Property Line
- SCRDI Bluff Road (Superfund Site)
- Culvert
- Ditch
- Mill Creek Flow Direction
- Dike Location
- Staff Gauge Location
- Top of Bluff
- Inferred Top of Bluff
- Bottom of Bluff
- Inferred Bottom of Bluff
- Secondary Bluff Area
- EL Former East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon I
- WL2 West Lagoon II
- Potentiometric Line (C.I. = 6 feet)
- Direction of Groundwater
- 129.74 Groundwater Elevation
- (119.65) Elevation for illustrative purposes only

Based upon data collected on October 4, 2021

0 300 600 Feet

1:7,200

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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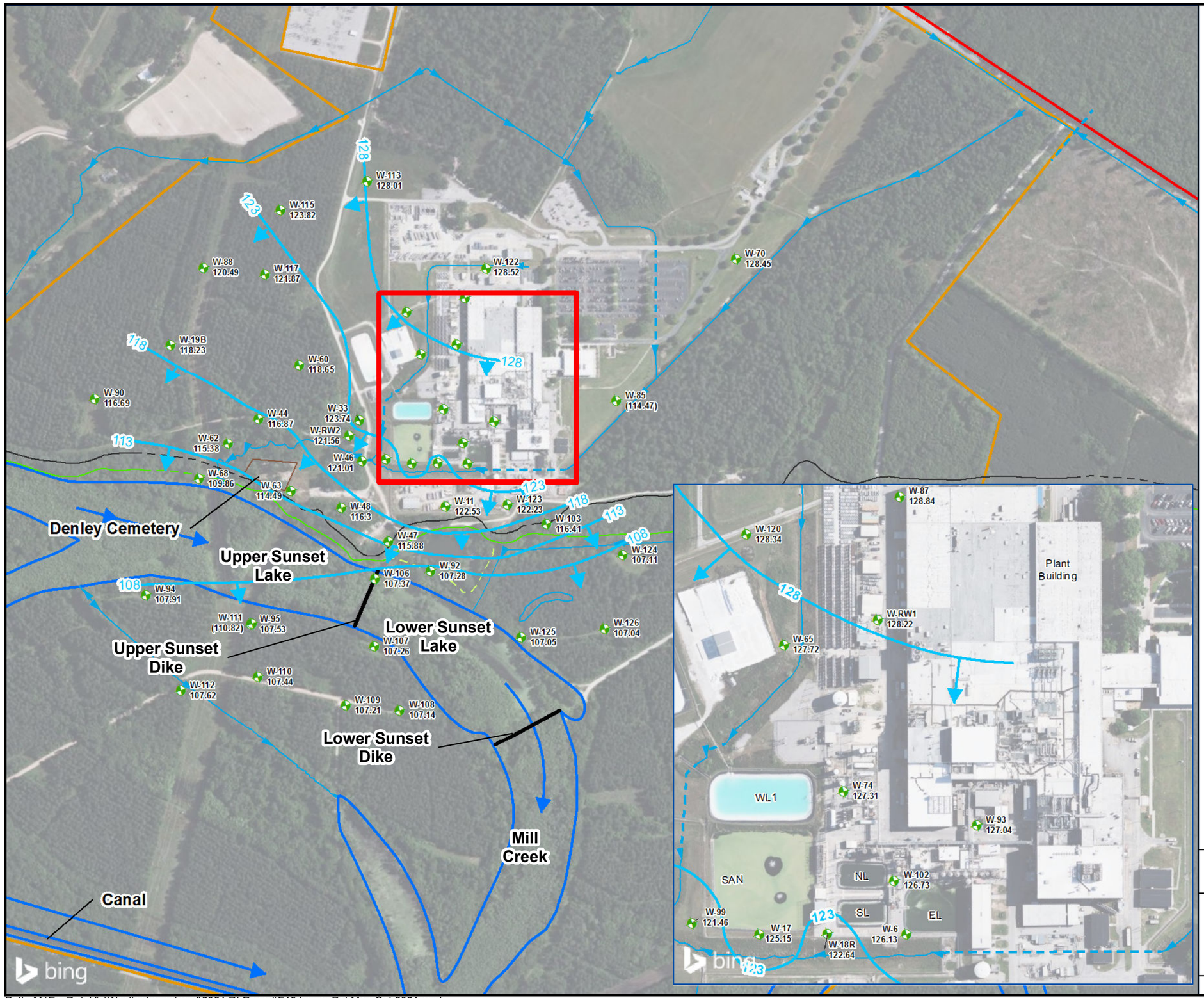
Surficial Aquifer - Upper Zone Potentiometric Map October 2021

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	CCS	July 2022	**FIGURE 18**

Path: M:\EnvDataViz\Westinghouse\mxd\2021 RI Report\F18 Upper Pot Map Oct 2021.mxd



Legend

- Surficial Aquifer - Lower Zone Monitoring Well
- Mill Creek
- Property Line
- SCRDI Bluff Road (Superfund Site)
- Culvert
- Ditch
- Mill Creek Flow Direction
- Dike Location
- Top of Bluff
- Inferred Top of Bluff
- Bottom of Bluff
- Inferred Bottom of Bluff
- Secondary Bluff Area
- EL Former East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon I
- WL2 West Lagoon II
- Potentiometric Line (C.I. = 5 feet)
- Direction of Groundwater
- 128.84 Groundwater Elevation
- (114.47) Elevation for illustrative purposes only

Based upon data collected on October 4, 2021

0 300 600 Feet

1:7,200

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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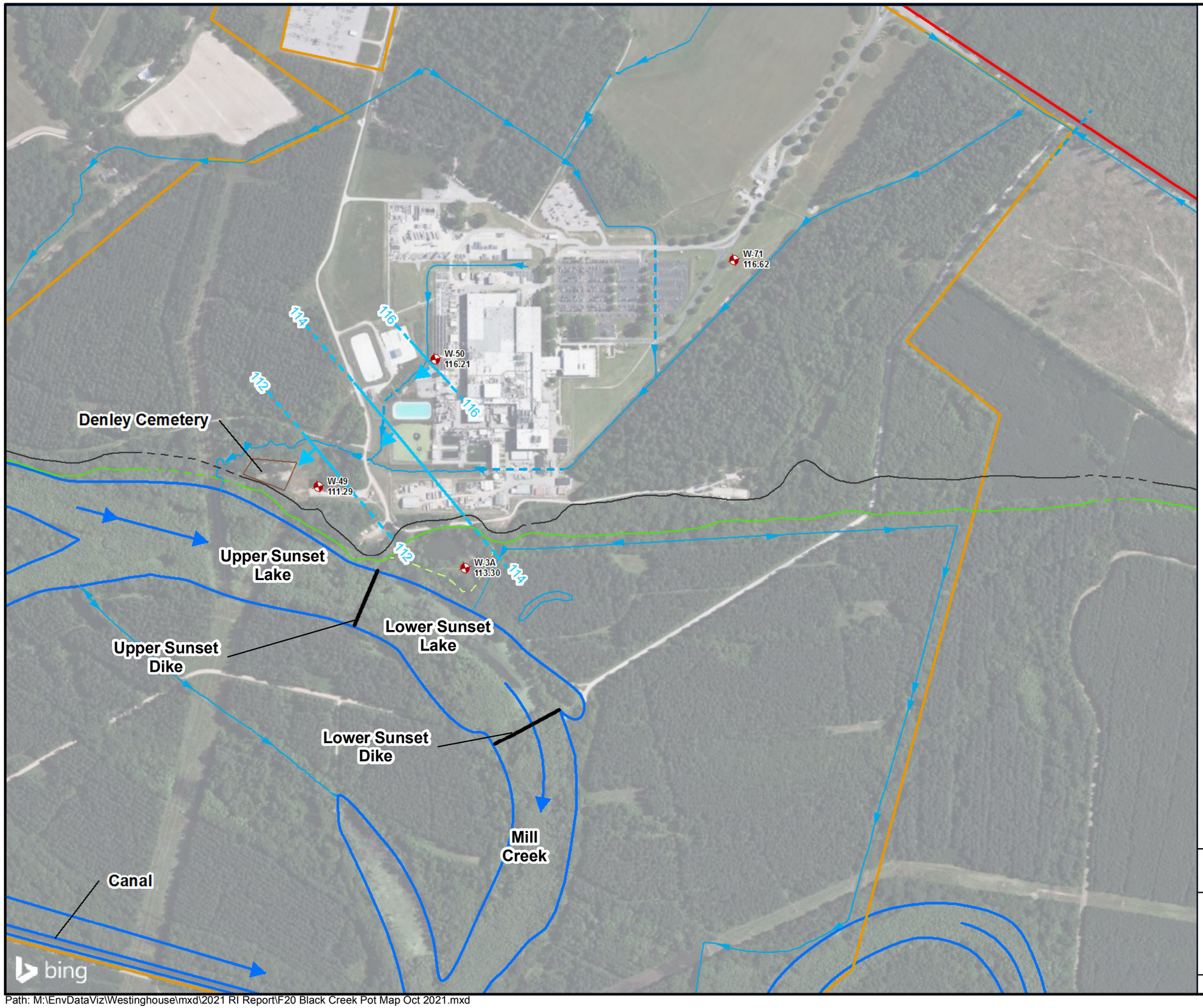
Surficial Aquifer - Lower Zone Potentiometric Map October 2021

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	CCS	July 2022	**FIGURE 19**

Path: M:\EnvDataViz\Westinghouse\mxd\2021 RI Report\F19 Lower Pot Map Oct 2021.mxd



Legend

- Black Creek Aquifer Monitoring Well
- Mill Creek
- Property Line
- SCRDI Bluff Road (Superfund Site)
- Culvert
- Ditch
- Mill Creek Flow Direction
- Dike Location
- Top of Bluff
- Inferred Top of Bluff
- Bottom of Bluff
- Inferred Bottom of Bluff
- Secondary Bluff Area
- EL Former East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon I
- WL2 West Lagoon II
- Potentiometric Line (C.I. = 2 feet, dashed where inferred)
- Direction of Groundwater
- 116.21 Groundwater Elevation

Based upon data collected on October 4, 2021

0 300 600 Feet

1:7,200

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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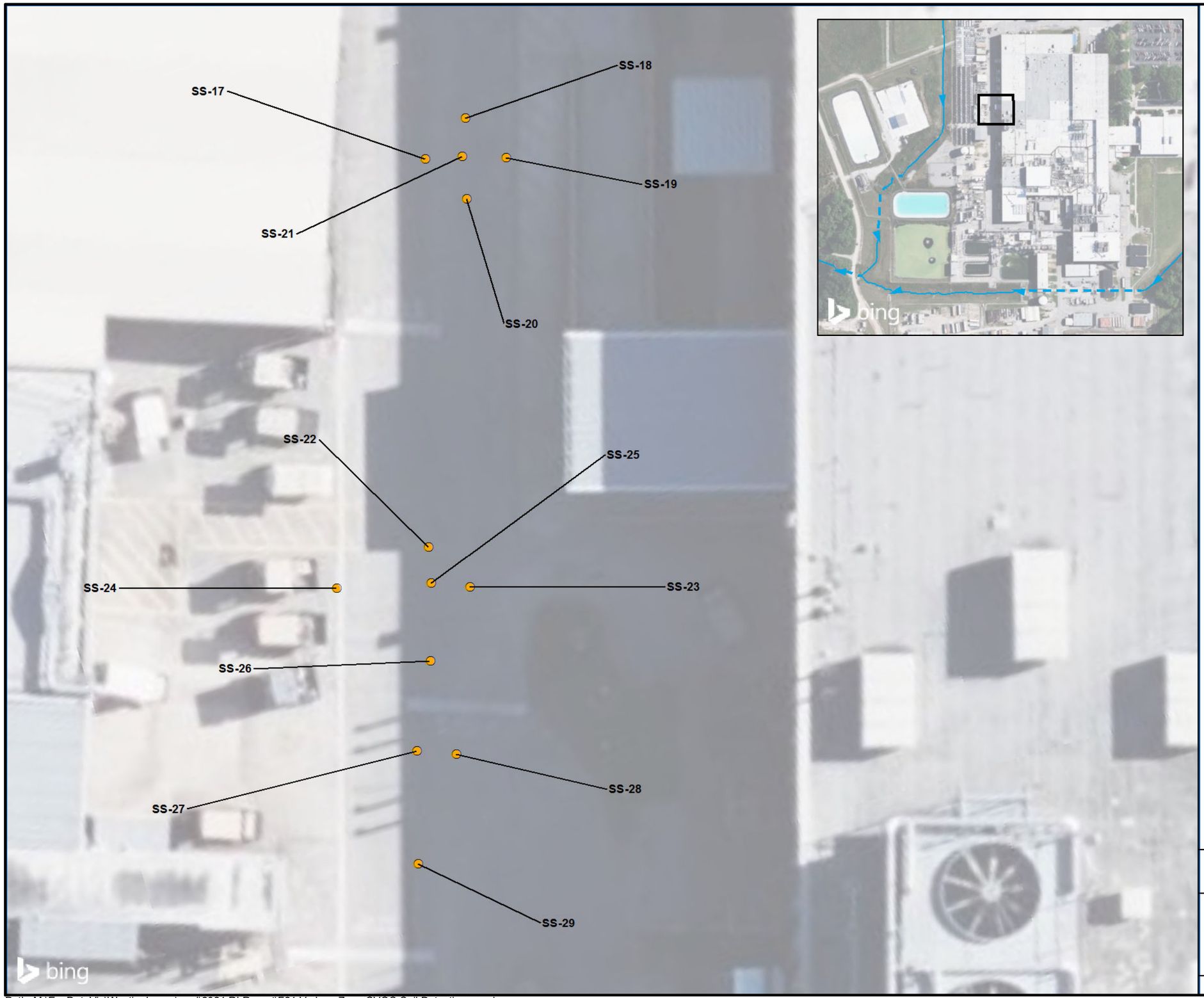
Black Creek Aquifer Potentiometric Map October 2021

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	CCS	July 2022	**FIGURE 20**

Path: M:\EnvDataViz\Westinghouse\mxd\2021 RI Report\F20 Black Creek Pot Map Oct 2021.mxd



Legend

- Soil Sample Location
- Ditch
- Culvert
- 21 Concentration in ug/kg
- Soil Sampling Location

0 5 10
Feet

1:144

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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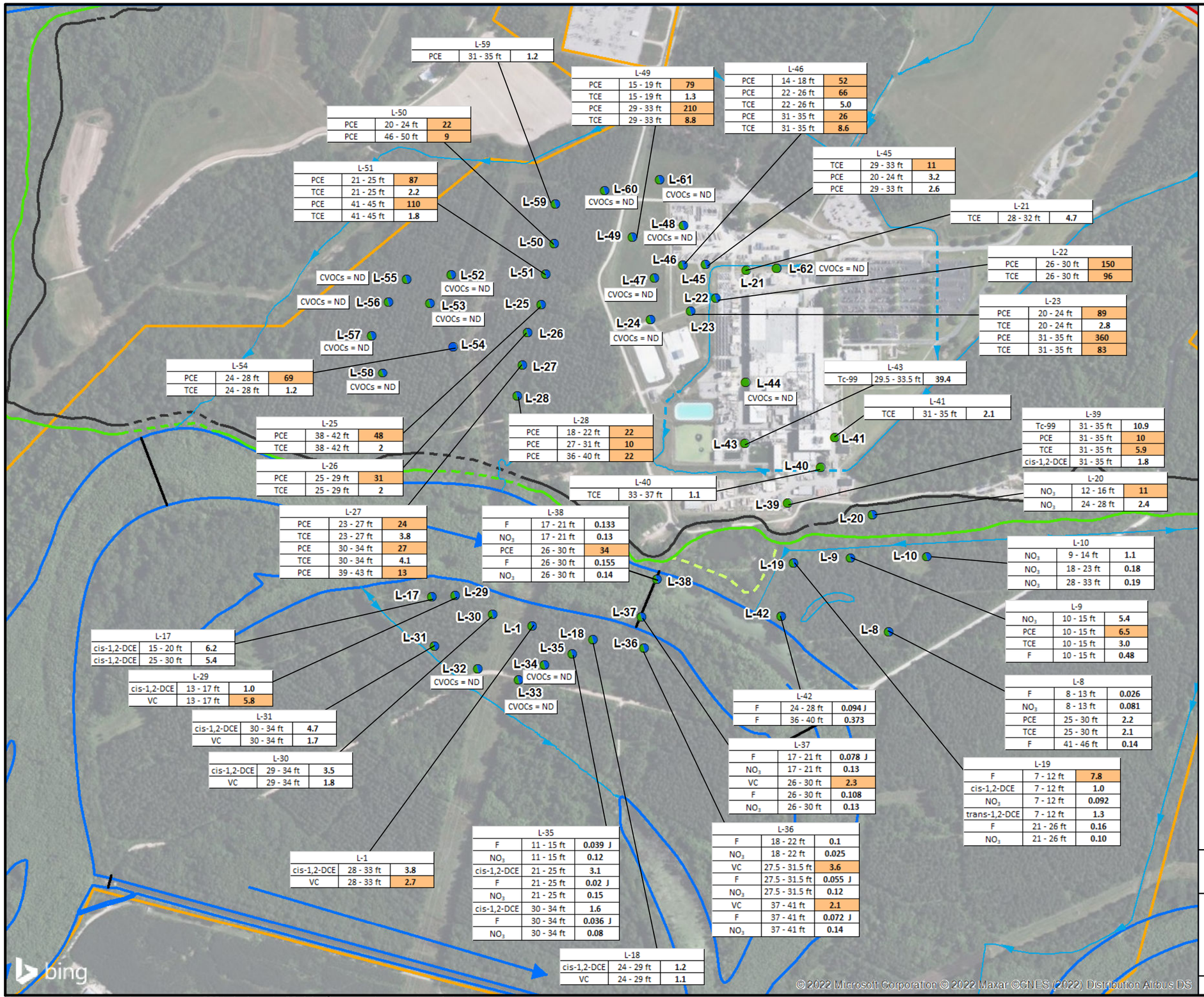
Vadose Zone CVOC Soil Detections

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	CCS	July 2022	**FIGURE 21**

Path: M:\EnvDataViz\Westinghouse\mxd\2021 RI Report\F21 Vadose Zone CVOC Soil Detections.mxd



Legend

- L - Surficial Aquifer Groundwater Screening Location - Upper Zone
- L - Surficial Aquifer Groundwater Screening Location - Lower Zone
- L - Surficial Aquifer Groundwater Screening Location - Upper and Lower Zones
- Ditch
- Culvert
- Mill Creek Flow Direction
- Dike Location
- Mill Creek
- Property Line
- SCRDI Bluff Road (Superfund Site)
- Top of Bluff
- Inferred Top of Bluff
- Bottom of Bluff
- Inferred Bottom of Bluff
- Secondary Bluff Area

PCE	Tetrachloroethene
TCE	Trichlorothene
cis-1,2-DCE	cis-1,2-Dichloroethene
trans-1,2-DCE	trans-1,2-Dichloroethene
VC	Vinyl Chloride
F	Fluoride
NO_3	Nitrate
Tc-99	Techenetium-99 (Total)
J	Result below reporting limit
ND	Not Detected

Analyte	MCL	Units
PCE	5	ug/L
TCE	5	ug/L
cis-1,2-DCE	70	ug/L
trans-1,2-DCE	100	ug/L
VC	2	ug/L
F	4	mg/L
NO_3	10	mg/L
Tc-99	900	pCi/L

Notes:
1. Data in boxes shaded orange exceed MCL Concentrations.

0 300 600 Feet

1:7,200

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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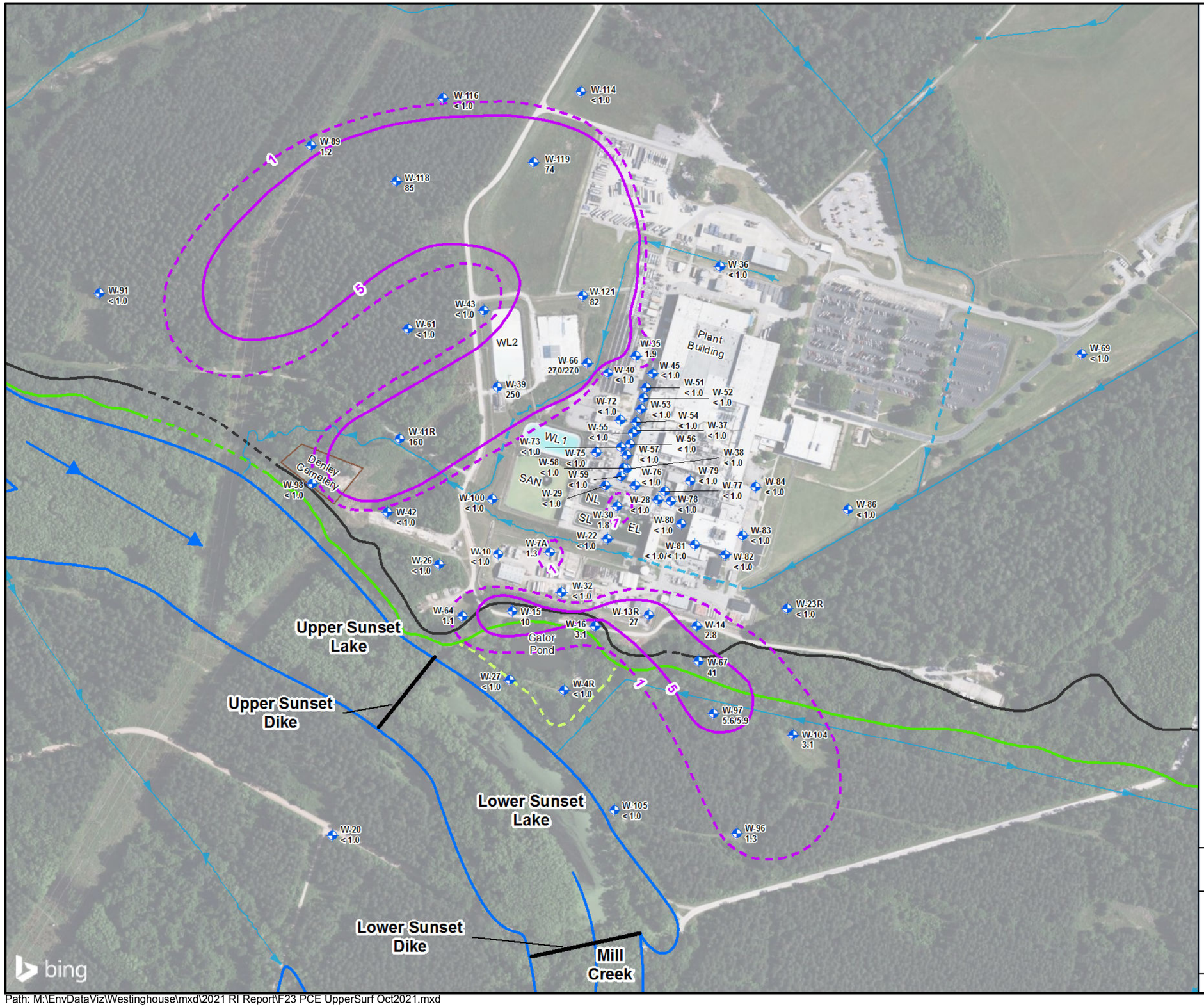
DPT Groundwater Analytical Detections

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	CCS	July 2022	**FIGURE 22**

Path: M:\EnvDataViz\Westinghouse\mxd\2021 RI Report\F22 DPT Groundwater Analytical Detections.mxd



Legend

- Surficial Aquifer - Upper Zone Monitoring Well
- Ditch
- Culvert
- Dike Location
- Mill Creek
- Mill Creek Flow Direction
- Top of Bluff
- Inferred Top of Bluff
- Bottom of Bluff
- Inferred Bottom of Bluff
- Secondary Bluff Area
- PCE Isoconcentration Contour (5 µg/L)
- PCE Isoconcentration Contour at or Above the Detection Limit (µg/L)
- 270 PCE Concentration in µg/L
- EL Former East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

Notes:

Based upon data collected in October 2021.

Although the river terrace sediments above and below the bluff are of different geologic ages (Pleistocene-vs-Holocene), they were deposited under similar conditions, have similar lithologies and are hydrogeologically connected as a single surficial aquifer.

Wells displaying two concentration values had a quality control duplicate sample taken.

N

0 200 400 Feet

1:4,800

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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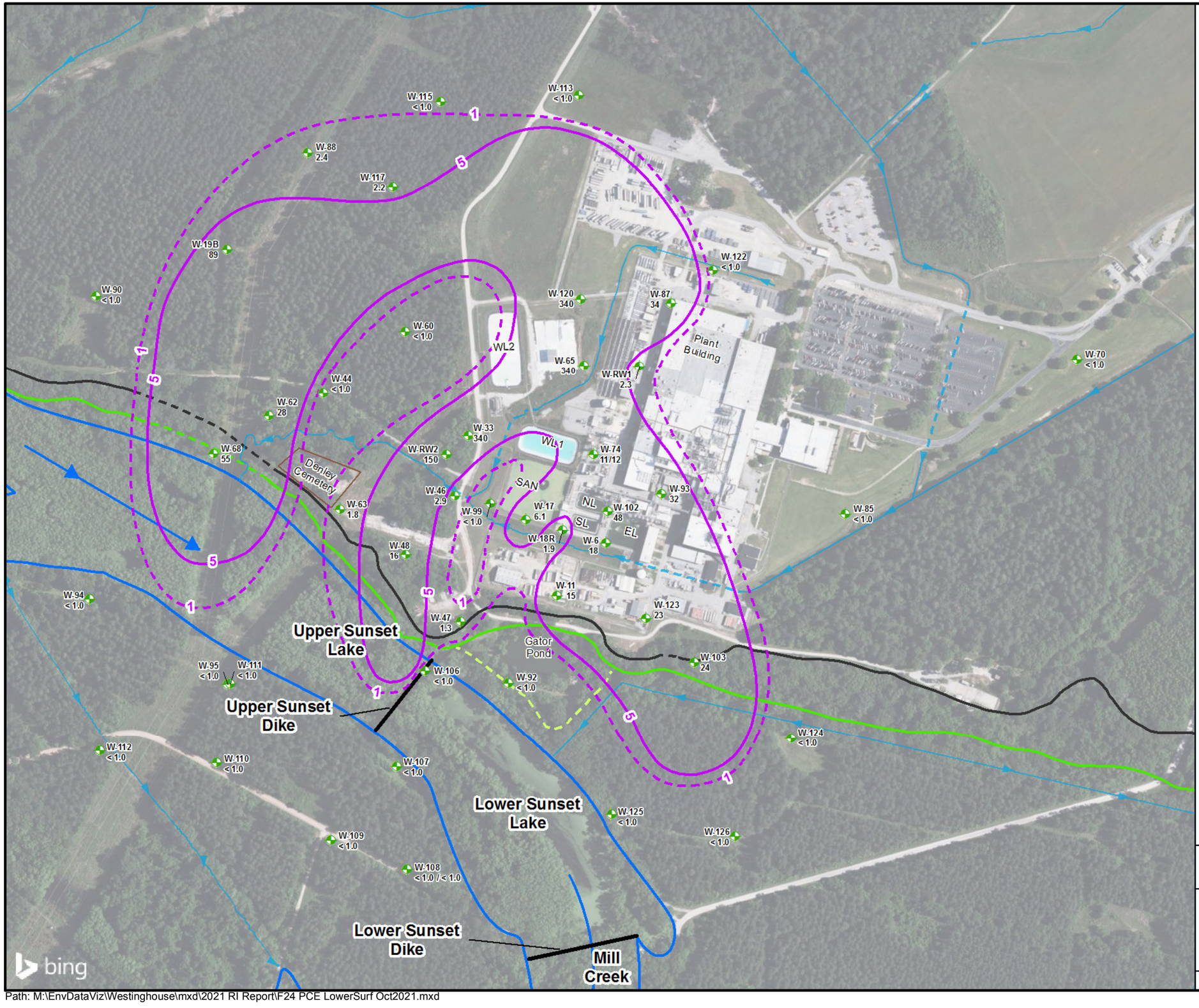
Extent of PCE - Surficial Aquifer - Upper Zone October 2021

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	CCS	July 2022	**FIGURE 23**

Path: M:\EnvDataViz\Westinghouse\mxd\2021 RI Report\F23 PCE UpperSurf Oct2021.mxd



Legend

- Surficial Aquifer - Lower Zone Monitoring Well
- Ditch
- Culvert
- Dike Location
- Mill Creek Flow Direction
- Mill Creek
- Top of Bluff
- Inferred Top of Bluff
- Bottom of Bluff
- Inferred Bottom of Bluff
- Secondary Bluff Area
- PCE Isoconcentration Contour (5 µg/L)
- PCE Isoconcentration Contour at or Above the Detection Limit (µg/L)
- 340 PCE Concentration in µg/L
- EL Former East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

Notes:
Based upon data collected in October 2021.
Although the river terrace sediments above and below the bluff are of different geologic ages (Pleistocene-vs-Holocene), they were deposited under similar conditions, have similar lithologies and are hydrogeologically connected as a single surficial aquifer.

Wells displaying two concentration values had a quality control duplicate sample taken.

N

0 200 400 Feet

1:4,800

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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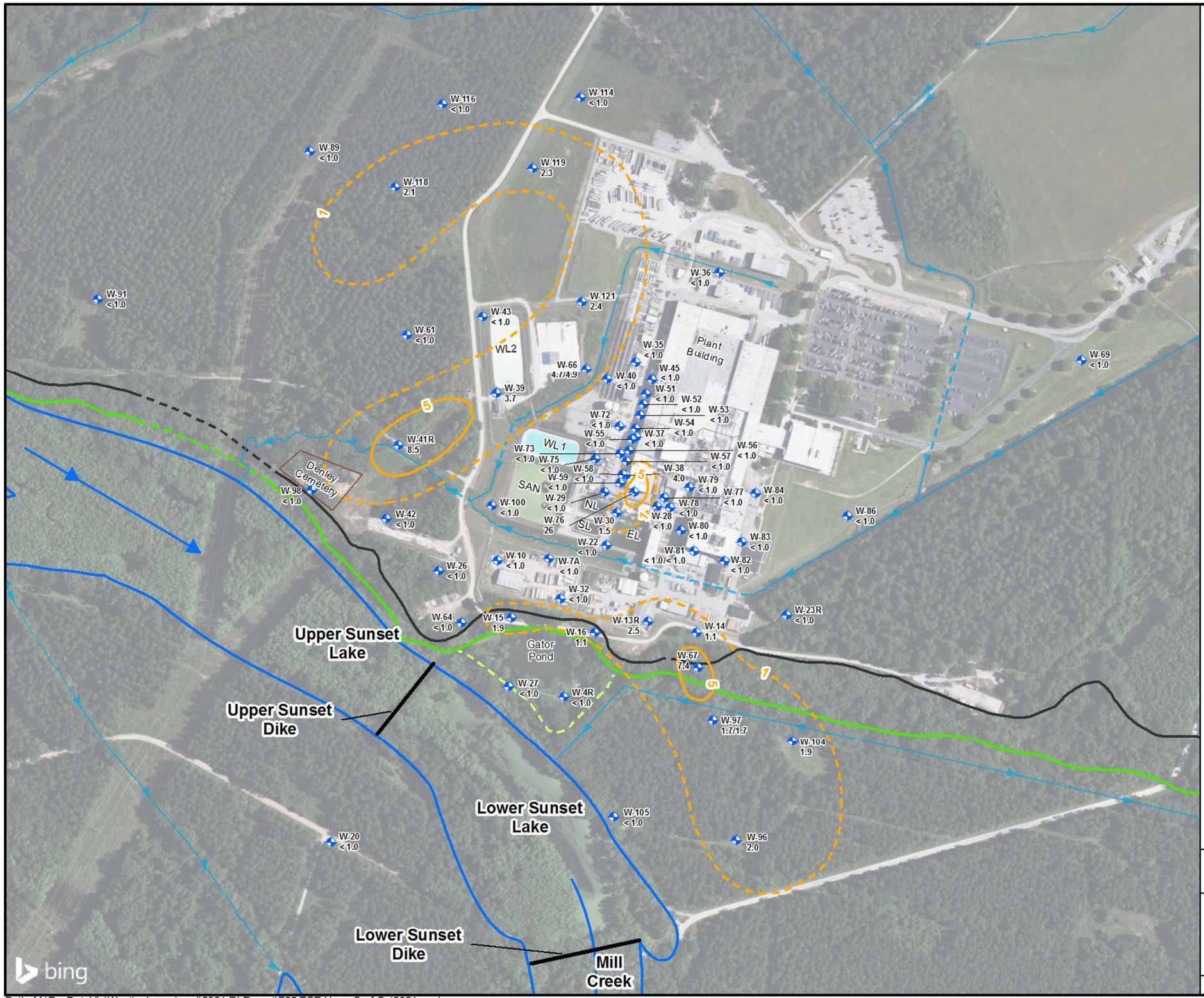
Extent of PCE
Surficial Aquifer - Lower Zone
October 2021

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	CCS	July 2022	**FIGURE 24**

Path: M:\EnvDataViz\Westinghouse\mxd\2021 RI Report\F24 PCE LowerSurf Oct2021.mxd



Legend

- Surficial Aquifer - Upper Zone Monitoring Well
- Ditch
- Culvert
- Dike Location
- Mill Creek Flow Direction
- Mill Creek
- Top of Bluff
- Inferred Top of Bluff
- Bottom of Bluff
- Inferred Bottom of Bluff
- Secondary Bluff Area
- TCE Isoconcentration Contour (5 ug/L)
- TCE Isoconcentration Contour at or Above the Detection Limit (µg/L)
- 26 — TCE Concentration in ug/L
- EL — Former East Lagoon
- NL — North Lagoon
- SL — South Lagoon
- SAN — Sanitary Lagoon
- WL1 — West Lagoon 1
- WL2 — West Lagoon 2

Notes:

Based upon data collected in October 2021.

Although the river terrace sediments above and below the bluff are of different geologic ages (Pleistocene-vs-Holocene), they were deposited under similar conditions, have similar lithologies and are hydrogeologically connected as a single surficial aquifer.

Wells displaying two concentration values had a quality control duplicate sample taken.

N

0 200 400 Feet

1:4,800

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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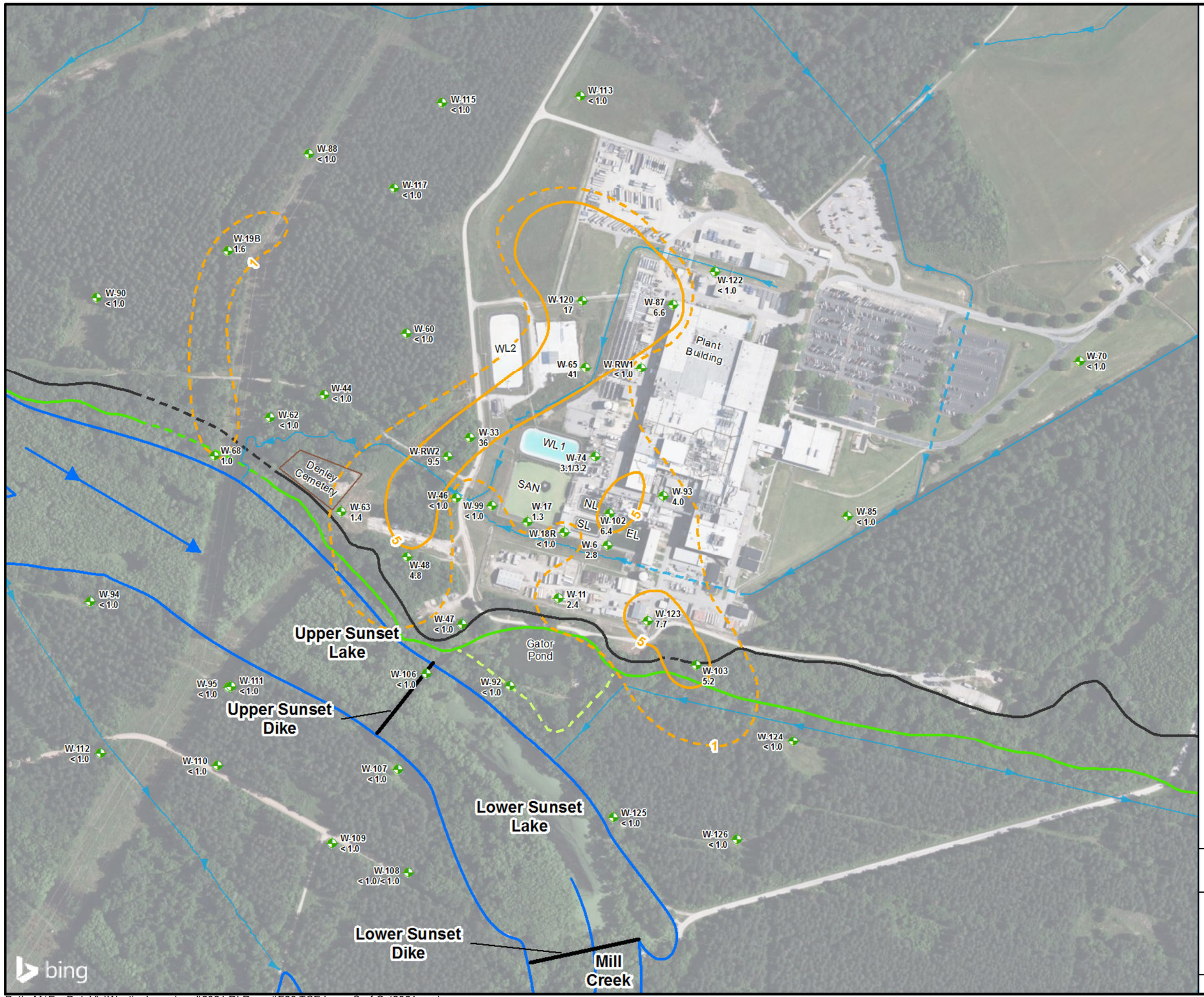
Extent of TCE
Surficial Aquifer - Upper Zone
October 2021

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	CCS	July 2022	**FIGURE 25**

Path: M:\EnvDataViz\Westinghouse\mxd\2021 RI Report\F25 TCE UpperSurf Oct2021.mxd



Legend

- Surficial Aquifer - Lower Zone Monitoring Well
- Ditch
- Culvert
- Dike Location
- Mill Creek Flow Direction
- Mill Creek
- Top of Bluff
- Inferred Top of Bluff
- Bottom of Bluff
- Inferred Bottom of Bluff
- Secondary Bluff Area
- TCE Isoconcentration Contour (5 ug/L)
- TCE Isoconcentration Contour at or Above the Detection Limit (µg/L)

41	TCE Concentration in ug/L
EL	Former East Lagoon
NL	North Lagoon
SL	South Lagoon
SAN	Sanitary Lagoon
WL1	West Lagoon 1
WL2	West Lagoon 2

Notes:

Based upon data collected in October 2021.

Although the river terrace sediments above and below the bluff are of different geologic ages (Pleistocene-vs-Holocene), they were deposited under similar conditions, have similar lithologies and are hydrogeologically connected as a single surficial aquifer.

Wells displaying two concentration values had a quality control duplicate sample taken.

0 200 400 Feet

1:4,800

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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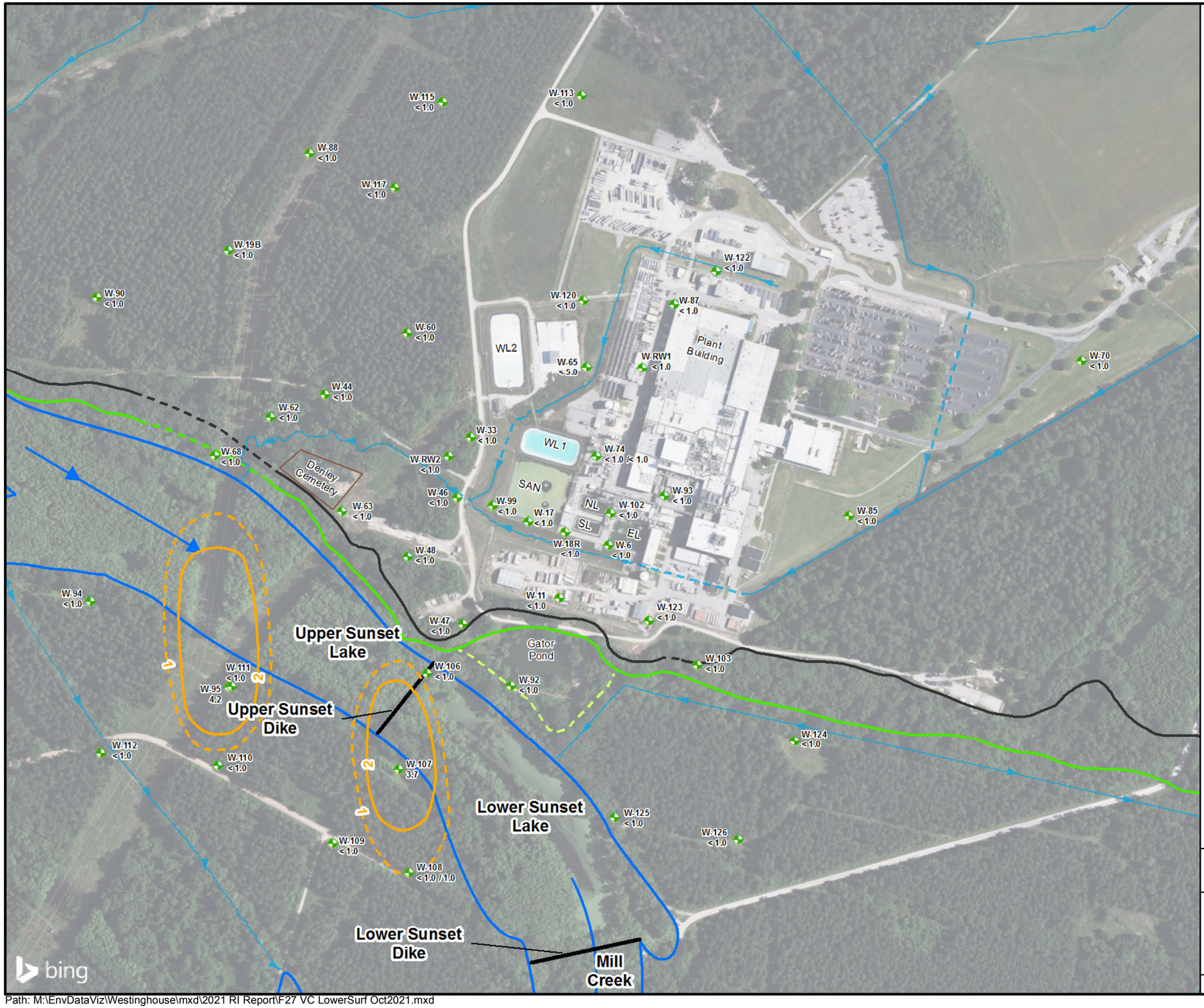
Extent of TCE
Surficial Aquifer - Lower Zone
October 2021

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	CCS	July 2022	**FIGURE 26**

Path: M:\EnvDataViz\Westinghouse\mxd\2021 RI Report\F26 TCE LowerSurf Oct2021.mxd



Legend

- Surficial Aquifer - Lower Zone Monitoring Well
- Ditch
- Culvert
- Ditch
- Mill Creek Flow Direction
- Mill Creek
- Top of Bluff
- Inferred Top of Bluff
- Bottom of Bluff
- Inferred Bottom of Bluff
- Secondary Bluff Area
- VC Isoconcentration Contour (2 ug/L)
- VC Isoconcentration Contour at or Above the Detection Limit (µg/L)
- 4.2 VC Concentration in ug/L
- EL Former East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

Notes:

Based upon data collected in October 2021.

Although the river terrace sediments above and below the bluff are of different geologic ages (Pleistocene-vs-Holocene), they were deposited under similar conditions, have similar lithologies and are hydrogeologically connected as a single surficial aquifer.

Wells displaying two concentration values had a quality control duplicate sample taken.

0 200 400 Feet

1:4,800

N

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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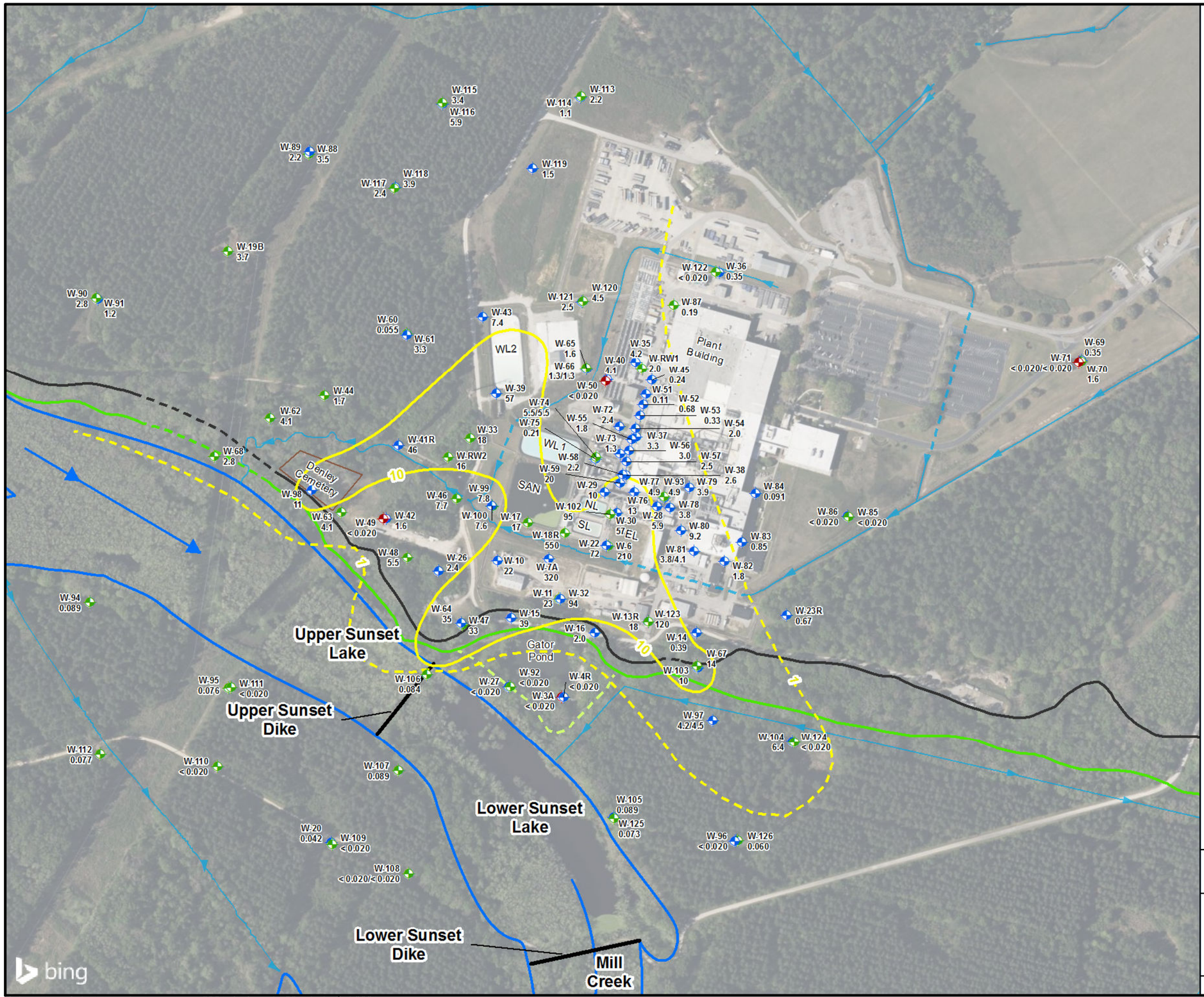
Extent of VC
Surficial Aquifer - Lower Zone
October 2021

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	CCS	July 2022	**FIGURE 27**

Path: M:\EnvDataViz\Westinghouse\mxd\2021 RI Report\F27 VC LowerSurf Oct2021.mxd



Legend

- Surficial Aquifer - Upper Zone Monitoring Well
- Surficial Aquifer - Lower Zone Monitoring Well
- Black Creek Aquifer Monitoring Well
- Ditch
- Culvert
- Dike Location
- Mill Creek Flow Direction
- Mill Creek
- Top of Bluff
- Inferred Top of Bluff
- Bottom of Bluff
- Inferred Bottom of Bluff
- Secondary Bluff Area
- Nitrate Isoconcentration Contour (10 mg/L)
- Nitrate Isoconcentration Contour at or Above the Detection Limit (µg/L)

550	Nitrate Concentration in mg/L
EL	Former East Lagoon
NL	North Lagoon
SL	South Lagoon
SAN	Sanitary Lagoon
WL1	West Lagoon 1
WL2	West Lagoon 2

Notes:

Based upon data collected in October 2021.

Although the river terrace sediments above and below the bluff are of different geologic ages (Pleistocene-vs-Holocene), they were deposited under similar conditions, have similar lithologies and are hydrogeologically connected as a single surficial aquifer.

Wells displaying two concentration values had a quality control duplicate sample taken.

0 200 400 Feet

1:4,800

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

N

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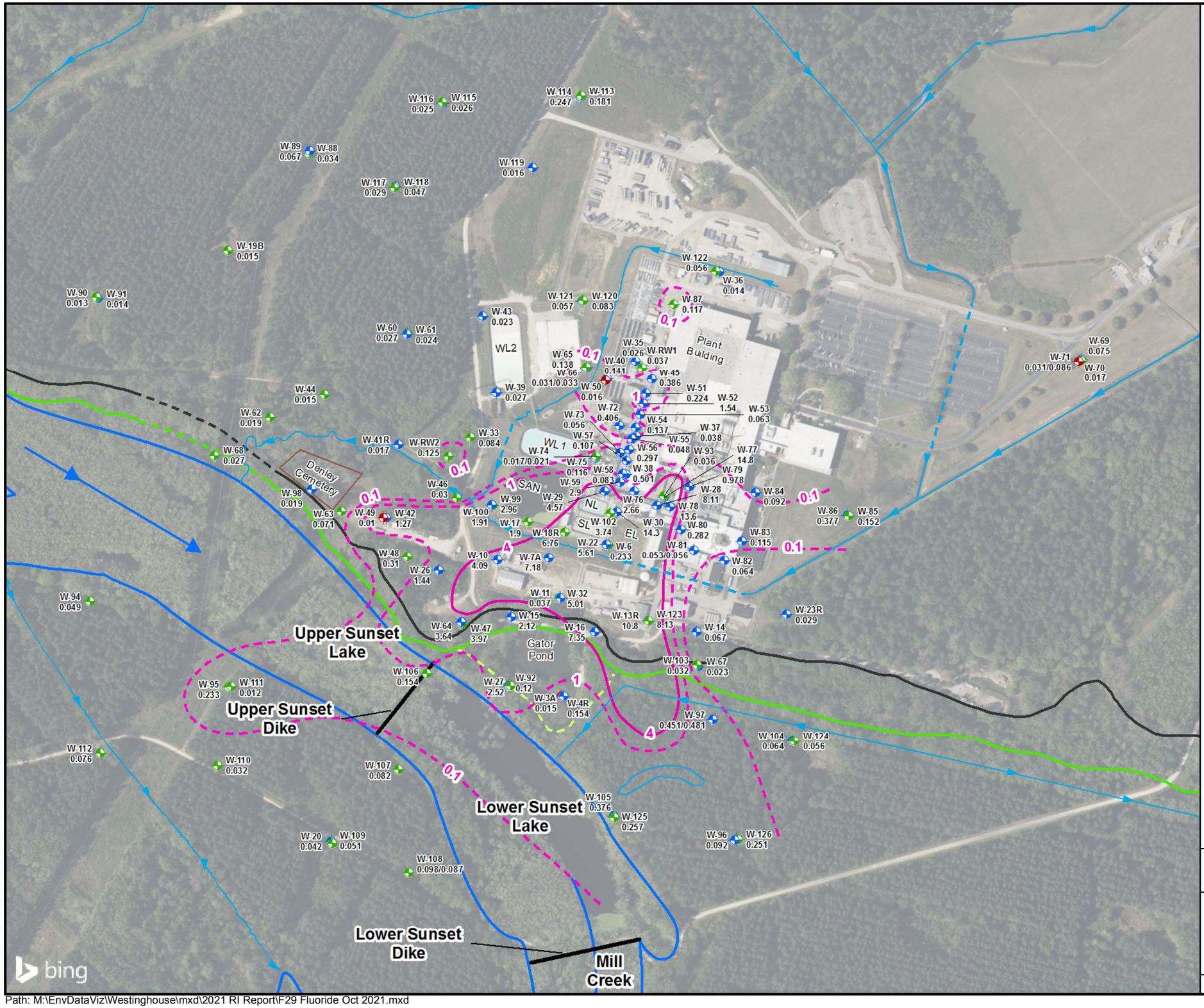
Extent of Nitrate in Groundwater October 2021

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	CCS	July 2022	**FIGURE 28**

Path: M:\EnvDataViz\Westinghouse\mxd\2021 RI Report\F28 Nitrate Oct 2021.mxd



Legend

- Surficial Aquifer - Upper Zone Monitoring Well
- Surficial Aquifer - Lower Zone Monitoring Well
- Black Creek Aquifer Monitoring Well
- Ditch
- Culvert
- Dike Location
- Mill Creek Flow Direction
- Mill Creek
- Top of Bluff
- Inferred Top of Bluff
- Bottom of Bluff
- Inferred Bottom of Bluff
- Secondary Bluff Area
- Fluoride Isoconcentration Contour (4 mg/L)
- Fluoride Isoconcentration Contour at or Above the Detection Limit (µg/L)
- 14.8 Fluoride Concentration in mg/L
- EL Former East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

Notes:

Based upon data collected in October 2021.

Although the river terrace sediments above and below the bluff are of different geologic ages (Pleistocene-vs-Holocene), they were deposited under similar conditions, have similar lithologies and are hydrogeologically connected as a single surficial aquifer.

Wells displaying two concentration values had a quality control duplicate sample taken.

N

0 200 400 Feet

1:4,800

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

NAD: North American Datum 1983

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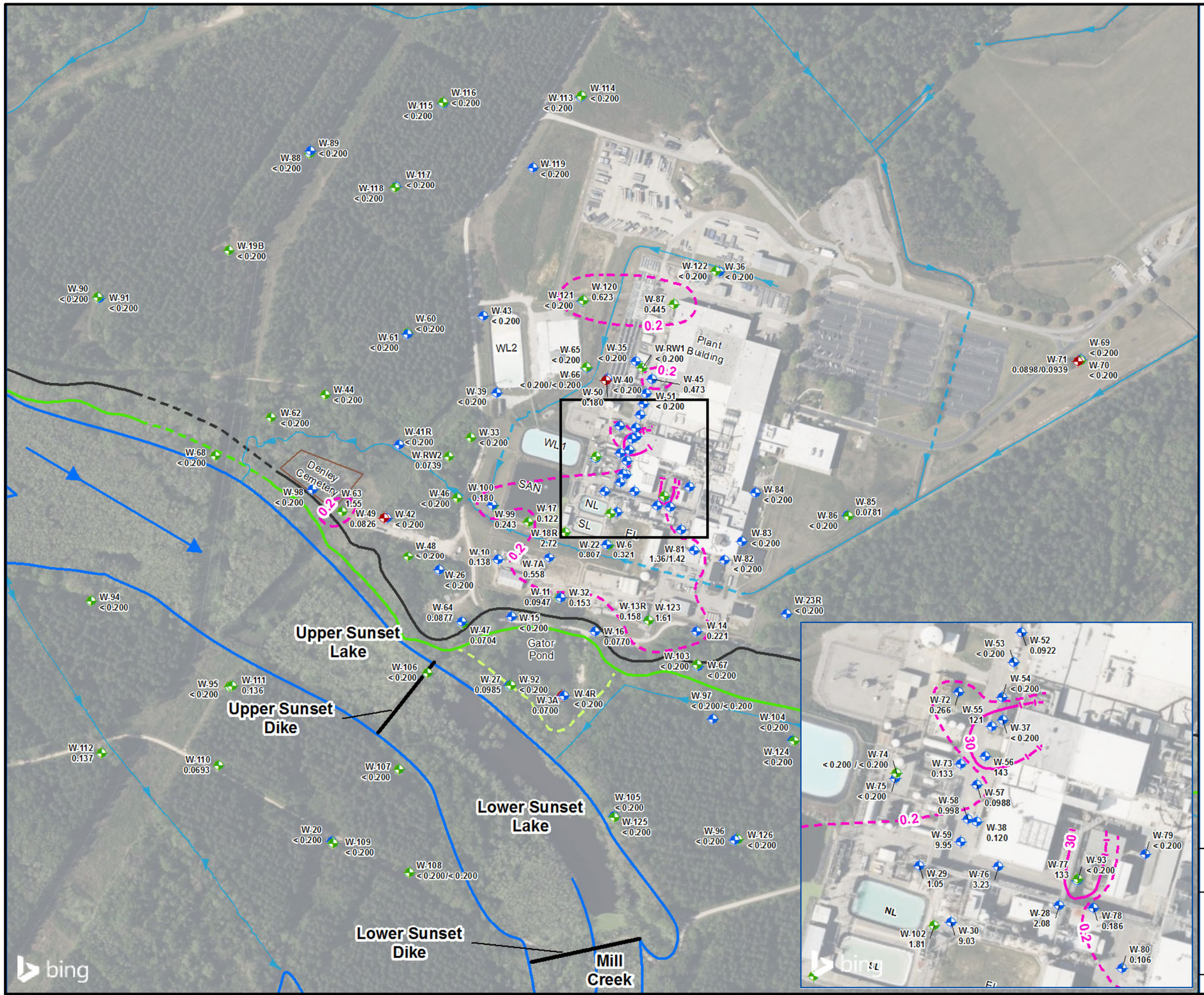
Extent of Fluoride in Groundwater October 2021

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	CCS	July 2022	**FIGURE 29**

Path: M:\EnvDataViz\Westinghouse\mxd\2021 RI Report\F29 Fluoride Oct 2021.mxd



Legend

- Surficial Aquifer - Upper Zone Monitoring Well
- Surficial Aquifer - Lower Zone Monitoring Well
- Black Creek Aquifer Monitoring Well
- Ditch
- Culvert
- Dike Location
- Mill Creek Flow Direction
- Mill Creek
- Top of Bluff
- Inferred Top of Bluff
- Bottom of Bluff
- Inferred Bottom of Bluff
- Secondary Bluff Area
- Uranium Isoconcentration Contour (30 µg/L)
- Uranium Inferred Isoconcentration Contour (µg/L)
- Uranim Isoconcetration Contour at or Above the Minimum Detectible Concentration (µg/L)
- 143 Total Uranium in µg/L
- EL Former East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

Notes:
Based upon data collected in October 2021.
Although the river terrace sediments above and below the bluff are of different geologic ages (Pleistocene-vs-Holocene), they were deposited under similar conditions, have similar lithologies and are hydrogeologically connected as a single surficial aquifer.

Wells displaying two concentration values had a quality control duplicate sample taken.

N

0 200 400 Feet

1:4,800

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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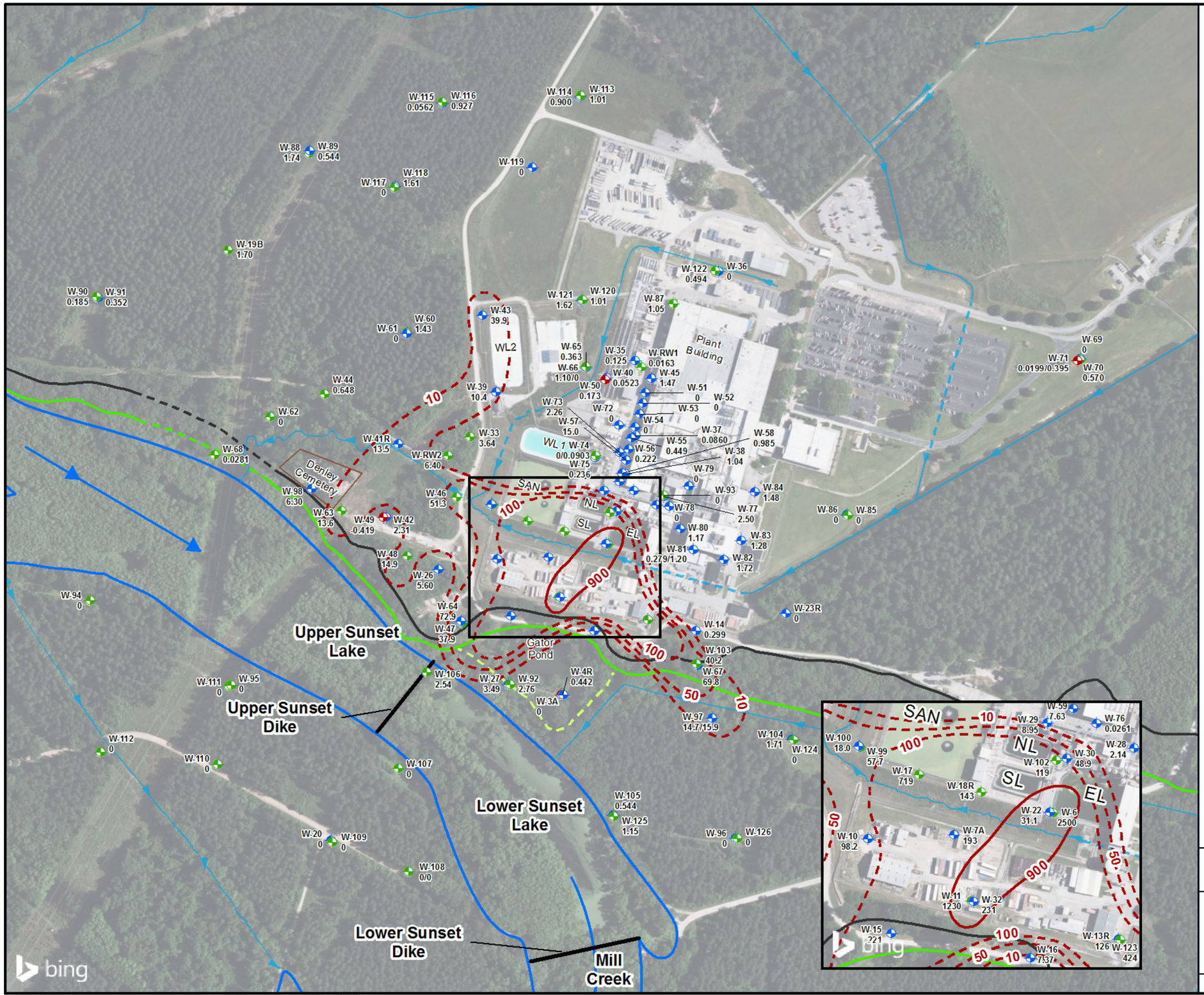
Extent of Uranium in Groundwater in October 2021

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	CCS	July 2022	**FIGURE 30**

Path: M:\EnvDataViz\Westinghouse\mxd\2021 RI Report\F30 Uranium Oct 2021.mxd



Legend

- Surficial Aquifer - Upper Zone Monitoring Well
- Surficial Aquifer - Lower Zone Monitoring Well
- Black Creek Aquifer Monitoring Well
- Ditch
- Culvert
- Dike Location
- Mill Creek Flow Direction
- Mill Creek
- Top of Bluff
- Inferred Top of Bluff
- Bottom of Bluff
- Inferred Bottom of Bluff
- Secondary Bluff Area
- Tc-99 Isoconcentration Contour (900 pCi/L)
- Tc-99 Isoconcetration Contour at or Above the Minimum Detectible Concentration (pCi/L)

2500	Technetium-99 Concentration in pCi/L
0	Concentration reported as a negative number by the analytical laboratory
EL	Former East Lagoon
NL	North Lagoon
SL	South Lagoon
SAN	Sanitary Lagoon
WL1	West Lagoon 1
WL2	West Lagoon 2

Notes:

Based upon data collected in October 2021.

Although the river terrace sediments above and below the bluff are of different geologic ages (Pleistocene-vs-Holocene), they were deposited under similar conditions, have similar lithologies and are hydrogeologically connected as a single surficial aquifer.

Wells displaying two concentration values had a quality control duplicate sample taken.

N

0 200 400 Feet

1:4,800

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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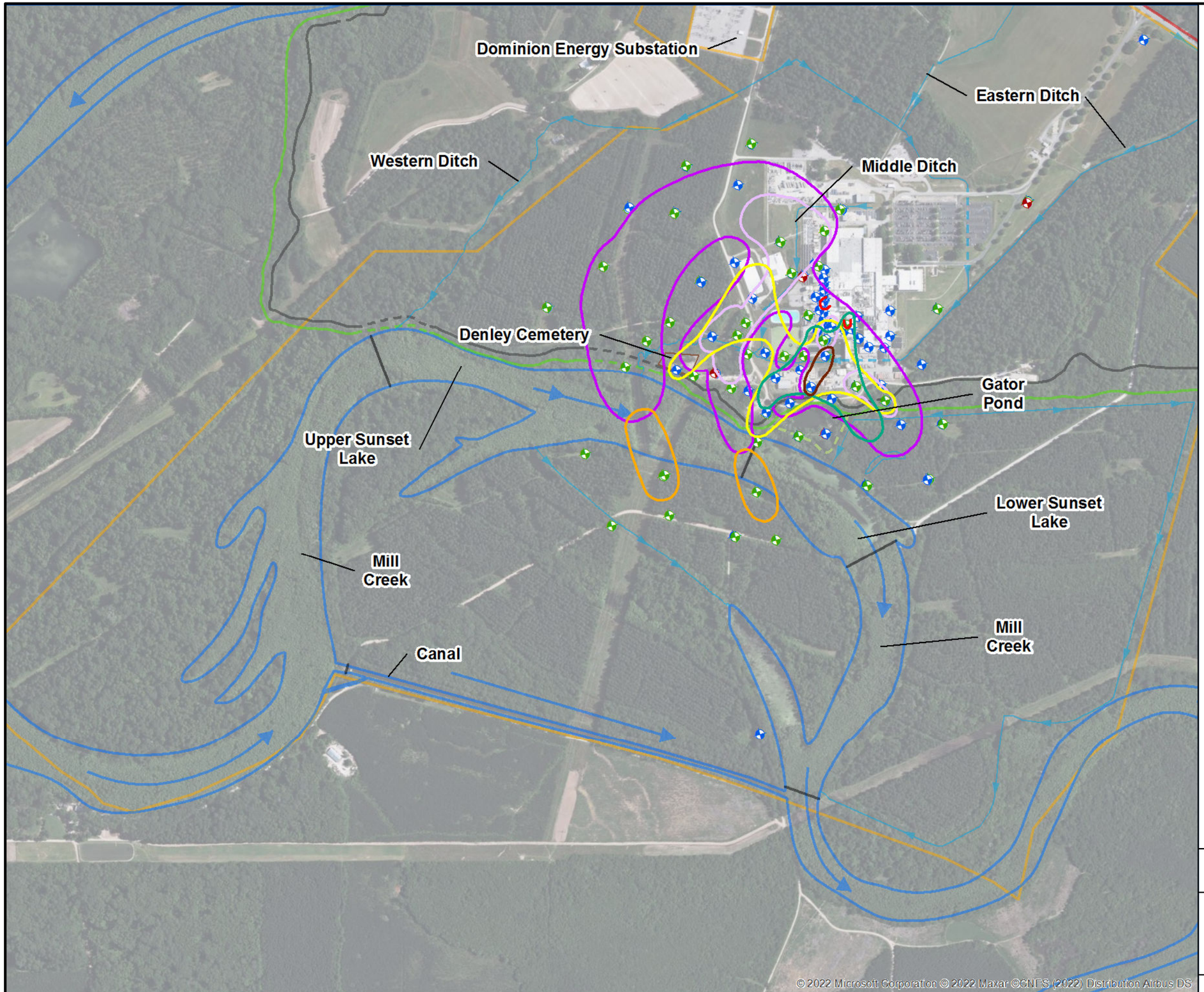
Extent of Technetium-99 in Groundwater October 2021

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	CCS	July 2022	**FIGURE 31**

Path: M:\EnvDataViz\Westinghouse\mxd\2021 RI Report\F31 Tech99 Oct 2021.mxd



Legend

- Surficial Aquifer - Upper Zone Monitoring Well
- Surficial Aquifer - Lower Zone Monitoring Well
- Black Creek Aquifer Monitoring Well
- Ditch
- Culvert
- Mill Creek Flow Direction
- Dike Location
- Mill Creek
- Property Line
- SCRDI Bluff Road (Superfund Site)
- Top of Bluff
- Inferred Top of Bluff
- Bottom of Bluff
- Inferred Bottom of Bluff
- Secondary Bluff Area
- PCE MCL Isocontour Line (5 µg/L)
- TCE MCL Isocontour Line (5 µg/L)
- VC MCL Isocontour Line (2 µg/L)
- Nitrate MCL Isocontour Line (10 mg/L)
- Fluoride MCL Isocontour Line (4 mg/L)
- Technetium 99 MCL Isocontour Line (900 pCi/L)
- Uranium MCL Isocontour Line (30 µg/L)

0 400 800 Feet

1:9,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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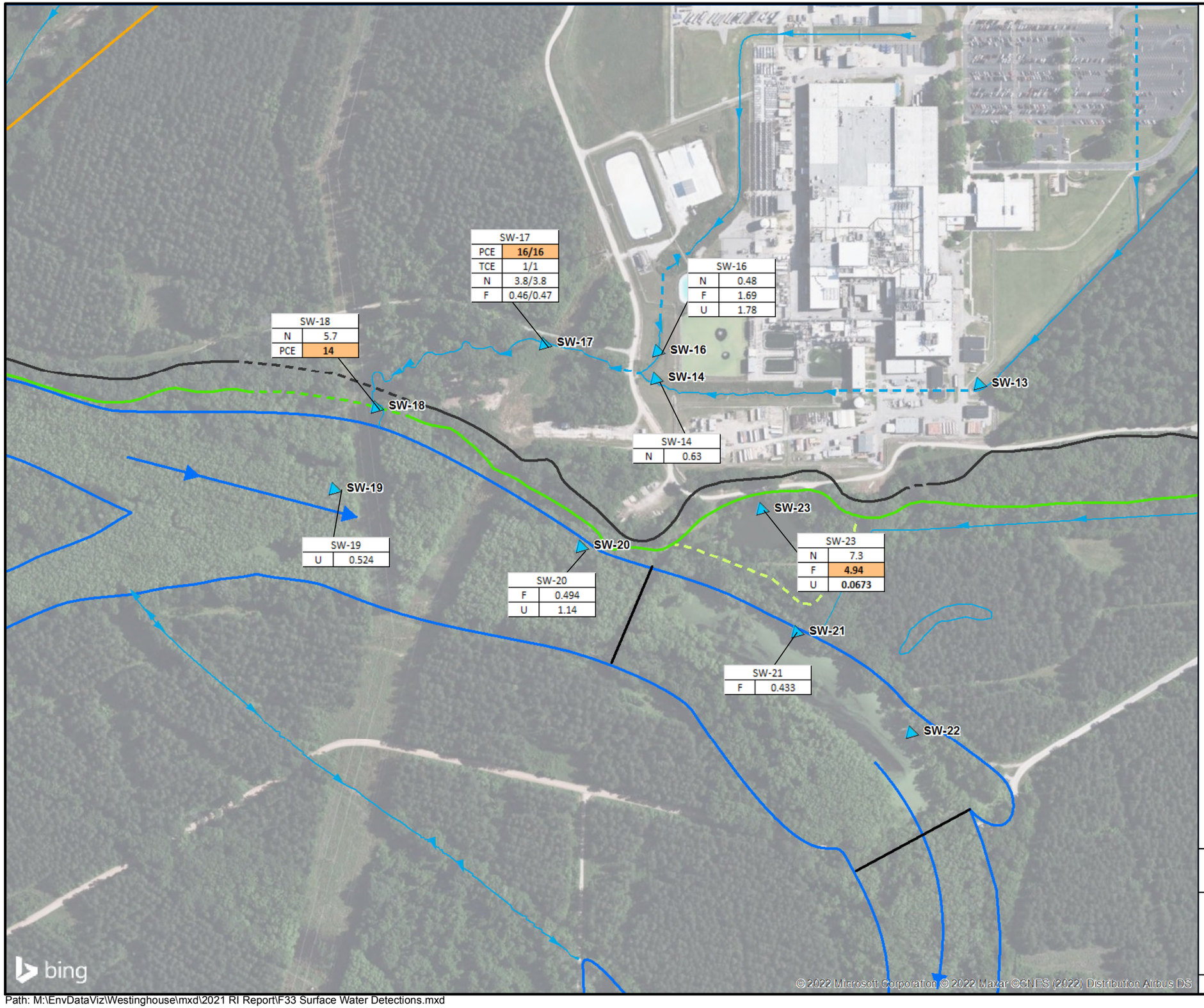
Lateral Extent of MCL Exceedances in Groundwater

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	CCS	July 2022	**FIGURE 32**

Path: M:\EnvDataViz\Westinghouse\mxd\2021 RI Report\F32 Lateral Extent of MCL Exceedances GW.mxd



Legend

- Surface Water Sample Location
- Ditch
- Culvert
- Mill Creek Flow Direction
- Dike Location
- Mill Creek
- Property Line
- SCRDI Bluff Road (Superfund Site)
- Top of Bluff
- Inferred Top of Bluff
- Bottom of Bluff
- Inferred Bottom of Bluff
- Secondary Bluff Area

PCE Tetrachloroethene
TCE Trichloroethene
N Nitrate
F Fluoride
U Total Uranium Istopes

Analyte	MCL	Units
PCE	5	ug/L
TCE	5	ug/L
N	10	mg/L
F	4	mg/L
U	30	ug/L

Notes:
Displayed concentrations are above the calculated background concentration.

Concentrations in shaded cells exceed their MCL.

Locations displaying two concentration values had a quality control duplicate sample taken.

0 170 340 Feet

1:4,130

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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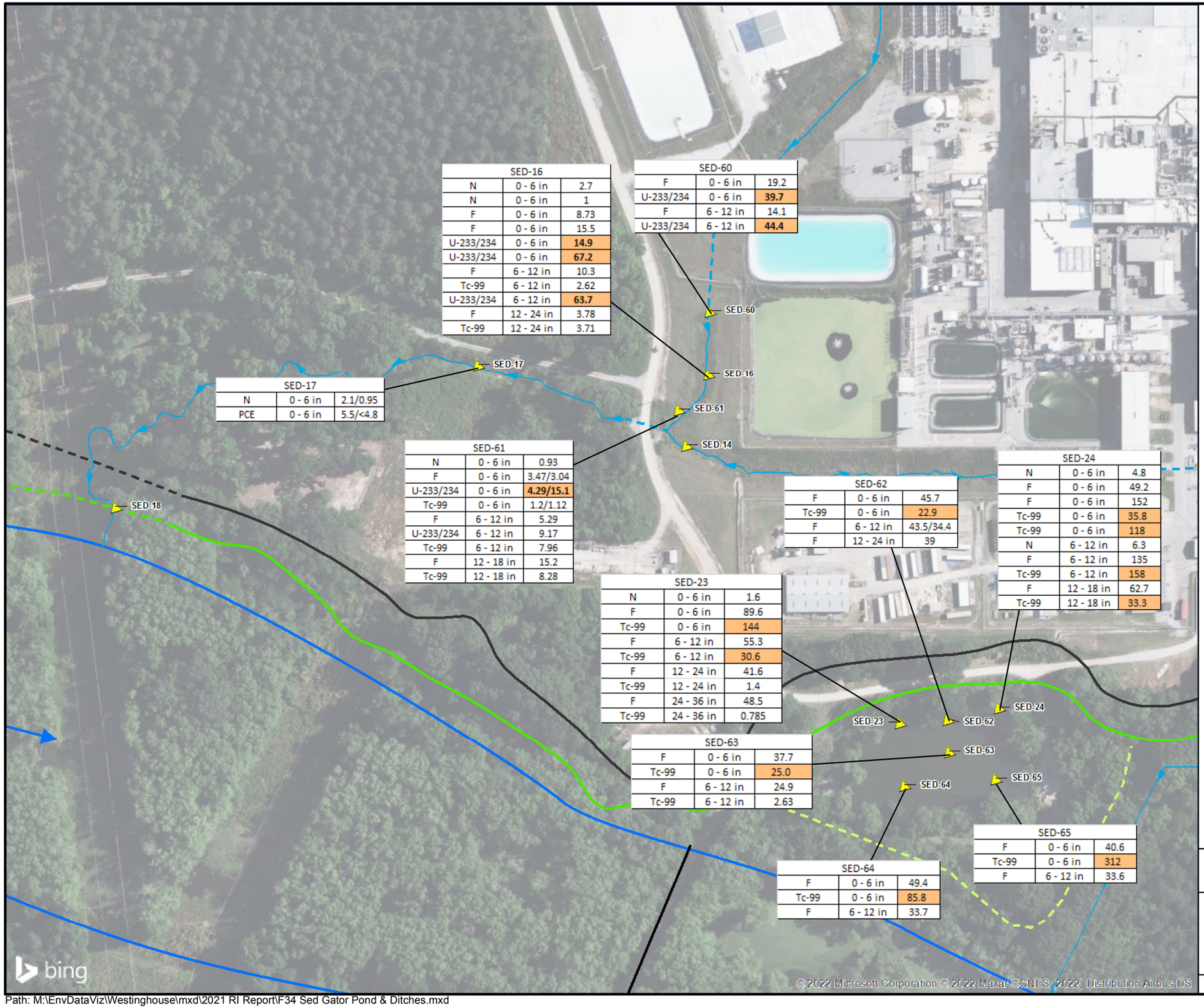
Surface Water Detections

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	CCS	July 2022	**FIGURE 33**

Path: M:\EnvDataViz\Westinghouse\mxd\2021 RI Report\F33 Surface Water Detections.mxd



Legend

- Sediment Sample Location
- Ditch
- Culvert
- Mill Creek Flow Direction
- Dike Location
- Mill Creek
- Top of Bluff
- Inferred Top of Bluff
- Bottom of Bluff
- Inferred Bottom of Bluff
- Secondary Bluff Area
- N — Nitrate
- F — Fluoride
- Tc-99 — Techenetium-99
- U-233/234 — Uranium Isotopes 233/234
- RUSL — Residential Use Screening Level

Analyte	Unit	RUSL
Nitrate as N	mg/kg	
Fluoride	mg/kg	
Technetium-99	pCi/g	19
Uranium-233/234	pCi/g	13
Uranium-235/236	pCi/g	8
Uranium-238	pCi/g	14

Notes:

Displayed nitrate and fluoride concentrations are above the calculated background concentration.

Concentrations in shaded cells exceed their RUSL.

Locations displaying two concentration values had a quality control duplicate sample taken.

0 80 160 Feet

1:1,920

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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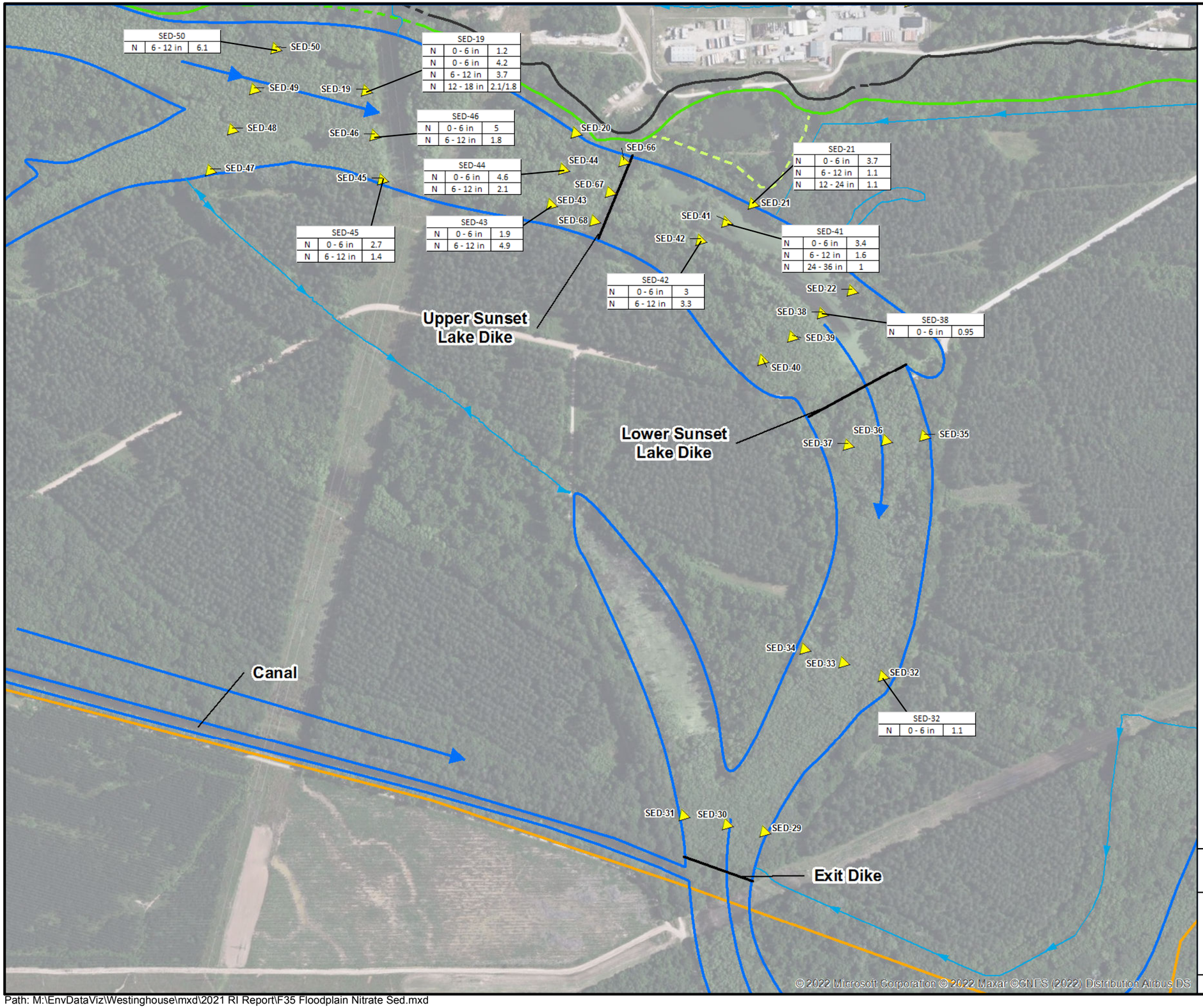
Gator Pond and Ditch COPC Sediment Detections

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	CCS	July 2022	**FIGURE 34**

Path: M:\EnvDataViz\Westinghouse\mxd\2021 RI Report\F34 Sed Gator Pond & Ditches.mxd



Legend

- Sediment Sample Location
- Ditch
- Culvert
- Mill Creek Flow Direction
- Dike Location
- Mill Creek
- Property Line
- Top of Bluff
- Inferred Top of Bluff
- Bottom of Bluff
- Inferred Bottom of Bluff
- Secondary Bluff Area
- N — Nitrate

Notes:
Displayed concentrations are above the calculated background concentration.

Locations displaying two concentration values had a quality control duplicate sample taken.

0 200 400 Feet

1:4,800

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

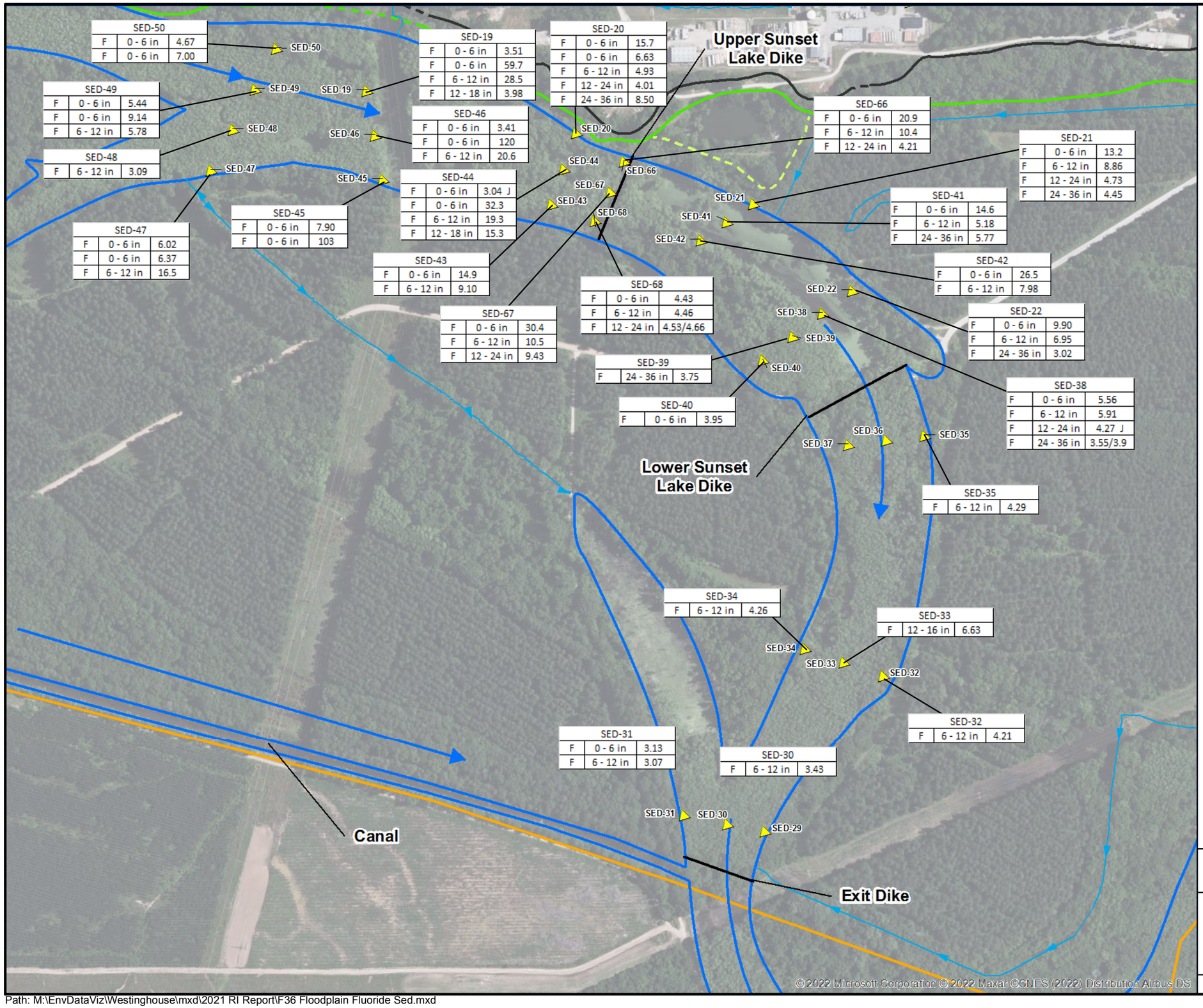
AECOM
101 Research Drive
Columbia, SC 29203
T: (803) 254-4400 F: (803) 771-6676

Floodplain Nitrate Sediment Detections

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	CCS	July 2022	**FIGURE 35**

Path: M:\EnvDataViz\Westinghouse\mxd\2021 RI Report\F35 Floodplain Nitrate Sed.mxd



Legend

- Sediment Sample Location
- Ditch
- Culvert
- Mill Creek Flow Direction
- Dike Location
- Mill Creek
- Property Line
- Top of Bluff
- Inferred Top of Bluff
- Bottom of Bluff
- Inferred Bottom of Bluff
- Secondary Bluff Area
- F Fluoride

Notes:
Displayed concentrations are above the calculated background concentration.

Locations displaying two concentration values had a quality control duplicate sample taken.

0 200 400 Feet

1:4,800

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

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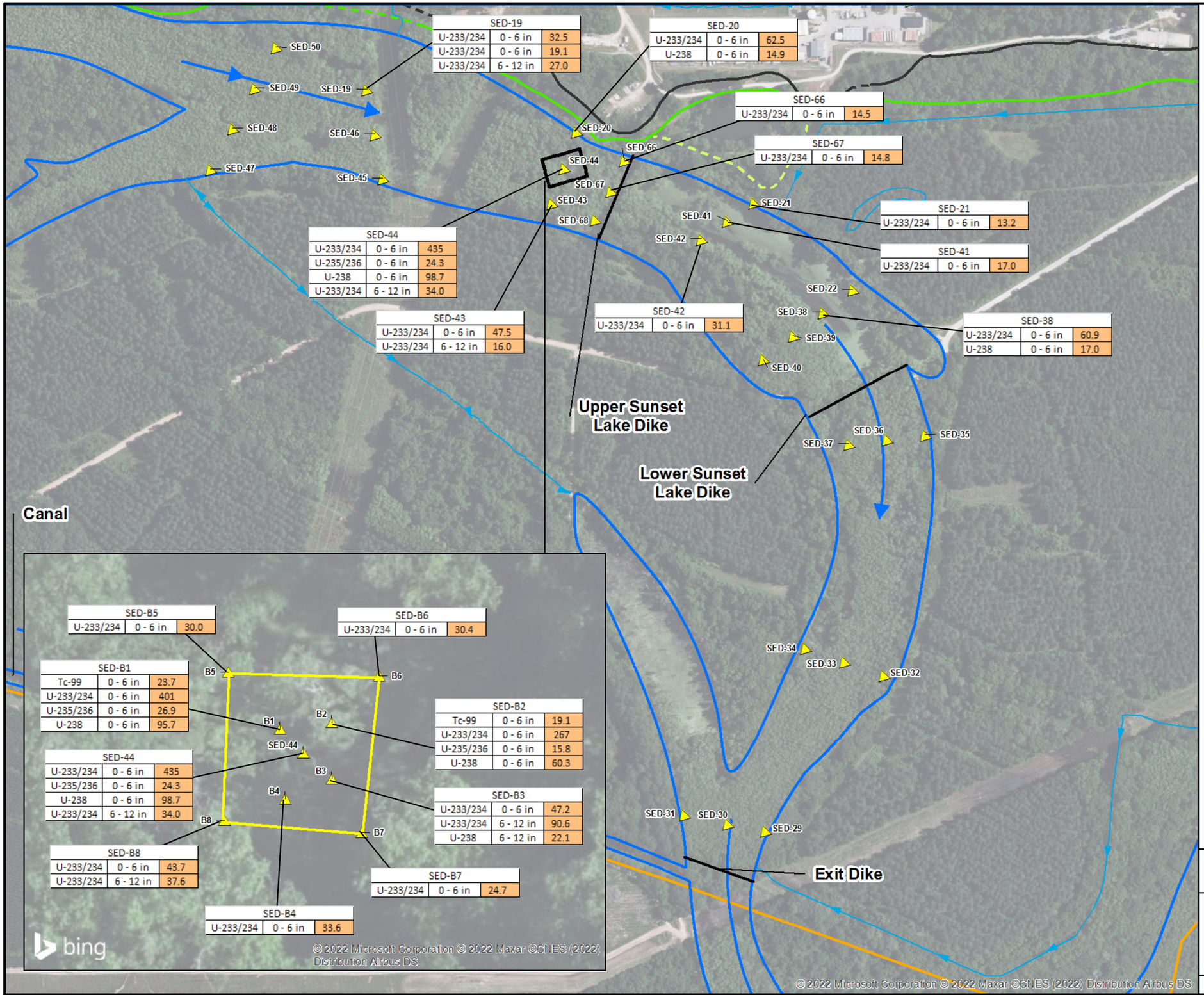
Floodplain Fluoride Sediment Detections

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	CCS	July 2022	**FIGURE 36**

Path: M:\EnvDataViz\Westinghouse\mxd\2021 RI Report\F36 Floodplain Fluoride Sed.mxd



Legend

- Sediment Sample Location
- Ditch
- Culvert
- Mill Creek Flow Direction
- Dike Location
- Mill Creek
- Property Line
- 10 Square Meters Bounding Box
- Top of Bluff
- Inferred Top of Bluff
- Bottom of Bluff
- Inferred Bottom of Bluff
- Secondary Bluff Area

U-233/234 Uranium Isotopes 233/234
U-235/236 Uranium Isotopes 235/236
U-238 Uranium Isotopes 238
RUSL Residential Use Screening Level

Analyte	Unit	RUSL
Uranium-233/234	pCi/g	13
Uranium-235/236	pCi/g	8
Uranium-238	pCi/g	14

Notes:
Wells displaying two concentration values had a quality control duplicate sample taken.

Locations displaying two concentration values had a quality control duplicate sample taken.

0 200 400 Feet
1:4,800

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

AECOM
101 Research Drive
Columbia, SC 29203
T: (803) 254-4400 F: (803) 771-6676

Floodplain Uranium Sediment Detections Above RUSL

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60595649	CCS	July 2022	**FIGURE 37**

Path: M:\EnvDataViz\Westinghouse\mxd\2021 RI Report\F37 Floodplain Uranium Sed.mxd

Appendix A
Operable Units Summaries

Operable Units Summaries

Northern Storage Area

Storage located in the Northern Storage Area Operable Unit (OU) includes final product shipping containers, radioactive waste intermodal containers awaiting shipment, and drums of lubricants and flammable liquids in the Oil House. Operations include refurbishment of shipping containers. Constituents of potential concern (COPCs) in this area are volatile organic compounds (VOCs) and U.

Mechanical Area

Manufacturing operations conducted in the Mechanical Area of the plant building include fuel rod inspection and storage, final assembly and storage, packaging, tube preparations, machining and tooling operations, grid fabrication, skeleton assembly, non-fuel component fabrication, and shipping and receiving. There was a small nickel plating operation within the Mechanical Area for coating grid straps for certain fuel designs. Containerization and off-site shipment of plating waste materials began in May of 2012 after the sump in the plating process area was refurbished. In March of 2020, the facility decommissioned the plating room. An external vendor cleaned the plating room tanks and associated air scrubbing system and removed all hazardous materials and chemicals. After cleaning, plating room controls and energy sources were locked out until the tanks could be physically removed later in 2020. Maintenance operations within the Mechanical Area OU use fuel oil, mineral spirits, and cutting oil. COPCs within the Mechanical Area include nickel, nitrate, and VOCs.

Chemical Area

Manufacturing operations conducted in the Chemical Area of the plant building include U conversion, powder blending, pellet manufacturing, including nuclear absorber addition, fuel rod loading, analytical services laboratory, and Uranium Recovery and Recycle Services (URRS). URRS operations include cylinder washing, incineration, U dissolution and purification through solvent extraction, and waste disposal preparations. There are two different feed materials used in the plant building for the uranium conversion process. One feed material, uranium hexafluoride (UF_6), is contained in cylinders and is heated from a solid to a gaseous state. The other feed material, liquid uranyl nitrate (UN), is “spiked” with hydrofluoric acid (HF) in a batch operation. Above ground and underground piping in the Chemical Area OU conveys wastewater to the Wastewater Treatment Area OU.

Bulk chemical storage tanks containing UN and HF, small chemical drum storage (dodecane, kerosene, and tributyl phosphate) used in the solvent extraction process, deionized water (DI) processing, and other miscellaneous operations are located outside of the plant building within the Chemical Area OU. Tetrachloroethylene (PCE) use in the solvent extraction process was discontinued in April 2020 and replaced with dodecane. CFFF decommissioning records describe historic releases in this OU. COPCs within the Chemical Area include VOCs, U, Technetium-99 (Tc-99), nitrate, ammonia, and fluoride.

West Lagoons Area

Two lined settling ponds exist within the West Lagoons area, West Lagoon I (WL I) and West Lagoon II (WL II). These lagoons were relined from December 2008 through February 2009 with 80 mil textured geomembrane high density polyethylene (HDPE). The liners have an approximate life span of 30 years. Since liner installation, maintenance inspections have been performed to assure liner integrity.

West II Lagoon receives treated wastewater from Waterglass, solvent extraction and incinerator areas, U removal processes, and still bottoms from ammonia distillation. The effluent from WL II flows to WL I. In both lagoons, calcium fluoride (CaF_2) solids settle out from the treated wastewater. Periodically, the settled CaF_2 solids are removed through a dredging and dewatering campaign. Removed CaF_2 is typically stored on a concrete pad adjacent to WL II prior to shipping off-site for recycling into cement or use in brick manufacturing operations. Runoff from the CaF_2 pad is collected in a drainage system and returned to WL II. COPC within the West Lagoons Area include VOCs, U, Tc-99, nitrate, ammonia, and fluoride.

Wastewater Treatment Area

Two lined settling ponds (North and South Lagoons), a sodium silicate (Waterglass) wastewater treatment process to treat U-contaminated, ammoniated wastewater from the conversion process, and several storage tanks exist in the Wastewater Treatment Area OU.

The North and South Lagoons were relined from January through February 2012 with 80 mil textured geomembrane HDPE. The liners have an approximate life span of 30 years. Since liner installation, maintenance inspections have been performed to assure liner integrity. Of the two remaining lagoons, the East Lagoon was closed in 2021 and plans are underway to close the Sanitary Lagoon.

The North and South Lagoons receive treated wastewater from the WL I and WL II. Operations in the West Lagoons Area OU are described above. Treated liquid process waste from the North or South Lagoon is mixed with treated sanitary wastewater in an underground pipe prior to transfer into the facility lift station. Before the North or South Lagoon is discharged, a four-corner sample is taken and analyzed for pH, total suspended solids (TSS), ammonia, fluoride and activity. The combined wastewater is then passed through a final aerator, followed by dechlorination and pH adjustment and subsequently discharge to the Congaree River via a 6-inch pipeline.

The Waterglass wastewater treatment process includes removal of residual U from ammoniated wastewater originating in the Chemical Area OU through flocculation and filtration. The filtered wastewater contains less than 0.2 parts per million (PPM) U. Following U removal, lime is added, and the wastewater is processed through a distillation column to remove and recover ammonia and fluoride.

The former East Lagoon received non-SNM liquid inputs such as effluent from the Deionized Water Building and rainwater from containment areas such as the bulk chemical storage area / tank farm. The lagoon also provided extra capacity for overflow from other lagoons or for containment in the event of a spill or emergency. Historic practices associated with lagoon operations included the introduction of materials containing low level, radiological contamination. The East Lagoon was monitored for pH and liquid level and was sampled for fluoride, ammonia and TSS. Once liquid levels in the East Lagoon reached a prescribed height, it was pumped to either the North or South Lagoon. The East Lagoon was removed from service, with remediation and closure activities completed in 2021 in accordance with a DHEC-approved Closure Plan (GEL, 2020).

Storage vessels in the Wastewater Treatment Area include tanks of nitric acid, sulfuric acid, sodium silicate, calcium oxide and calcium hydroxide, totes of sulfuric acid and nitric acid, tanks of contaminated ammoniated wastewater, and drums of Waterglass solids, containing ammonia and U. Low level radioactive waste packaging and UF_6 cylinder recertification operations are also performed.

COPCs within the Wastewater Treatment Area include U, Tc-99, fluoride, nitrate, and ammonia.

Sanitary Lagoon Area

Site sanitary sewage, including potentially contaminated sanitary wastewater from showering and handwashing in the Chemical Area OU is treated in an extended aeration package plant prior to discharge to a polishing lagoon (e.g., Sanitary Lagoon). U is captured in biosolids within the package plant and shipped offsite for burial. The Sanitary Lagoon was installed in 1968 and is not lined. The discharged effluent is chlorinated and mixed with treated liquid process waste in the Wastewater Treatment Area. COPCs within the Sanitary Lagoon Area OU are U and Tc-99. Sludge in the Sanitary Lagoon was characterized in 2021 in support of the planned closure of the lagoon, which is currently scheduled for 2024. Sludge samples were analyzed for isotopic U, Tc-99, fluoride, nitrate, and ammonia. Sludge samples were also collected at five additional systematic locations and analyzed for target compound list (TCL) VOCs and TCL SVOCs.

Southern Storage Area

Miscellaneous activities exist within the Southern Storage Area such as onsite emergency response operations; storage buildings containing new, spare and surplus process equipment; and hazardous waste storage beginning in 2020. Past operations included a storage pad where low-level radioactive material was packaged for off-site disposal;

intermodal containers with inventory stored for U recovery and with excess equipment; and UF_6 cylinders that were empty or contained only heel quantities of material. This OU currently stores fuel oil, gasoline and used oil tanks and drums of coolant and paint. COPCs within the Southern Storage Area OU include VOCs, fluoride, U and Tc-99.

Western Storage Area

Bulk chemical storage (e.g., ammonium hydroxide, fuel oil #2, and sodium hydroxide), UF_6 cylinder storage, hazardous waste storage and respirator cleaning operations exist in the Western Storage Area OU. In addition, two former oil houses were in this area. COPCs within the Western Storage Area OU include fluoride, U, Tc-99, nickel, nitrate, ammonia, and VOCs.

References

GEL, 2020. East Lagoon Closure Plan, Westinghouse Columbia Fuel Fabrication Facility, Hopkins, South Carolina, June, 2020.

Appendix B
Facility Description and Operational Background

Facility Description and Operational Background

The developed area of the property is approximately 130-140 feet above mean sea level. Elevations drop to approximately 110 feet above mean sea level immediately south of the plant/wastewater treatment plant (WWTP) area, on the Congaree River floodplain. The change in elevation occurs abruptly along a bluff that defines the southern edge of the developed portion of the property.

The Gator Pond is a manmade pond constructed prior to Columbia Fuel Fabrication Facility's development of the site. It is located approximately 500 feet southwest of the WWTP within a man-made step-down area of the bluff. The pond is fed by a combination of groundwater and precipitation. Water discharges from the pond through groundwater seepage or overland flow during periods of high precipitation. The pond has a 6-inch diameter discharge pipe/valve that is currently closed.

Upper and Lower Sunset Lakes are located west and south of the Gator Pond and approximately 900 feet southwest of the WWTP. The Sunset Lakes are located within a natural oxbow created by a former channel of the Congaree River. Mill Creek flows into the former river channel west of the site and occupies the channel until it flows into the Congaree River approximately three miles south of the site. A manmade dam approximately 1,700 feet south of the WWTP backs up water in Mill Creek, creating Lower Sunset Lake. A second manmade dam cuts across Mill Creek approximately 1,000 feet southwest of the WWTP, creating Upper Sunset Lake. The majority of the flow of Mill Creek is diverted away from Sunset Lakes via the man-made canal along the southern property boundary.

Surface drainage above the bluff at the developed area of the site flows into several man-made stormwater ditches across the property and surrounding areas. These ditches merge and flow into natural ditches that flow into Upper Sunset Lake. The southern portion of the property, including the Gator Pond, Mill Creek, and the Sunset Lakes are located within the floodplain of the Congaree River. Overland flow in these areas flows into the Gator Pond, Sunset Lakes, Mill Creek, and natural ditches.

The SCRDI Bluff Road site (formerly known as South Carolina Recycling and Disposal, Inc.) is located across Bluff Road from the northern property boundary. According to information on the internet (Justia US Law – law.justia.com), hazardous waste storage began on this property in late-1973 or early-1974, and operations ceased in 1982. This property was placed on the United States Environmental Protection Agency's Superfund Program's National Priority List in 1983. Releases at SCRDI are not known to have impacted the Columbia Fuel Fabrication Facility.

References

JUSTIA US Law website (USA/SCDHEC vs SCRDI et al. lawsuit), http://law.justia.com/cases/federal/district-courts/FSupp/653/984/2400694/, reviewed by Mr. Jeremy Grant of AECOM on September 24, 2017.

Appendix C
Historical Assessment Report Summaries and Excerpts

Historical Investigations and Summaries

1980 Davis and Floyd Report on Groundwater Investigations

The first environmental investigation was performed at the site in 1980 when a fish kill occurred in the Gator Pond southwest of the wastewater treatment plant (WWTP). Elevated concentrations of fluoride and ammonia nitrogen were detected by the Columbia Fuel Fabrication Facility (CFFF) in surface water samples collected from the pond. Davis and Floyd, Inc. (Davis and Floyd) performed a groundwater investigation in 1980 following the surface water sampling. The groundwater investigation included the installation of 28 monitoring wells (W-6 through W-33) between the WWTP and the Gator Pond. The results were presented in the *Report on Groundwater Investigations* (Davis and Floyd, 1980).

Fluoride and ammonia concentrations exceeded the maximum contaminant level (MCL) in groundwater samples from 10 and 12 of the monitoring wells, respectively, located between the WWTP and the Gator Pond. Davis and Floyd concluded that the sources of the fluoride and ammonia nitrogen were the concentrated waste treatment tanks, the ammonia storage tank area, and the waste treatment lagoons in the WWTP.

1982 Soil & Material Engineers, Inc. Groundwater Hydrology Study

Following the Davis and Floyd investigation, the CFFF and the South Carolina Department of Health and Environmental Control (DHEC) questioned the need for additional monitoring wells and whether it was likely that deeper aquifers beneath or adjacent to the site could become impacted. Soil and Material Engineers (S&ME) was contracted by Davis and Floyd to review previous studies and make recommendations as to whether additional hydrogeologic investigations were warranted. During the study, S&ME reviewed existing site and regional hydrogeologic data, performed borehole geophysical logging, and completed one deep stratigraphic boring.

The *Groundwater Hydrology Study* (S&ME, 1982) identified three hydrogeologic units beneath the CFFF, Unit I, Unit II, and Unit III. Unit I, the uppermost unit, was identified as the terrace aquifer system (currently referred to as the surficial aquifer). Unit II was identified as a confining unit in the upper portion of the Black Mingo Formation (misidentified previously, currently identified as the Black Creek Formation). Unit III was identified as a confined aquifer in the Black Mingo Formation. The groundwater flow direction was determined to be to the south-southwest toward the Gator Pond and Sunset Lakes. The study indicated that the number and depth of the monitoring wells were adequate to monitor groundwater quality.

1984 and 1985 Studies

Monitoring wells currently designated as W-40 and W-45 were installed in the shallow aquifer in 1984, and well W-3A was installed in the Black Creek Aquifer in 1985 by Law (RUST, 1995). However, neither AECOM nor CFFF have a report detailing the reasons or findings from the well installations.

1988 Soil & Material Engineers, Inc. Groundwater Mixing Zone Request

A report entitled *Ground-Water Mixing Zone Request* (S&ME, 1988) was submitted to DHEC in response to the Department's suggestion that criteria for the establishment of a mixing zone possibly could be met. The report included historical data from 1980 through 1987 and indicated that the four criteria for establishment of a groundwater mixing zone at the facility could be met based on the groundwater quality data available at the time. Subsequent correspondence by the CFFF resulted in a proposed boundary for the mixing zone and proposed alternate maximum concentration limits for ammonia, nitrate, and fluoride.

After an initial favorable determination, subsequent correspondence by DHEC raised several issues that resulted in the Mixing Zone not being approved. Among these issues were the need for further study of the lateral extent of groundwater impacts in the shallow aquifer in the WWTP area, further study of the competency of the underlying confining unit, further study of the discharge of groundwater to surface water in the Sunset Lakes area, and the monitoring of parameters other than ammonia, nitrate, and fluoride.

1989 EPA Westinghouse Screening Site Inspection Final Report

The United States Environmental Protection Agency (EPA) performed a Screening Site Inspection (SSI) in 1989. The SSI involved the collection of groundwater, surface water, soil, sediment, and field blank samples for analyses of organic and inorganic constituents. The SSI Report (EPA, 1989) indicated that a variety of organic and inorganic compounds were detected in groundwater samples collected at the facility.

Following submittal of the SSI report, meetings were held between DHEC, CFFF, and SEC Donohue to discuss the results of the SSI and the status of the mixing zone request. Concern with the validity of some of the results of the SSI were raised by both DHEC and CFFF. The basis for the concern was the manner that groundwater samples were obtained during the SSI that resulted in high turbidity in the samples. Other concerns were raised about the results representing only one sampling event and that conclusions were based on estimated concentrations. During the meeting it was agreed that additional investigation was warranted to verify the presence or absence of organic compounds.

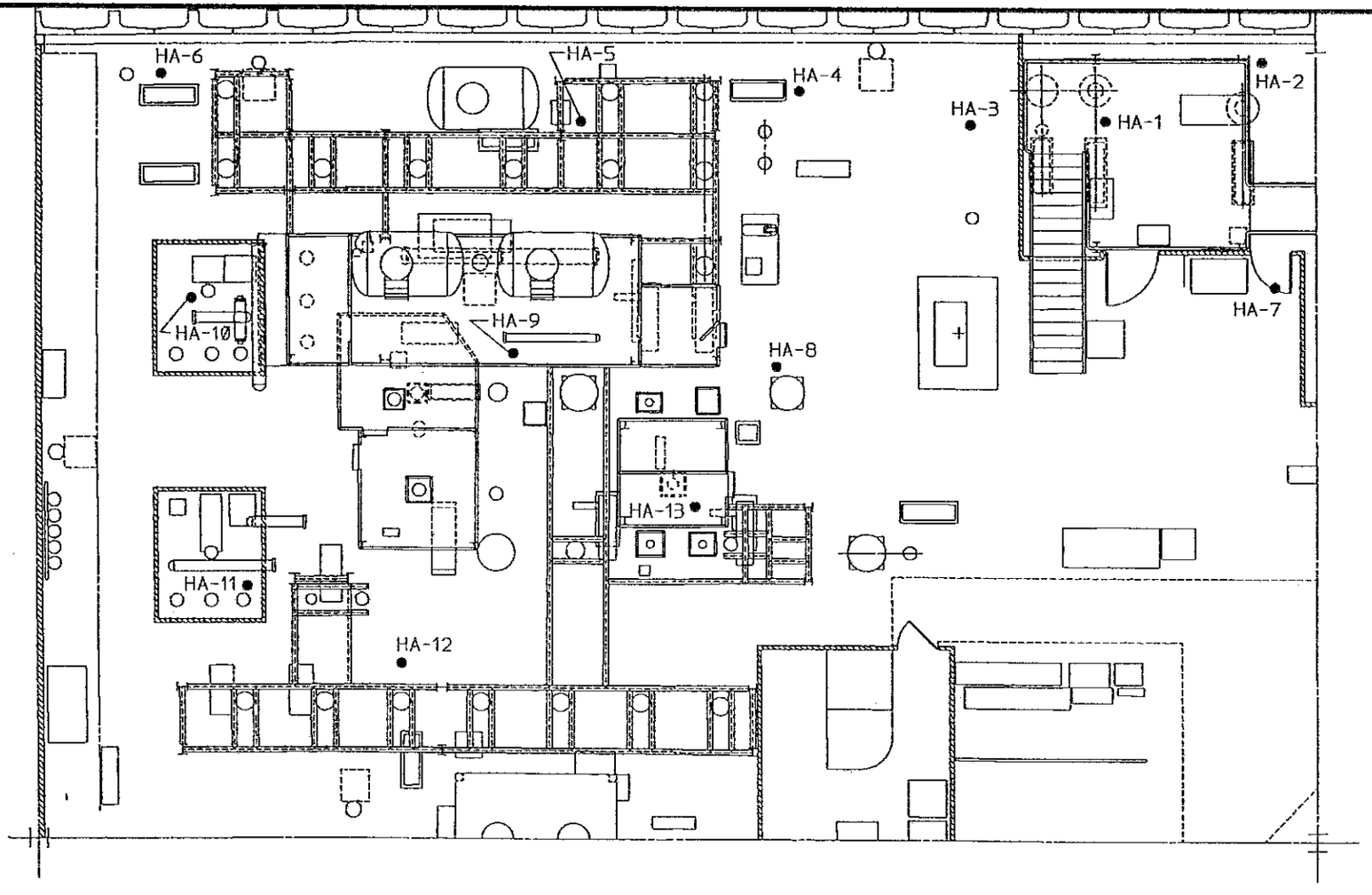
1992 Westinghouse Environmental and Geotechnical Services, Inc. Report of Soil Sampling Solvent Extraction Area

In November 1991, Westinghouse Environmental and Geotechnical Services, Inc. (WEGS) completed hand auger borings and collected soil samples below the concrete floor of the plant building in the Solvent Extraction Area (SOLX) within the Chemical Area where nitric acid is used. Cracks detected in the floor indicated that soil below the building may have been impacted. The soil sampling methods and soil boring records are presented in the *Report of Soil Sampling Solvent Extraction Area* (WEGS, 1992).

The soil samples were analyzed for gross alpha by CFFF. Results of the soil sample analyses were presented by CFFF to the NRC on January 23, 1992. Gross alpha concentrations were detected in depth-discrete soil samples from two borings. As a result of the meeting, CFFF agreed to perform additional soil and groundwater sampling and analyses outside of the SOLX to assess potential environmental impacts. These data were submitted to DHEC under separate cover.

Pertinent excerpts from this report are included below.

AB23341A



LEGEND

HA-1Ø ● HAND-AUGER SOIL SAMPLING LOCATION

10 0 10 20

APPROXIMATE SCALE IN FEET

Source: 1992 Westinghouse and Geotechnical Services, Inc. Report of Soil Sampling Solvent Extraction Area

WESTINGHOUSE ELECTRIC CORPORATION
COMMERCIAL NUCLEAR FUEL DIVISION
COLUMBIA, SOUTH CAROLINA
CLWE044

Westinghouse Environmental and Geotechnical Services, Inc.

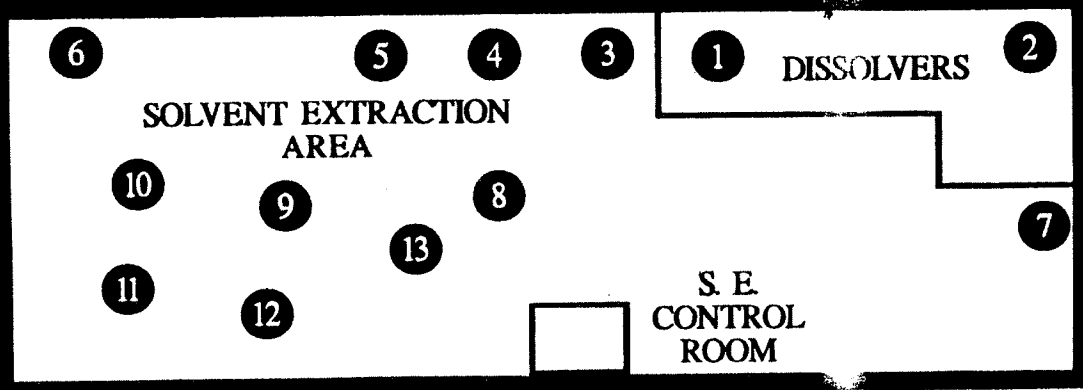
SOIL SAMPLING LOCATIONS
SOLVENT EXTRACTION AREA

CAPITAL BLUEPRINT CO. N50663

COMMERCIAL NUCLEAR FUEL DIVISION
COLUMBIA, S. C. PLANT
SOIL SAMPLING RESULTS

SAMPLE NUMBER	SAMPLE ACTIVITY(PCI/GM) @ VARIOUS DEPTHS(FT) 2'	4'	6'	8'	10'	12'
1	645	2068	2711	2584	2412	–
2	752	549	184	–	–	–
3	385	69	811	328	3	–
4	1962	1601	2045	–	–	–
5	44	11	–	–	–	–
6	3	5	–	–	–	–
7	208	8	–	–	–	–
8	9	10	5	4	6	2
9	3	5	–	–	–	–
10	24	5	–	–	–	–
11	24	27	11	34	3	–
12	16	5	3	3	2	–
13	252	183	–	–	–	–

SAMPLE LOCATIONS WITHIN FACILITY



Source: CFFF Tabulation of Results From the 1991 Solvent Extraction Area Soil Sampling by Westinghouse Environmental and Geotechnical Services, Inc.

SOLVENT EXTRACTION SOIL SAMPLING

CHEMICAL RESULTS

NOVEMBER 22, 1991

SAMPLE	DEPTH	RESULT, PPM NO3
1	12'	1440
2	6'	163
3	10'	274
4	6'	1620
5	4'	109
6	4'	67
7	4'	91
8	10'	71
9	4'	13
10	4'	13
11	10'	8
12	10'	15
13	3'	391

Source: CFFF Tabulation of Results From the 1991 Solvent Extraction Area Soil Sampling by Westinghouse Environmental and Geotechnical Services, Inc.

1992 SEC Donohue Report of Soil and Ground-Water Sampling Outside of the Solvent Extraction Area

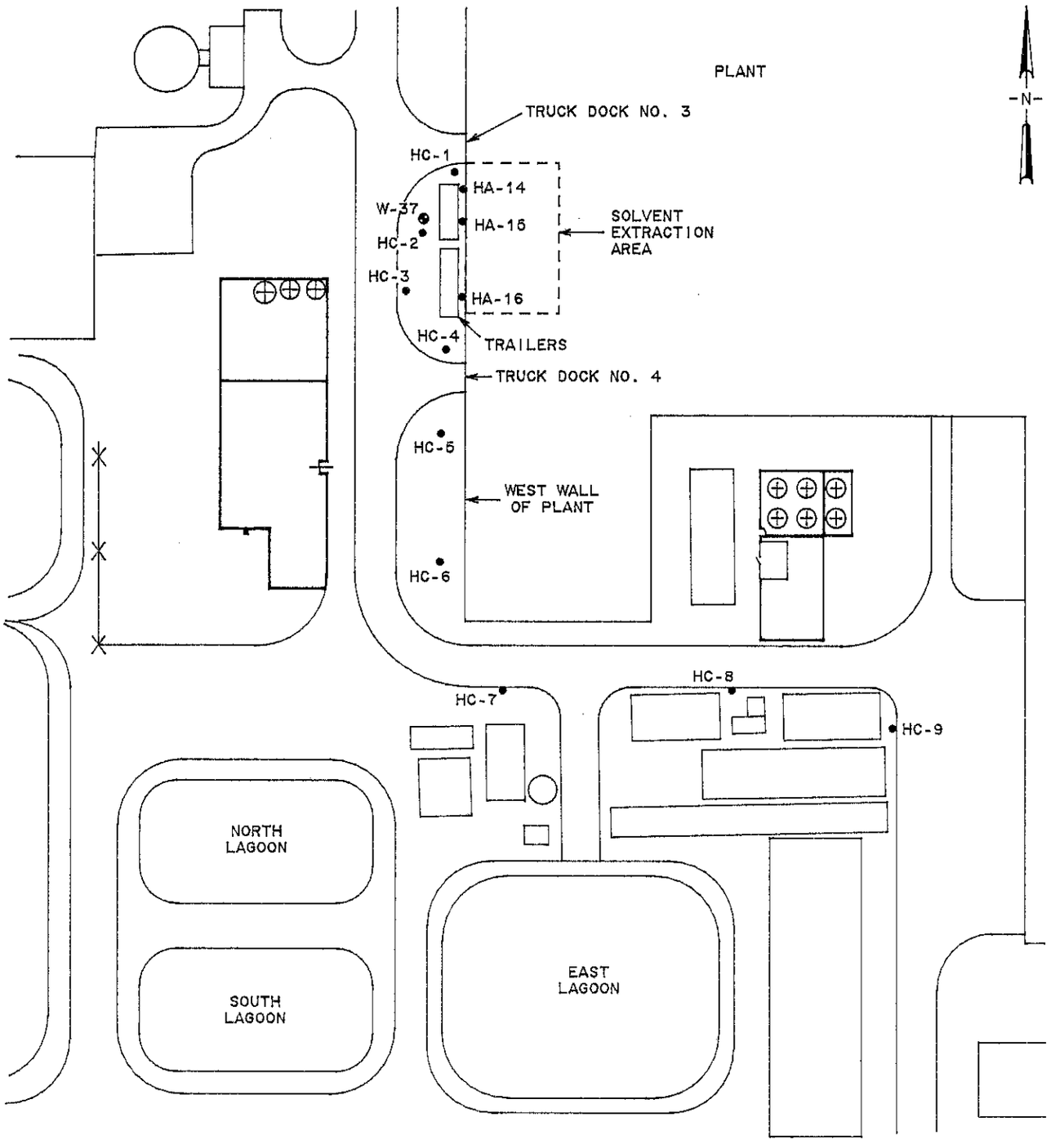
Soil and groundwater samples were collected by SEC Donohue Environment & Infrastructure (SEC Donohue) outside of SOLX during an investigation in February 1992. Soil samples were collected using hand-augers and direct push technology (DPT), and groundwater samples were collected from temporary DPT wells and one permanent monitoring well. The samples were analyzed for nitrate and radioactivity. The results of the investigation are presented in the *Report of Soil and Groundwater Sampling* (SEC Donohue, 1992a).

Gross alpha in soil exceeded activities considered a potential “regulatory concern” in two soil samples. Nitrate concentrations in soil were detected in the range of naturally occurring nitrate; therefore, the results indicated that soil had not been impacted with nitric acid.

Groundwater samples were collected at two intervals in each temporary well. Gross alpha in groundwater ranged from 4 picocuries per liter (pCi/L) to 21 pCi/L. Gross beta ranged from 11 pCi/L to 19 pCi/L at both depth intervals in eight temporary wells and one interval in the ninth temporary well. Gross beta was detected at 166 pCi/L in the second interval of the ninth temporary well. Nitrate concentrations in groundwater exceeded the MCL of 10 milligrams per liter (mg/L) in at least one sample interval in five temporary groundwater wells at concentrations ranging from 10.0 mg/L to 41.2 mg/L. The study concluded that it was not likely that a significant impact to groundwater had occurred in the vicinity of SOLX.

Pertinent excerpts from this report are included below.

AB2341



80 0 80 160

SCALE IN FEET

Source: 1992 SEC Donohue Report of Soil and Ground-Water Sampling Outside of the Solvent Extraction Area

LEGEND

HC-6 ● HYDROCONE/GEOCONE SAMPLING LOCATION

HA-14 ● HAND AUGER SAMPLING LOCATION

W-37 ⊕ MONITORING WELL LOCATION

WESTINGHOUSE ELECTRIC CORP.
COMMERCIAL NUCLEAR
FUEL DIVISION
COLUMBIA, SOUTH CAROLINA
CE044

SEC DONOHUE
Environment & Infrastructure

FIGURE 3
MAP OF SOIL AND GROUND-WATER SAMPLING LOCATIONS

CAPITAL BLUEPRINT CO. N50663

TABLE 1.

SUMMARY OF GEOCONE AND HAND AUGER
SOIL ANALYSES

Westinghouse Electric Corporation
Commercial Nuclear Fuel Division
Columbia, South Carolina

SAMPLE LOCATION	DEPTH INTERVAL feet	RADIOACTIVITY GROSS ALPHA pCi/G	NITRATE mg/kg
HC-1	1.5-3	5.4	0.9
	4.5-6	4.6	0.4
	7.5-9	4.4	0.3
HC-2	1.5-3	5.1	0.9
	4.5-6	4.1	4.3
	7.5-9	5.1	2.2
HC-3	1.5-3	5.2	2.0
	4.5-6	5.0	1.4
	7.5-9	4.9	1.1
HC-4	1.5-3	5.7	0.9
	4.5-6	7.8	1.2
	7.5-9	5.7	1.7
HC-5	1.5-3	18.5	2.0
	4.5-6	8.1	4.0
	7.5-9	9.0	2.4
HC-6	1.5-3	12.8	0.5
	4.5-6	6.8	1.0
	7.5-9	9.0	2.0
HC-7	1.5-3	9.5	0.9
	4.5-6	7.3	0.7
	7.5-9	30.5	0.5
HC-8	1.5-3	8.8	0.5
	4.5-6	9.3	0.6
	7.5-9	14.0	1.2
HC-9	1.5-3	11.3	0.1
	4.5-6	22.5	0.2
	7.5-9	12.3	0.5
HA-14	2-3	18.3	1.5
	5-6	44.3	0.9
	8-9	4.2	1.0
HA-15	2-3	21.3	0.9
	5-6	28.8	0.5
	8-9	18.4	0.6
HA-16	2-3	9.3	1.8
	5-6	6.0	1.8

wcp01t1.wk1

Source: 1992 SEC Donohue Report of Soil and Ground-Water Sampling Outside of the Solvent Extraction Area

TABLE 2.

SUMMARY OF HYDROCONE AND MONITORING WELL
GROUND-WATER ANALYSES

Westinghouse Electric Corporation
Commercial Nuclear Fuel Division
Columbia, South Carolina

SAMPLE LOCATION	DEPTH INTERVAL feet	FIELD CONDUCTIVITY umhos/cm	LAB pH	RADIOACTIVITY GROSS ALPHA pCi/L	RADIOACTIVITY GROSS BETA pCi/L	NITRATE mg/L
HC-1	14.5-15.5	140	7.0	5	12	3.3
	24-25	120	6.8	5	12	5.1
HC-2	11-12	130	7.1	5	12	6.9
	17-18	180	6.7	6	12	7.7
HC-3	14-15	190	6.7	6	12	7.8
	24-25	90	6.1	5	12	6.0
HC-4	11-12	370	6.4	6	11	29.0
	18-19	170	5.8	5	11	10.6
HC-5	11-12	270	4.6	19	12	11.7
	16.5-17.5	155	7.1	5	12	10.0
HC-6	11-12	130	5.3	21	19	8.6
	18-19	125	5.2	ND	12	9.9
HC-7	11-12	320	5.9	8	13	2.7
	18-19	400	7.6	5	166	41.2
HC-8	11-12	235	6.9	8	14	11.2
	18-19	140	5.6	ND	12	10.3
HC-9	11-12	310	6.2	6	12	9.5
	18-19	295	6.8	6	11	16.6
W-37	15.5-20.5	165	6.0	4	12	5.8

ND = Not Detected

wcp01t2.wk1

Source: 1992 SEC Donohue Report of Soil and Ground-Water Sampling Outside of the Solvent Extraction Area

1992 SEC Donohue Confirmatory Ground-Water Investigation Report

A confirmatory groundwater investigation was performed by SEC Donohue in 1992 based on the meetings following the EPA's SSI. The investigation included redevelopment of existing monitoring wells, replacement of one monitoring well (W-7A), and the installation of two new monitoring wells (W-35 and W-36). Filtered and unfiltered groundwater samples were collected for metals analysis as well as aluminum and turbidity analysis to assess relative sediment content of each sample. In addition, two rounds of confirmatory groundwater sampling and analysis for verification were conducted, with the results presented in the *Confirmatory Ground-Water Investigation Report* (SEC Donohue, 1992b).

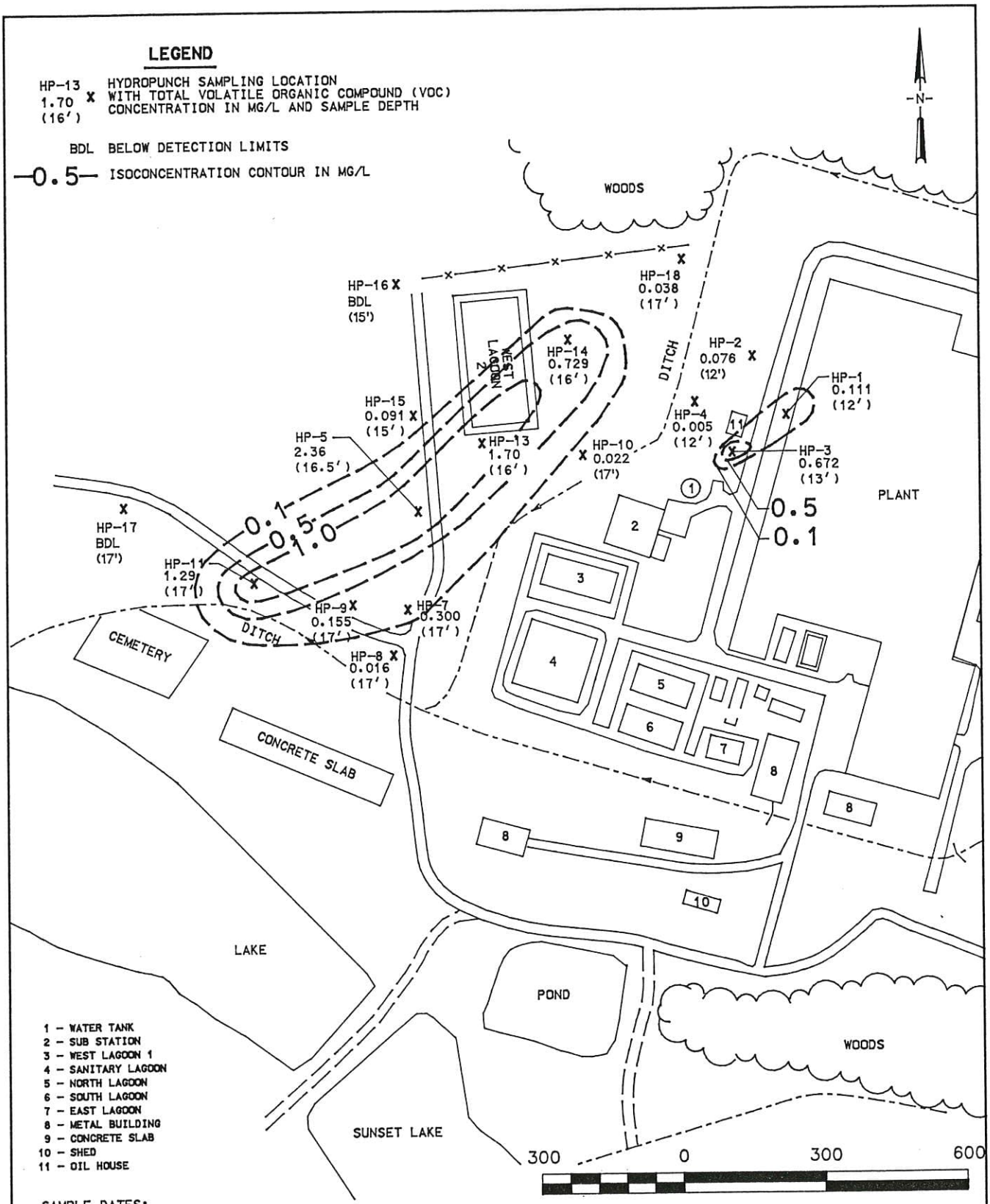
The confirmatory groundwater sampling indicated concentrations of fluoride and nitrate above the MCLs in groundwater samples collected from wells W-7A and W-30 near the WWTP. Chemical analyses indicated that tetrachloroethylene (PCE) and trichloroethylene (TCE) were detected at concentrations exceeding the MCLs in groundwater samples from two monitoring wells (W-33 and W-35). Monitoring well W-35 was located adjacent to a former Oil House which was used to store oils and previously to store solvents. Concentrations of metals during the confirmatory investigation were within the range detected in the background samples and generally below MCLs. The *Confirmatory Ground-water Investigation Report* recommended that the establishment of a groundwater mixing zone in the vicinity of the WWTP should proceed for the fluoride-ammonia-nitrate plume. The report indicated that further investigation may be necessary for the detected volatile organic compounds (VOCs).

1994 Rust Environment and Infrastructure, Inc. Chlorinated Solvent Assessment Report

Based on the results of the confirmatory groundwater investigation, DHEC, in 1993, denied a groundwater mixing zone and requested that CFFF assess the source and horizontal and vertical extent of the chlorinated VOCs (CVOCs) in soil and groundwater. The chlorinated solvent assessment was performed by Rust Environment and Infrastructure (Rust) in late 1993 and early 1994. The assessment included redeveloping three monitoring wells, collecting depth-discrete groundwater samples from 18 borings using a Hydropunch™ sampler, installation and sampling of five new monitoring wells (W-39 and W-41 through W-44), sampling of eight existing wells, and collection of surface water samples from six locations. The results were presented in the *Chlorinated Solvent Assessment Report* (Rust, 1994).

The results indicated that PCE and TCE were detected at concentrations exceeding MCLs in groundwater samples in the vicinity of the former Oil House formerly located adjacent to monitoring well W-35 and areas downgradient of the former Oil House. The report indicated that the source of the CVOCs was most likely the former Oil House, which was used to store oils and previously to store drums of chlorinated solvents prior to 1980. The *Chlorinated Solvent Assessment Report* indicated that the horizontal and vertical extent of CVOCs in groundwater had not been fully defined.

Pertinent excerpts from this report are included below.



SAMPLE DATES:
10-20-1993 THRU 10-25-1993 (HP-1 THRU HP-10)

11-30-1993 THRU 12-01-1994 (HP-11 THRU HP-16)

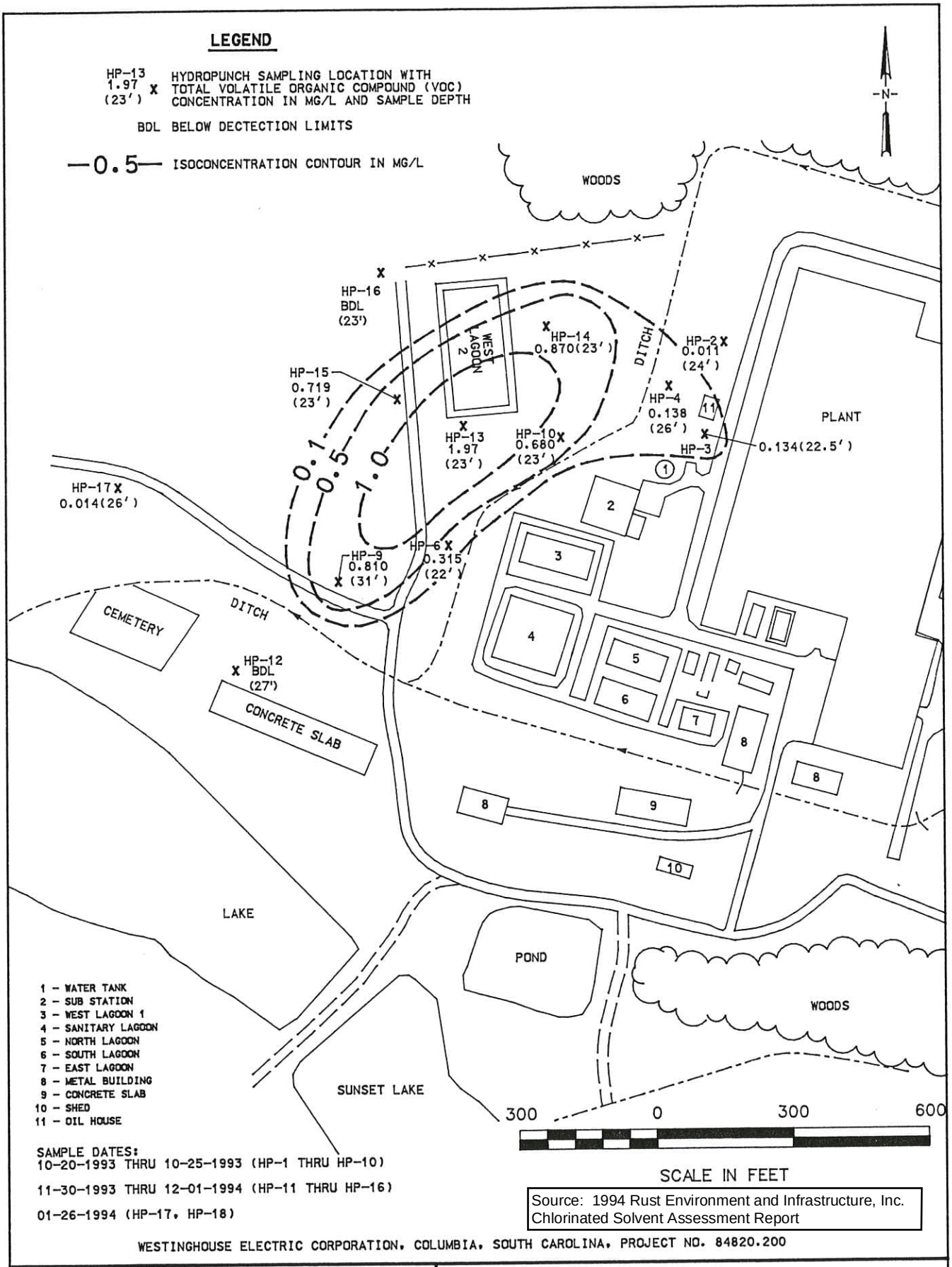
01-26-1994 (HP-17, HP-18)

Source: 1994 Rust Environment and Infrastructure, Inc. Chlorinated Solvent Assessment Report

WESTINGHOUSE ELECTRIC CORPORATION, COLUMBIA, SOUTH CAROLINA, PROJECT NO. 84820.200

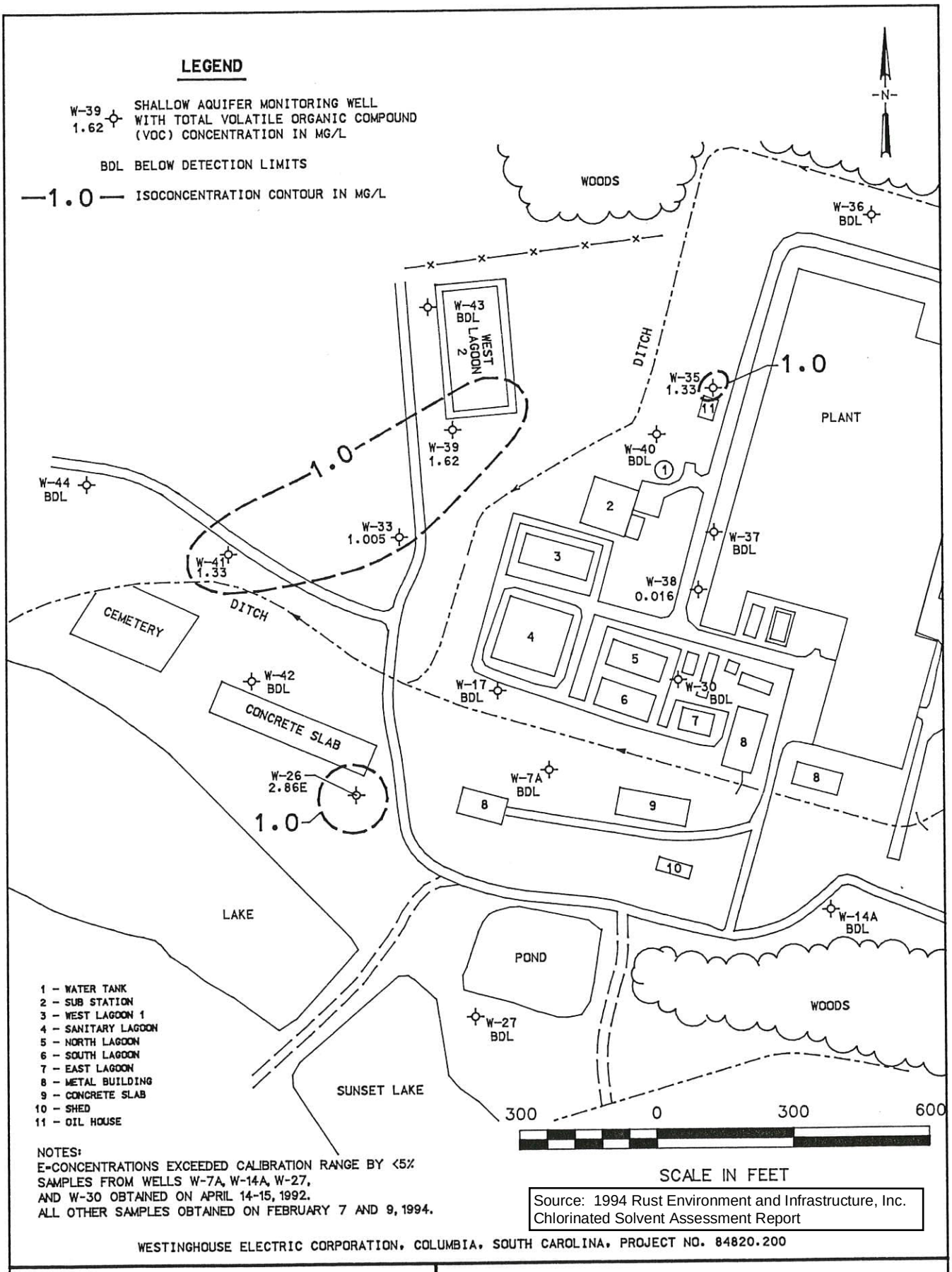
RUST ENVIRONMENT & INFRASTRUCTURE

FIGURE 3-2
MAP OF TOTAL VOC CONCENTRATIONS IN UPPER SHALLOW AQUIFER HYDROPUNCH SAMPLES



RUST ENVIRONMENT & INFRASTRUCTURE

FIGURE 3-3
MAP OF TOTAL VOC CONCENTRATIONS IN LOWER SHALLOW AQUIFER HYDROPUNCH SAMPLES



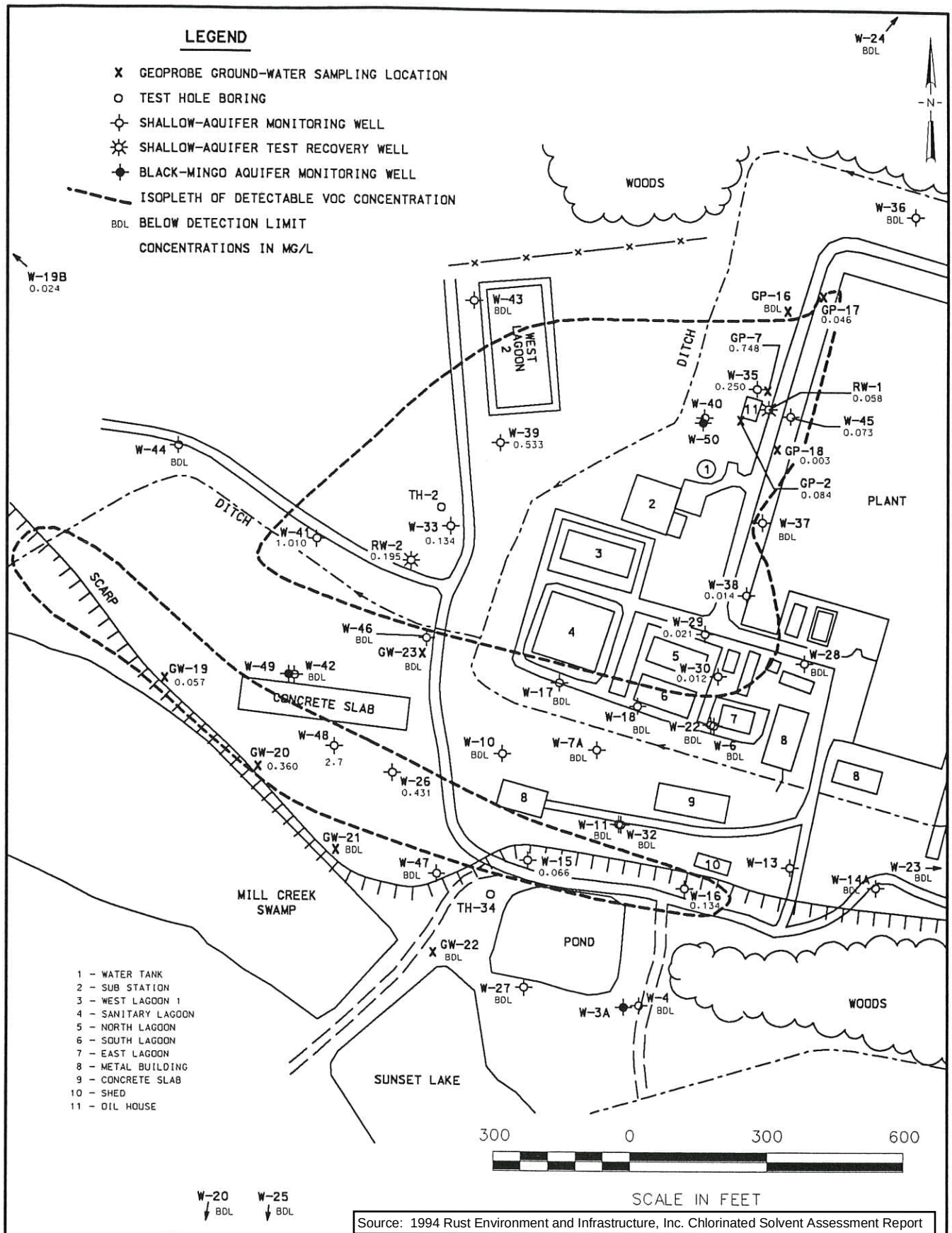
NOTES:
E=CONCENTRATIONS EXCEEDED CALIBRATION RANGE BY <5%
SAMPLES FROM WELLS W-7A, W-14A, W-27,
AND W-30 OBTAINED ON APRIL 14-15, 1992.
ALL OTHER SAMPLES OBTAINED ON FEBRUARY 7 AND 9, 1994.

Source: 1994 Rust Environment and Infrastructure, Inc. Chlorinated Solvent Assessment Report

WESTINGHOUSE ELECTRIC CORPORATION, COLUMBIA, SOUTH CAROLINA, PROJECT NO. 84820.200

RUST ENVIRONMENT & INFRASTRUCTURE

FIGURE 3-5
MAP OF TOTAL VOC CONCENTRATIONS IN SHALLOW AQUIFER MONITORING WELL SAMPLES



Source: 1994 Rust Environment and Infrastructure, Inc. Chlorinated Solvent Assessment Report

WESTINGHOUSE ELECTRIC CORPORATION, COLUMBIA, SOUTH CAROLINA, PROJECT NO. 33143.500

RUST ENVIRONMENT & INFRASTRUCTURE

FIGURE 3-8
MAP OF TOTAL VOLATILE ORGANIC COMPOUND (VOC) CONCENTRATIONS, APRIL 1995

1995 Rust Environment and Infrastructure, Inc. Conceptual Design Report

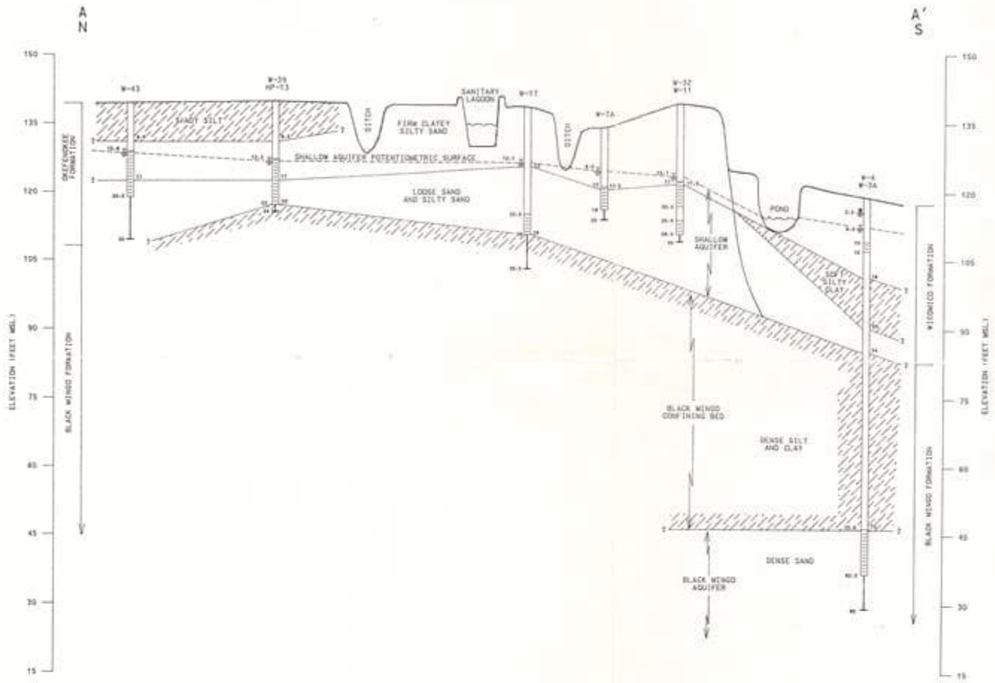
Based on the results of the *Chlorinated Solvent Assessment Report*, a remedial design investigation was performed by Rust in 1995 as part of a remedial design plan for remediation of the CVOCs. The investigation included well abandonments, DPT soil and groundwater sampling, monitoring well and recovery well installations, groundwater sampling, surface water sampling, and hydraulic testing (pump tests and slug tests). The results are presented in the *Conceptual Design Report* (Rust, 1995).

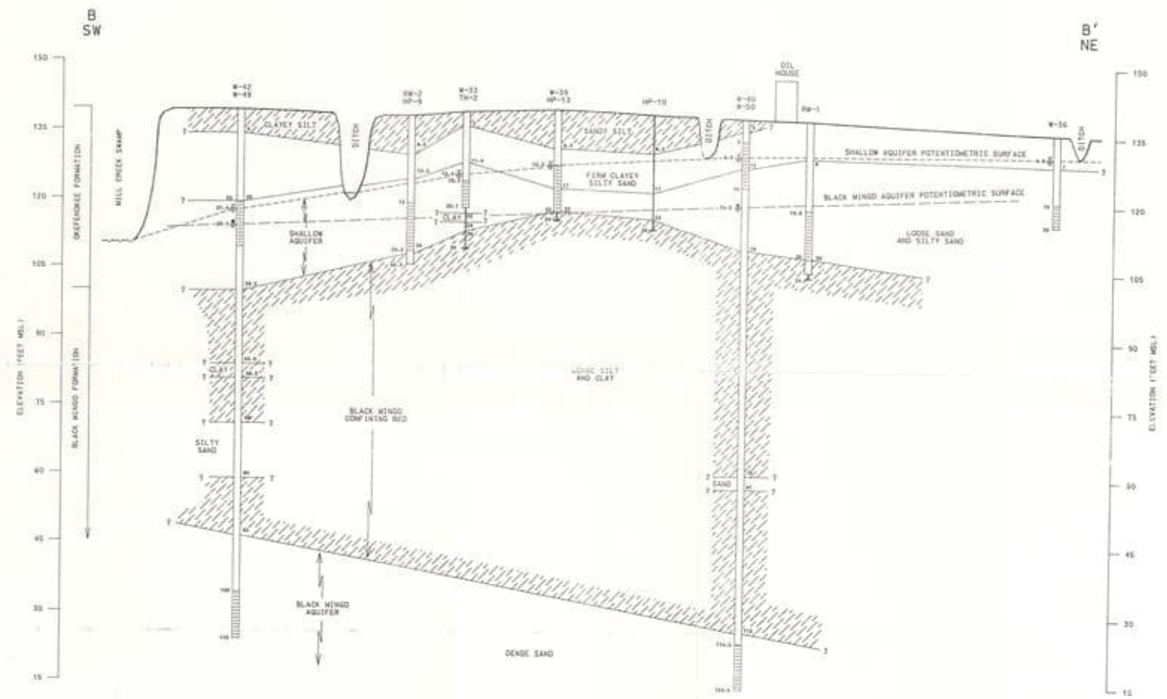
The report included refined interpretations of the site hydrogeology, source area soil and groundwater results, DPT and monitoring well groundwater results, surface water results, and aquifer hydraulic testing results. The results indicated that highest CVOCs were present in one soil sample adjacent to the former Oil House located adjacent to monitoring well W-35. The highest concentration of total petroleum hydrocarbons was detected in one soil sample near the former location of a diesel fuel underground storage tank.

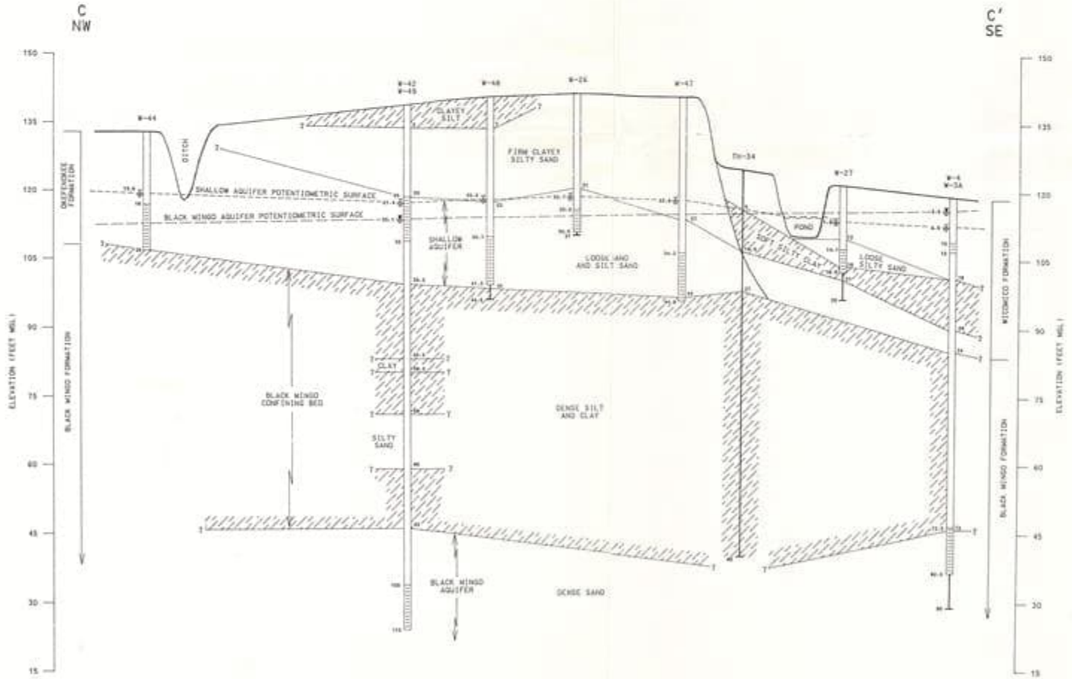
The *Chlorinated Solvent Assessment Report* and *Conceptual Design Report* indicated that PCE, TCE, cis-1,2-dichlorothylene (cis-1,2-DCE), and vinyl chloride (VC) were detected at concentrations exceeding MCLs in the surficial aquifer and that the former Oil House was the likely source of the CVOCs. Concentrations of fluoride and nitrate were detected at concentrations exceeding MCLs in groundwater samples collected within and downgradient of the WWTP. The report indicated that the objectives of remediation would be to limit CVOC migration and remove CVOCs through the interception and treatment of groundwater from the leading edge of the plume. The report recommended additional aquifer testing and review of treatment and disposal options.

CFFF and Rust personnel met with DHEC in 1995 to review the *Conceptual Design Report* and to discuss practical approaches for groundwater remediation of CVOCs. Groundwater pump and treat technologies were determined to be infeasible because of the excessive predicted quantities of wastewater, limited additional capacity for the force main that runs to the river, and required NPDES permit modification. In-situ technologies, specifically air sparge (AS) and soil vapor extraction (SVE), were considered to be feasible.

Pertinent excerpts from this report are included below.



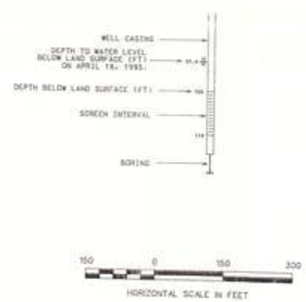




LOCATION MAP



LEGEND



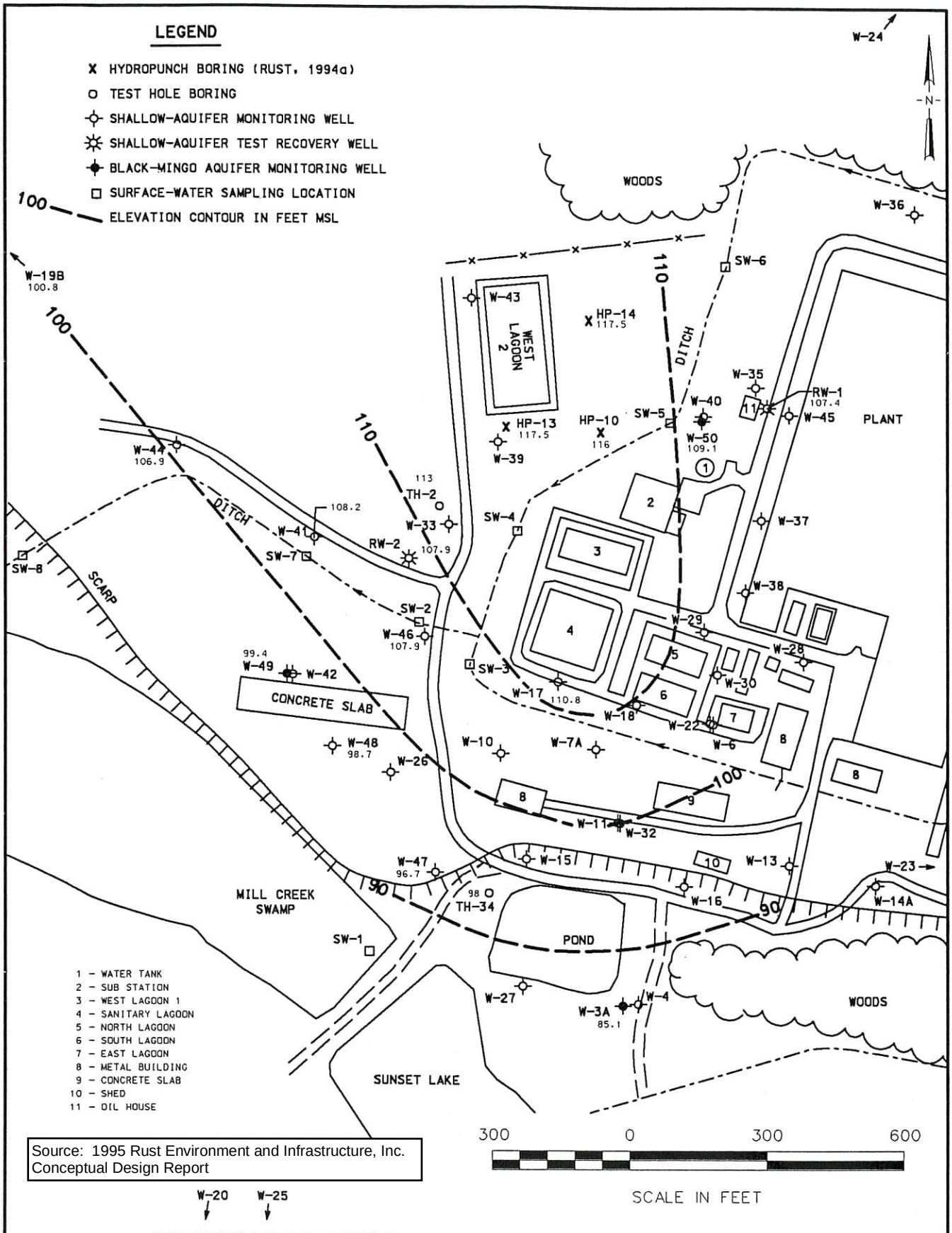
Source: 1995 Rust Environment and Infrastructure, Inc. Conceptual Design Report

REV.NO.	DESCRIPTION	DATE

FIGURE 3-1
HYDROGEOLOGIC CROSS-SECTIONS

RUST ENVIRONMENT & INFRASTRUCTURE

SCALE: AS SHOWN	DRAWN BY: WJG	CHECKED BY: DPS
JOB NO. 33143.500	DATE: 7/95	SHEET 1 OF 1

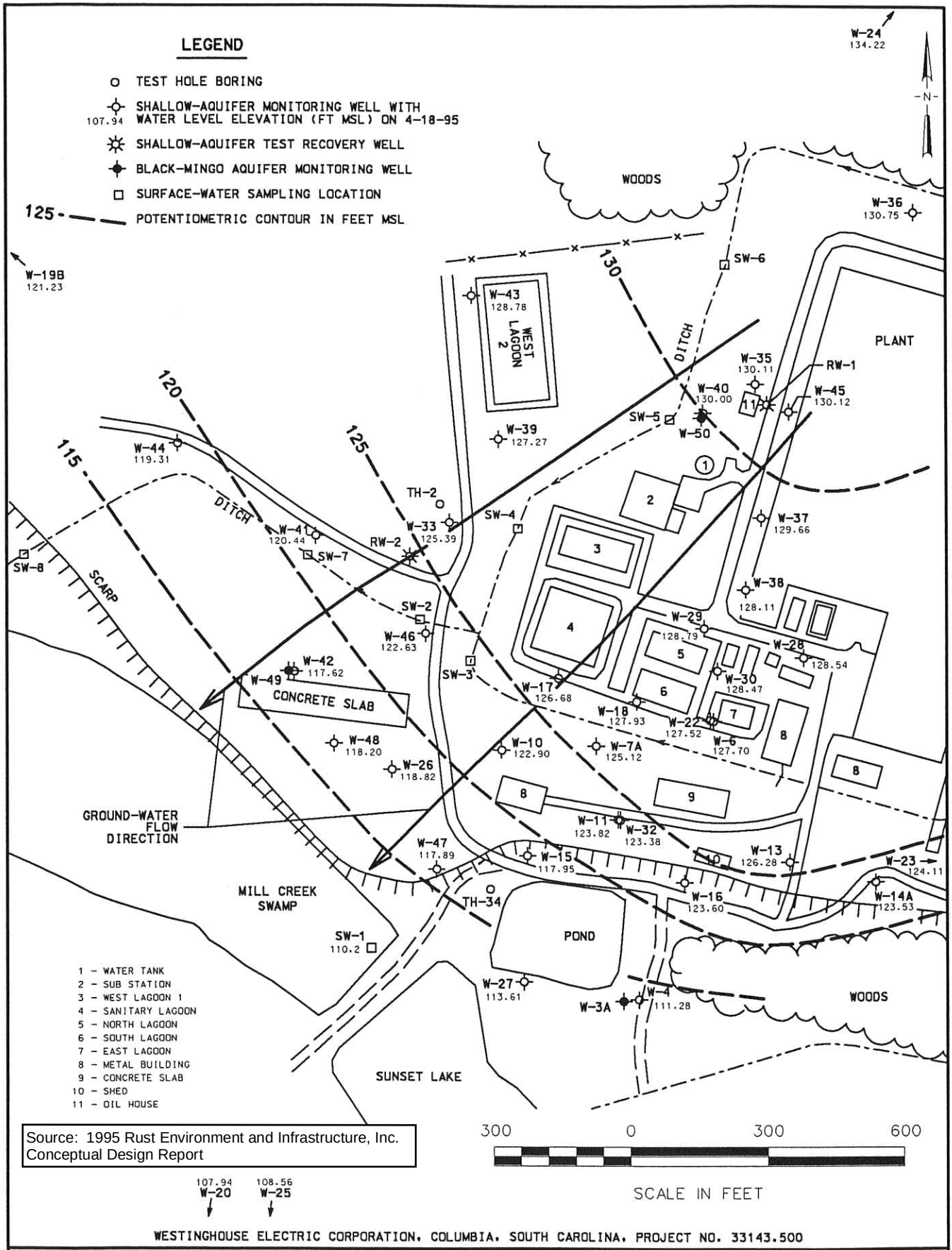


Source: 1995 Rust Environment and Infrastructure, Inc. Conceptual Design Report

WESTINGHOUSE ELECTRIC CORPORATION, COLUMBIA, SOUTH CAROLINA, PROJECT NO. 33143.500

RUST ENVIRONMENT & INFRASTRUCTURE

FIGURE 3-2
STRUCTURE CONTOUR MAP OF THE TOP OF THE BLACK MINGO FORMATION

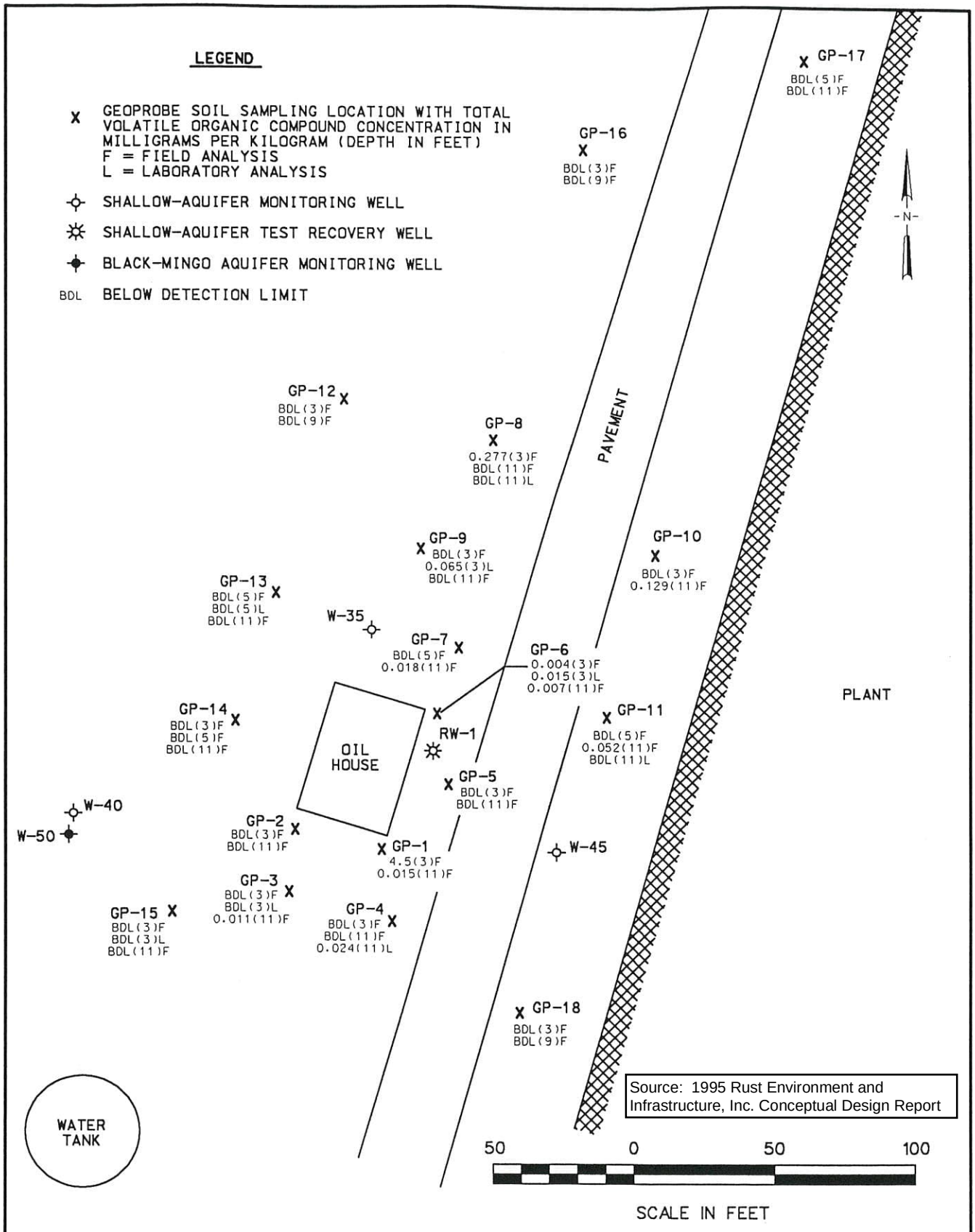


Source: 1995 Rust Environment and Infrastructure, Inc. Conceptual Design Report

WESTINGHOUSE ELECTRIC CORPORATION, COLUMBIA, SOUTH CAROLINA, PROJECT NO. 33143.500

RUST ENVIRONMENT & INFRASTRUCTURE

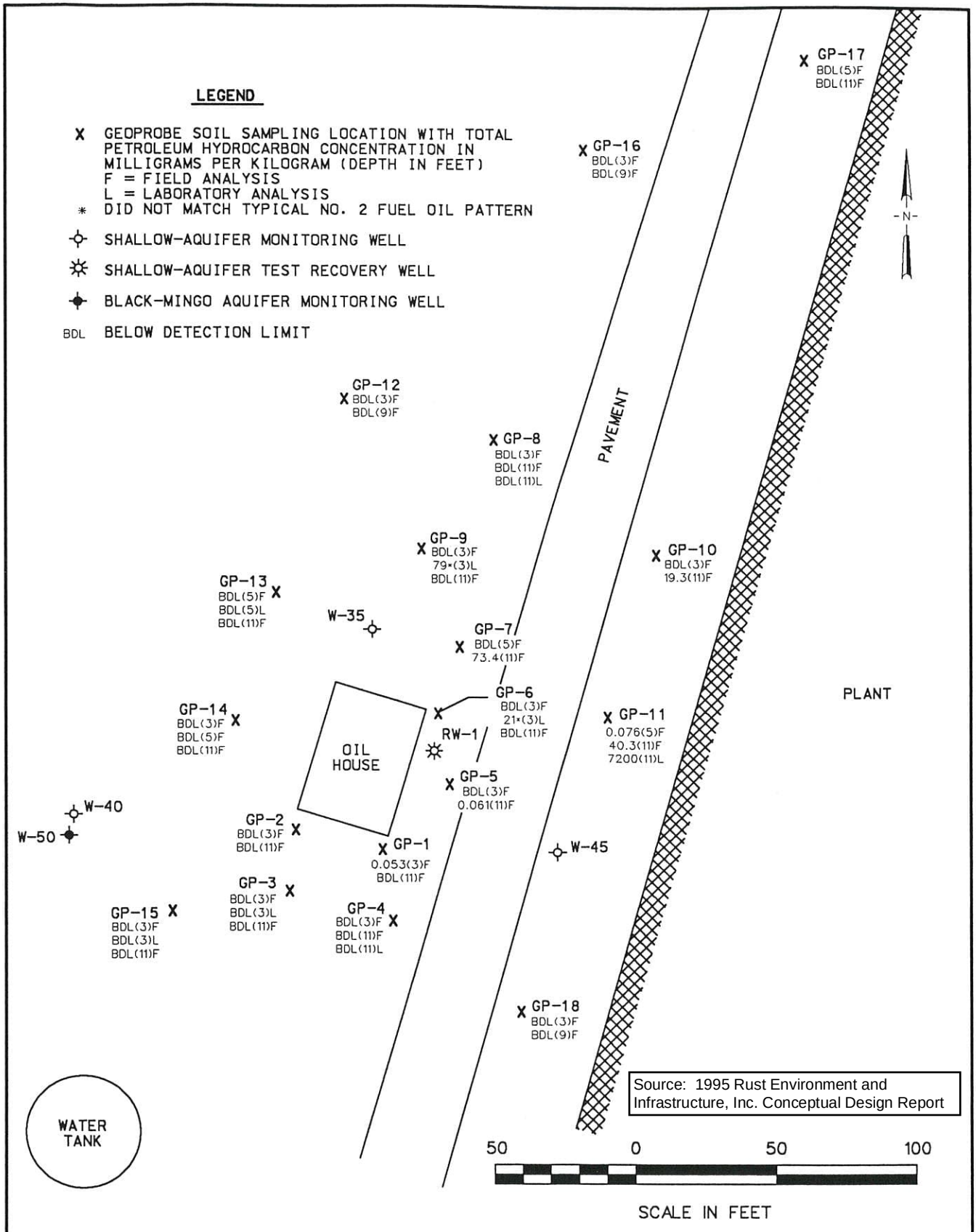
FIGURE 3-3
SHALLOW AQUIFER POTENTIOMETRIC MAP
APRIL 18, 1995



WESTINGHOUSE ELECTRIC CORPORATION, COLUMBIA, SOUTH CAROLINA, PROJECT NO. 33143.500

RUST ENVIRONMENT & INFRASTRUCTURE

FIGURE 3-4
MAP OF VOLATILE ORGANIC COMPOUND CONCENTRATIONS DETECTED IN GEOPROBE SOIL SAMPLES



Source: 1995 Rust Environment and Infrastructure, Inc. Conceptual Design Report

WESTINGHOUSE ELECTRIC CORPORATION, COLUMBIA, SOUTH CAROLINA, PROJECT NO. 33143.500

RUST ENVIRONMENT & INFRASTRUCTURE

FIGURE 3-5
MAP OF TOTAL PETROLEUM HYDROCARBON CONCENTRATIONS DETECTED IN GEOPROBE SOIL SAMPLES

TABLE 3-2

SUMMARY OF PARAMETERS DETECTED IN GEOPROBE SOIL SAMPLES

Westinghouse Commercial Nuclear Fuel Division
Columbia, South Carolina

Project No. 33143.500

				Volatile Organic Compounds (VOCs)									
		Total Diesel Range		Acetone	Tetrachloroethene		Trichloroethene		1,2-Dichloroethene (Total)		Total VOCs	
Geoprobe Location	Sample Depth (Feet)	Field (mg/kg)	Laboratory (mg/kg)	Laboratory (mg/kg)	Field (mg/kg)	Laboratory (mg/kg)	Field (mg/kg)	Laboratory (mg/kg)	Field (mg/kg)	Laboratory (mg/kg)	Field (mg/kg)	Laboratory (mg/kg)
GP-1	3	0.053	NA	NA	4.1	NA	0.356	NA	0.014	NA	4.5	NA
GP-1	11	< 0.025	NA	NA	0.015	NA	< 0.002	NA	< 0.005	NA	0.015	NA
GP-2	3	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA	BDL	NA
GP-2	11	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA	BDL	NA
GP-3	3	< 0.025	< 10	< 0.010	< 0.002	< 0.005	< 0.002	< 0.005	< 0.005	< 0.005	BDL	BDL
GP-3	11	< 0.025	NA	NA	0.011	NA	< 0.002	NA	< 0.005	NA	0.011	NA
GP-4	3	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA	BDL	NA
GP-4	11	< 0.025	< 10	0.012	< 0.002	0.012	< 0.002	< 0.005	< 0.005	< 0.005	BDL	0.024
GP-5	3	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA	BDL	NA
GP-5	11	0.061	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA	BDL	NA
GP-6	3	< 0.025	21 *	0.015	0.004	< 0.005	< 0.002	< 0.005	< 0.005	< 0.005	0.004	0.015
GP-6	11	< 0.025	NA	NA	< 0.002	NA	0.002	NA	0.005	NA	0.007	NA
GP-7	5	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA	BDL	NA
GP-7	11	73.4	NA	NA	0.007	NA	0.005	NA	0.006	NA	0.018	NA
GP-8	3	< 0.025	NA	NA	0.274	NA	0.003	NA	< 0.005	NA	0.277	NA
GP-8	11	< 0.025	< 10	< 0.010	< 0.002	< 0.005	< 0.002	< 0.005	< 0.005	< 0.005	BDL	BDL
GP-9	3	< 0.025	79 *	0.051	< 0.002	0.014	< 0.002	< 0.005	< 0.005	< 0.005	BDL	0.065
GP-9	11	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA	BDL	NA
GP-10	3	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA	BDL	NA
GP-10	11	19.3	NA	NA	0.129	NA	< 0.002	NA	< 0.005	NA	0.129	NA

Source: 1995 Rust Environment and Infrastructure, Inc. Conceptual Design Report

WCP03T05.WK4

TABLE 3-2

SUMMARY OF PARAMETERS DETECTED IN GEOPROBE SOIL SAMPLES

Westinghouse Commercial Nuclear Fuel Division
Columbia, South Carolina

Project No. 33143.500

				Volatile Organic Compounds (VOCs)									
		Total Diesel Range		Acetone	Tetrachloroethene		Trichloroethene		1,2-Dichloroethene (Total)		Total VOCs	
Geoprobe Location	Sample Depth (Feet)	Field (mg/kg)	Laboratory (mg/kg)	Laboratory (mg/kg)	Field (mg/kg)	Laboratory (mg/kg)	Field (mg/kg)	Laboratory (mg/kg)	Field (mg/kg)	Laboratory (mg/kg)	Field (mg/kg)	Laboratory (mg/kg)
GP-11	5	0.076	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA	BDL	NA
GP-11	11	40.3	7200	< 12.5	< 0.002	< 6.25	< 0.002	< 6.25	0.052	< 6.25	0.052	BDL
GP-12	3	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA	BDL	NA
GP-12	9	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA	BDL	NA
GP-13	5	< 0.025	< 10	< 0.010	< 0.002	< 0.005	< 0.002	< 0.005	< 0.005	< 0.005	BDL	BDL
GP-13	11	< 0.025	NA		< 0.002	NA	< 0.002	NA	< 0.005	NA	BDL	NA
GP-14	3	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA	BDL	NA
GP-14	5	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA	BDL	NA
GP-14	11	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA	BDL	NA
GP-15	3	< 0.025	< 10	< 0.010	< 0.002	< 0.005	< 0.002	< 0.005	< 0.005	< 0.005	BDL	BDL
GP-15	11	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA	BDL	NA
GP-16	3	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA	BDL	NA
GP-16	9	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA	BDL	NA
GP-17	5	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA	BDL	NA
GP-17	11	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA	BDL	NA
GP-18	3	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA	BDL	NA
GP-18	9	< 0.025	NA	NA	< 0.002	NA	< 0.002	NA	< 0.005	NA	BDL	NA

Notes: mg/kg = Milligrams per kilogram.
Field analyses performed by Microseeps.
Laboratory analyses performed by IEA, Inc.
* = Did not match typical No. 2 Fuel Oil pattern.
BDL = Below Detection Limit.
NA = Not analyzed.

Source: 1995 Rust Environment and Infrastructure, Inc. Conceptual Design Report

WCP03T05.WK4

TABLE 3-3

HISTORICAL SUMMARY OF ORGANIC PARAMETERS
DETECTED IN MONITORING WELL SAMPLES

Westinghouse Commercial Nuclear Fuel Division
Columbia, South Carolina

Project No. 33143.500

Well Number	Sample Date	No. 2 Fuel Oil (mg/L)	Volatile Organic Compounds (VOCs) Benzene (mg/L)	Ethyl-benzene (mg/L)	Tetrachloro-ethene (mg/L)	Trichloro-ethene (mg/L)	1,2-DCE (Total) (mg/L)	Vinyl Chloride (mg/L)	Total VOCs (mg/L)
W-3A	03/05/92	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/14/92	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/05/95	18	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	06/29/95	20	NA	NA	NA	NA	NA	NA	NA
W-4	04/05/95	2.8	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-6	04/04/95	< 0.50	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-7A	03/04/92	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/15/92	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/05/95	4.0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-10	03/03/95	6.2	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/05/95	6.4	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-11	04/05/95	2.2	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-14A	03/05/92	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/15/92	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/05/95	1.3	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-15	03/03/95	4.0	< 0.005	< 0.005	0.042	< 0.005	< 0.005	< 0.010	0.042
	04/05/95	7.0	< 0.005	< 0.005	0.058	0.008	< 0.005	< 0.010	0.066
W-16	04/05/95	1.2	< 0.005	< 0.005	0.100	0.017	0.017	< 0.010	0.134
W-17	12/02/93	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	02/09/94	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/05/95	4.2	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-18	04/04/95	2.1	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-19B	04/05/95	< 0.50	< 0.005	< 0.005	0.014	0.010	< 0.005	< 0.010	0.024
W-20	04/04/95	0.89	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-22	04/04/95	< 0.50	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-23	04/06/95	5.0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-24	03/04/92	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/14/92	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/03/95	2.6	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-25	04/04/95	5.9	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-26	12/02/93	NA	< 0.050	< 0.050	1.600	0.100	< 0.050	< 0.100	1.700
	02/07/94	NA	< 0.050	< 0.050	< 0.050	< 0.050	2.100 E	0.760	2.860 E
	03/03/95	13	< 0.010	< 0.010	< 0.010	0.015	0.260	0.280	0.555
	04/06/95	26	< 0.010	< 0.010	< 0.010	0.011	0.220	0.200	0.431
W-27	03/05/92	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/14/92	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/05/95	3.3	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-28	04/05/95	0.64	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-29	04/05/95	1.9	< 0.005	< 0.005	0.021	< 0.005	< 0.005	< 0.010	0.021
W-30	03/04/92	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/15/92	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/04/95	1.4	< 0.005	< 0.005	0.006	0.006	< 0.005	< 0.010	0.012
W-32	04/05/95	3.2	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL

Source: 1995 Rust Environment and Infrastructure, Inc.
Conceptual Design Report

TABLE 3-3

HISTORICAL SUMMARY OF ORGANIC PARAMETERS
DETECTED IN MONITORING WELL SAMPLES

Westinghouse Commercial Nuclear Fuel Division
Columbia, South Carolina

Project No. 33143.500

Well Number	Sample Date	No. 2 Fuel Oil (mg/L)	Volatile Organic Compounds (VOCs) Benzene (mg/L)	Ethyl-benzene (mg/L)	Tetrachloro-ethene (mg/L)	Trichloro-ethene (mg/L)	1,2-DCE (Total) (mg/L)	Vinyl Chloride (mg/L)	Total VOCs (mg/L)
W-33	03/05/92	NA	< 0.005	< 0.005	0.230	0.110	< 0.005	< 0.010	0.340
	04/14/92	NA	< 0.005	< 0.005	0.210	0.097	< 0.005	< 0.010	0.307
	02/09/94	NA	< 0.025	< 0.025	0.830	0.140	0.035	< 0.050	1.005
	04/05/95	3.6	< 0.005	< 0.005	0.100	0.034	< 0.005	< 0.010	0.134
W-35	03/04/92	NA	< 0.010	< 0.010	0.110	0.010	0.030	< 0.020	0.150
	04/15/92	NA	< 0.025	< 0.025	0.270	< 0.025	0.070	< 0.050	0.340
	02/09/94	NA	< 0.025	< 0.025	0.920	0.120	0.290	< 0.050	1.330
	10/14/94	2.2	<0.012	<0.0125	0.340	0.042	0.120	< 0.025	0.502
	04/04/95	1.9	< 0.010	< 0.010	0.190	0.018	0.042	< 0.020	0.250
W-36	03/04/92	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/14/92	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	02/07/94	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/04/95	1.4	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-37	12/02/93	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	02/09/94	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	10/14/94	3.8	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/04/95	0.57	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-38	02/09/94	NA	< 0.005	< 0.005	0.010	0.006	< 0.005	< 0.010	0.016
	04/04/95	0.52	< 0.005	< 0.005	0.014	< 0.005	< 0.005	< 0.010	0.014
W-39	02/07/94	NA	< 0.050	< 0.050	1.500	0.120	< 0.050	< 0.100	1.620
	04/04/95	2.1	< 0.020	< 0.020	0.470	0.063	< 0.020	< 0.040	0.533
W-40	10/26/93	NA	< 0.005	< 0.005	0.110	0.021	< 0.005	< 0.010	0.131
	02/09/94	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	10/14/94	0.50	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/06/95	< 0.50	< 0.010	< 0.010	0.310	0.120	< 0.010	< 0.020	0.430
W-41	02/07/94	NA	< 0.050	< 0.050	1.100	0.230	< 0.050	< 0.100	1.330
	04/03/95	4.3	< 0.025	< 0.025	0.910	0.100	< 0.025	< 0.050	1.010
W-42	02/07/94	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	10/14/94	0.64	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	03/03/95	2.6	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/04/95	< 0.50	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-43	02/07/94	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/03/95	< 0.50	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-44	02/07/94	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	04/03/95	1.4	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-45	03/08/94	9.9	0.013	0.005	0.012	< 0.005	0.140	< 0.010	0.170
	10/14/94	25	0.012	< 0.005	0.008	< 0.005	0.130	< 0.010	0.150
	04/04/95	88	0.005	< 0.005	0.008	< 0.005	0.060	< 0.010	0.073
W-46	04/04/95	< 0.50	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-47	04/04/95	0.60	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-48	04/04/95	< 0.50	< 0.005	< 0.005	0.880	0.170	1.100	0.550	2.700
W-49	04/04/95	< 0.50	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
W-50	04/06/95	10	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.010	BDL
	06/29/95	< 0.50	NA	NA	NA	NA	NA	NA	NA
RW-1	04/04/95	< 0.50	< 0.005	< 0.005	0.049	0.009	< 0.005	< 0.010	0.058
RW-2	04/04/95	< 0.50	< 0.005	< 0.005	0.150	0.045	< 0.005	< 0.010	0.195

Notes: mg/L = Milligrams per liter.
1,2-DCE = 1,2-Dichloroethene.
BDL = Below Detection Limit.
NA = Not analyzed.
E = Concentration exceeded calibration range.

Source: 1995 Rust Environment and Infrastructure, Inc. Conceptual Design Report

1996 Rust Environment and Infrastructure, Inc. Pilot Test Report

Rust conducted a pilot test in 1996 to assess the effectiveness of an AS/SVE system for remediation of CVOCs. One AS test well, three AS piezometers, one SVE test well, and three SVE piezometers were constructed in the vicinity of monitoring well W-26 for the pilot test. Air sparging and soil vapor extraction were tested separately initially, and then in combination. The results of the tests were positive for application of both technologies, simultaneously. The pilot test results were presented in the *Pilot Test Report* (Rust, 1996). The pilot testing indicated that AS/SVE was a viable remedial option for CVOCs at the site. The site installed and implemented an AS/SVE remediation system from 1997-2011.

2011 AECOM Source Investigation Report

AECOM performed a source investigation in the WWTP area in 2011. The source investigation included groundwater sampling from 20 DPT borings and wastewater sampling from five lagoons. The groundwater and wastewater samples were analyzed for fluoride and nitrate. The results of the source investigation were presented in the *Source Investigation Report* (AECOM, 2011).

The report indicated that fluoride and nitrate concentrations in groundwater exceeded MCLs in the vicinity of the North, South, and East Lagoons and surrounding WWTP facilities. The report concluded that there was no clear evidence that the wastewater lagoons were a continuing source of fluoride in groundwater because the fluoride concentrations in wastewater lagoon samples were up to 10 times less than the elevated concentrations in groundwater samples. The report concluded that groundwater had been impacted by nitrate from wastewater seepage from one or more of these lagoons since nitrate in groundwater samples were up to one half of the concentration in wastewater samples from the North and South Lagoons.

Pertinent excerpts from this report are included below.



Legend

- Shallow Aquifer Monitoring Well Location
- Deep Aquifer Monitoring Well Location
- Surface Water Sample Location
- Soil Boring Location
- 0.5 Fluoride Concentration (mg/L)
- Fluoride Isoconcentration Contour (mg/L)

Note:
Groundwater samples from the monitoring wells were collected in December 2010 or April 2011.

100 50 0 100 Feet

1:1,200

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2011 AECOM Source Investigation Report

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FLUORIDE IN GROUNDWATER UPPER SHALLOW AQUIFER

WESTINGHOUSE ELECTRIC CORPORATION
COLUMBIA, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60158741	RJS	JUNE 2011	**FIGURE 4**



Legend

- Shallow Aquifer Monitoring Well Location
- Deep Aquifer Monitoring Well Location
- Surface Water Sample Location
- Soil Boring Location
- 0.05 Fluoride Concentration (mg/L)
- Fluoride Isoconcentration Contour (mg/L)

Note:
Groundwater samples from the monitoring wells were collected in December 2010 or April 2011.

100 50 0 100 Feet

1:1,200

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2011 AECOM Source Investigation Report

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FLUORIDE IN GROUNDWATER LOWER SHALLOW AQUIFER

WESTINGHOUSE ELECTRIC CORPORATION
COLUMBIA, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60158741	RJS	JUNE 2011	**FIGURE 5**



Legend

- Shallow Aquifer Monitoring Well Location
- Deep Aquifer Monitoring Well Location
- Surface Water Sample Location
- Soil Boring Location
- 0.13 Nitrate Concentration (mg/L)
- Nitrate Isoconcentration Countuor (mg/L)

Note:
Groundwater samples from the monitoring wells were collected in December 2010 or April 2011.

100 50 0 100 Feet

1:1,200

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2011 AECOM Source Investigation Report

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NITRATE IN GROUNDWATER UPPER SHALLOW AQUIFER

WESTINGHOUSE ELECTRIC CORPORATION
COLUMBIA, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60158741	RJS	JUNE 2011	**FIGURE 6**



Legend

- Shallow Aquifer Monitoring Well Location
- Deep Aquifer Monitoring Well Location
- Surface Water Sample Location
- Soil Boring Location
- 0.13 Nitrate Conentration (mg/L)
- Nitrate Isoconcentration Contour (mg/L)

Note:
Groundwater samples from the monitoring wells were collected in December 2010 or April 2011.

100 50 0 100 Feet

1:1,200

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2011 AECOM Source Investigation Report

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NITRATE IN GROUNDWATER LOWER SHALLOW AQUIFER

WESTINGHOUSE ELECTRIC CORPORATION
COLUMBIA, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60158741	RJS	JUNE 2011	**FIGURE 7**

2014 AECOM Preliminary Baseline Risk Assessment

As discussed in below, DHEC requested submittal of a Baseline Risk Assessment (BRA) in addition to the Remedial Investigation (RI) Report in 2013. A Preliminary Baseline Risk Assessment (PBRA) was performed in 2013 and AECOM submitted the *Preliminary Baseline Risk Assessment* in February 2014 (AECOM, 2014). The PBRA presented the initial steps of the human health risk assessment (HHRA) and the ecological risk assessment (ERA) and was intended to decide if additional steps in the BRA process were needed to complete the BRA.

For the HHRA, cis-1,2-DCE, PCE, TCE, and gross alpha were conservatively retained at chemicals of potential concern (COPCs) in groundwater. The screening level exceeded for each VOC was its EPA Regional Screening Level for Tap Water, which was derived to be protective of regular long-term use of water for drinking and bathing. Gross alpha exceeded its MCL, which is protective of similar uses. Because site groundwater is not used for these purposes under current conditions and is unlikely to be used for such purposes in the future, this screening was very conservative. PCE was identified as a vapor intrusion COPC in groundwater for the current commercial/industrial exposure scenario.

The Ecological risk summary of the PBRA concluded that there were no preliminary chemicals of potential ecological concern (COPECs) in surface water or sediment that warranted retention as COPECs at the site.

2015 AECOM Remedial Investigation Report

On March 13, 2013, DHEC issued a letter indicating that reports from 2010 through 2011 had been reviewed. The letter indicated that future assessments and remedial actions would be evaluated in accordance with the EPA *Guidance for Conducting RIs and Feasibility Studies under CERCLA* (EPA, 1988). The letter acknowledged that the fluoride, nitrate, and VOC plumes had been delineated and that fluoride and nitrate sources had been identified. The letter further indicated that Gross Beta and Gross Alpha trends and sources were not identified; VOC concentrations had been increasing since the AS/SVE system had been turned off for two years, and that “most of the referenced reports submitted to date consist primarily of data without maps or interpretation”. Therefore, DHEC requested submittal of a comprehensive RI Report for the CFFF site consistent with EPA guidance. A BRA was also requested.

During subsequent discussions between CFFF and DHEC, it was decided that the RI work would consist primarily of summarizing investigation data from 1980 to 2011 along with limited new work. The new work completed in 2013 consisted of collection of 10 sediment samples (SED-1 through SED-10) for analysis of VOCs, nitrate, fluoride, gross alpha, and gross beta at locations coinciding with previous surface water samples (SW-1 through SW-10), a comprehensive round of water level measurements in site monitoring wells and surveying the site monitoring wells.

The historical investigation results and new results were presented in the *Remedial Investigation Report* (AECOM, 2015). The majority of the RI report was a summary of investigation results performed through 2012. Numerous tables and figures from the previous investigations described above were included in the 2015 RI Report. DHEC and the CFFF agreed that data tables and isoconcentration maps for COPCs would include data from 2004 to present.

The sediment sampling results from July 2013 indicated that PCE was detected in one sediment sample (SED-7) in the tributary downstream. No other CVOCs were detected in sediment samples. Sediment sample SED-7 was located near the previously documented PCE groundwater plume. Gross alpha was detected in one sediment sample (SED-5) at a concentration of 377 picocuries per gram (pCi/g). Gross alpha in the remaining sediment samples ranged from non-detect to 23.40 pCi/g. Gross beta was detected in sediment sample SED-10 at a concentration of 295 pCi/g, with the remaining gross beta concentrations ranging from 15.7 pCi/g to 52.1 pCi/g.

PCE was detected in surface water samples SW-7, SW-8, and SW-10 in 2008 at concentrations ranging from 1.6 micrograms per liter (µg/L) to 9.2 µg/L. One surface water sample (SW-8) from the stormwater ditch near the confluence with Upper Sunset Lake exceeded the MCL for PCE. A resample of SW-8 in 2009 confirmed the exceedance of the MCL at a concentration of 14 µg/L. it was suspected that the PCE detected at location SW-8 was the result of PCE impacted groundwater discharging to the ditch.

Pertinent excerpts from this report are included below.



N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

400 200 0 400 Feet

1:4,800

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2015 AECOM Remedial Investigation Report

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SITE MAP

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 1-3**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Comprehensive Sample and Site Map from Surveyed Data 08-2013.mxd



N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- Water Table Surface Contours 06-06-13
- 120.79 Water Level Elevation (Ft msl) on June 6, 2013
- Inferred Groundwater Flow Direction
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2015 AECOM Remedial Investigation Report

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WATER TABLE SURFACE MAP JUNE 6, 2013

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 3-7**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Water Table Surface 06-2013.mxd



N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- 116.35 Black Mingo Aquifer Water Level Elevation (Ft msl) on June 6, 2013
- Potentiometric Contours of the Black Mingo Aquifer
- Inferred Groundwater Flow Direction

EL	East Lagoon
NL	North Lagoon
SL	South Lagoon
SAN	Sanitary Lagoon
WL1	West Lagoon 1
WL2	West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2015 AECOM Remedial Investigation Report

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POTENTIOMETRIC SURFACE MAP BLACK MINGO AQUIFER JUNE 6, 2013

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 3-8**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Deep Water Table Surface 06-2013.mxd



N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- 1.78 Flouride Concentration (mg/L)
- Fluoride Isoconcentration Contour (mg/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2015 AECOM Remedial Investigation Report

AECOM
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FLUORIDE IN GROUNDWATER DECEMBER 2004

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-5**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Fluoride in Groundwater 12-2004.mxd



N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- 1.2 Flouride Concentration (mg/L)
- Flouride Isoconcentration Contour (mg/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2015 AECOM Remedial Investigation Report

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FLOURIDE IN GROUNDWATER AND SURFACE WATER DECEMBER 2008

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-6**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Flouride in Groundwater 12-2008.mxd



N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- 1.96 Flouride Concentration (mg/L)
- Fluoride Isoconcentration Contour (mg/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2015 AECOM Remedial Investigation Report

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FLUORIDE IN GROUNDWATER OCTOBER 2013

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-9**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Fluoride in Groundwater 10-2013.mxd



N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- 27.70 Nitrate Concentration (mg/L)
- Nitrate Isoconcentration Contour (mg/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2015 AECOM Remedial Investigation Report

AECOM
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NITRATE IN GROUNDWATER DECEMBER 2004

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-10**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Nitrate in Groundwater 12-2004.mxd



N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water Sampling Locations
- Ditch
- 3.6 Nitrate Concentration (mg/L)
- Nitrate Isoconcentration Contour (mg/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2015 AECOM Remedial Investigation Report

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NITRATE IN GROUNDWATER AND SURFACE WATER DECEMBER 2008

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-11**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Nitrate in Groundwater 12-2008.mxd



N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- 3.5 Nitrate Concentration (mg/L)
- Nitrate in Groundwater Contour (mg/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2015 AECOM Remedial Investigation Report

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NITRATE IN GROUNDWATER OCTOBER 2013

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-14**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Nitrate in Groundwater 10-2013.mxd



N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- 2.0 Gross Alpha Concentration (pCi/L)
- Gross Alpha Isoconcentration Contour (pCi/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2015 AECOM Remedial Investigation Report

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GROSS ALPHA IN GROUNDWATER DECEMBER 2004

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-15**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Gross Alpha in Groundwater 12-2004.mxd



N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- 0.6 Gross Alpha Concentration (pCi/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2015 AECOM Remedial Investigation Report

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GROSS ALPHA IN GROUNDWATER AND SURFACE WATER DECEMBER 2008

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-16**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Gross Alpha in Groundwater 12-2008.mxd



N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- 0.16 Gross Alpha Concentration (pCi/L)
- Gross Alpha Isoconcentration (pCi/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2015 AECOM Remedial Investigation Report

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GROSS ALPHA IN GROUNDWATER OCTOBER 2013

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-17**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Gross Alpha in Groundwater 10-2013.mxd



N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- 4.0 Gross Beta Concentration (pCi/L)
- Gross Beta Isoconcentration Contour (pCi/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2015 AECOM Remedial Investigation Report

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GROSS BETA IN GROUNDWATER DECEMBER 2004

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-18**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Gross Beta in Groundwater 12-2004.mxd



N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- 1.6 Gross Beta Concentration (pCi/L)
- Gross Beta Isoconcentration Contour (pCi/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

Note:
Concentrations are adjusted for pottasium-40.

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2015 AECOM Remedial Investigation Report

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ADJUSTED GROSS BETA IN GROUNDWATER AND SURFACE WATER DECEMBER 2008

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-19**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Gross Beta in Groundwater 12-2008.mxd



N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- 2.93 Gross Beta Concentration (pCi/L)
- Gross Beta Isoconcentration Contour (pCi/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2015 AECOM Remedial Investigation Report

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GROSS BETA IN GROUNDWATER OCTOBER 2013

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-20**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Gross Beta in Groundwater 10-2013.mxd



N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- 1.6 PCE Concentration (µg/L)
- PCE Isoconcentration Contour (µg/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2015 AECOM Remedial Investigation Report

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PCE IN GROUNDWATER AND SURFACE WATER DECEMBER 2008

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-25**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\PCE in Groundwater 12-2008.mxd



N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- 3.5 TCE Concentration (µg/L)
- TCE Isoconcentration Contour (µg/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2015 AECOM Remedial Investigation Report

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TCE IN GROUNDWATER AND SURFACE WATER DECEMBER 2008

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-26**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\TCE in Groundwater 12-2008.mxd



N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- 2.0 1,2-DCE Concentration (µg/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2015 AECOM Remedial Investigation Report

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1,2-DCE IN GROUNDWATER AND SURFACE WATER DECEMBER 2008

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-27**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\DCE in Groundwater 12-2008.mxd



N

Legend

- Shallow Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Surface Water/Sediment Sampling Locations
- Ditch
- <2.0 Vinyl Chloride Concentration (µg/L)
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2015 AECOM Remedial Investigation Report

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VINYL CHLORIDE IN GROUNDWATER AND SURFACE WATER DECEMBER 2008

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60302740	RJS	December 2013	**FIGURE 4-28**

Path: L:\Group\earth\ATLANTA Cadd Files\101948 Westinghouse\GIS\Maps\Vinyl Chloride in Groundwater 12-2008.mxd

Table 4-6
Summary of Analytical Results in Surface Water
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
SW-1	**Feb-94**	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Apr-95	<5.0	<5.0	<5.0	<10.0	**0.4**	**0.1**	<0.02	NA	NA	NA	NA	NA
	Dec-08	<1.0	<1.0	<1.0	<2.0	**12.1**	<1.00	<0.10	**2.28**	**3.77**	<5.0	NA	NA
SW-2	**Feb-94**	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Apr-95	**100.0**	**8.0**	<5.0	<10.0	**0.7**	**0.1**	**1.9**	NA	NA	NA	NA	NA
	Dec-08	<1.0	<1.0	<1.0	<2.0	**2.5**	<1.00	**0.2**	**1.04**	**1.90**	<5.0	NA	NA
	Jul-13	NA	NA	NA	NA	<0.5	<1.00		**3.38**	<2.02	NA	NA	NA
SW-3	**Feb-94**	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Apr-95	<5.0	<5.0	<5.0	<10.0	**0.2**	**0.4**	**0.2**	NA	NA	NA	NA	NA
	Dec-08	<1.0	<1.0	<1.0	<2.0	**1.4**	<1.00	**0.1**	**1.12**	**5.76**	<5.0	NA	NA
SW-4	**Feb-94**	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Apr-95	**120.0**	**8.0**	<5.0	<10.0	**1.1**	14.0	**8.0**	NA	NA	NA	NA	NA
	Dec-08	<1.0	<1.0	<1.0	<2.0	**2.6**	<1.00	**5.3**	**164.00**	**26.50**	<5.0	NA	NA
SW-5	**Feb-94**	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Apr-95	**24.0**	<5.0	<5.0	<10.0	**0.8**	**14.0**	**8.0**	NA	NA	NA	NA	NA
	Dec-08	<1.0	<1.0	<1.0	<2.0	**0.8**	<1.00	**3.1**	**192.00**	**38.40**	<5.0	NA	NA
SW-6	**Feb-94**	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Apr-95	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
	Dec-08	<1.0	<1.0	<1.0	<2.0	**0.5**	<1.00	**0.1**	**1.60**	**0.00**	<5.0	NA	NA
SW-7	**Apr-95**	**130.0**	**20.0**	<5.0	<10	**0.8**	**1.7**	**5.9**	NA	NA	NA	NA	NA
	Dec-08	**3.8**	<1.0	<1.0	<2.0	**4.7**	**5.7**	**3.6**	**2.78**	**4.88**	<5.0	NA	NA

Source: 2015 AECOM Remedial Investigation Report

Table 4-6
Summary of Analytical Results in Surface Water
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Potassium mg/L	Potassium 40 mg/L	Adjusted Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	MCL=15	MCL=50*			MCL=50*
SW-8	**Apr-95**	**120.0**	**27.0**	<5.0	<10	**0.6**	**0.8**	**8.8**	NA	NA	NA	NA	NA
	Dec-08	**9.2**	<1.0	<1.0	<2.0	**4.4**	<1.00	**1.3**	NA	NA	NA	NA	NA
	Mar-09	**14.0**	<2.0	NA	<2.0	NA	NA	NA	**2.24**	**3.97**	NA	NA	NA
SW-9	**Dec-08**	<1.0	<1.0	<1.0	<2.0	**12.1**	<1.00	<0.10	**1.84**	**4.02**	<5.0	NA	NA
SW-10	**Dec-08**	**1.6**	<1.0	<1.0	<2.0	**10.3**	**8.8**	**19.4**	**1.47**	**50.00**	**7.10**	**5.82**	**44.18**
Pond	**Jul-13**	NA	NA	NA	NA	**7.3**	**2.7**		<1.07	4.99	NA	NA	NA
Causeway	**Jul-13**	NA	NA	NA	NA	<0.5	<1.00		<1.50	<4.24	NA	NA	NA
Spillway	**Jul-13**	NA	NA	NA	NA	<0.5	**2.2**		<1.07	4.99	NA	NA	NA

Notes:

mg/L: Milligrams per liter
pCi/L: Picocuries per liter
MCL: Maximum contaminant level
Bold: The analyte was detected by the laboratory
Bold and Shaded: The analyte concetration exceeded the EPA MCL
NA: Not available
NS: Not sampled

Source: 2015 AECOM Remedial Investigation Report

Table 4-7
Summary of Analytical Results in Sediment
Westinghouse Columbia Fuel Fabrication Facility
Hopkins, South Carolina
AECOM Project No. 60302740

Sample	Sample Date	Acetone ug/kg	2-Butanone (MEK) ug/kg	1,2-Dichloro-benzene ug/kg	Methyl Acetate ug/kg	Tetrachloro-ethene ug/kg	Toluene ug/kg	Fluoride mg/kg	Nitrate mg/kg	Gross Alpha pCi/g	Gross Beta pCi/g
SED-1	**07/18/13**	**240.0**	48.0	<12.0	<12.0	<12.0	<12.0	**4.3**	<0.39	**12.10**	**25.90**
SED-2	**07/18/13**	**34.0**	<9.4	<4.7	<4.7	<4.7	<4.7	**12.0**	<0.24	**23.40**	**25.40**
SED-3	**07/18/13**	**59.0**	**13.0**	<6.3	<6.3	<6.3	<6.3	**2.1**	<0.27	**13.20**	**23.50**
SED-4	**07/18/13**	<22.0	<11.0	<5.4	<5.4	<5.4	<5.4	**66.0**	**0.30**	**13.80**	**30.40**
SED-5	**07/18/13**	**400.0**	**41.0**	**13.0**	<7.5	<7.5	<7.5	**18.0**	<0.31	**377.00**	**52.10**
SED-6	**07/18/13**	<19.0	<9.4	<4.7	<4.7	<4.7	<4.7	**2.2**	**0.33**	**3.79**	**15.70**
SED-7	**07/18/13**	<20.0	<10.0	<5.0	<5.0	**30.0**	<5.0	**1.7**	**8.40**	**9.05**	**25.20**
SED-8	**07/18/13**	<21.0	<10.0	<5.1	<5.1	<5.1	<5.1	<1.3	**0.46**	<3.03	**21.80**
SED-9	**07/18/13**	**170.0**	**36.0**	<6.9	**21.0**	<6.9	**11.0**	**7.0**	<0.29	**10.30**	**20.70**
SED-10	**07/18/13**	**570.0**	**110.0**	<34.0	<34.0	<34.0	<34.0	**220.0**	**0.97**	**7.55**	**295.00**

Notes:

mg/kg: Milligrams per kilogram

ug/kg: Micrograms per kilogram

pCi/g: Picocuries per gram

Bold: The analyte was detected by the laboratory

Source: 2015 AECOM Remedial Investigation Report

2017 AECOM CVOC Field Screening Report

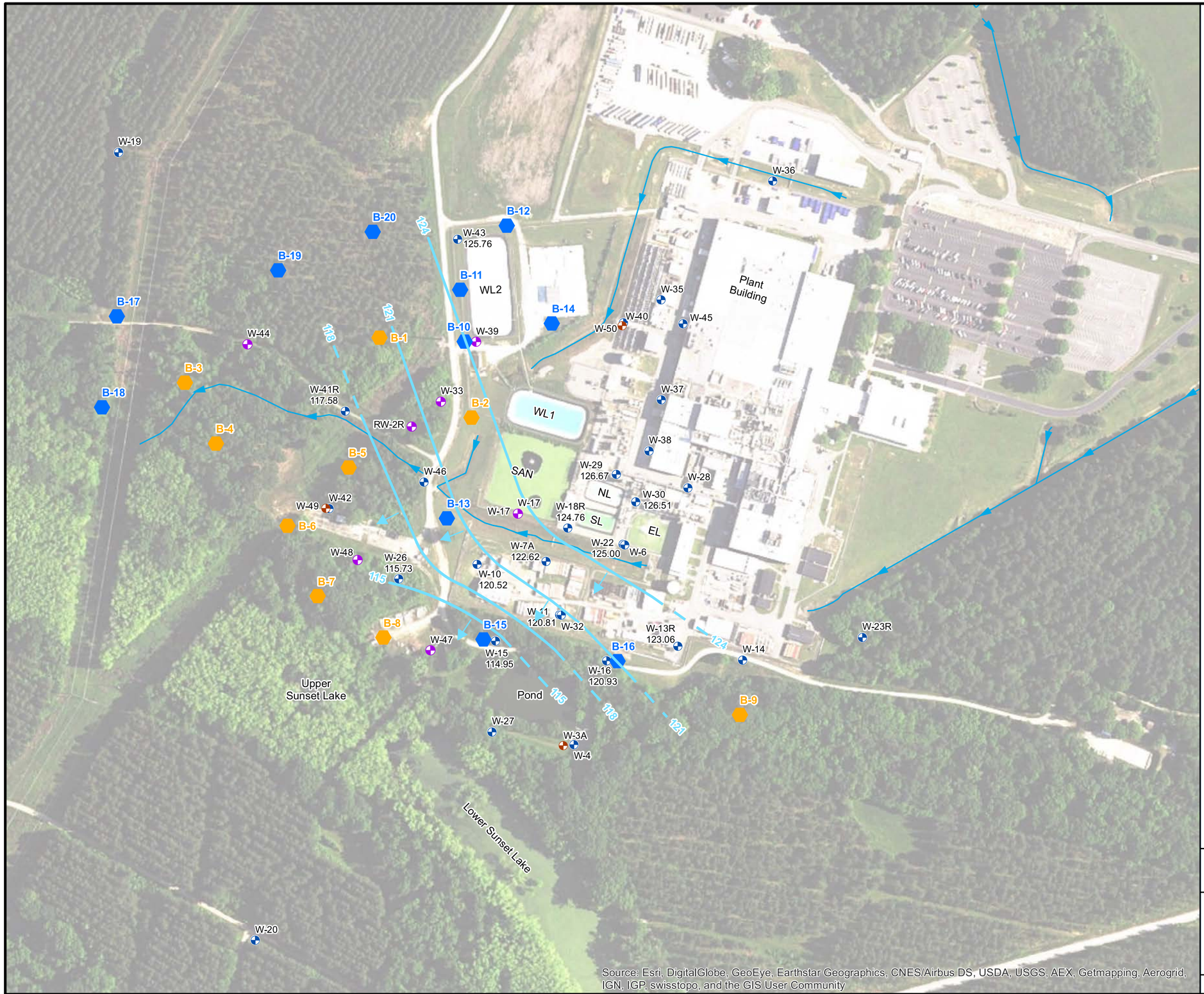
On September 15, 2015, following review of the 2015 RI Report, DHEC issued a letter indicating that regulatory oversight of the CVOC impact to groundwater would be managed by the State Remediation Section of the Bureau of Land and Waste Management (BLWM) and that groundwater monitoring and reporting for the WWTP area would be managed by the Bureau of Water. In the letter, DHEC requested that a work plan be submitted to install three new monitoring wells in specific areas of the CVOC impact. The letter also requested that a second work plan for long-term groundwater monitoring be submitted after the new wells were installed and sampled. In a follow-up letter dated September 30, 2015, the DHEC BLWM recommended that groundwater investigation by field screening be performed prior to installing new monitoring wells to allow for more appropriate well locations and screening intervals.

After the September 30, 2015 letter, DHEC indicated to CFFF that sites managed under the BLWM at DHEC were going to be required to enter a Voluntary Cleanup Contract (VCC). Therefore, CFFF and DHEC began the process of developing a VCC for the CVOC impact in late 2015. CFFF entered into VCC-16-4948-RP with DHEC on August 23, 2016. The *Additional Groundwater Investigation for CVOCs Work Plan* was submitted on October 4, 2016 to conduct additional groundwater screening (AECOM, 2016).

In December 2016, AECOM installed nine sonic groundwater screening borings at the site. Groundwater from these borings were screened using the AQR Color-Tec® system, and samples from multiple depth intervals from each boring were submitted to an South Carolina certified laboratory for confirmatory analyses for VOCs. The *Work Plan Addendum, Additional Groundwater Investigation for CVOCs* (AECOM, 2017) was submitted to DHEC in April 2017 for additional borings that were screened using a low-level membrane interface probe (LLMIP) and hydraulic profiling tool (HPT). Eleven LLMIP borings were drilled in October 2017. Based on the results of the LLMIP screening, confirmatory groundwater samples were collected from one to two intervals at six LLMIP boring locations using a DPT drill rig.

In accordance with its National Pollution Discharge Elimination System permit and Special Nuclear Material SNM-1107 license, CFFF collected groundwater samples from 20 monitoring wells in October 2017. The results of the field screening and groundwater sampling were included in the *CVOC Field Screening Report* (AECOM, 2017).

The report concluded that there were two CVOC plumes at the site, recommended the installation of 10 new monitoring wells and proposed a long-term groundwater monitoring plan. Pertinent excerpts from this report are included below.



N

Legend

- DPT Boring Locations
- LLMIP Boring Locations
- Shallow Aquifer Monitoring Well Location
- Intermediate Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Ditch
- Potentiometric Line
  Contour Interval = 3ft
- Direction of Groundwater Flow
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2
- 124.76 Groundwater Elevation

300 150 0 300
Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2017 AECOM CVOC Field Screening Report

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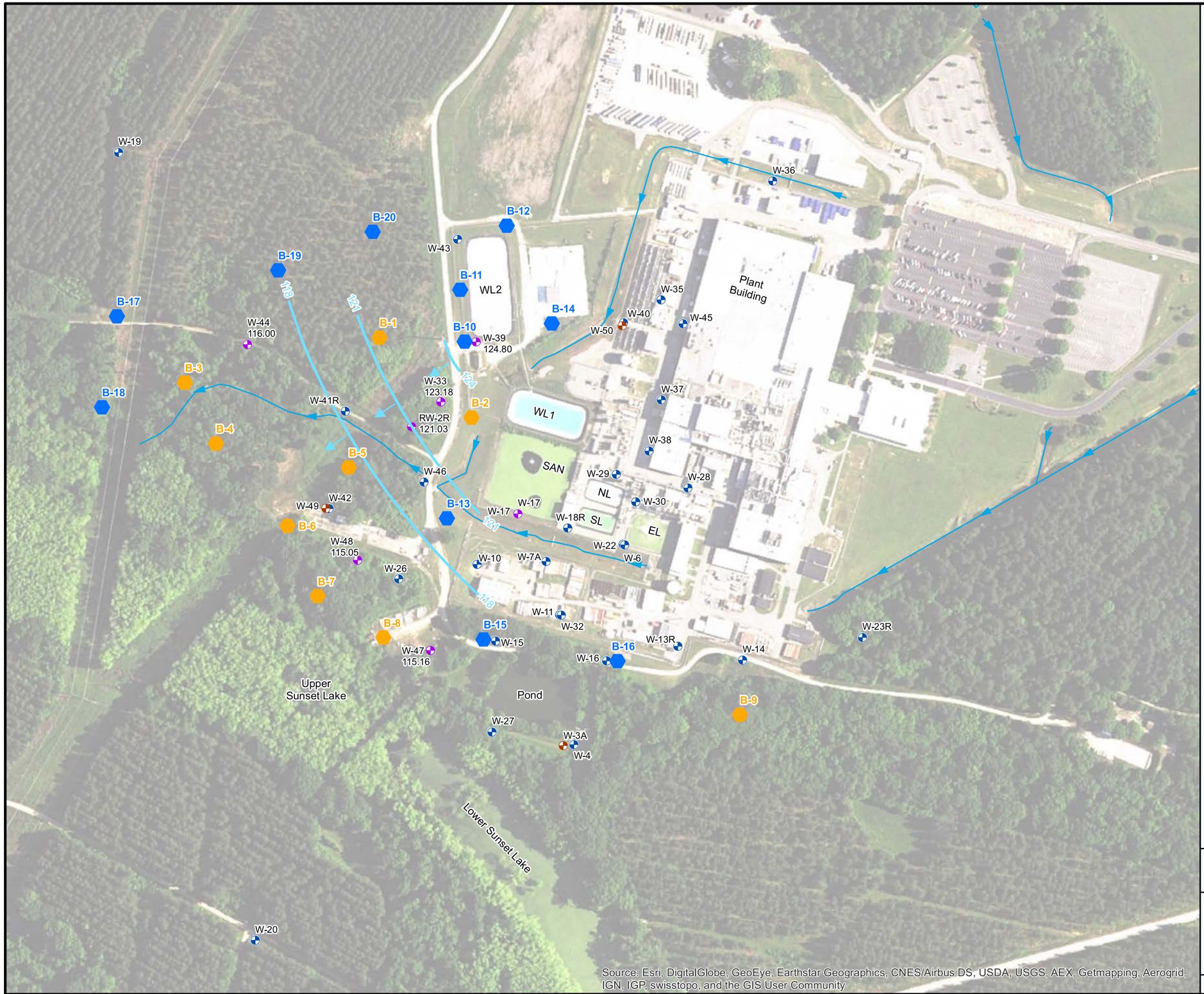
Potentiometric Surface Map - Shallow Water Table

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60528361	KPM	November 2017	**FIGURE 3**

Path: O:\60528361 Westinghouse 2017\900-Work\920-GIS_Surveying\GroundwaterElevation_Shallow.mxd



Legend

- DPT Boring Locations
- LLMIP Boring Locations
- Shallow Aquifer Monitoring Well Location
- Intermediate Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Ditch
- Potentiometric Line
  Contour Interval = 3ft
- Direction of Groundwater Flow
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2
- 115.05 Groundwater Elevation

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2017 AECOM CVOC Field Screening Report

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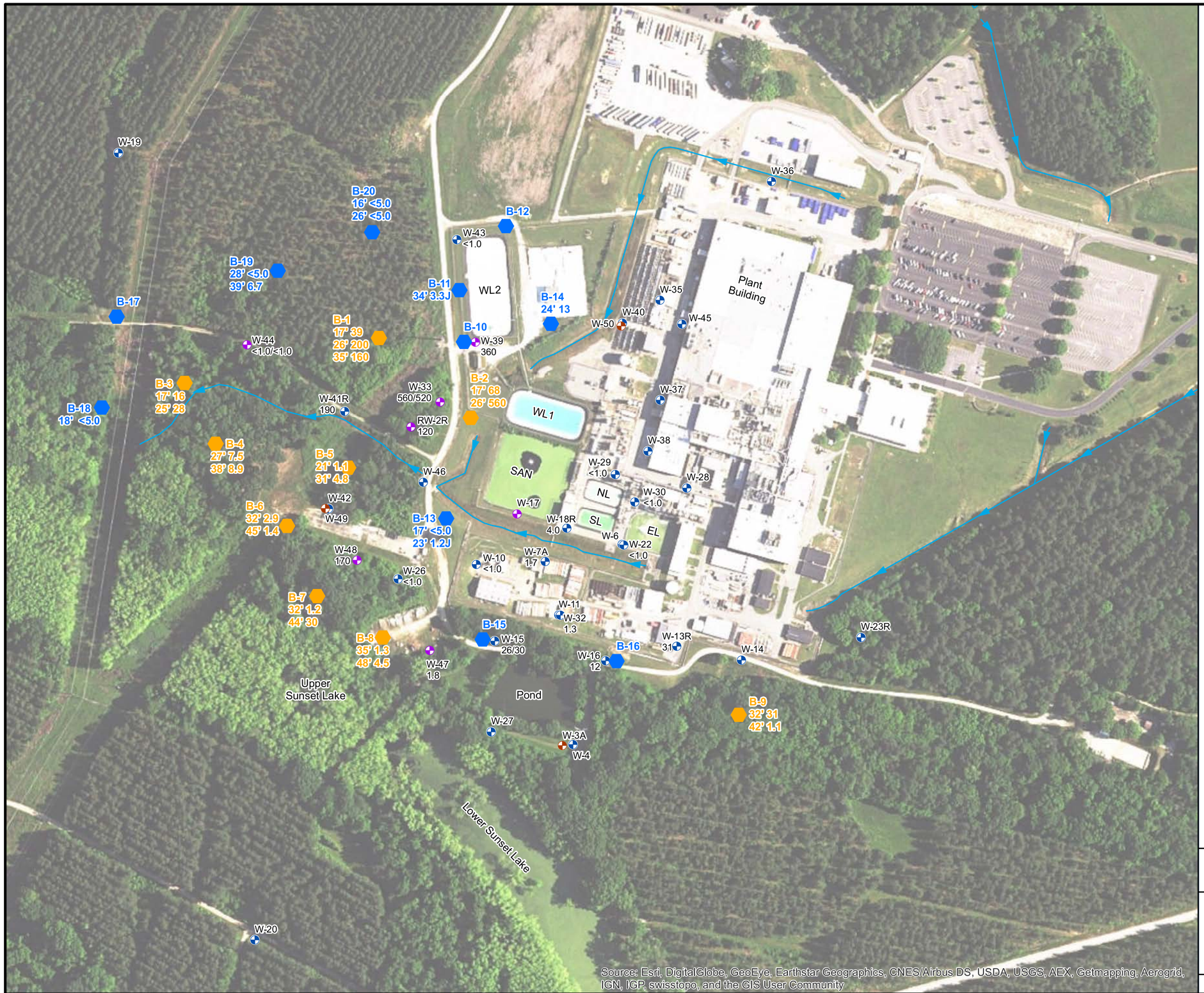
Potentiometric Surface Map - Intermediate Water Table

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60528361	KPM	November 2017	**FIGURE 4**

Path: O:\60528361 Westinghouse 2017\900-Work\920-GIS_Surveying\GroundwaterElevation_Intermediate.mxd



N

Legend

- DPT Boring Locations
- LLMIP Boring Locations
- Shallow Aquifer Monitoring Well Location
- Intermediate Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Ditch
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2
- 560 Tetrachloroethene (PCE) Concentration in ug/L*
- 39' Groundwater Sample Collection Depth in Feet*

Source: 2017 AECOM CVOC Field Screening Report

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

* Samples taken in December 2016 and October 2017

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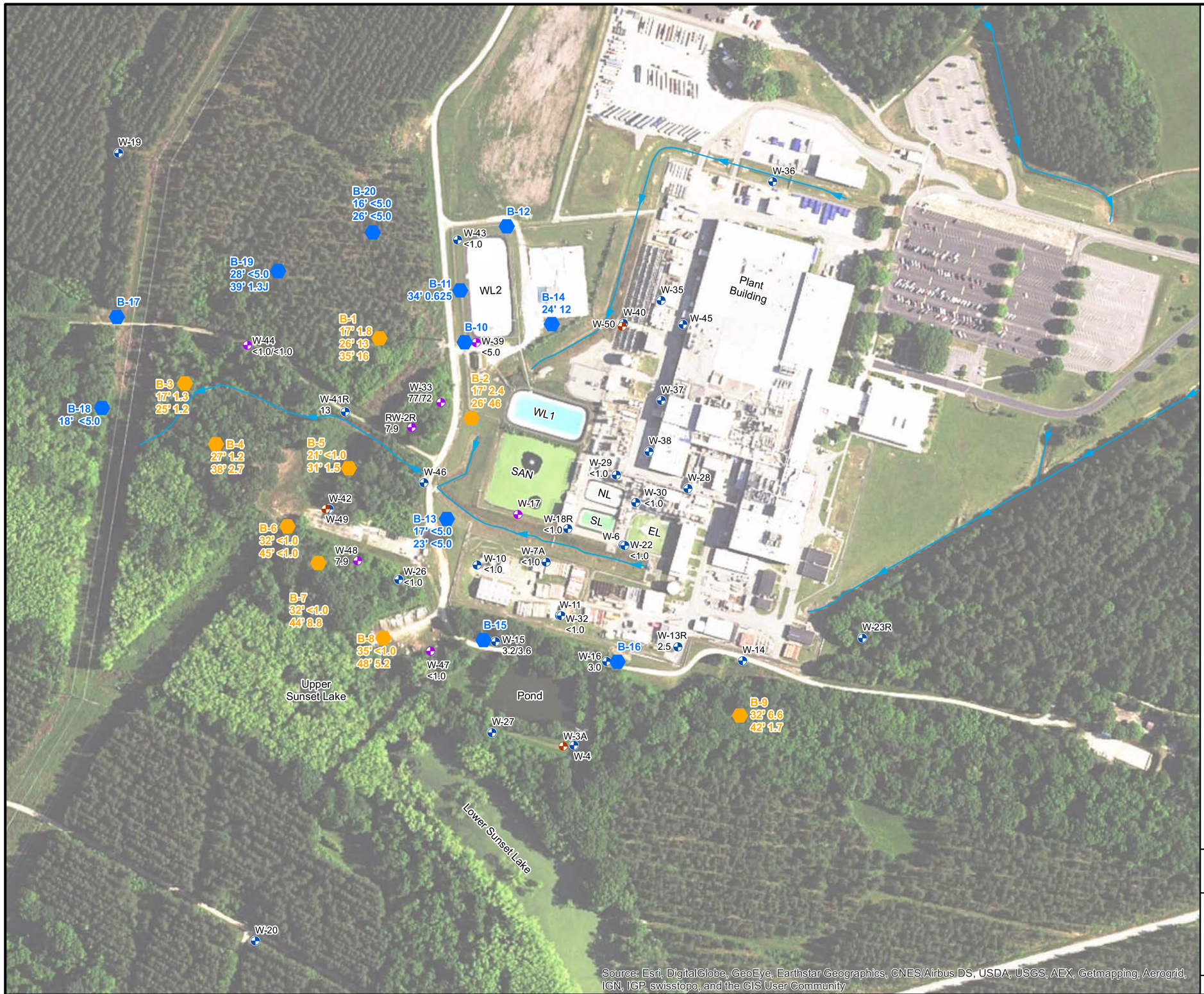
PCE in Groundwater

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60528361	KPM	November 2017	**FIGURE 5**

Path: O:\60528361 Westinghouse 2017\900-Work\920-GIS_Surveying\PCE_InGroundwater_Dec2016AndOct2017.mxd



N

Legend

- DPT Boring Locations
- LLMIP Boring Locations
- Shallow Aquifer Monitoring Well Location
- Intermediate Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Ditch
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2
- 77 Trichloroethene (TCE) Concentration in ug/L*
- 39' Groundwater Sample Collection Depth in Feet*

* Samples taken in December 2016 and October 2017

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2017 AECOM CVOC Field Screening Report

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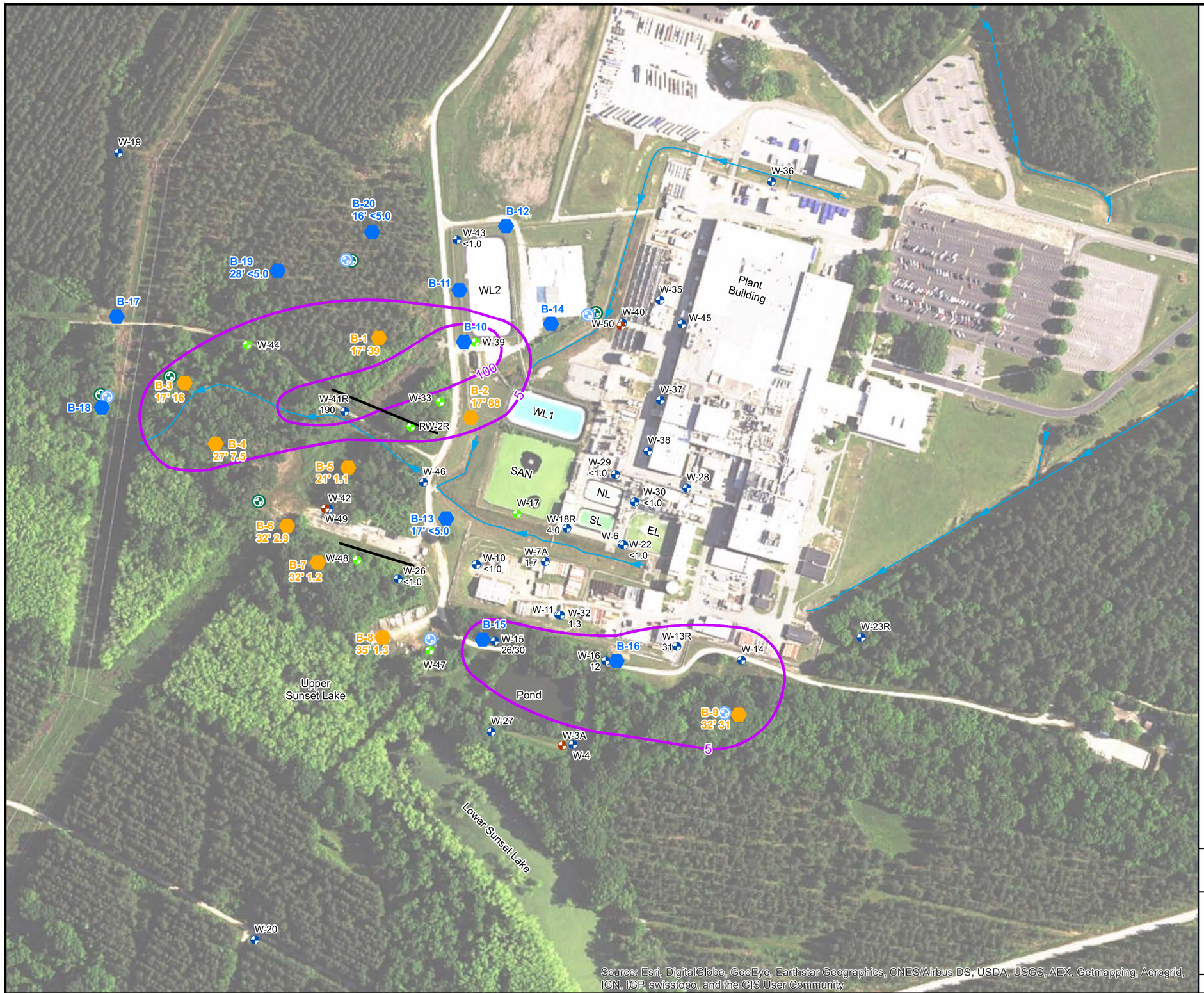
TCE in Groundwater

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60528361	KPM	November 2017	**FIGURE 6**

Path: O:\60528361 Westinghouse 2017\900-Work\920-GIS_Surveying\TCE_InGroundwater_Dec2016AndOct2017.mxd



Legend

- Proposed Shallow Monitoring Wells
- Proposed Intermediate Monitoring Wells
- Sonic Boring Locations
- LLMIP Boring Locations
- Shallow Aquifer Monitoring Well Location
- Intermediate Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Ditch
- AS/SVE System Transect Lines
- PCE Plume
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2
- 560 Tetrachloroethene (PCE) Concentration in ug/L*
- 39' Groundwater Sample Collection Depth in Feet*

Source: 2017 AECOM CVOC Field Screening Report

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

* Samples taken in December 2016 and October 2017

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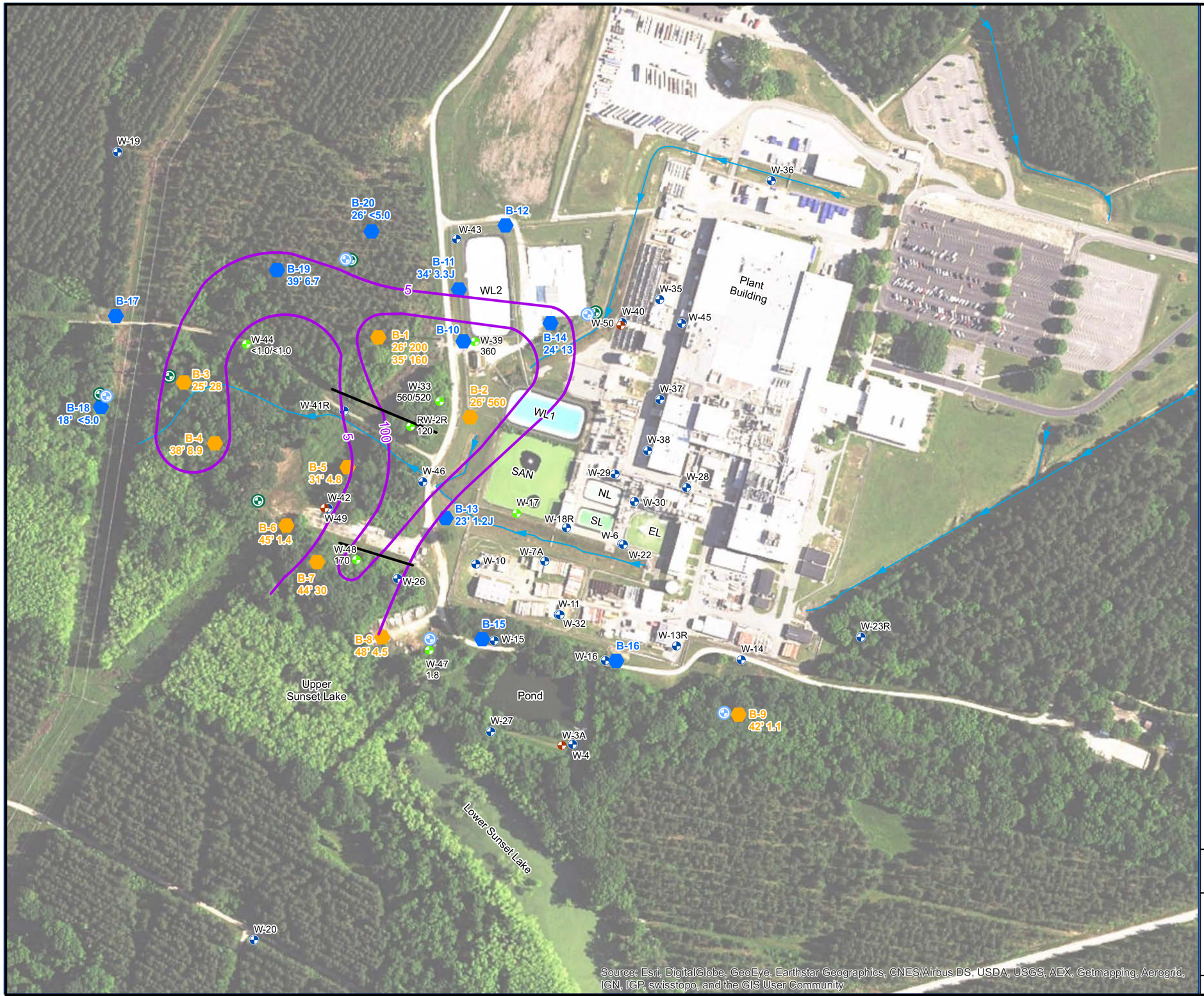
PCE Plume Map - Shallow Water Table

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60528361	KPM	November 2017	**FIGURE 7**

Path: O:\60528361 Westinghouse 2017\900-Work\920-GIS_Surveying\PCE_PlumeMap_ShallowWaterTable.mxd Date: 12/5/2017



Legend

- Proposed Shallow Monitoring Wells
- Proposed Intermediate Monitoring Wells
- Sonic Boring Locations
- LLMIP Boring Locations
- Shallow Aquifer Monitoring Well Location
- Intermediate Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Ditch
- AS/SVE System Transect Lines
- PCE Plume
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2
- 560 Tetrachloroethene (PCE) Concentration in ug/L*
- 39' Groundwater Sample Collection Depth in Feet*

Source: 2017 AECOM CVOC Field Screening Report

300 150 0 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

* Samples taken in December 2016 and October 2017

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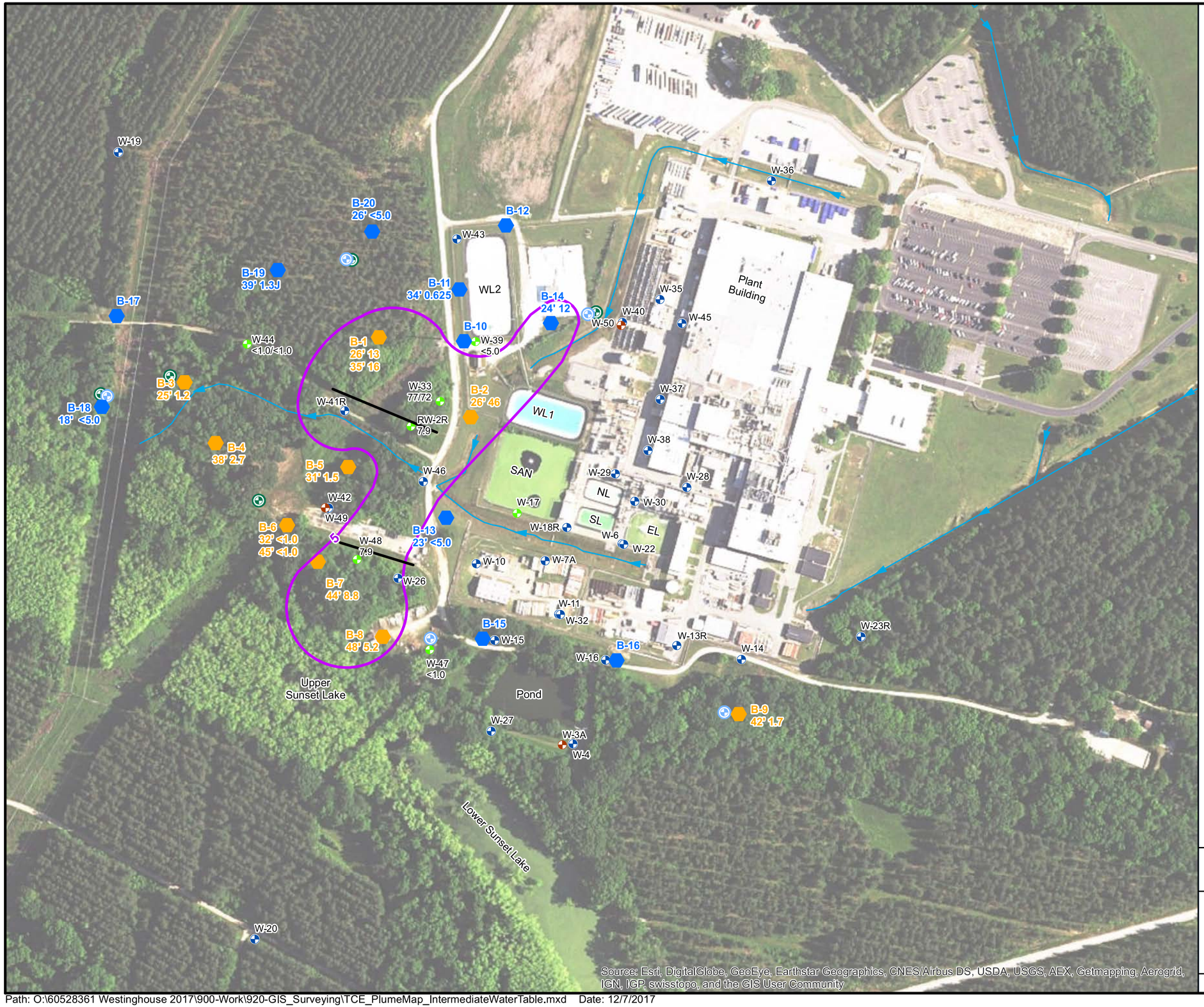
PCE Plume Map - Intermediate Water Table

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60528361	KPM	November 2017	**FIGURE 8**

Path: O:\60528361 Westinghouse 2017\900-Work\920-GIS_Surveying\PCE_PlumeMap_IntermediateWaterTable.mxd Date: 12/5/2017



N

Legend

- Proposed Shallow Monitoring Wells
- Proposed Intermediate Monitoring Wells
- Sonic Boring Locations
- LLMIP Boring Locations
- Shallow Aquifer Monitoring Well Location
- Intermediate Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Ditch
- AS/SVE System Transect Lines
- TCE Plume
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2
- 77 Trichloroethene (TCE) Concentration in ug/L*
- 39' Groundwater Sample Collection Depth in Feet*

* Samples taken in December 2016 and October 2017

300 150 0 300
Feet
1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2017 AECOM CVOC Field Screening Report

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TCE Plume Map - Intermediate Water Table

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60528361	KPM	November 2017	**FIGURE 9**

Path: O:\60528361 Westinghouse 2017\900-Work\920-GIS_Surveying\TCE_PlumeMap_IntermediateWaterTable.mxd Date: 12/7/2017

Table 1
Westinghouse Columbia Fuel Fabrication Facility
Summary of Groundwater Elevation Data

Well Number	Date Measured	Screen Interval (ft bgs)	Top of Casing Elevation (ft NAVD-88)	Depth to Water (ft btoc)	Groundwater Elevation (ft NAVD-88)
W-7A	10/12/17	13.0-18.0	135.01	12.39	122.62
W-10	10/12/17	18.5-23.5	136.77	16.25	120.52
W-13R	10/12/17	15.5-18.5	135.89	12.83	123.06
W-15	10/13/17	13.5-18.5	127.85	12.90	114.95
W-16	10/13/17	15.5-18.5	124.87	3.94	120.93
W-18R	10/12/17	12.5-17.5	136.99	12.23	124.76
W-22	10/12/17	13.4-17.8	136.48	11.48	125.00
W-24	10/13/17	10.1-15.1	141.84	11.25	130.59
W-26	10/13/17	25.5-30.5	141.98	26.25	115.73
W-29	10/12/17	10.0-15.1	138.50	11.83	126.67
W-30	10/12/17	10.2-15.2	138.76	12.25	126.51
W-32	10/12/17	17.5-22.5	140.46	19.65	120.81
W-33	10/12/17	15.1-20.7	139.10	15.92	123.18
W-39	10/13/17	12.0-22.0	141.10	16.23	124.87
W-41R	10/12/17	14.0-24.0	133.66	16.08	117.58
W-43	10/13/17	10.5-20.5	141.22	15.46	125.76
W-44	10/12/17	16.0-26.0	134.53	18.53	116.00
W-47	10/13/17	34.3-44.8	141.81	26.95	114.86
W-48	10/13/17	30.7-41.3	142.36	27.31	115.05
RW-2R	10/12/17	19.0-29.2	139.69	18.66	121.03

Notes:
ft bgs = feet below ground surface
ft btoc = feet below top of casing
Elevations are in feet above mean sea level based on the North American Vertical Datum of 1988 (NAVD-88)
ND = not detected
NM = not measured
N/A = not applicable

Source: 2017 AECOM CVOC Field Screening Report

Table 2
Westinghouse Columbia Fuel Fabrication Facility
Summary of Detected Chlorinated Compounds

Boring/Well ID	Sample Date	Screening Depth (ft)	Color-Tec Results (ppm)		Laboratory Analysis Results (ug/L)							
			Tetrachlororethene (PCE)	Trichchlorethene (TCE)	Tetrachlororethene (PCE)	Trichchlorethene (TCE)	cis-1, 2-Dichloroethene	trans-1, 2-Dichloroethene	Vinyl Chloride	Chloroform	Bromodichloromethane (BCM)	Dibromochloromethane (DBCM)
B-1	12/13/2016	13-17	1	< 1	**39**	1.8	< 5	< 5	< 2	< 1	< 1	< 1
	12/13/2016	22-26	< 1	0.5	**200**	**13**	< 5	< 5	< 2	< 1	< 1	< 1
	12/13/2016	31-35	1.5	0.5	**160**	**16**	< 1	< 1	< 2	< 1	< 1	<1
B-2	12/13/2016	13-17	< 1	< 1	**68**	2.4	< 5	< 5	< 2	< 1	< 1	< 1
	12/13/2016	22-26	4	3	**560**	**46**	9.3	< 5	< 10	< 5	< 5	< 5
B-3	12/14/2016	13-17	< 1	< 1	**16**	1.3	< 1	< 1	< 2	1.2	< 1	< 1
	12/14/2016	21-25	< 1	< 1	**28**	1.2	< 1	< 1	< 2	< 1	< 1	< 1
B-4	12/15/2016	23-27	< 1	< 1	**7.5**	1.2	< 1	< 1	< 2	4	2.3	< 1
	12/15/2016	34-38	< 1	< 1	**8.9**	2.7	< 5	< 5	< 2	< 1	< 1	< 1
B-5	12/15/2016	17-21	< 1	< 1	1.1	< 1	< 1	< 1	< 2	4.2	2.8	< 1
	12/15/2016	27-31	< 1	< 1	4.8	1.5	< 1	< 1	< 2	1.3	< 1	< 1
B-6	12/14/2016	28-32	< 1	< 1	2.9	< 1	< 1	< 1	< 2	5.4	3.4	< 1
	12/14/2016	41-45	< 1	< 1	1.4	< 1	< 1	< 1	< 2	6.9	3.7	1.1
B-7	12/16/2016	28-32	< 1	< 1	1.2	< 1	< 1	< 1	< 2	5.2	2.6	< 1
	12/16/2016	40-44	< 1	< 1	**30**	**8.8**	45	< 1	< 2	5.2	1.2	< 1
B-8	12/16/2016	31-35	< 1	< 1	1.3	< 1	< 1	< 1	< 2	6.1	3	< 1
	12/16/2016	44-48	< 1	< 1	4.5	**5.2**	8	1.5	**2.3**	< 1	< 1	< 1
B-9	12/19/2016	28-32	< 1	< 1	**31**	**6.6**	1.7	< 1	< 2	1.6	< 1	< 1
	12/19/2016	38-42	< 1	< 1	1	1.7	< 5	< 5	< 2	1.3	< 1	< 1
B-11	10/12/2017	30-34	NA	NA	3.3 J	0.62 J	< 5	< 5	< 2	< 5	< 5	< 5
B-13	10/12/2017	13-17	NA	NA	< 5	< 5	< 5	< 5	< 2	< 5	< 5	< 5
	10/12/2017	19-23	NA	NA	1.2 J	< 5	< 5	< 5	< 2	< 5	< 5	< 5
B-14	10/12/2017	20-24	NA	NA	**13**	12	1.0 J	< 5	< 2	< 5	< 5	< 5
B-18	10/11/2017	14-18	NA	NA	< 5	< 5	< 5	< 5	< 2	< 5	< 5	< 5
B-19	10/11/2017	24-28	NA	NA	< 5	< 5	< 5	< 5	< 2	< 5	< 5	< 5
	10/11/2017	35-39	NA	NA	**6.7**	1.3 J	< 5	< 5	< 2	< 5	< 5	< 5
B-20	10/12/2017	12-16	NA	NA	<5	< 5	< 5	< 5	< 2	< 5	< 5	< 5
	10/12/2017	22-26	NA	NA	< 5	< 5	< 5	< 5	< 2	< 5	< 5	< 5
RW-2R	10/12/2017	19.2-29.2	NA	NA	**120**	**7.9**	< 1	< 1	< 1	< 1	< 1	< 1
W-7A	10/12/2017	13-18	NA	NA	1.7	< 1	< 1	< 1	< 1	< 1	< 1	< 1
W-10	10/12/2017	18.5-23.5	NA	NA	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
W-13R	10/12/2017	15.5-18.5	NA	NA	**31**	2.5	1.1	< 1	< 1	< 1	< 1	< 1
W-15	10/13/2017	13.5-18.5	NA	NA	**26**	3.2	2.4	< 1	< 1	< 1	< 1	< 1
W-15 DUP	10/13/2017	13.5-18.5	NA	NA	**30**	3.6	2.6	< 1	< 1	< 1	< 1	< 1
W-16	10/13/2017	15.5-18.5	NA	NA	**12**	3	2.6	< 1	< 1	< 1	< 1	< 1
W-18	10/12/2017	12.5-17.5	NA	NA	4	< 1	< 1	< 1	< 1	2.6	< 1	< 1
W-22	10/12/2017	13.4-17.8	NA	NA	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
W-24	10/13/2017	10.1-15.1	NA	NA	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
W-26	10/13/2017	10.1-15.1	NA	NA	< 1	< 1	4.1	< 1	< 1	< 1	< 1	< 1
W-29	10/12/2017	10.1-15.1	NA	NA	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
W-30	10/12/2017	10.2-15.2	NA	NA	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
W-32	10/12/2017	17.5-22.5	NA	NA	1.3	< 1	< 1	< 1	< 1	< 1	< 1	< 1
W-33	10/12/2017	15.7-20.7	NA	NA	**560**	**77**	< 5	< 5	< 5	< 5	< 5	< 5
W-33 DUP	10/12/2017	15.7-20.7	NA	NA	**520**	**72**	< 5	< 5	< 5	< 5	< 5	< 5
W-39	10/13/2017	12-22	NA	NA	**360**	< 5	< 5	< 5	< 5	< 5	< 5	< 5
W-41R	10/12/2017	14-24	NA	NA	**190**	**13**	< 1	< 1	< 1	< 1	< 1	< 1
W-43	10/13/2017	10.5-20.5	NA	NA	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
W-44	10/12/2017	16.0-26.0	NA	NA	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
W-44 DUP	10/12/2017	16.0-26.0	NA	NA	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
W-47	10/13/2017	34.8-44.8	NA	NA	1.8	< 1	< 1	< 1	< 1	< 1	< 1	< 1
W-48	10/13/2017	31.3-41.3	NA	NA	**170**	**7.9**	3.3	< 1	< 1	< 1	< 1	< 1
MCL			N/A	N/A	5	5	70	100	2	N/A	N/A	N/A

Source: 2017 AECOM CVOC Field Screening Report

2018 AECOM Contaminated Wastewater Line Assessment Report

In October 2008, a breach was discovered in the below ground, gravity drain Contaminated Wastewater (CWW) line at a joined connection point along the western side of the plant building. Samples of effluent water from the line and soils corresponding to the depth of the CWW line near the break were collected by CFFF personnel. These samples identified radionuclides in the process wastewater and subsurface soils. In 2011, CFFF personnel discovered breaches at two locations of the CWW line underneath the manufacturing building floor. Soil and wastewater samples were collected by CFFF near one of the breaches. These samples identified radionuclides in soil and process wastewater at the break. The second 2011 breach location could not be sampled due to plant infrastructure. The CWW piping beneath the floor was abandoned and replaced with new above ground PVC piping at this time.

Although CFFF had not detected evidence of releases from these incidents in existing monitoring wells or from its environmental monitoring program (including surface water and sediment), in 2018, Westinghouse voluntarily initiated assessment activities to further evaluate the effects of these releases on soil and/or groundwater. This investigation included the installation of nine DPT borings to collect vadose zone soil and groundwater samples in July 2018 at locations approximately 25 feet west of the former CWW line to collect vadose zone soil and groundwater samples. The 25-foot offset was necessitated by the presence of multiple underground utilities in the immediate area of the former CWW line that would not allow safe use of mechanical equipment. The DPT groundwater samples were turbid, causing anomalously high U concentrations to be detected. Therefore, temporary wells (TMW-1 through TMW-9) that could be developed to obtain non-turbid groundwater samples were installed adjacent to the DPT boring locations in September 2018. Nine hand auger soil borings were installed adjacent to the CWW line.

The Uranium (U) concentrations in groundwater samples from the temporary wells were significantly lower from the temporary wells than samples from DPT borings. U exceeded its MCL in two temporary monitoring wells (TMW-5 and TMW-6, currently monitoring wells W-55 and W-56). U in groundwater was concluded to be present in the upper 5-6 feet of the surficial aquifer groundwater because nearby monitoring well W-37 which is screened deeper in the upper zone of the surficial aquifer was not impacted with U above the MCL.

CVOCs PCE and cis-1,2-DCE were detected in groundwater at concentrations below MCLs in two temporary wells (TMW-2 and TMW-3, currently monitoring wells W-52 and W-53, respectively). VC was detected in groundwater from temporary well TMW-3 (W-53) at a concentration exceeding the MCL for VC. Nitrate was detected in two temporary wells (TMW-8 and TMW-9, currently monitoring wells W-58 and W-59) at concentrations exceeding its MCL. Nitrate concentrations in groundwater were believed to be related to operations of the nearby WWTP. Fluoride and Tc-99 were also detected in the nine temporary wells at concentrations below their respective MCLs. Westinghouse retained these temporary wells to serve as building monitoring system wells within the overall groundwater monitoring well network. The temporary wells were renamed as permanent wells W-51 through W-59.

Vadose zone soil analytical results indicated that U above the free releasable limit (11 PPM U) was present in soils at two locations adjacent to the CWW line at concentrations of 12.57 PPM and 15.03 PPM. The U source appeared to be related to one of the CWW line breaches.

The report recommended additional groundwater assessment to further define the horizontal extent of the U identified in the immediate area of the CWW Line and development of a Conceptual Site Model to identify potential exposure pathways.

The results of the investigation were presented in the *Contaminated Wastewater Line Assessment Report* (AECOM, 2018a). Pertinent excerpts from this report are included below.

Table 1
Westinghouse Columbia Fuel Fabrication Facility
Contaminated Wastewater Line Assessment
Soil Uranium Analytical Results

Boring	Sample Date	Sample Collection Method	Boring Depth (feet)	Sample Interval (Feet)	U233/34 (pCi/g)	U235/36 (pCi/g)	U238 (pCi/g)	Total U (pCi/g)	U (ppm)	U234 (µg/g)	U235 (µg/g)	U238 (µg/g)	Total U (µg/g)
					Isotopic Uranium (Alpha Spec)					Isotopic Uranium (ICPMS)			
Boring #1	7/17/2018	DPT	8	7-8	0.985	0.247	0.84	2.072	0.74	NA	NA	NA	NA
Boring #2	7/17/2018	DPT	8	7-8	0.629	0.126	0.527	1.282	0.46	NA	NA	NA	NA
Boring #3	7/17/2018	DPT	8	7-8	0.701	0.115	0.735	1.551	0.55	NA	NA	NA	NA
Boring #4	7/17/2018	DPT	8	7-8	0.661	0.142	0.706	1.509	0.54	NA	NA	NA	NA
Boring #5	7/18/2018	DPT	8	7-8	0.845	0.0356U	0.635	1.5156	0.54	NA	NA	NA	NA
Boring #6	7/18/2018	DPT	8	7-8	0.871	0.0905	0.951	1.9125	0.68	NA	NA	NA	NA
Boring #7	7/18/2018	DPT	8	7-8	0.754	0.0553U	0.805	1.6143	0.58	NA	NA	NA	NA
Boring #8	7/18/2018	DPT	8	7-8	0.638	0.191	0.85	1.679	0.60	NA	NA	NA	NA
Boring #9	7/18/2018	DPT	5	4-5	2.15	0.176	2.05	4.376	1.56	NA	NA	NA	NA
CWW-HA-B11	9/26/2018	Hand Auger	8	7-8	0.297	0.0767U	0.374	0.7477	0.27	<0.00207	0.00424J	0.596	0.612
CWW-HA-B12	9/26/2018	Hand Auger	3.7	3.5-3.7	0.671	-0.0142U	0.826	1.4828	0.53	<0.00216	0.00768J	0.946	0.927
CWW-HA-B13	9/26/2018	Hand Auger	1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
CWW-HA-B14	9/26/2018	Hand Auger	8	7-8	0.966	0.0522U	0.677	1.6952	0.61	<0.00224	0.00467J	0.68	0.681
CWW-HA-B15	9/27/2018	Hand Auger	2	1-2	1.79	0.108U	0.897	2.795	1.00	<0.00238	0.0326	2.66	2.7
CWW-HA-B16	9/27/2018	Hand Auger	8	7-8	4.4	0.203U	1.34	5.943	2.12	<0.00216	0.0519	2.15	2.17
CWW-HA-B17	9/27/2018	Hand Auger	8	7-8	8.92	0.413	3.05	12.383	4.42	<0.00208	0.164	7.95	7.96
CWW-HA-B18	9/27/2018	Hand Auger	8	7-8	28.2	1.32	5.68	**35.2**	**12.57**	0.014	1.71	54.5	53.5
CWW-HA-B19	9/27/2018	Hand Auger	8	7-8	32.4	1.77	7.92	**42.09**	**15.03**	0.00355J	0.473	15.3	15.1

Notes:
U - Uranium
pCi/g - picocuries per gram
ppm - parts per million
µg/g - micrograms per gram
ICPMS - inductively coupled plasma mass spectometry
DPT - Direct Push Technology
U (analytical data notation) - Analyte was analyzed for, but was not detected above the method detection limit, minimum detectable activity, minimum detectable concentration or limit of detection
J - value is estimated
NS - not sampled
BOLD values exceed the uranium "free releasable" limit of 30 pCi/g or 11 ppm U.

Source: 2018 AECOM Contaminated Wastewater Line Assessment Report

Table 2
Westinghouse Columbia Fuel Fabrication Facility
Contaminated Wastewater Line Assessment
Groundwater Uranium Analytical Results

Boring	Sample Date	Sample Collection Method	Boring Depth (feet bls)	Screened Interval (feet bls)	Gross Alpha (pCi/L)	Gross Beta (pCi/L)	U233/34 (pCi/L)	U235/36 (pCi/L)	U238 (pCi/L)	Total U (pCi/L)	U234 (µg/L)	U235 (µg/L)	U238 (µg/L)	U (µg/L)	U233/34 (pCi/L)	U235/36 (pCi/L)	U238 (pCi/L)	Total U (pCi/L)	U234 (µg/L)	U235 (µg/L)	U238 (µg/L)	U (µg/L)
							Unfiltered				Unfiltered				Field filtered				Field filtered			
							Isotopic Uranium (Alpha Spec)				Isotopic Uranium (ICPMS)				Isotopic Uranium (Alpha Spec)				Isotopic Uranium (ICPMS)			
Boring #1	7/17/2018	DPT	15	11-15	1,100	831	41.1	2.47	50.8	94.37	<0.010	0.233	32.2	**32.44**	NA	NA	NA	NA	NA	NA	NA	NA
Boring #2	7/17/2018	DPT	15	11-15	373	699	13.6	0.717U	12.4	26.72	<0.010	0.0632	7.51	7.58	NA	NA	NA	NA	NA	NA	NA	NA
Boring #3	7/17/2018	DPT	15	11-15	314	414	9.05	0.00968U	14.5	23.56	<0.010	0.0471	6.14	6.20	NA	NA	NA	NA	NA	NA	NA	NA
Boring #4	7/17/2018	DPT	15	11-15	388	470	47.1	3.82	26	76.92	<0.010	0.398	32.7	**33.11**	NA	NA	NA	NA	NA	NA	NA	NA
Boring #5	7/18/2018	DPT	15	11-15	48,400	17,800	40,700	2,180	9,390	52,270	6.69	735	22400	**23,141.69**	NA	NA	NA	NA	NA	NA	NA	NA
Boring #6	7/18/2018	DPT	15	11-15	16,400	5,755	14,000	782	2,950	17,732	2.3	260	7970	**8,232.30**	NA	NA	NA	NA	NA	NA	NA	NA
Boring #7	7/18/2018	DPT	15	11-15	252	262	23.7	2.27	13	38.97	<0.010	0.281	17.2	17.49	NA	NA	NA	NA	NA	NA	NA	NA
Boring #8	7/18/2018	DPT	15	11-15	2,845	1,635	1,230	63.2	297	1,590	0.135	16.1	523	**539.24**	NA	NA	NA	NA	NA	NA	NA	NA
Boring #9	7/18/2018	DPT	15	11-15	4,795	2,020	2,670	145	603	3,418	0.349	43	1410	**1,453.35**	NA	NA	NA	NA	NA	NA	NA	NA
W-37	8/5/2018	PMW	20.5	15.5-20.5	4.75	5.08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
W-38	8/5/2018	PMW	21	15-20	2.03U	4.81	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
W-45	8/5/2018	PMW	16	6-16	18.9	8.02	12.8	0.404	3.35	16.55	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CWW-TMW-01	9/25/2018	TMW	15	10-15	0.529U	2.98U	0.274U	0.058U	0.182U	0.51	<0.010	<0.010	0.0752J	0.08	0.258U	0.0612U	0.196U	0.32	<0.010	<0.010	<0.067	<0.087
CWW-TMW-02	9/24/2018	TMW	15	10-15	0.896U	0.854U	0.188U	0.188	0.172U	0.55	<0.010	<0.010	<0.067	<0.087	0.115U	0.142U	0.164U	0.26	<0.010	<0.010	<0.067	<0.087
CWW-TMW-03	9/24/2018	TMW	15	10-15	0.871U	3.85	0.185U	0.0365U	0.0218U	0.24	<0.010	<0.010	<0.067	<0.087	0.115U	0.157U	0.0835U	0.27	<0.010	<0.010	<0.067	<0.087
CWW-TMW-04	9/24/2018	TMW	15	10-15	-0.489U	1.55U	0.139U	0.171U	0.196U	0.51	<0.010	<0.010	0.0761J	0.08	0.395	0.287	0.242U	0.68	<0.010	<0.010	0.0767J	0.08
CWW-TMW-05	9/24/2018	TMW	15	10-15	283	32.5	230	14.3	53	297.30	0.0426J	4.53	138	**142.57**	202	13.4	43	215.40	0.0355J	4.39	133	**137.43**
CWW-TMW-06	9/25/2018	TMW	15	10-15	346	42	271	16.2	63.2	350.40	0.0426J	4.83	152	**156.87**	254	15.2	57	269.20	0.0374J	4.67	147	**151.71**
CWW-TMW-07	9/25/2018	TMW	15	10-15	11.5	0.498U	5.18	0.196U	1.22	6.60	<0.010	0.117	3.8	3.92	7.58	0.329	1.16	7.91	<0.010	0.115	3.48	3.61
CWW-TMW-08	9/25/2018	TMW	15	10-15	5.39	4.05	1.12	0.348	0.572	2.04	<0.010	0.0234J	0.8	0.82	1.2	0.0854U	0.317	1.29	<0.010	0.0228J	0.812	0.85
CWW-TMW-09	9/25/2018	TMW	15	10-15	25.5	7.42	18.5	1.36	4.66	24.52	<0.010	0.346	11.3	11.65	20.5	1.27	5.5	21.77	<0.010	0.322	10.2	10.53

Notes:
U - uranium
bls - below land surface
pCi/L - picocuries per liter
µg/L - micrograms per liter
ICPMS - inductively coupled plasma mass spectometry
NA - not analyzed
DPT - direct push technology
PMW - permanent monitoring well
TMW - temporary monitoring well
U (analytical data notation) - Analyte was analyzed for, but was not detected above the method detection limit, minimum detectable activity, minimum detectable concentration or limit of detection
J - value is estimated
BOLD values exceed the uranium maximum contaminant level of 30 ug/L

Source: 2018 AECOM Contaminated Wastewater Line Assessment Report

Table 3
Westinghouse Columbia Fuel Fabrication Facility
Contaminated Wastewater Line Assessment
Non-uranium Groundwater Detections

Boring	Sample Date	Sample Collection Method	Boring Depth (feet)	Screened Interval (feet)	Tetrachloroethene (µg/L)	Trichloroethene (µg/L)	cis-1,2-Dichloroethene (µg/L)	Vinyl Chloride (µg/L)	2-Methylnaphthalene (µg/L)	Acenapthene (µg/L)	Fluorene (µg/L)	Phenanthrene (µg/L)	Ammonia (mg/L)	Fluoride (mg/L)	Nitrate (mg/L)	Technetium 99 (pCi/L)	Technetium 99 (pCi/L)
					VOCs				SVOCs							UF	FF
CWW-TMW-01	9/25/2018	DPT	15	10-15	<1.0	<1.0	<1.0	<1.0	<0.80	<0.80	<0.80	<0.80	0.21	0.331	0.027	-3.01U	11.2U
CWW-TMW-02	9/24/2018	DPT	15	10-15	<1.0	<1.0	2.6	<1.0	<0.80	<0.80	<0.80	<0.80	0.108	0.871	0.67	1.54U	2.78U
CWW-TMW-03	9/24/2018	DPT	15	10-15	2.0	<1.0	33.0	**2.1**	4.4	1.1	1.8	1.9	0.382	0.108	2.1	-6.8U	1.09U
CWW-TMW-04	9/24/2018	DPT	15	10-15	<1.0	<1.0	<1.0	<1.0	<0.80	<0.80	<0.80	<0.80	0.0559	0.348	2.2	11.9U	1.75U
CWW-TMW-05	9/24/2018	DPT	15	10-15	<1.0	<1.0	<1.0	<1.0	<0.80	<0.80	<0.80	<0.80	0.0817	0.14	5.1	8.9U	5.14U
CWW-TMW-06	9/25/2018	DPT	15	10-15	<1.0	<1.0	<1.0	<1.0	<0.80	<0.80	<0.80	<0.80	0.146	0.163	6.5	7.18U	9.92U
CWW-TMW-07	9/25/2018	DPT	15	10-15	<1.0	<1.0	<1.0	<1.0	<0.80	<0.80	<0.80	<0.80	0.0465J	0.125	6.2	-2.29U	2.22U
CWW-TMW-08	9/25/2018	DPT	15	10-15	<1.0	<1.0	<1.0	<1.0	<0.80	<0.80	<0.80	<0.80	19	0.174	**17**	-1.18U	2.66U
CWW-TMW-09	9/25/2018	DPT	15	10-15	<1.0	<1.0	<1.0	<1.0	<0.80	<0.80	<0.80	<0.80	3.93	0.698	**26**	13.8U	-2.17U
MCL					5	5	70	2	N/A	N/A	N/A	N/A	N/A	4	10	900	900

Notes:
µg/L - micrograms per liter
mg/L - miligrams per liter
pCi/L - picocuries per liter
VOCs - volatile organic compounds
SVOCs - semivolatile organic compounds
UF - unfiltered
FF - field filtered
DPT - direct push technology
U - analyte was analyzed for, but was not detected above the method detection limit, minimum detectable activity, minimum detectable concentration or limit of detection
BOLD values exceed the maximum contaminant level
N/A - Not Applicable
SVOC samples were collected on 10/8/18 and 10/9/18

Source: 2018 AECOM Contaminated Wastewater Line Assessment Report



N

Legend

- Shallow Aquifer Monitoring Well Location
- Intermediate Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Ditch
- CWW Line Study Area
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:2,780

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2018 AECOM Contaminated Wastewater Line Assessment Report

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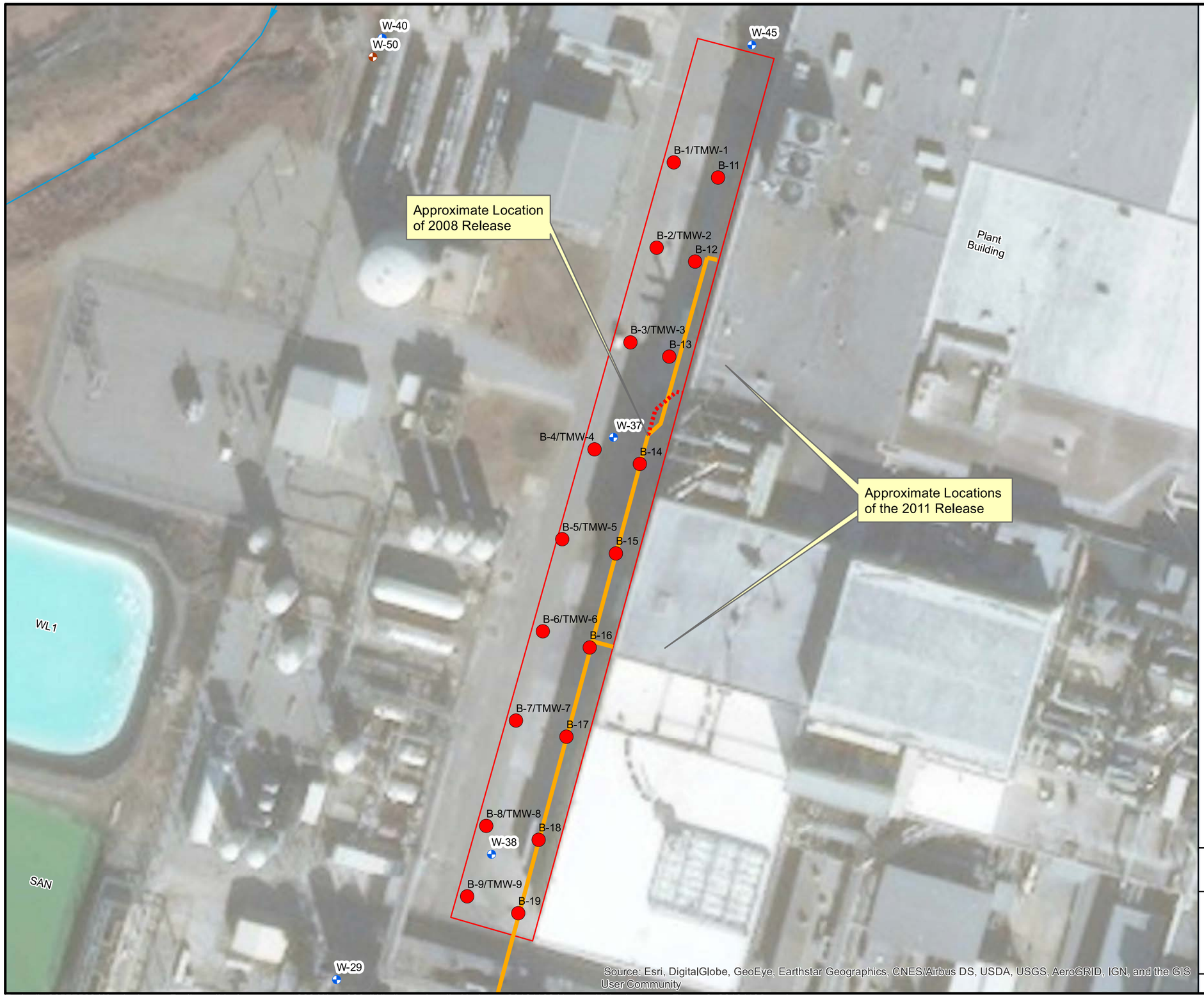
Site Map

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60577539	JDL	November 2018	**FIGURE 2**

Path: O:\60577539 Westinghouse Radionuclide Assessment\900-Work\920-GIS_Surveying\JL_Updates_20181102\CWWLine_SiteMap_20181106.mxd



N

Legend

- Study Area
- Boring Locations
- Shallow Aquifer Monitoring Well Location
- Intermediate Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Contaminated Wastewater Line
- Former Contaminated Wastewater Line
- Ditch
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

50 25 0 50 Feet

1:579

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2018 AECOM Contaminated Wastewater Line Assessment Report

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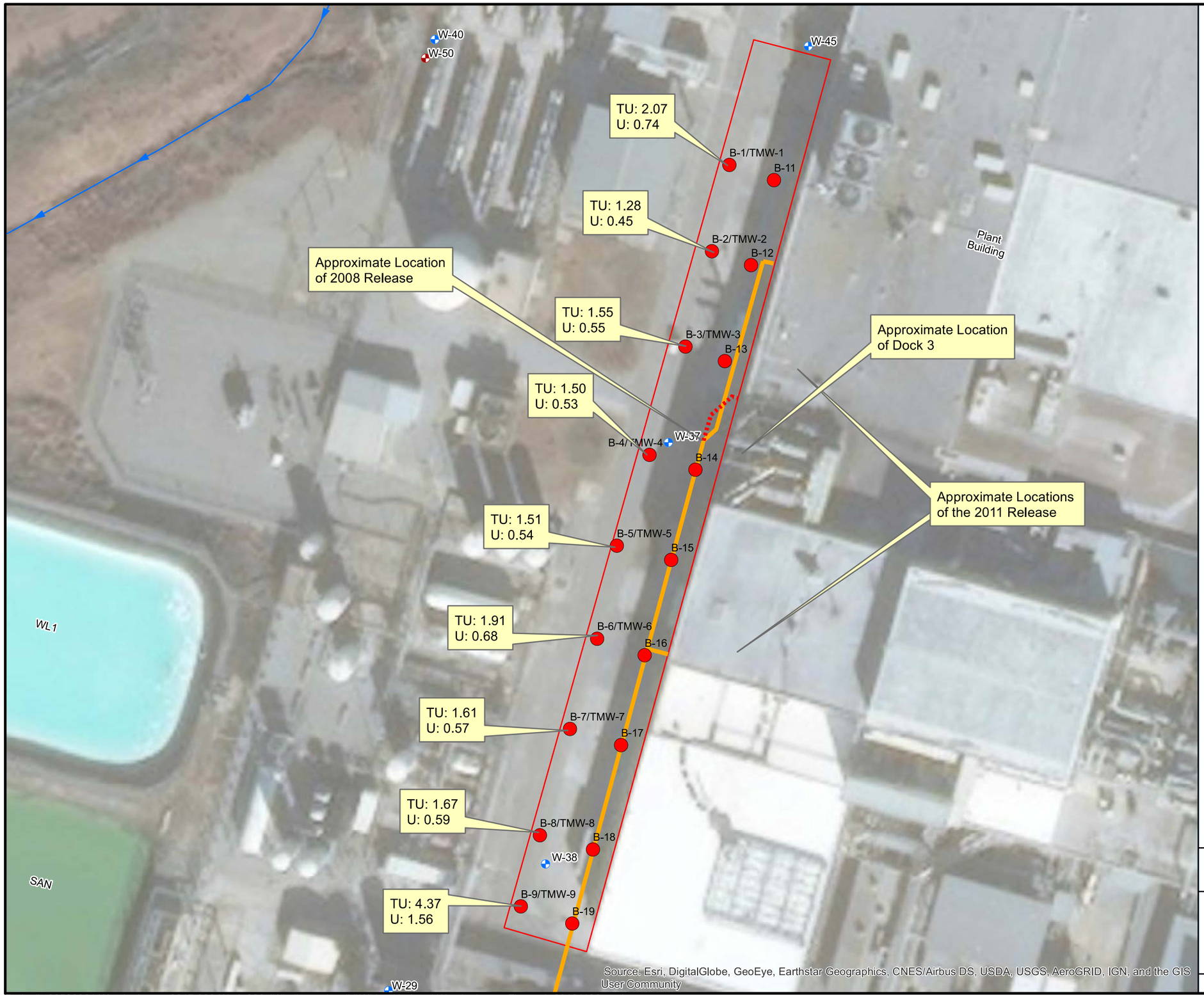
CWW Line Study Area Map

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60577539	JDL	November 2018	**FIGURE 3**

Path: O:\60577539 Westinghouse Radionuclide Assessment\900-Work\920-GIS_Surveying\JL_Updates_20181102\Updated Westinghouse Figure 3_20181106.mxd



N

Legend

- Study Area
- Boring Locations
- Black Mingo Aquifer Monitoring Well Location
- Intermediate Aquifer Monitoring Well Location
- Shallow Aquifer Monitoring Well Location
- Contaminated Wastewater Line
- Former Contaminated Wastewater Line
- Ditch

EL	East Lagoon
NL	North Lagoon
SL	South Lagoon
SAN	Sanitary Lagoon
WL1	West Lagoon 1
WL2	West Lagoon 2
TU	Total Uranium in PCi/g
U	Total Uranium in PPM

50 25 0 50 Feet

1:573

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Soil Samples Collected on 7/17/18 & 7/18/18

Source: 2018 AECOM Contaminated Wastewater Line Assessment Report

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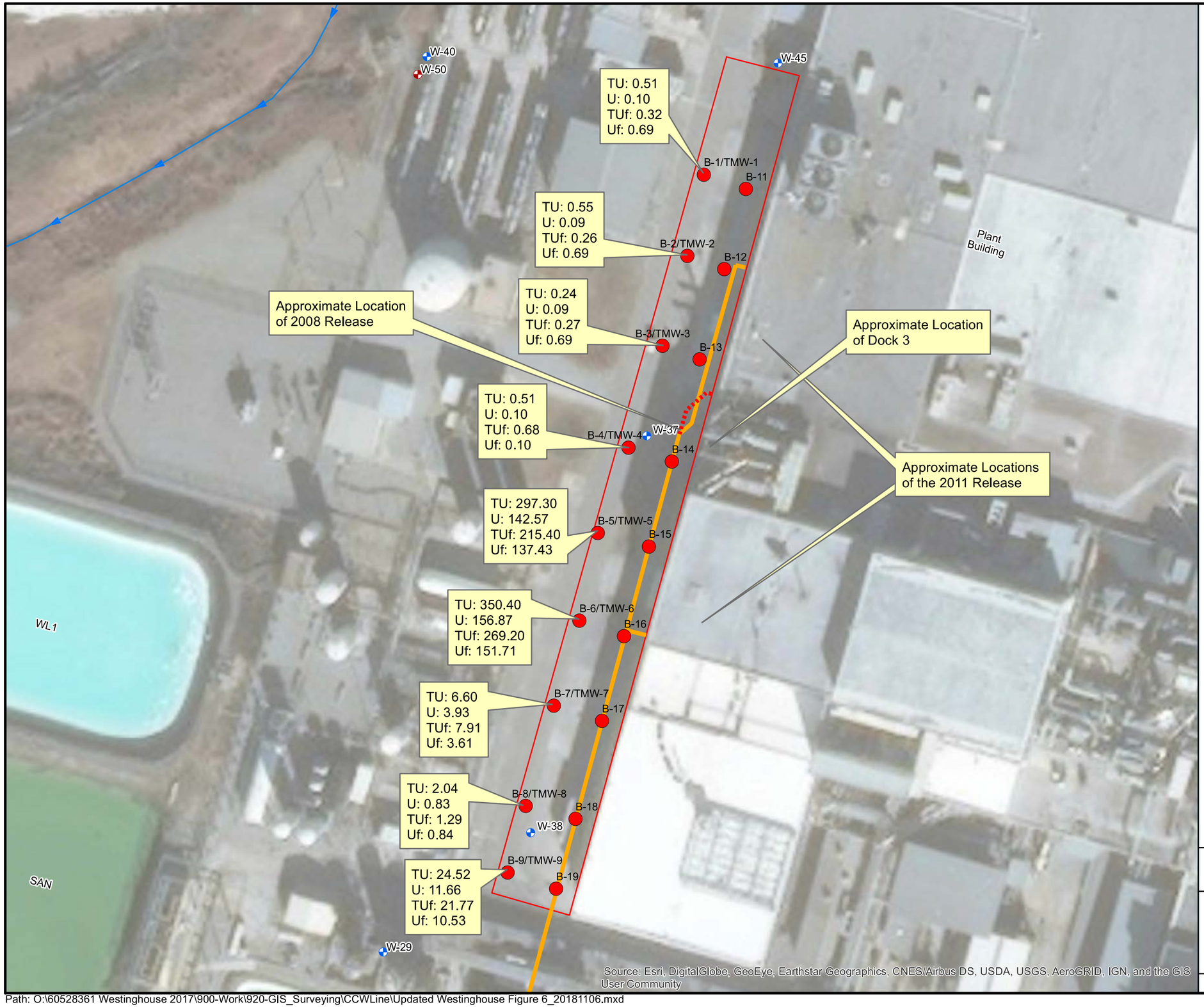
DPT Soil CoC Map

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60577539	JDL	November 2018	**FIGURE 4**

Path: O:\60528361 Westinghouse 2017\900-Work\920-GIS_Surveying\CCWLine\Updated Westinghouse Figure 4_20181106.mxd



N

Legend

- Study Area
- Boring Locations
- Shallow Aquifer Monitoring Well Location
- Intermediate Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Contaminated Wastewater Line
- Former Contaminated Wastewater Line
- Ditch
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2
- TU Unfiltered Total U in pCi/L
- U Unfiltered Total U in ug/L
- TUf Field Filtered Total U in pCi/L
- Uf Field Filtered Total U in ug/L

50 25 0 50 Feet

1:609

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Groundwater Samples Collected on 9/25/18

Source: 2018 AECOM Contaminated Wastewater Line Assessment Report

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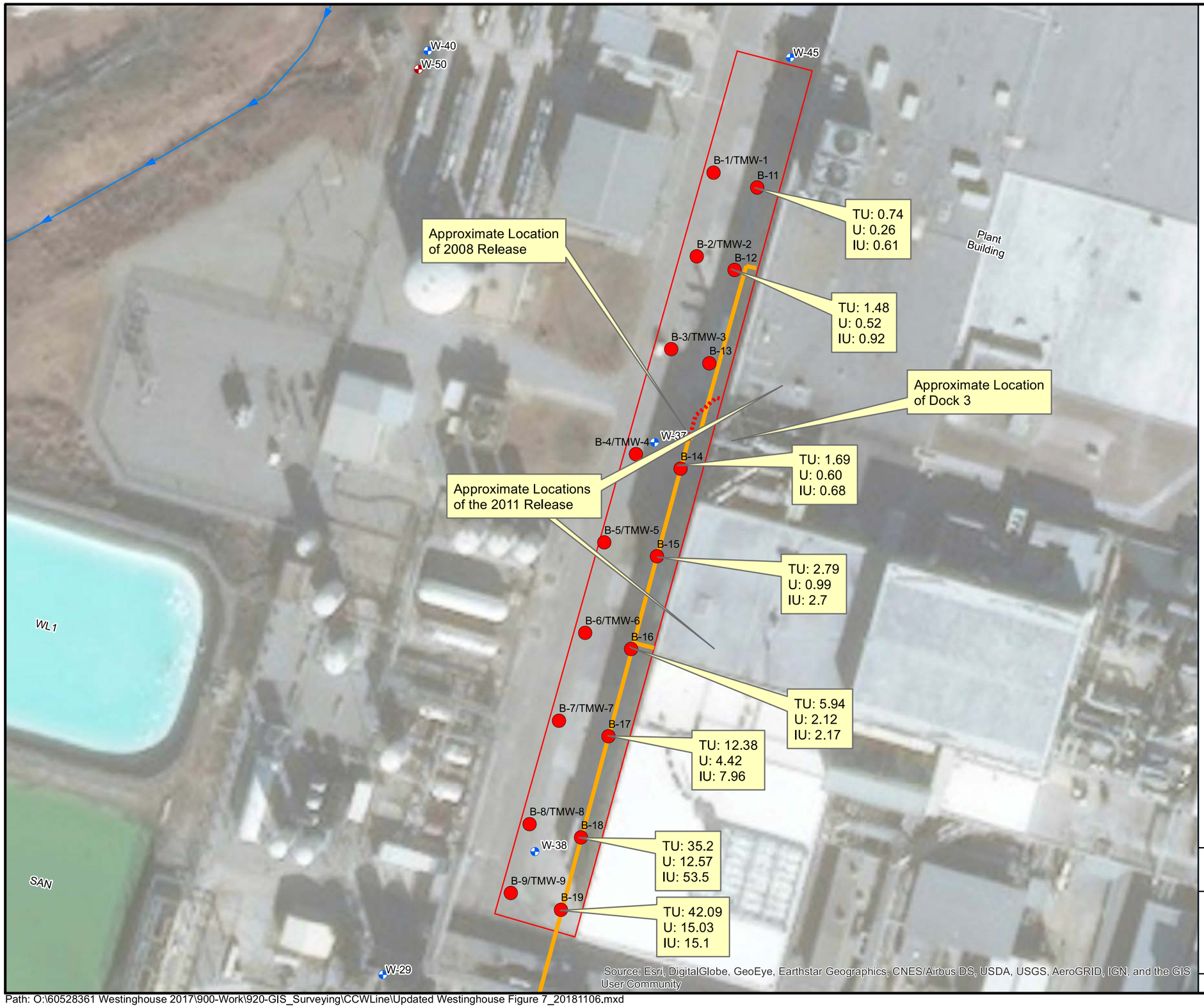
TMW Groundwater CoC Map

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60577539	JDL	November 2018	**FIGURE 5**

Path: O:\60528361 Westinghouse 2017\900-Work\920-GIS_Surveying\CCWLine\Updated Westinghouse Figure 6_20181106.mxd



N

Legend

- Study Area
- Boring Locations
- Shallow Aquifer Monitoring Well Location
- Intermediate Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Contaminated Wastewater Line
- Former Contaminated Wastewater Line
- Ditch
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2
- TU Total Uranium in PCi/g
- U Total Uranium in PPM
- IU ICPMS Total Uranium in ug/g

50 25 0 50 Feet

1:590

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Soil Samples Collected on 9/24/18 & 9/25/18

Source: 2018 AECOM Contaminated Wastewater Line Assessment Report

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Hand Auger Boring Soil CoC Map

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60577539	JDL	November 2018	**FIGURE 6**

Path: O:\60528361 Westinghouse 2017\900-Work\920-GIS_Surveying\CCWLine\Updated Westinghouse Figure 7_20181106.mxd

2018 AECOM HF Spiking Station #2 Assessment Report

CFFF uses two spiking stations within the manufacturing plant where hydrofluoric acid (HF) is mixed with uranyl nitrate for the conversion process. The spiking stations are located within the Chemical Area operable unit. A release of low pH liquid containing U was documented in 2018 at HF Spiking Station #2 (HFSS#2).

During routine inspection of HFSS #2, liquid was discovered on top of a polypropylene liner within the concrete berm containing the station. Upon removal of the polypropylene liner, a hole the size of a quarter was noticed in the epoxy coating over the concrete in the spiking station. Westinghouse personnel obtained subsurface soils directly below this hole to a depth of 67 inches below the concrete surface for analysis by the CFFF Chemical Lab. As documented in the 5-day Notification of HF Spiking Station #2 Dike Leak letter (Westinghouse, 2018), U, fluoride and low pH were detected in the subsurface soils. Based upon the information in the 5-day notification letter, DHEC responded with a letter requesting that CFFF define the extent of soil impacted by this release.

A field investigation was performed by AECOM in August 2018 and September 2018 to collect soil samples beneath HFSS#2. Hand auger borings were installed to collect soil samples for radiological and chemical analyses.

Based upon the analytical results of the soil samples, the following conclusions were reached:

- Some of the soil below the concrete floor within the HFSS#2 area was impacted with fluoride, nitrate, and U, and had localized areas of low pH (<5 standard units);
- Except for soil from one borehole, soil did not contain U concentrations above the releasable limit below 7-8 feet within the HFSS#2 footprint. Note that the floor of the manufacturing plant is elevated 4 feet above ground surface.; and
- U below the concrete floor exists outside of the HFSS#2 footprint but did not appear to be associated with the HFSS#2 release.

The results of the investigation were presented in the *HF Spiking Station #2 Assessment Report* (AECOM, 2018b). Pertinent excerpts from this report are included below.

Table 1
Westinghouse Columbia Fuel Fabrication Facility
HF Spiking Station #2 Assessment
Soil Analytical Results

Sample Location	Date Collected			Reported Values (ICPMS)				PPM	Alpha Spec				Liquid Scint		
		F mg/kg	Nitrate mg/kg	U234 ug/kg	U235 ug/kg	U238 ug/kg	Total U ug/kg	Total U mg/kg	U233/34 pCi/g	U235/36 pCi/g	U238 pCi/g	Total U pCi/g	Tc-99 pCi/g	pH	% moisture
HF-B1-(1-2)	8/20/2018	7.62	NA	<10.3	134	4,350	4,484	4.48	4.92	0.281	2.5	7.70	3.85	6.84	7.41
HF-B1-(3-4)	8/20/2018	143	NA	985	108,000	2,890,000	**2,998,985**	**2,999**	7,420	375	1,310	**9,105**	14.6	4.59	7.27
HF-B1-(5-6)	8/20/2018	374	NA	1,000	115,000	3,120,000	**3,236,000**	**3,236**	8,750	402	1,640	**10,792**	6.24	4.04	7.66
HF-B1-(7-8)	9/6/2018	341	717	954	106,000	2,750,000	**2,856,954**	**2,857**	5,650	267	1,030	**6,947**	24.7	3.76	9.77
HF-B1-(9-10)	9/6/2018	5.21	351	72.7	4,910	122,000	**126,983**	**127**	417	22.1	73.4	**512.5**	0.685	4.18	11.9
HF-B1-(11-12)	9/6/2018	0.4J	104	20.5	3,600	91,100	**94,721**	**94.7**	316	17.8	61.3	**395.1**	4.91	4.78	12.6
HF-B2-(1-2)	8/20/2018	12.0	NA	<10.2	230	8,440	8,670	8.67	12.6	0.638	2.96	16.20	14.7	8.84	4.75
HF-B3-(1-2)	8/20/2018	22.0	NA	<9.46	16.1	665	681.1	0.68	1.49	0.195	0.811	2.50	-16.8	4.23	1.04
HF-B3-(3-4)	8/20/2018	50.4	NA	70.8	8,210	196,000	**204,281**	**204**	745	36.1	121	**902**	-2.68	4.29	0.876
HF-B3-(4.5-5)	8/20/2018	118	NA	36.6	4,360	115,000	**119,397**	**119**	311	13.6	51.5	**376**	-1.24	5.19	1.46
HF-B4-(1-2)	8/21/2018	10.8	NA	112	13,600	429,000	**442,712**	**443**	793	43.6	173	**1,009**	15.5	5.30	1.02
HF-B4-(3-4)	8/21/2018	10.8	NA	132	16,600	512,000	**528,732**	**529**	999	54.5	224	**1,277**	5.15	5.30	1.27
HF-B4-(5-5.5)	8/21/2018	22.8	NA	33.2	3,800	109,000	**112,833**	**113**	237	9.91	49.8	**296**	2.51	5.18	2.01
HF-B5-(1-2)	8/21/2018	6.27	NA	4.7J	577	20,400	**20,977**	**21.0**	17.1	1.02	4.59	22.71	-1.15	8.01	4.58
HF-B6-(1-2)	8/21/2018	0.514J	NA	<10.3	12.4J	941	953	0.95	1.31	-0.00756	1.00	2.31	3.23	6.66	7.83
HF-B6-(3-4)	8/21/2018	0.915J	NA	<10.1	8.29J	915	923	0.92	0.945	-0.0102	0.700	1.65	19.0	4.72	7.88
HF-B6-(5-6)	8/21/2018	<1.11	NA	<11.0	9.74J	1,170	1,180	1.18	1.16	0.114	0.912	2.19	3.57	5.92	10.3
HF-B6-(7-8)	9/6/2018	<1.10	29.4	<10.6	28.0	1,090	1,118	1.12	1.28	0.0785	0.444	1.80	13.5	6.18	9.27
HF-B6-(9-10)	9/6/2018	<1.14	16.8	<11.2	10.3J	909	919	0.92	0.907	0.0969	0.548	1.55	16.5	6.18	13.0
HF-B6-(11-12)	9/6/2018	<1.13	12.7	<11.1	13.9J	1,030	1044	1.04	1.43	0.142	1.28	2.85	2.94	5.97	12.4
HF-B7-(1-2)	8/21/2018	4.48	NA	<9.84	185	6,340	6,525	6.53	9.68	0.597	2.70	12.98	15.4	8.92	2.14
HF-B8-(1-2)	8/21/2018	5.30	NA	31.2	4,210	131,000	**135,241**	**135**	12.8	0.422	2.79	16.01	12.7	9.30	3.86
HF-B9-(1-2)	8/21/2018	0.414J	NA	<10.3	14.1J	1,170	1,184	1.18	1.68	0.146	0.999	2.83	10.7	5.75	7.36
HF-B9-(3-4)	8/21/2018	305	NA	466	53,000	1,410,000	**1,463,466**	**1,463**	3690	202	637	**4,529**	23.1	4.04	7.23
HF-B9-(5-6)	8/21/2018	111	NA	64.7	7,680	183,000	**190,745**	**191**	478	28.3	81.1	**587**	7.95	3.95	11.5
HF-B9-(7-8)	9/6/2018	<1.12	167	<11.1	24.0	1,240	1,264	1.26	1.65	0.0806	0.728	2.46	11.0	5.81	10.8
HF-B9-(9-10)	9/6/2018	<1.12	43.9	<11.1	17.3	1,060	1,077	1.08	1.56	0.147	0.576	2.28	-3.91	6.15	11.2
HF-B9-(11-12)	9/6/2018	<1.15	19.3	<11.3	80.4	2,970	3,050	3.05	6.6	0.527	2.25	9.38	2.81	6.02	13.4
HF-B10-(1-2)	8/21/2018	13.3	NA	53.9	7,020	217,000	**224,074**	**224**	430	23.4	96.9	**550**	16.1	6.40	5.09
HF-B10-(3-4)	8/21/2018	17.6	NA	181	22,300	669,000	**691,481**	**691**	1460	74.7	290	**1,825**	6.99	4.55	2.11
HF-B11-(1-2)	8/22/2018	47.6	NA	12.2	1,470	44,900	**46,382**	**46.4**	80.0	4.52	17.1	**101.6**	20.5	4.48	1.18
HF-B11-(3-4)	8/22/2018	295	NA	400	46,600	1,250,000	**1,297,000**	**1,297**	3,300	175	618	**4,093**	3.24	4.13	3.16
HF-B11-(5-6)	8/22/2018	1180	NA	1,680	192,000	5,600,000	**5,793,680**	**5,794**	12,500	630	2,320	**15,450**	-1.18	3.65	13.3
HF-B11-(7-8)	9/7/2018	497	729	1,550	152,000	3,910,000	**4,063,550**	**4,064**	6,650	343	1,170	**8,163**	13.9	4.06	11.9
HF-B11-(9-10)	9/7/2018	2.59	188	<10.6	286	8,180	8,466	8.47	11.4	0.523	2.78	14.70	11.5	5.83	11.9
HF-B11-(11-12)	9/7/2018	<1.13	34.6	<10.9	323	8,620	8,943	8.94	36.0	2.06	7.19	**45.25**	-1.17	5.64	12.2
HF-B12-(1-2)	8/22/2018	43.6	NA	399	85,600	10,100,000	**10,185,999**	**10,186**	5,170	249	841	**6,260**	0.935	6.86	2.71
HF-B12-(3-4)	8/22/2018	467	NA	1,010	119,000	2,750,000	**2,870,010**	**2,870**	5,900	291	978	**7,169**	19.4	4.17	4.42

Source: 2018 AECOM HF Spiking Station #2 Assessment Report

Table 1
Westinghouse Columbia Fuel Fabrication Facility
HF Spiking Station #2 Assessment
Soil Analytical Results

Sample Location	Date Collected			Reported Values (ICPMS)				PPM	Alpha Spec				Liquid Scint		
		F mg/kg	Nitrate mg/kg	U234 ug/kg	U235 ug/kg	U238 ug/kg	Total U ug/kg	Total U mg/kg	U233/34 pCi/g	U235/36 pCi/g	U238 pCi/g	Total U pCi/g	Tc-99 pCi/g	pH	% moisture
HF-B13-(1-2)	9/12/2018	<1.09	70.8	<10.5	11.4	1,140	1,151	1.15	1.17	0.353	1.16	2.683	11.7	6.18	8.69
HF-B13-(3-4)	9/12/2018	0.99J	67.0	<10.8	10.3J	985	1,000	1.00	0.689	0.178	1.11	1.98	-7.42	4.67	7.83
HF-B13-(5-6)	9/12/2018	<1.09	57.4	<10.5	11J	1,090	1,101	1.10	1.39	0.427	0.981	2.80	-1.48	5.50	8.70
HF-B13-(7-8)	9/12/2018	<1.12	33.6	<11.0	8.28J	914	922	0.92	1.43	0.452	0.581	2.46	0.736	5.05	11.9
HF-B13-(9-10)	9/12/2018	<1.14	29.0	<10.9	7.34J	759	766	0.77	1.38	0.203	1.04	2.62	-0.00596	4.52	12.9
HF-B13-(11-12)	9/12/2018	<1.14	14.6	<10.5	13.8J	824	838	0.84	1.48	0.540	1.14	3.16	2.49	5.22	12.8
HF-B14-(1-2)	9/12/2018	<1.01	6.90	<9.86	4.85	346	341	0.34	0.709	0.205	0.454	1.37	7.11	5.88	1.31
HF-B14-(3-4)	9/12/2018	2.51	8.34	12.3	1,340	33,200	**34,552**	**34.55**	94.4	5.00	18.7	**118.1**	-0.389	5.09	1.17
HF-B14-(5-5.3)	9/12/2018	139	57.8	58.2	6,160	168,000	**174,218**	**174**	366	21.3	69.8	**457**	-2.65	4.64	1.82
HF-B15-(1-2)	9/12/2018	1.18	24.7	<9.42	7.7J	479	487	0.49	1.59	0.280	0.390	2.26	6.64	8.17	0.958
HF-B15-(3-4)	9/12/2018	201	382	529	116,000	3,260,000	**3,376,529**	**3,377**	4,760	268	989	**6,017**	31.6	4.46	6.88
HF-B15-(5-6)	9/12/2018	288	384	531	119,000	3,450,000	**3,569,531**	**3,570**	6,560	416	1,480	**8,456**	-6.56	4.41	7.97
HF-B15-(7-8)	9/12/2018	0.80J	111	10.1J	1,160	31,100	**32,270**	**32.27**	101	6.84	23.7	**132**	10.4	5.12	9.61
HF-B15-(9-10)	9/12/2018	<1.15	40.1	<11.0	34.4	1,580	1,614	1.61	8.04	0.359	2.03	10.43	-1.57	5.1	12.9
HF-B15-(11-12)	9/12/2018	<1.14	14.5	6.01J	642	19,500	**20,148**	**20.15**	23.8	2.14	6.52	**32.46**	3.30	5.29	14.1
HF-B16-(1-2)	9/7/2018	33.7	236	86.7	9,690	284,000	**293,777**	**294**	450	23.2	99.1	**572**	13.2	4.26	5.77
HF-B16-(3-4)	9/7/2018	122	114	1,230	140,000	3,660,000	**3,801,230**	**3,801**	7,980	409	1,420	**9,809**	17.2	4.53	8.38
Free Releasable Uranium Limit		N/A	N/A	N/A	N/A	N/A	11000	11	N/A	N/A	N/A	30	N/A	N/A	N/A

Notes:

ICPMS - Inductively coupled plasma mass spectometry
PPM - units converted to parts per million
F - Fluoride
mg/kg - milligrams per kilogram
U - Uranium
ug/kg - micrograms per kilogram
pCi/L - Picocuries per liter
NA - Not analyzed
J - Concentratoin is above the method detection limit but below the reporting limit
BOLD values indicates concentration above the free releasable soil limit (11,000 ug/kg or 30 pCi/g)
N/A - Not applicable

Source: 2018 AECOM HF Spiking Station #2 Assessment Report



N

Legend

- Shallow Aquifer Monitoring Well Location
- Intermediate Aquifer Monitoring Well Location
- Black Mingo Aquifer Monitoring Well Location
- Ditch
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

300 150 0 300 Feet

1:2,780

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2018 AECOM HF Spiking Station #2 Assessment Report

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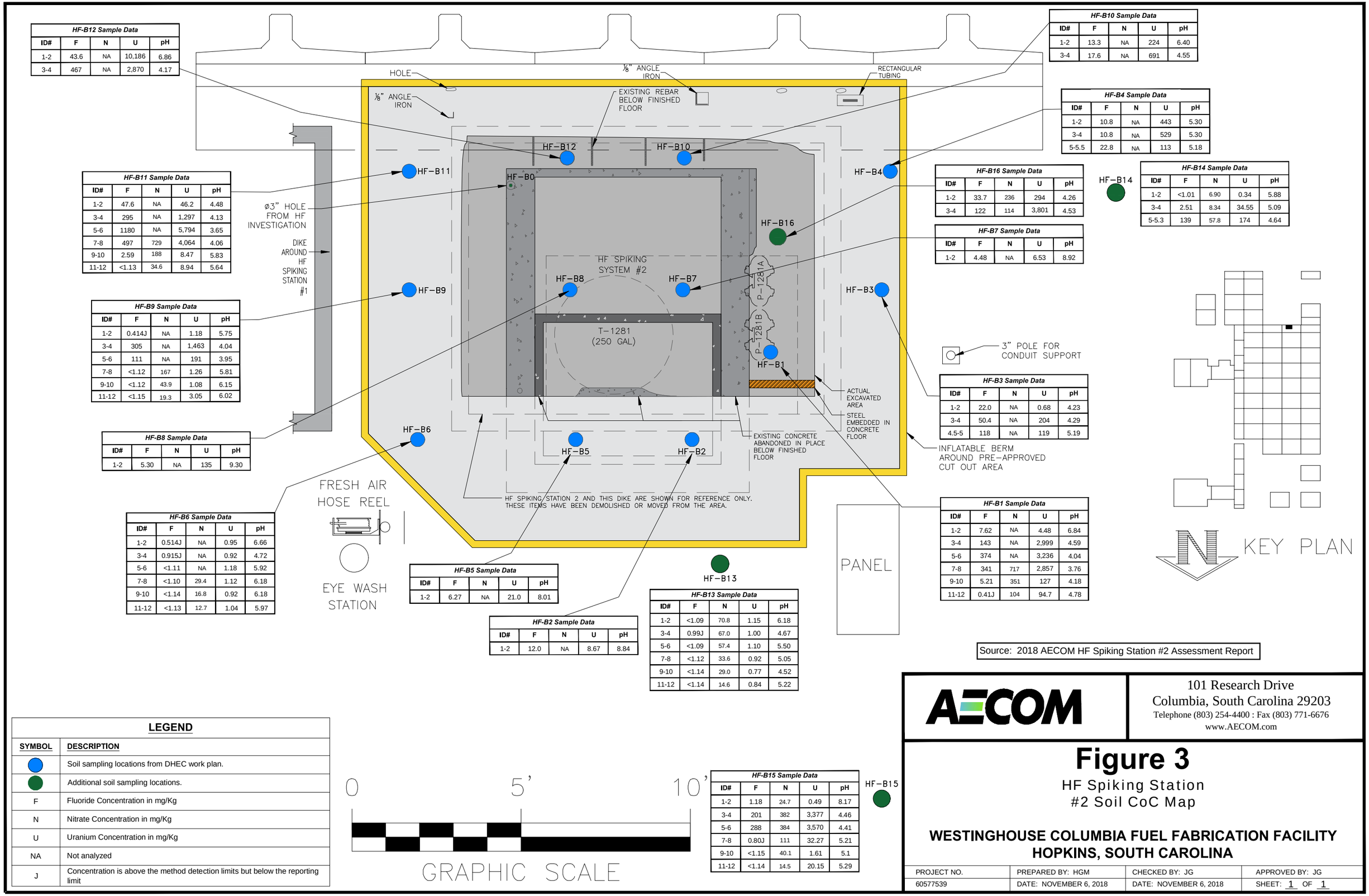
Site Map

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60577539	JDL	November 2018	**FIGURE 2**

Path: O:\60577539 Westinghouse Radionuclide Assessment\900-Work\920-GIS_Surveying\JL_Updates_20181102\CWWLine_SiteMap_20181106.mxd



HF-B12 Sample Data

ID#	F	N	U	pH
1-2	43.6	NA	10,186	6.86
3-4	467	NA	2,870	4.17

HF-B10 Sample Data

ID#	F	N	U	pH
1-2	13.3	NA	224	6.40
3-4	17.6	NA	691	4.55

HF-B4 Sample Data

ID#	F	N	U	pH
1-2	10.8	NA	443	5.30
3-4	10.8	NA	529	5.30
5-5.5	22.8	NA	113	5.18

HF-B11 Sample Data

ID#	F	N	U	pH
1-2	47.6	NA	46.2	4.48
3-4	295	NA	1,297	4.13
5-6	1180	NA	5,794	3.65
7-8	497	729	4,064	4.06
9-10	2.59	188	8.47	5.83
11-12	<1.13	34.6	8.94	5.64

HF-B16 Sample Data

ID#	F	N	U	pH
1-2	33.7	236	294	4.26
3-4	122	114	3,801	4.53

HF-B14 Sample Data

ID#	F	N	U	pH
1-2	<1.01	6.90	0.34	5.88
3-4	2.51	8.34	34.55	5.09
5-5.3	139	57.8	174	4.64

HF-B7 Sample Data

ID#	F	N	U	pH
1-2	4.48	NA	6.53	8.92

HF-B9 Sample Data

ID#	F	N	U	pH
1-2	0.414J	NA	1.18	5.75
3-4	305	NA	1,463	4.04
5-6	111	NA	191	3.95
7-8	<1.12	167	1.26	5.81
9-10	<1.12	43.9	1.08	6.15
11-12	<1.15	19.3	3.05	6.02

HF-B3 Sample Data

ID#	F	N	U	pH
1-2	22.0	NA	0.68	4.23
3-4	50.4	NA	204	4.29
4.5-5	118	NA	119	5.19

HF-B8 Sample Data

ID#	F	N	U	pH
1-2	5.30	NA	135	9.30

HF-B1 Sample Data

ID#	F	N	U	pH
1-2	7.62	NA	4.48	6.84
3-4	143	NA	2,999	4.59
5-6	374	NA	3,236	4.04
7-8	341	717	2,857	3.76
9-10	5.21	351	127	4.18
11-12	0.41J	104	94.7	4.78

HF-B6 Sample Data

ID#	F	N	U	pH
1-2	0.514J	NA	0.95	6.66
3-4	0.915J	NA	0.92	4.72
5-6	<1.11	NA	1.18	5.92
7-8	<1.10	29.4	1.12	6.18
9-10	<1.14	16.8	0.92	6.18
11-12	<1.13	12.7	1.04	5.97

HF-B5 Sample Data

ID#	F	N	U	pH
1-2	6.27	NA	21.0	8.01

HF-B2 Sample Data

ID#	F	N	U	pH
1-2	12.0	NA	8.67	8.84

HF-B13 Sample Data

ID#	F	N	U	pH
1-2	<1.09	70.8	1.15	6.18
3-4	0.99J	67.0	1.00	4.67
5-6	<1.09	57.4	1.10	5.50
7-8	<1.12	33.6	0.92	5.05
9-10	<1.14	29.0	0.77	4.52
11-12	<1.14	14.6	0.84	5.22

HF-B15 Sample Data

ID#	F	N	U	pH
1-2	1.18	24.7	0.49	8.17
3-4	201	382	3,377	4.46
5-6	288	384	3,570	4.41
7-8	0.80J	111	32.27	5.21
9-10	<1.15	40.1	1.61	5.1
11-12	<1.14	14.5	20.15	5.29

Source: 2018 AECOM HF Spiking Station #2 Assessment Report

LEGEND

SYMBOL	DESCRIPTION
●	Soil sampling locations from DHEC work plan.
●	Additional soil sampling locations.
F	Fluoride Concentration in mg/Kg
N	Nitrate Concentration in mg/Kg
U	Uranium Concentration in mg/Kg
NA	Not analyzed
J	Concentration is above the method detection limits but below the reporting limit

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Figure 3

HF Spiking Station
#2 Soil CoC Map

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY: HGM	CHECKED BY: JG	APPROVED BY: JG
60577539	DATE: NOVEMBER 6, 2018	DATE: NOVEMBER 6, 2018	SHEET: 1 OF 1

O:\60577539 WESTINGHOUSE RADIONUCLIDE ASSESSMENT\900-WORK\910-CAD\20-SHEETS\FIGURE 3.DWG 11/6/2018 11:39:03 AM

2018 Leidos Technical Basis Document for Spiking Station #2

In 2018 Leidos prepared *Technical Basis Document - Site-Specific Clean-up Levels for Uranium in Soil at HF Spiking Station #2 at the Westinghouse Columbia Fuel Fabrication Facility (WCFFF*) (Ledios, 2018) “to establish pre-decommissioning target cleanup levels or residual U in soil originating from HF Spiking Station #2”. The intent was to establish levels to protect workers, achieve as low as reasonably achievable exposure to radiation, and prevent leaching of U to groundwater.

The Technical Basis Document (TBD) indicated that the target cleanup level is based on the reasonable maximum exposure (RME) industrial worker scenario. The RESRAD-ONSITE Version 7.2 computer model was used to calculate potential risk and dose for U.

The TBD concluded that the subsurface soil and the concrete floor provide a barrier between industrial workers and U in soil. The dose-based target cleanup level for U was calculated at 41,667 ppm. Soil sampling results were below this limit. For future risk scenarios, the Comprehensive Environmental Response, Compensation, and Liability Act target cleanup levels range from 149 ppm ($CR=10^{-6}$) to 14,920 ppm ($CR=10^{-4}$). During sampling, U exceeded 149 ppm for $CR=10^{-6}$ but was less than to 14,920 ppm for $CR=10^{-4}$. The TBD indicated that since subsurface activity in this area is unlikely, and a protective cover is provided by the concrete floor slab, excavation of impacted soi is not warranted. The TBD did recommend routine groundwater monitoring for ongoing evaluation of the effectiveness of the protective cover of the floor slab.

2019 AECOM CVOC Assessment Report

The previous *CVOC Field Screening Report* (AECOM, 2017) recommended the installation of additional monitoring wells. Nine monitoring wells were installed in October and November 2018. The entire monitoring well network, including the new wells were sampled in October and November 2018. The groundwater analytical results indicated that there are PCE and TCE groundwater plumes in the upper and lower zones of the surficial aquifer west of the plant building and in the upper zone of the surficial aquifer south of the plant building.

The report concluded that the plumes in the western site area appeared to emanate from the vicinity of West Lagoon II and from a source(s) between the plant building and the lagoon. TCE concentrations in the western plume were above the MCL in the upper and lower portions of the surficial aquifer, but concentrations of TCE above its MCL occurred primarily in the lower zone of the surficial aquifer. A groundwater sample from the lower zone of the surficial aquifer monitoring well W-19B contained PCE above its MCL. This well is in an area of the site where there were no known historical operations. Groundwater from the lower zone of surficial aquifer monitoring well W-60 between West Lagoon II and monitoring well W-19B was not impacted with PCE; therefore, the source of the impact in monitoring well W-19B remained unknown.

A second, smaller CVOC plume was located in the southern portion of the site near the bluff and the Gator Pond. PCE concentrations above the MCL within this plume appeared to be within the upper surficial aquifer only based on previous groundwater screening results (AECOM, 2017). The source area(s) for this plume were unknown, as there are no known processes in this area that currently use PCE or used PCE in the past. PCE concentrations in this plume were an order of magnitude lower than the PCE concentrations in the plume described above and did not appear to point to any particular potential source area.

The results of the investigation were presented in the *CVOC Assessment Report* (AECOM, 2019). Pertinent excerpts from this report are included below.



Legend

- Upper Surficial Monitoring Well Location
- Lower Surficial Monitoring Well Location
- Black Mingo Monitoring Well Location
- Ditch

EL	East Lagoon
NL	North Lagoon
SL	South Lagoon
SAN	Sanitary Lagoon
WL1	West Lagoon 1
WL2	West Lagoon 2

Note:

* : Monitoring well W-39 is screened within the upper and lower surficial aquifer

N

0 150 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2019 AECOM CVOC Assessment Report

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Site Map

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60585917	LJG	January 2019	**FIGURE 2**

Path: M:\EnvDataViz\Westinghouse\mxd\January2019\figure2_SiteFigure.mxd



Legend

- Upper Surficial Monitoring Well Location
- Lower Surficial Monitoring Well Location
- Black Mingo Monitoring Well Location
- Ditch
- Potentiometric Line (C.I. = 4 feet)
- Direction of Groundwater Flow
- 129.19 Groundwater Elevation
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

Note:

Based upon data collected on November 26, 2018

* : Monitoring well W-39 is screened within the upper and lower surficial aquifer

N

0 150 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2019 AECOM CVOC Assessment Report

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Upper Surficial Aquifer Potentiometric Map

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60585917	LJG	January 2019	**FIGURE 3**

Path: M:\EnvDataViz\Westinghouse\mxd\January2019\figure3_upperWT_GWpot.mxd



Legend

- Upper Surficial Monitoring Well Location
- Lower Surficial Monitoring Well Location
- Black Mingo Monitoring Well Location
- Ditch
- Potentiometric Line (C.I. = 4 feet)
- Direction of Groundwater Flow
- 128.36 Groundwater Elevation
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

Note:

Based upon data collected on November 26, 2018

* : Monitoring well W-39 is screened within the upper and lower surficial aquifer

N

0 150 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2019 AECOM CVOC Assessment Report

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Lower Surficial Aquifer Potentiometric Map

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60585917	LJG	January 2019	**FIGURE 4**

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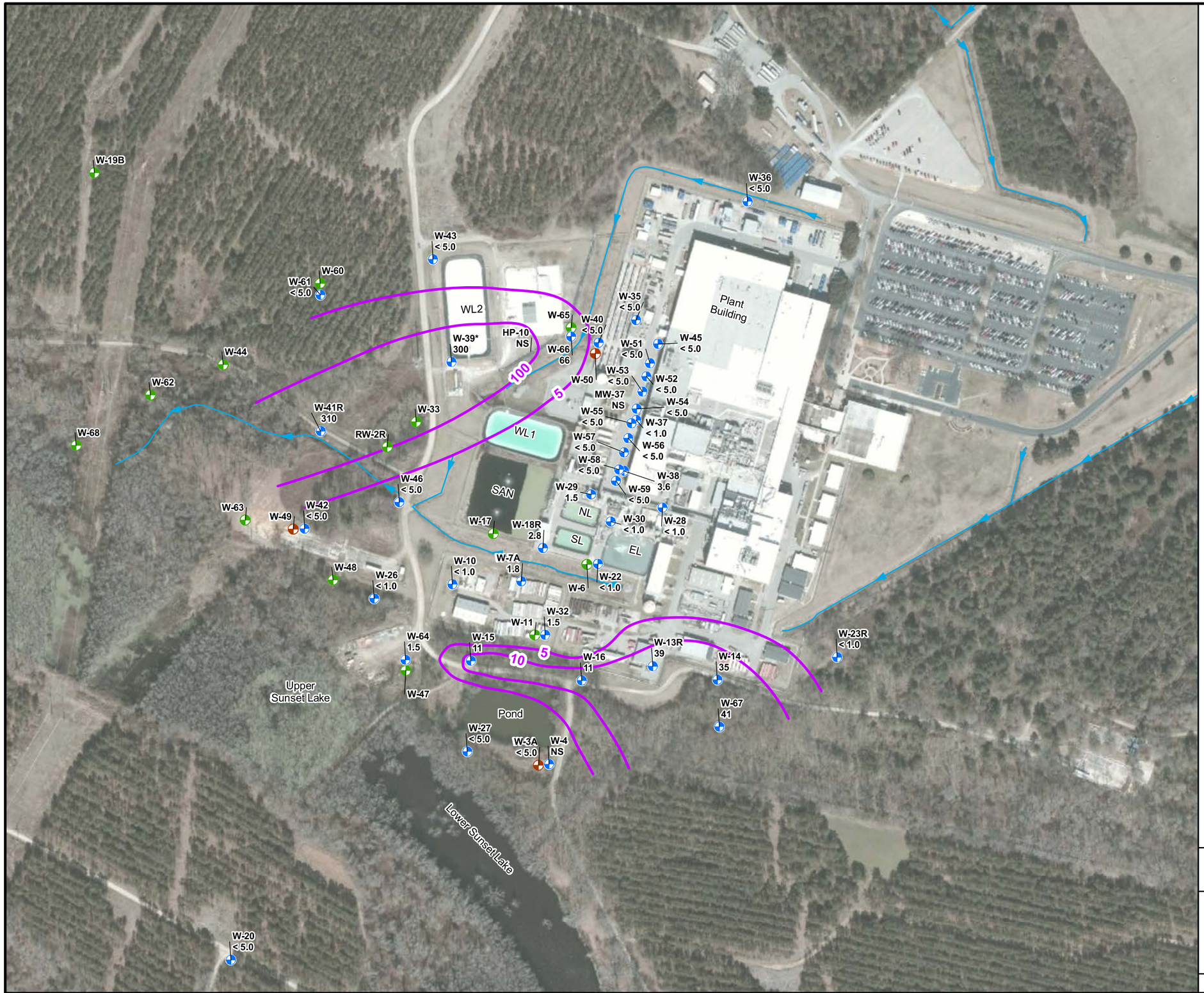

Legend

- Upper Surficial Monitoring Well Location
- Lower Surficial Monitoring Well Location
- Black Mingo Monitoring Well Location
- Ditch
- PCE Isoconcentration Contours (µg/L)
- 300 PCE Concentration in µg/L
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

Note:

Based upon data collected from October-December, 2018

* : Monitoring well W-39 is screened within the upper and lower surficial aquifer

N

0 150 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2019 AECOM CVOC Assessment Report

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PCE Plume
Upper Surficial Aquifer

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60585917	LJG	January 2019	**FIGURE 5**

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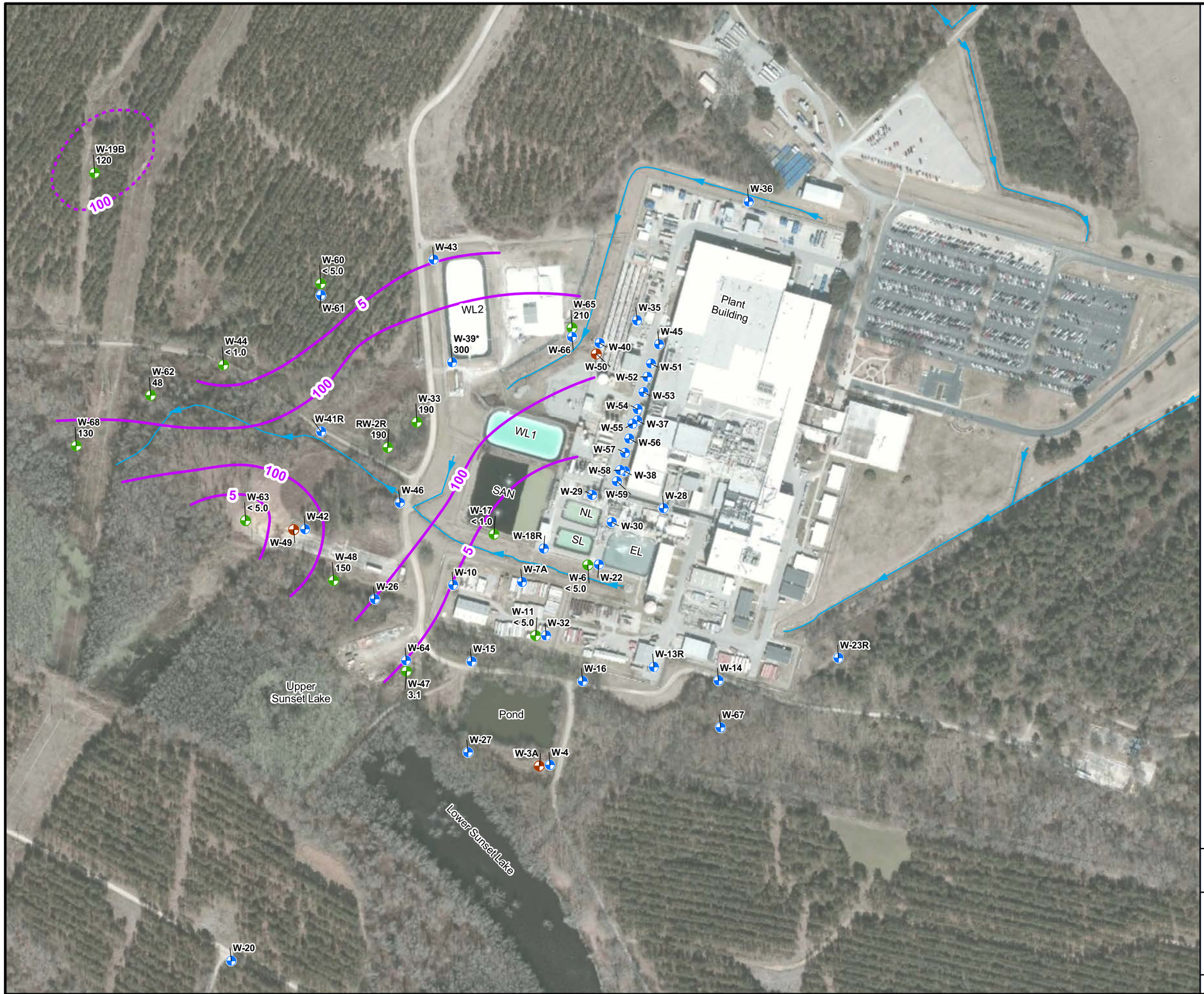

Legend

- Upper Surficial Monitoring Well Location
- Lower Surficial Monitoring Well Location
- Black Mingo Monitoring Well Location
- Ditch
- PCE Isoconcentration Contours (µg/L) (Dashed where inferred)
- 210 PCE Concentration in µg/L
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

Note:

Based upon data collected from October-December, 2018

* : Monitoring well W-39 is screened within the upper and lower surficial aquifer

N

0 150 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2019 AECOM CVOC Assessment Report

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PCE Plume
Lower Surficial Aquifer

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60585917	LJG	January 2019	**FIGURE 6**

Path: M:\EnvDataViz\Westinghouse\mxd\January2019\figure6_pce_lowerWT.mxd



Legend

- Upper Surficial Monitoring Well Location
- Lower Surficial Monitoring Well Location
- Black Mingo Monitoring Well Location
- Ditch
- TCE Isoconcentration Contours (µg/L)
- 5.3 TCE Concentration in µg/L
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

Note:

Based upon data collected from October-December, 2018

* : Monitoring well W-39 is screened within the upper and lower surficial aquifer

N

0 150 300 Feet

1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2019 AECOM CVOC Assessment Report

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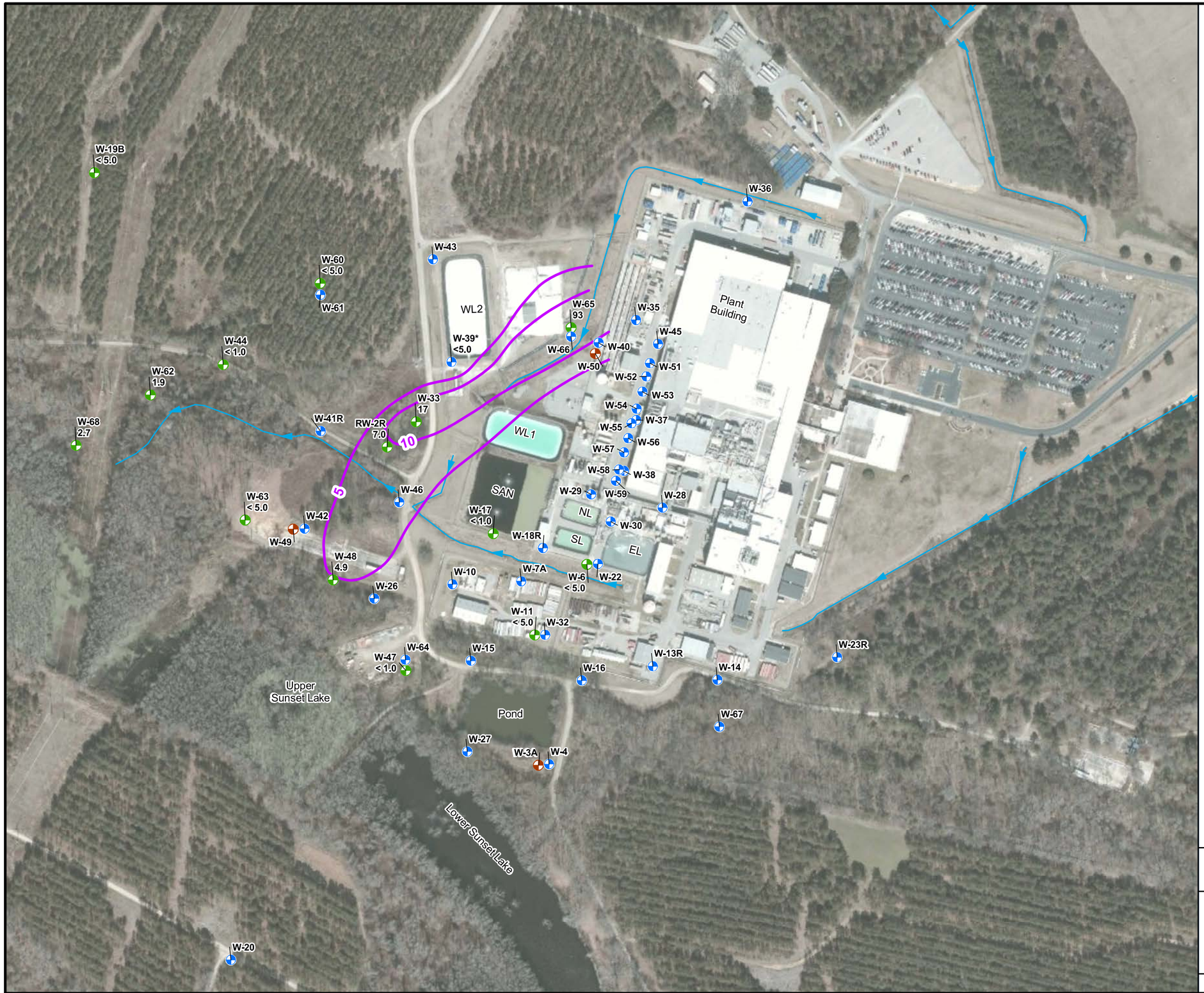
TCE Plume
Upper Surficial Aquifer

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60585917	LJG	January 2019	**FIGURE 7**

Path: M:\EnvDataViz\Westinghouse\mxd\January2019\figure7_tce_upperWT.mxd



Legend

- Upper Surficial Monitoring Well Location
- Lower Surficial Monitoring Well Location
- Black Mingo Monitoring Well Location
- Ditch
- TCE Isoconcentration Contours (µg/L)
- 93 TCE Concentration in µg/L
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

Note:
Based upon data collected from October-December, 2018
* : Monitoring well W-39 is screened within the upper and lower surficial aquifer

N

0 150 300
Feet
1:3,600

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2019 AECOM CVOC Assessment Report

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TCE Plume
Lower Surficial Aquifer

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:	
60585917	LJG	January 2019	**FIGURE 8**

Path: M:\EnvDataViz\Westinghouse\mxd\January2019\figure8_tce_lowerWT.mxd

Table 1
Summary of Groundwater Elevation Data
Westinghouse Columbia Fuel Fabrication Facility
AECOM Project No. 60585917

Well Number	Date Measured	Screen Interval (ft bgs)	Ground Surface Elevation (ft)	Top of Casing Elevation (ft)	Depth to Water (ft btoc)	Groundwater Elevation (ft)
W-3A	11/26/18	72.5-82.5	117.64	120.08	4.66	115.42
W-4	11/26/18	10.0-12.0	116.50	116.09	3.41	112.68
W-6	11/26/18	23.5-28.5	136.96	136.46	9.65	126.81
W-7A	11/26/18	13.0-18.0	132.94	135.06	10.58	124.48
W-10	11/26/18	18.5-23.5	136.89	136.81	15.27	121.54
W-11	11/26/18	25.5-28.5	138.45	140.76	17.17	123.59
W-13R	11/26/18	15.5-18.5	136.38	136.13	11.00	125.13
W-14	11/26/18	23.5-28.5	136.22	137.83	15.65	122.18
W-15	11/26/18	13.5-18.5	126.67	127.90	11.25	116.65
W-16	11/26/18	15.5-18.5	125.64	124.93	NM	NM
W-17	11/26/18	23.5-28.0	137.57	139.27	13.57	125.70
W-18R	11/26/18	12.5-17.5	137.15	136.71	10.90	125.81
W-19B	11/26/18	30.0-40.5	140.58	142.85	25.72	117.13
W-20	11/26/18	11.5-16.3	113.27	116.16	5.77	110.39
W-22	11/26/18	13.4-17.8	137.08	136.51	9.70	126.81
W-23R	11/26/18	15.0-20.0	137.45	140.47	19.10	121.37
W-24	11/26/18	10.1-15.1	139.83	141.94	7.62	134.32
W-25	11/26/18	22.9-27.7	114.70	114.70	5.05	109.65
W-26	11/26/18	25.5-30.5	140.59	142.21	24.82	117.39
W-27	11/26/18	14.1-18.9	120.22	121.87	9.43	112.44
W-28	11/26/18	9.8-14.7	136.98	138.88	11.30	127.58
W-29	11/26/18	10.0-15.1	136.96	138.61	10.95	127.66
W-30	11/26/18	10.2-15.2	136.87	138.81	11.30	127.51
W-32	11/26/18	17.0-22.5	138.33	140.61	17.93	122.68
W-33	11/26/18	15.1-20.7	138.06	139.33	15.02	124.31
W-35	11/26/18	16.0-21.0	136.59	139.07	10.40	128.67
W-36	11/26/18	15.0-20.0	134.16	136.29	7.10	129.19
W-37	11/26/18	15.5-20.5	136.58	139.04	10.71	128.33
W-38	11/26/18	15.0-20.0	136.71	136.51	8.70	127.81
W-39	11/26/18	12.0-22.0	139.08	141.15	15.02	126.13
W-40	11/26/18	5.0-15.0	136.42	139.26	10.60	128.66
W-41R	11/26/18	14.0-24.0	131.02	133.81	15.32	118.49
W-42	11/26/18	20.0-30.0	137.83	140.96	24.02	116.94
W-43	11/26/18	10.5-20.5	138.09	141.33	12.65	128.68
W-44	11/26/18	16.0-26.0	131.93	134.86	18.24	116.62
W-45	11/26/18	6.0-16.0	137.20	140.02	11.55	128.47
W-46	11/26/18	15.5-25.5	132.39	134.74	13.20	121.54

Source: 2019 AECOM CVOC Assessment Report

Table 1
Summary of Groundwater Elevation Data
Westinghouse Columbia Fuel Fabrication Facility
AECOM Project No. 60585917

Well Number	Date Measured	Screen Interval (ft bgs)	Ground Surface Elevation (ft)	Top of Casing Elevation (ft)	Depth to Water (ft btoc)	Groundwater Elevation (ft)
W-47	11/26/18	34.3-44.8	140.70	141.90	25.46	116.44
W-48	11/26/18	30.7-41.3	139.74	142.56	25.55	117.01
W-49	11/26/18	105.0-115.0	137.82	140.25	26.33	113.92
W-50	11/26/18	114.5-124.5	136.79	139.58	21.35	118.23
W-51	11/26/18	10.0-15.0	136.67	136.51	7.97	128.54
W-52	11/26/18	10.0-15.0	136.71	136.19	7.80	128.39
W-53	11/26/18	10.0-15.0	136.83	136.54	8.13	128.41
W-54	11/26/18	10.0-15.0	136.79	136.52	8.20	128.32
W-55	11/26/18	10.0-15.0	136.90	136.63	8.38	128.25
W-56	11/26/18	10.0-15.0	136.83	136.68	8.50	128.18
W-57	11/26/18	10.0-15.0	136.90	136.73	8.74	127.99
W-58	11/26/18	10.0-15.0	136.85	136.37	8.92	127.45
W-59	11/26/18	10.0-15.0	136.10	136.42	8.70	127.72
W-60	11/26/18	32.0-37.0	137.25	140.20	22.46	117.74
W-61	11/26/18	13.0-23.0	137.34	140.60	17.39	123.21
W-62	11/26/18	19.0-24.0	125.63	128.38	13.49	114.89
W-63	11/26/18	37.0-42.0	138.78	141.02	25.85	115.17
W-64	11/26/18	21.0-31.0	140.15	142.75	25.76	116.99
W-65	11/26/18	26.5-31.5	138.17	140.95	12.59	128.36
W-66	11/26/18	12.0-22.0	138.01	140.91	12.36	128.55
W-67	11/26/18	21.0-31.0	132.60	135.26	16.76	118.50
W-68	11/26/18	13.0-18.0	113.40	116.53	5.36	111.17
RW-2R	11/26/18	19.0-29.2	136.98	139.93	17.91	122.02

Notes:
ft bgs = feet below ground surface
ft btoc = feet below top of casing
ft = elevations are in feet above mean sea level based on the North American Vertical Datum of 1988 (NAVD-88)
NM = not measured due to well obstruction

Source: 2019 AECOM CVOC Assessment Report

Table 2
Summary of Detected Chlorinated Compounds
Westinghouse Columbia Fuel Fabrication Facility
AECOM Project No. 60585917

Well ID	Sample Date	Screened Interval (ft bgs)	Tetrachlororethene (PCE)	Trichchlorethene (TCE)	cis-1, 2-Dichloroethene	trans-1, 2-Dichloroethene	Vinyl Chloride
RW-2R	10/16/2018	19.2-29.2	**190**	**7**	< 1	< 1	< 1
W-3A	11/29/2018	72.5-82.5	< 5	< 5	< 5	< 5	< 2
W-3A DUP	11/29/2018	72.5-82.5	< 5	< 5	< 5	< 5	< 2
W-4	NS	10.0-12.0	NS	NS	NS	NS	NS
W-6	11/5/2018	23.5-28.5	< 5	< 5	< 5	< 5	< 2
W-7A	10/19/2018	13.0-18.0	1.8	< 1	< 1	< 1	< 1
W-10	10/19/2018	18.5-23.5	< 1	< 1	< 1	< 1	< 1
W-11	11/5/2018	25.5-28.5	< 5	< 5	< 5	< 5	< 2
W-13R	10/19/2018	15.5-18.5	**39**	3.1	1.4	< 1	< 1
W-14	10/18/2018	23.5-28.5	**35**	**5.3**	< 1	< 1	< 1
W-15	10/15/2018	13.5-18.5	**11**	2.0	1.2	< 1	< 1
W-16	10/18/2018	15.5-18.5	**11**	2.9	3.2	< 1	< 1
W-17	10/25/2018	23.5-28.0	< 1	< 1	< 1	< 1	< 1
W-18R	10/23/2018	12.5-17.5	2.8	< 1	< 1	< 1	< 1
W-19B	10/3/2018	30.0-40.5	**83**	1.7	< 1	< 1	< 1
W-19B	11/4/2018	30.0-40.5	**120**	< 5	< 5	< 5	< 2
W-20	10/30/2018	11.5-16.3	< 5	< 5	< 5	< 5	< 2
W-20 DUP	10/30/2018	11.5-16.3	< 5	< 5	< 5	< 5	< 2
W-22	10/23/2018	13.4-17.8	< 1	< 1	< 1	< 1	< 1
W-23R	10/18/2018	15.0-20.0	< 1	< 1	< 1	< 1	< 1
W-24	10/16/2018	10.1-15.1	< 1	< 1	< 1	< 1	< 1
W-25	NS	22.9-27.7	NS	NS	NS	NS	NS
W-26	10/16/2018	10.1-15.1	< 1	< 1	1.1	< 1	< 1
W-27	10/29/2018	14.1-18.9	< 5	< 5	< 5	< 5	< 2
W-27 DUP	10/29/2018	14.1-18.9	< 5	< 5	< 5	< 5	< 2
W-27	11/28/2018	14.1-18.9	< 5	< 5	< 5	< 5	< 2
W-27 DUP	11/28/2018	14.1-18.9	< 5	< 5	< 5	< 5	< 2
W-28	10/23/2018	9.8-14.7	< 1	< 1	< 1	< 1	< 1
W-29	10/23/2018	10.1-15.1	1.5	< 1	< 1	< 1	< 1
W-30	10/23/2018	10.2-15.2	< 1	< 1	< 1	< 1	< 1
W-32	10/19/2018	17.5-22.5	1.5	< 1	< 1	< 1	< 1
W-33	10/16/2018	15.7-20.7	**190**	**17**	2.0	< 1	< 1
W-35	11/1/2018	16.0-21.0	< 5	< 5	< 5	< 5	< 2
W-36	11/1/2018	15.0-20.0	< 5	< 5	< 5	< 5	< 2
W-37	10/18/2018	15.5-20.5	< 1	< 1	< 1	< 1	< 1
W-38	10/18/2018	15.0-20.0	3.6	**11**	< 1	< 1	< 1
W-39	10/25/2018	12.0-22.0	**300**	< 5	5.0	< 5	< 5
W-40	11/29/2018	5.0-15.0	< 5	< 5	< 5	< 5	< 2
W-41R	10/15/2018	14.0-24.0	**310**	**23**	< 5	< 5	< 5
W-42	11/4/2018	20.0-30.0	< 5	< 5	< 5	< 5	< 2
W-43	11/28/2018	10.5-20.5	< 5	< 5	< 5	< 5	< 2
W-43 DUP	10/29/2018	10.5-20.5	< 5	< 5	< 5	< 5	< 2
W-43	10/29/2018	10.5-20.5	< 5	< 5	< 5	< 5	< 2
W-43 DUP	11/28/2018	10.5-20.5	< 5	< 5	< 5	< 5	< 2
W-44	10/15/2018	16.0-26.0	< 1	< 1	< 1	< 1	< 1
W-45	11/4/2018	6.0-16.0	< 5	< 5	< 5	< 5	< 2
W-46	11/4/2018	15.5-25.5	< 5	< 5	< 5	< 5	< 2
W-47	10/25/2018	34.8-44.8	3.1	< 1	< 1	< 1	< 1
W-48	10/25/2018	31.3-41.3	**150**	4.9	2.2	< 1	< 1
W-49	12/13/2018	105.0-115.0	< 1	< 1	< 1	< 1	< 1
W-50	NS	114.5-124.5	NS	NS	NS	NS	NS
W-51	10/28/2018	10.0-15.0	< 5	< 5	< 5	< 5	< 2
W-52	10/28/2018	10.0-15.0	< 5	< 5	< 5	< 5	< 2
W-53	10/28/2018	10.0-15.0	< 5	< 5	19	< 5	< 2
W-54	10/28/2018	10.0-15.0	< 5	< 5	< 5	< 5	< 2

Source: 2019 AECOM CVOC Assessment Report

Table 2
Summary of Detected Chlorinated Compounds
Westinghouse Columbia Fuel Fabrication Facility
AECOM Project No. 60585917

Well ID	Sample Date	Screened Interval (ft bgs)	Tetrachlororethene (PCE)	Trichchlorethene (TCE)	cis-1, 2-Dichloroethene	trans-1, 2-Dichloroethene	Vinyl Chloride
W-55	10/27/2018	10.0-15.0	< 5	< 5	< 5	< 5	< 2
W-56	10/27/2018	10.0-15.0	< 5	< 5	< 5	< 5	< 2
W-57	10/27/2018	10.0-15.0	< 5	< 5	< 5	< 5	< 2
W-58	10/27/2018	10.0-15.0	< 5	< 5	< 5	< 5	< 2
W-59	10/27/2018	10.0-15.0	< 5	< 5	< 5	< 5	< 2
W-60	10/30/2018	32.0-37.0	< 5	< 5	< 5	< 5	< 2
W-61	10/30/2018	13.0-23.0	< 5	< 5	< 5	< 5	< 2
W-62	11/1/2018	19.0-24.0	**48**	1.9	< 1	< 1	< 1
W-63	10/31/2018	37.0-42.0	< 5	< 5	< 5	< 5	< 2
W-64	11/1/2018	21.0-31.0	1.5	< 1	< 1	< 1	< 1
W-65	10/31/2018	26.5-31.5	**210**	**93**	< 5	< 5	< 2
W-66	10/31/2018	12.0-22.0	**66**	< 5	< 5	< 5	< 2
W-67	11/1/2018	21.0-31.0	**41**	**8.4**	1.7	< 1	< 1
W-68	11/6/2018	13.0-18.0	**130**	2.7	< 1	< 1	< 1
MCL			5	5	70	100	2

Notes: NS - not sampled.
All Laboratory concentrations are displayed in µg/L.
Bold values exeed maximum concentration levels (MCL).

Source: 2019 AECOM CVOC Assessment Report

2019 AECOM Preliminary Human Health Risk Assessment

In 2019, CFFF requested AECOM to update the HHRA, previously completed in 2014 as described above, to assure there was no public, health, and safety impact from historic plant operations using data collected during Phase I of the RI. The Preliminary HHRA (AECOM, 2019b) comprised the initial steps of the HHRA and provided conservative screenings of recent data collected on and in the vicinity of the CFFF property. The chemicals initially identified as preliminary COPCs based on their exceedance of conservative screening values included VOCs, SVOCs, inorganics, and radionuclides in groundwater. Gross alpha and gross beta were retained as preliminary COPCs in soil, vegetation, sediment, and fish because they had no established screening values for protection of human health in these media.

Conservative groundwater screening levels (EPA Regional Screening Level for Tap Water) were exceeded, but these levels do not consider that groundwater is not used for drinking water purposes currently or will likely be used in the future. In addition, five of the volatile groundwater COPCs were identified as vapor intrusion COPCs in groundwater for a hypothetical residential exposure scenario. These scenarios were to be further evaluated to calculate the cancer risk or noncancer hazard they may pose based on reasonable maximum estimates of concentrations and potential exposures at the site in the BRA.

2019 Westinghouse Soil Baseline Activity Statistical Analysis

In 2017, CFFF personnel performed extensive environmental surface soil sampling to characterize the baseline or background radiation content in soil. Surface soil samples were collected at 82 locations along the CFFF property boundary and sent to a 3rd party environmental analytical laboratory, GEL Laboratories (GEL), for analysis by gross alpha, gross beta, and isotopic uranium (alpha spectroscopy)

The data was summarized in a report titled *CFFF Soil Baseline Activity Statistical Analysis* (Westinghouse, 2019). The report includes the sample locations and statistical analysis of the laboratory results.

The average alpha soil background activity was 22.5 picocuries per gram (pCi/g), and the average beta background activity was 22.8 pCi/g. The background activities for the summation of all U isotopes analyzed by alpha spectroscopy ranged from 1.16 to 4.41 pCi/g total U. The report concluded that the average totalized U activity of background soil sample result was dependent on the moisture content of the sample. This document provided the background subtraction value for soil samples that exceed screening levels. Additionally, the uncertainty associated with each background subtraction was included to provide a basis for confidence statements, as needed. A copy of this report is included below.

8.1 Appendix 1: Sampling Diagram



Source: 2019 Westinghouse Soil Baseline Activity Statistical Analysis

2020 Westinghouse Tc-99 Source Investigation Report

As part of its nuclear fuel production process, the CFFF uses U feedstock provided by customers in the form of UF_6 or UN. Within the feedstock, the component Tc-99 exists in residual quantities as explained below.

Tc-99 is a nuclear fission product of U. While it occurs naturally in tiny amounts within the earth's crust, it is primarily human-made and produced during nuclear reactor operations where U is irradiated with neutrons. Tc-99 was introduced into the commercial nuclear fuel cycle in 1956 when high-enriched U from U.S. Government military reactors was re-processed (e.g., down-blended) into low-enriched U fuel. Reprocessed U was used in the commercial nuclear fuel cycle until 1977; due to residual impacts, Tc-99 remains in the nuclear fuel cycle to this day.

Tc-99 is a beta particle emitter. For CFFF, gross beta concentrations in groundwater are an indication of the potential presence of Tc-99. In past groundwater well sampling and investigation, CFFF has seen an indication of the potential presence of Tc-99 (elevated gross beta) in some groundwater wells near plant operations and in the Gator Pond. These indications are more than 0.6 miles from the nearest site boundary. In 2018, CFFF began direct measurement of Tc-99 in all groundwater wells and surface water to fully characterize any potential impact.

From 2018 to the present, groundwater from two monitoring wells (W-6 and W-11) have exceeded the MCL for Tc-99. Review of environmental groundwater data collected at CFFF shows that gross beta concentrations were present in surficial aquifer groundwater monitoring wells beginning in the 1980s when the monitoring wells were first installed.

In 2020, CFFF conducted a Tc-99 source investigation that focused on the most likely sources of Tc-99 in liquid streams and process solids that could have the potential to contact the environment.

Residual quantities of Tc-99 were identified in the aqueous U manufacturing process stream. The highest Tc-99 concentration identified during this investigation sampling was 449 pCi/L, which is approximately 1/5th of the Tc-99 concentrations in groundwater from monitoring wells W-6 and W-11. The report concludes that the impact of Tc-99 in the environment occurred sometime in the past and that no significant contributions of Tc-99 impact to groundwater are presently occurring. Current site operations do not have the potential to introduce Tc-99 into the environment above its groundwater MCL (900 pCi/L).

The results of the investigation are presented in the *Technetium-99 Source Investigation Report* (Westinghouse, 2020a). Pertinent excerpts from this report are included below.

Table 1 – Phase I Sample Locations

SAMPLE DESCRIPTION	SAMPLE LOCATION	FIGURE 1 SAMPLE ID	SAMPLE MEDIA
Contaminated Sump	T-1187/T-1189	I-1	Liquid
Wastewater from Incinerator / SOLX Aqueous Waste	T-1148/T-1149	I-2	Liquid
Solution from Conversion	T-1160B/C	I-3	Liquid
Solution from Cylinder Recertification	T-1160A	I-4	Liquid
Waterglass wastewater	T-1166	I-5	Liquid
East Lagoon	Lagoon sludge and surrounding soil	I-6	Solid

The East Lagoon has been previously identified as an area of interest, and closure of the East Lagoon is planned to be completed in 2021. While Tc-99 was identified in one area of the lagoon sludge as described in the *East Lagoon Characterization Report* included in **Attachment 3**, it is not believed that current East Lagoon operations are an ongoing source of Tc-99. As part of this Work Plan, additional samples (sludge and soil) in the East Lagoon were collected to bound the previously identified Tc-99 area and to determine if any soil potentially contained Tc-99 in the surrounding area. Additional assessment of the soils beneath the East Lagoon liner will be completed once the lagoon is emptied and the liner is removed as part of closure activities.

Table 2 provides the Phase II sample locations of the liquid and solid process streams that are down stream of the processes believed to be potential sources of Tc-99. These locations were sampled after laboratory analysis confirmed the presence of Tc-99 in the associated Phase I process stream.

Table 2 – Phase II Sample Locations

SAMPLE DESCRIPTION	SAMPLE LOCATION	FIGURE 1 SAMPLE ID	SAMPLE MEDIA
Solution from Conversion	5 product lines, before and after bag filters(FL-x12A/B); V-1005A/B	II-1; II-2	Liquid
Scrap Cage Monitor Discharge	Scrap cage before Q-tank	II-3	Liquid
West II Lagoon	Grab sample from surface of lagoon	II-4	Liquid
Recycled Ammonia	T-19, T-20	II-5	Liquid
Waterglass Cake	Grab sample from available solids	II-6	Solid
Dewatering Plant Solids	Grab sample from available solids	II-7	Solid
CaF_2 Pile	Grab sample from CaF_2 pile	II-8	Solid

Analytical Laboratory

All samples were logged on a Chain of Custody form, stored in a sample cooler, and sealed and secured when not in the custody of the sampling crew. GEL Laboratories, LLC, was utilized for the analysis and has National Environmental Laboratory Accreditation Program (NELAP) certification, as well as all appropriate SCDHEC certifications. The analytical laboratory is capable of achieving reporting limits appropriate for characterization. The laboratory data reports contain complete documentation of the laboratory's interaction with each sample, including a case narrative, descriptions of the analyses performed, the analytical methods used, and a description of the laboratory's internal QC review process. The analytical laboratory reports are provided in **Attachment 2**.

Source: 2020 Westinghouse Tc-99 Source Investigation Report

Radiological Sample Results

The Phase I Liquid sample results are provided in Table 3.

Table 3 – Phase I Liquid Sample Results

Sample #	Sample ID	Sample Description	Gross Analyte Activity (pCi/L)				Tc-99 / U-235 Ratio
			U-234	U-235	U-238	Tc-99	
1	T-1166	Waterglass wastewater	95.2	5.1	15.5	271.0	53.0
2	T-1160A	Solution from Cylinder Recertification	23,700.0	1,070.0	3,590.0	305.0	0.29
3	T-1160B	Solution from Conversion	50,100.0	2,850.0	8,300.0	377.0	0.13
4	T-1149	Wastewater from Incinerator / SOLX Aqueous Waste	61,500.0	2,800.0	8,710.0	48.7	0.02
5	T-1189	Contaminated Sump	2,050.0	117.0	339.0	4.7	0.04

Tc-99 was identified in the greatest quantities in the liquid streams of the Waterglass wastewater, the Cylinder Recertification process solution, and the T-1160B Conversion process line. A much lower Tc-99 concentration was identified in wastewater from the Incinerator and Solvent Extraction (SOLX) aqueous waste stream, while the Tc-99 identified in the Contaminated Sump liquid was insignificant. It is also important to examine the relationship between Tc-99 and U concentrations in the samples.

Since it is known that Tc-99 arrives at CFFF in UF_6 cylinders or as UN, it is anticipated to identify U with Tc-99 in the liquid stream from cylinder recertification. This liquid stream consists of the water used to hydrostatically test the cylinders. It is also anticipated to identify Tc-99 in the Conversion process line, as the U fuel stock feed material is expected to contain Tc-99, and there has been little separation of U from the liquid stream. The liquid stream from Conversion and the liquid stream from Cylinder Recertification are both fed to the Waterglass process. The Waterglass process removes residual U in the form of Waterglass 'cake' and the wastewater is sent for ammonia recovery. The Waterglass wastewater is representative of the combined wastewaters from both Conversion and Cylinder Recertification.

It is also reasonable to identify lower levels of Tc-99 in the Incinerator and SOLX aqueous waste stream due to the expected dilution of the aqueous stream at this point. Also, the Contaminated Sump sample indicates that any U present is likely the result of superficial U within the plant interior (e.g. solid U powder or particles) that has become suspended in liquid (e.g. from housekeeping or mopping of areas where loose material is present), as no significant Tc-99 has been identified in this waste stream.

Phase I solid sampling focused on the East Lagoon. Previous East Lagoon Characterization sampling had identified Tc-99 in the sludge of the East Lagoon in one small area. The *East Lagoon Characterization Report* is provided in **Attachment 3**. Of the 16 East Lagoon characterization sample locations, Tc-99 was identified in only one sample. It is reasonable to identify Tc-99 in the lagoon sludge due to the high organic content of the material, but the identification of Tc-99 in only one of 16 samples indicates that the Tc-99 is isolated. Phase I sampling was performed to delineate the area of Tc-99 impacted sludge. Soil samples were also collected in the area immediately adjacent to the corner of the East Lagoon where Tc-99 was originally identified in the single sludge sample. The analytical results are summarized in Table 4.

Source: 2020 Westinghouse Tc-99 Source Investigation Report

Table 4 – Phase I Solid Sample Results

Sample #	Sample ID	Sample Description	Gross Analyte Activity (pCi/g)				Tc-99 / U-235 Ratio
			U-234	U-235	U-238	Tc-99	
6	EL-S-A	East Lagoon Sludge Follow up	728.0	37.7	155.0	203.0	5.38
7	EL-S-B	East Lagoon Sludge Follow up	1,360.0	61.2	262.0	52.4	0.86
8	EL-S-C	East Lagoon Sludge Follow up	11,100.0	502.0	2,100.0	19.5	0.039
9	EL-SO-D-2'	Soil adjacent to East Lagoon	1.9	0.1	1.6	0.0	0.00
10	EL-SO-D-4'	Soil adjacent to East Lagoon	0.8	0.0	0.5	0.0	0.00
11	EL-SO-D-6'	Soil adjacent to East Lagoon	0.8	0.0	0.8	1.1	25.3
12	EL-SO-E-2'	Soil adjacent to East Lagoon	1.7	0.0	0.8	0.0	0.00
13	EL-SO-E-4'	Soil adjacent to East Lagoon	3.0	0.1	1.4	0.9	6.70
14	EL-SO-E-6'	Soil adjacent to East Lagoon	3.4	0.3	1.5	0.0	0.00
15	EL-SO-F-2'	Soil adjacent to East Lagoon	2.7	0.1	1.1	0.3	3.28
16	EL-SO-F-4'	Soil adjacent to East Lagoon	1.0	0.1	0.6	0.0	0.00
17	EL-SO-F-6'	Soil adjacent to East Lagoon	0.7	0.0	0.7	0.0	0.00

Elevated Tc-99 was identified in one follow up sludge bounding sample, in residual quantities in the remaining two sludge bounding samples, and no Tc-99 was identified in the surrounding soil above the laboratory detection limit. These data, combined with the data from the *East Lagoon Characterization Report* (**Attachment 3**), confirms that the East Lagoon is not a significant source of Tc-99 in the environment. It is also reasonable to presume that the Tc-99 identified in the small area of the East Lagoon originated from the same historical surface release that introduced Tc-99 into the environment.

The Phase I sample of the Solution from Conversion confirms that Tc-99 is in fact present in the U stock feed material. The Phase II Liquid sampling focused on the Conversion lines, both before and after the bag filters, as well as other areas of interest such as the Scrap Cage discharge, the West II Lagoon surface water, and the recycled Ammonia lines that are fed back into the Conversion process. Phase II Liquid sampling was designed to detect potential differences in Tc-99 concentrations across the manufacturing process by sampling individual conversion lines, and subsequent processes. The results of this sampling are summarized in Table 5.

Source: 2020 Westinghouse Tc-99 Source Investigation Report

Table 5 – Phase II Liquid Sample Results

Sample #	Sample ID / Description	Gross Analyte Activity (pCi/L)				Tc-99/U-235 Ratio
		U-234	U-235	U-238	Tc-99	
18	CL-1 Before	513,000	21,700	75,100	58.7	0.003
19	CL-1 After	32,900	1,600	5,480	50.1	0.031
20	CL-2 Before	282,000	12,900	32,900	449.0	0.035
21	CL-2 After	96,400	4,200	11,100	73.9	0.018
22	CL-3 Before	367,000	16,800	50,700	438.0	0.026
23	CL-3 After	30,900	1,390	4,000	16.4	0.012
24	CL-4 Before	174,000	9,220	28,300	142.0	0.015
25	CL-4 After	25,900	1,170	4,190	63.7	0.054
26	Scrap Cage Monitor Discharge	20,600	1,030	3,400	201.0	0.20
27	W2	3.9	0.6	1.0	96.0	157
28	T-19 Ammonia	0.1	0.0	0.1	13.4	N/A
29	T-20 Ammonia	0.2	0.0	0.2	0.0	N/A

The wastewater stream from the Conversion lines passes through a set of bag filters before it is sent to Waterglass. Samples were collected before and after these bag filters (samples 18-25). The bag filters capture fine U particulate, which is later recovered by nitric acid washing in the Scrap Cage. The wastewater from the acid washing process in the Scrap Cage is also sent to Waterglass (sample 26). These processes are expected to contain Tc-99 originating from the UF_6 feedstock.

After processing in Waterglass, wastewater is fed to the stills to recover ammonia that is reused in the Conversion process. The still bottoms are transferred to the West Lagoons (W2, sample 27). Lower Tc-99 concentrations are reported here due to mixing with large volumes of water in the lagoon. Recycled Ammonia is recovered from the Waterglass wastewater and reused in the Conversion process (T-19, sample 26, and T-20, sample 29).

The Phase II solid samples focused on the solid products removed from the Phase I and Phase II liquids, specifically the Waterglass cake, the Solid CaF_2 removed from the West II Lagoon, and the Dewatering Sludge. Phase II solid sampling was designed to determine if some Tc-99 may possibly be retained in the manufacturing process solids. The results of this sampling are summarized in Table 6.

Table 6 – Phase II Solid Sample Results

Sample #	Sample ID / Description	Gross Analyte Activity (pCi/g)				Tc-99/U-235 Ratio
		U-234	U-235	U-238	Tc-99	
30	WG-D46035	523,000	22,300	74,700	22.1	0.001
31	Calcium Fluoride	16.3	0.7	2.4	0.5	0.67
32	Sludge Dewatering D45671	3,510	156	507	3.5	0.02

The Waterglass Cake (sample 30), and the Dewatering Plant Solids (sample 31) represent the solid material that is extracted during the U recovery process. The CaF_2 is the solid material that is dredged from the West II Lagoon (sample 31). No significant Tc-99 was identified in any of the Phase II solid

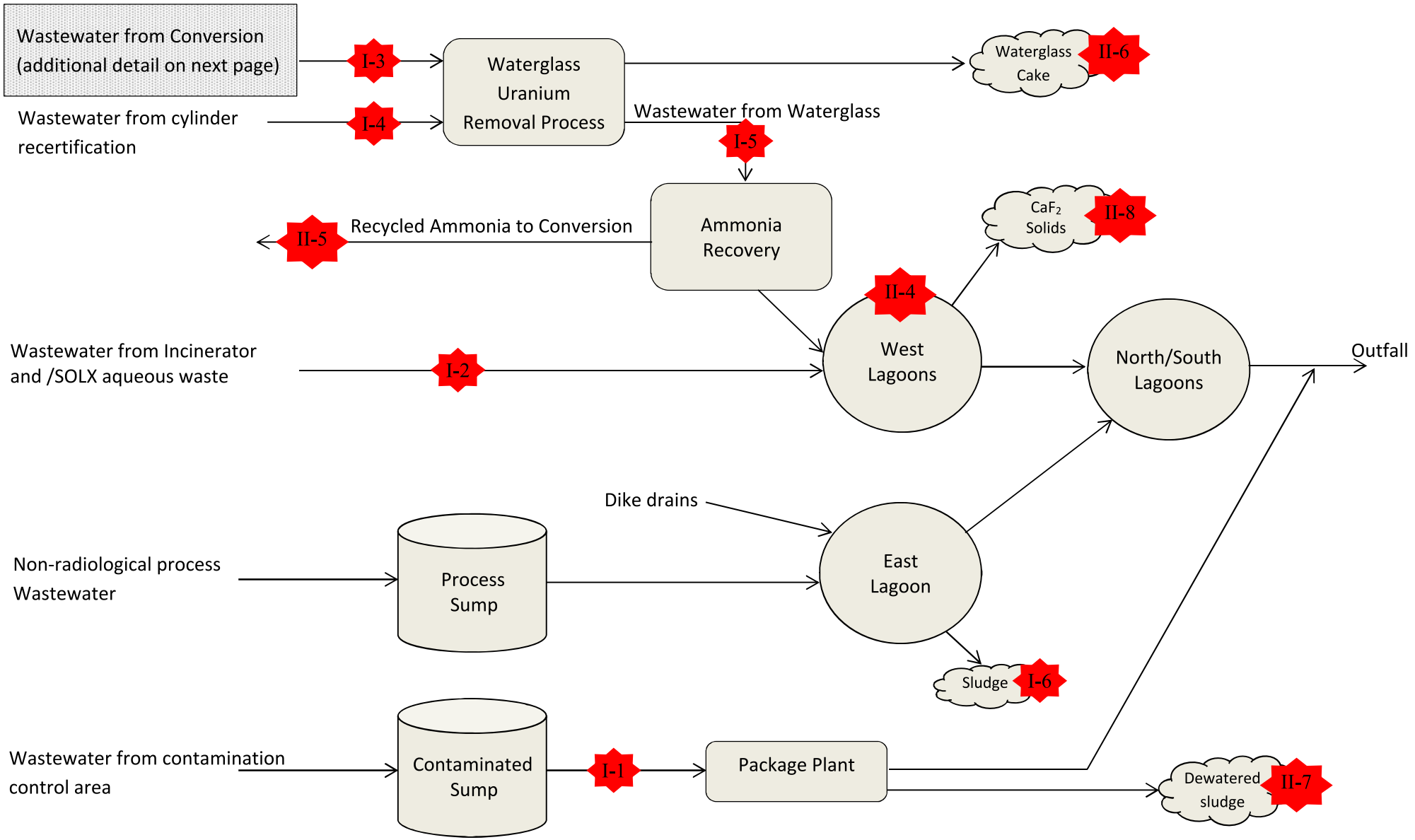
Source: 2020 Westinghouse Tc-99 Source Investigation Report

Figure 1

Aqeuous Process Flow Map

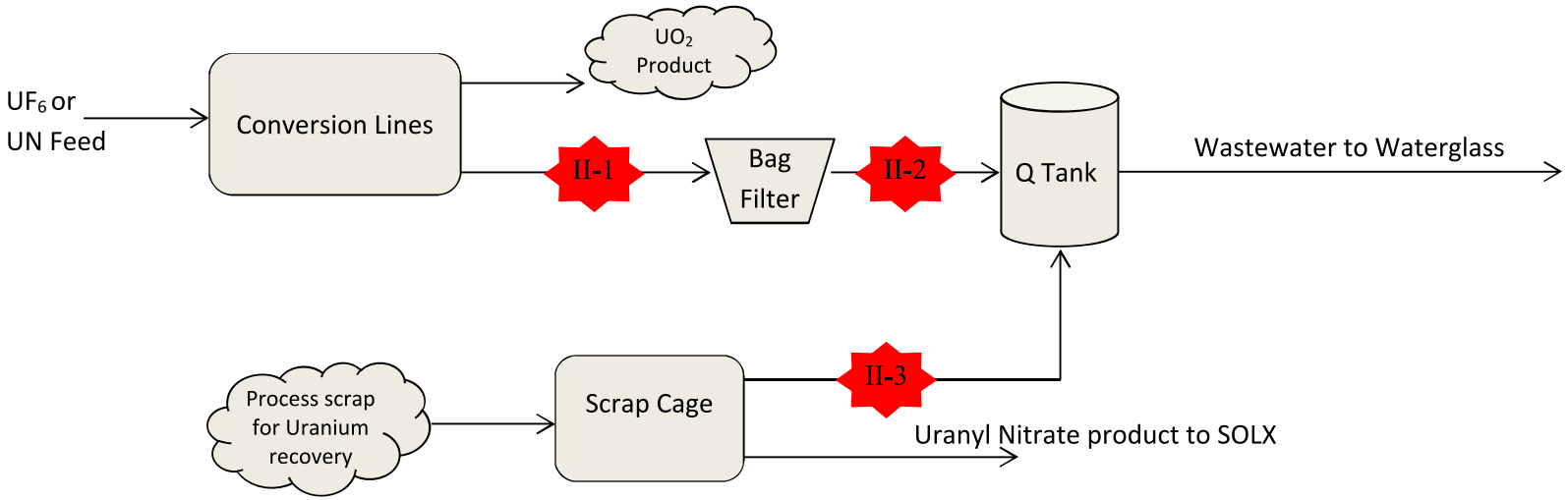
Source: 2020 Westinghouse Tc-99 Source Investigation Report

Process Map and Sample Locations



Source: 2020 Westinghouse Tc-99 Source Investigation Report

Process Map and Sample Locations



Source: 2020 Westinghouse Tc-99 Source Investigation Report

2020 AECOM HF Spiking Station #1 Assessment Report

HF Spiking Station #1 (HFSS #1) is located adjacent to HFSS #2 within the Chemical Area operable unit. Both spiking stations use the same process described in **Section 1.5.17**. To assess whether operations of HFSS#1 resulted in subsurface impacts similar to those found during the 2018 assessment beneath HFSS#2, CFFF had discussions with DHEC and decided to voluntarily investigate subslab soil quality beneath HFSS #1.

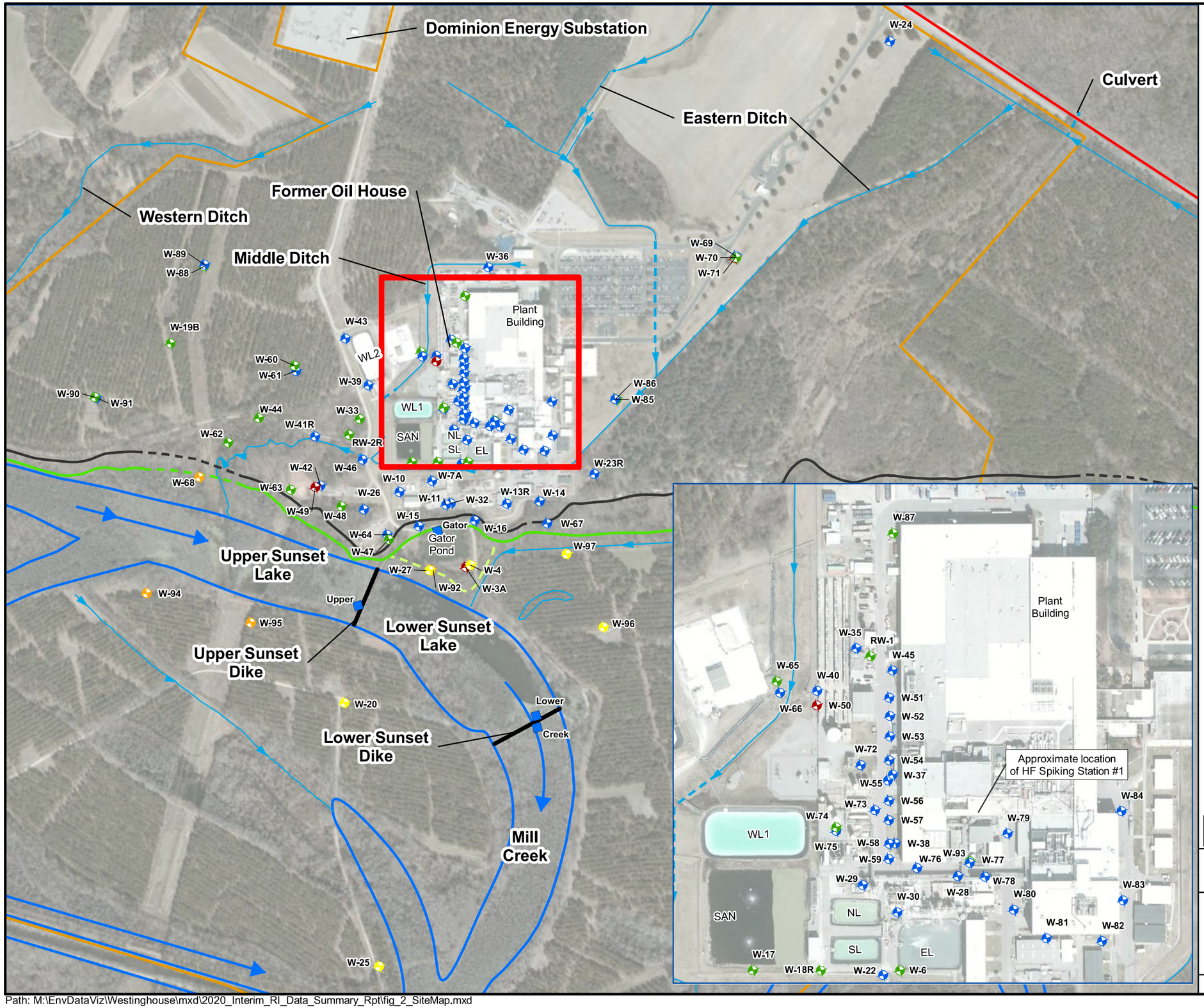
Field investigation activities were performed in May 2020 and included the installation of five hand auger borings to collect samples from beneath the HFSS #1 footprint and two angled hand auger borings to collect soil samples from adjacent to the plant buildings footer near HFSS #1. Composite soil samples were collected from five intervals, except for borings where hand auger refusal was encountered at shallower depths. Soil samples were analyzed for percent moisture, fluoride, nitrate, isotopic U, Tc-99, and pH.

Soil from four borings contained U above the site-specific remediation action level, as documented in the facility's *Procedure RA-433 Environmental Remediation Revision 1* (Westinghouse, 2020b), with the greatest impact encountered in soil samples from two boreholes at depths ranging from 2 feet below slab surface (bss) to 8 feet bss. Soil impact within two boreholes increased from the surface to the greatest impact in the 4-6 foot sampling interval and decreased thereafter. The floor (slab surface) of the manufacturing plant is elevated 4 feet above ground surface.

The report concluded:

- Some of the soil below the concrete floor within the HF Spiking Station #1 area is impacted with fluoride, nitrate, and U, and has areas of low pH (<5 standard units).
- In general, surficial soils (0-2 feet bss) has minimal impact from the operations of HFSS #1.
- Soil from four borings exceeds the site-specific remedial action levels.

The report recommended performing evaluations for dose/risk under an industrial worker scenario, potential for off-site impacts if the soil is left in place, and an assessment of site conditions as part of the decision making process. The results of the investigation are presented in the *HF Spiking Station #1 Assessment Report* (AECOM, 2020). Pertinent excerpts from this report are included below.



Legend

- Ditch
- Culvert
- Mill Creek Flow Direction
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon I
- WL2 West Lagoon II

Groundwater Monitoring Wells

- Upper Surficial Aquifer
- Lower Surficial Aquifer
- Black Mingo Aquifer
- Upper Floodplain Well
- Lower Floodplain Well

- Mill Creek
- Property Line
- SCRDI Bluff Road (Superfund Site)
- Dike Location
- Staff Gauge Location
- Top of Bluff
- Inferred Top of Bluff
- Bottom of Bluff
- Inferred Bottom of Bluff
- Secondary Bluff Area

0 300 600 Feet

1:7,200

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

Source: 2020 AECOM HF Spiking Station #1 Assessment Report

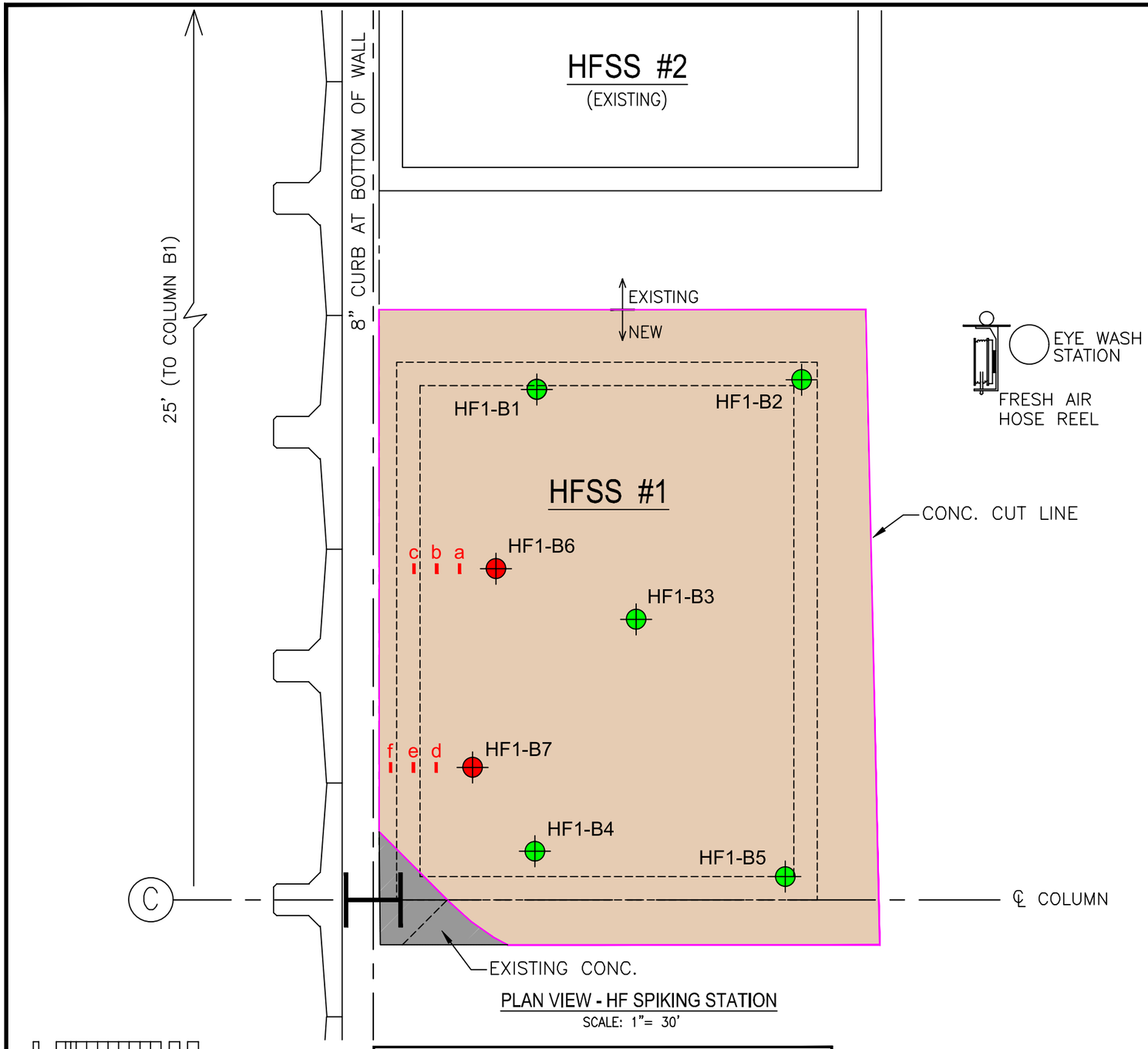
AECOM
101 Research Drive
Columbia, SC 29203
T: (803) 254-4400 F: (803) 771-6676

Site Map

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

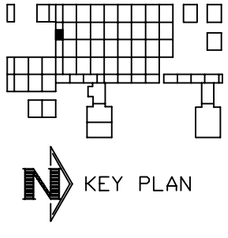
PROJECT NO.	PREPARED BY:	DATE:	
60633543	CCS	July 2020	**FIGURE 2**

Path: M:\EnvDataViz\Westinghouse\mxd\2020_Interim_RI_Data_Summary_Rpt\fig_2_SiteMap.mxd



PLAN VIEW - HF SPIKING STATION

SCALE: 1"= 30'



LEGEND - SOIL SAMPLING

SYMBOL	DESCRIPTION
	REMOVED DIKE OUTLINE, HF SPIKING STATION 1
	CONCRETE REMOVAL FOR REPLACEMENT SPIKING STATION
	SOIL SAMPLING LOCATIONS FOR SCDHEC WORK PLAN
	SOIL SAMPLING LOCATIONS FOR STRUCTURAL ENGINEERING, (SAMPLES COLLECTED @ AN ANGLE)

Source: 2020 AECOM HF Spiking Station #1 Assessment Report

0 30' 60'

GRAPHIC SCALE

Sample Data Collection Results

HF1 - B1 Sample Data — 05-04-2020

Depth BSS ft.	Corrosivity SU	Fluoride mg/kg	Nitrate mg/kg	Technetium-99 pCi/g	Uranium-233/234 pCi/g	Uranium-235/236 pCi/g	Uranium-238 pCi/g
1–2	4.81	28.3	180	0.447 U	13.2	0.828	3.22
2–4	4.02	706	707	0.88 U	8,310	465	1,620
4–6	3.88	1,500	1,240	0.0772 U	10,100	436	1,680
6–8	4.03	936	971	0.871 U	4,500	252	802
8–10	4.26	96.4	303	0.656 U	1,440	79.4	263

HF1 - B2 Sample Data — 05-05-2020

Depth BSS ft.	Corrosivity SU	Fluoride mg/kg	Nitrate mg/kg	Technetium-99 pCi/g	Uranium-233/234 pCi/g	Uranium-235/236 pCi/g	Uranium-238 pCi/g
1–2	6.38	1.28	76.5	0	4.65	0.455	1.39
2–4	5.16	0.623 J	90.8	0	0.847	0.107 U	0.785
4–6	6.05	1.09	94	0	1.5	0.0943 U	0.955
6–8	5.98	1.1	45.9	0.00658 U	0.926	0.0131 U	0.218
8–10	6.17	0.8 J	23.4	0	1.52	0.0407 U	0.421

HF1 - B3 Sample Data — 05-05-2020

Depth BSS ft.	Corrosivity SU	Fluoride mg/kg	Nitrate mg/kg	Technetium-99 pCi/g	Uranium-233/234 pCi/g	Uranium-235/236 pCi/g	Uranium-238 pCi/g
1–2	4.82	6.24	285	0	3.52	0.0795 U	1.13
2–4	4.08	683	589	0	3,510	159	582
4–6	3.96	1,020	1,290	0	5,600	264	948
6–8	4.11	546	700	0	2,790	171	632
8–10	4.25	343	398	0	2,600	139	636

HF1 - B4 Sample Data — 05-06-2020

Depth BSS ft.	Corrosivity SU	Fluoride mg/kg	Nitrate mg/kg	Technetium-99 pCi/g	Uranium-233/234 pCi/g	Uranium-235/236 pCi/g	Uranium-238 pCi/g
1–2	5.46	65.8	69.3	0	563	29	110
2–4	3.97	335	70.4	0.171 U	511	22.1	105
4–5.33	3.29	359	82.5	2.6 U	700	31.9	139

HF1 - B5 Sample Data — 05-06-2020

Depth BSS ft.	Corrosivity SU	Fluoride mg/kg	Nitrate mg/kg	Technetium-99 pCi/g	Uranium-233/234 pCi/g	Uranium-235/236 pCi/g	Uranium-238 pCi/g
1–2	5.07	1.55	232	0	9.36	0.396	2.56
2–4	4.39	135	288	0	1,520	82.8	246
4–6	4.28	21.7	440	0	1,250	50.9	224
6–8	5.67	1.11	150	0	9.67	0.587	1.61
8–10	4.35	0.879 J	54.3	0	2.85	0.294	1.02

HF1 - B7 Sample Data (Sample collected @ angle - a,b,c) — 05-06-2020

Depth BSS ft.	Corrosivity SU	Fluoride mg/kg	Nitrate mg/kg	Technetium-99 pCi/g	Uranium-233/234 pCi/g	Uranium-235/236 pCi/g	Uranium-238 pCi/g
"a" 0–1.90	8.09	N/S	N/S	N/S	N/S	N/S	N/S
"b" 1.90–3.79	6.35	5.67	14.5	0	403	19.3	78.5
"c" 3.79–5.37	6.22	43.8	38.0	0	226	9.66	41.6

HF1 - B7 Sample Data (Sample collected @ angle - d,e,f) — 05-06-2020

Depth BSS ft.	Corrosivity SU	Fluoride mg/kg	Nitrate mg/kg	Technetium-99 pCi/g	Uranium-233/234 pCi/g	Uranium-235/236 pCi/g	Uranium-238 pCi/g
"d" 0–1.88	4.72	40.4	127	0	2,140	93.5	313
"e" 1.88–3.75	4.41	158	178	3.15 U	2,020	92	355
"f" 3.75–5.08	5.21	121	83	0.627 U	799	46.5	158
5.08–REFUSAL	4.58	N/S	N/S	N/S	N/S	N/S	N/S

REMEDIAL ACTION SCREENING LEVEL	Fluoride mg/kg	Nitrate mg/kg	Technetium-99 pCi/g	Uranium-233/234 pCi/g	Uranium-235/236 pCi/g	Uranium-238 pCi/g
	3,100	130,000	88,400	3,310	39	179

NOTES:
BSS - BELOW SOIL SURFACE
FT. - FEET
SU - STANDARD UNITS
mg/kg - MILLIGRAM PER KILOGRAM
pCi/g - PICOCURIES PER GRAM
U - NOT DETECTED ABOVE THE METHOD DETECTION CONCENTRATION
N/S - NOT SAMPLED
- SHADED CELLS EXCEED THE REMEDIAL ACTION SCREENING LEVEL
- GEL LABORATORY WORK ORDERS : 510581, 510757, 510807

AECOM
101 Research Drive
Columbia, South Carolina 29203
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www.AECOM.com

Figure 3

HF Spiking Station #1
Soil CoC Map

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY: CAV	CHECKED BY: JG	APPROVED BY: JG
60533543	DATE: JULY 15, 2020	DATE: JULY 15, 2020	SHEET: 1 OF 1

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Table 1
Westinghouse Columbia Fuel Fabrication Facility
HF Spiking Station #1
Soil Analytical Results

			Analyte	pH	Fluoride	Nitrate	Technetium-99	Uranium-233/234	Uranium-235/236	Uranium-238
			Unit	SU	mg/kg	mg/kg	pCi/g	pCi/g	pCi/g	pCi/g
Sample ID	Sample Depth	Depth BSS	Sample Date							
HF1-B1-(1-2)	1 - 2 ft	1 - 2 ft	5/4/2020	**4.81**	**28.3**	**180**	0.447 U	**13.2**	**0.828**	**3.22**
HF1-B1-(2-4)	2 - 4 ft	2 - 4 ft	5/4/2020	**4.02**	**706**	**707**	0.88 U	**8,310**	**465**	**1,620**
HF1-B1-(4-6)	4 - 6 ft	4 - 6 ft	5/4/2020	**3.88**	**1500**	**1240**	0.0772 U	**10,100**	**436**	**1,680**
HF1-B1-(6-8)	6 - 8 ft	6 - 8 ft	5/4/2020	**4.03**	**936**	**971**	0.871 U	**4,500**	**252**	**802**
HF1-B1-(8-10)	8 - 10 ft	8 - 10 ft	5/4/2020	**4.26**	**96.4**	**303**	0.656 U	**1,440**	**79.4**	**263**
HF1-B2-(1-2)	1 - 2 ft	1 - 2 ft	5/5/2020	**6.38**	**1.28**	**76.5**	0	**4.65**	**0.455**	**1.39**
HF1-B2-(2-4)	2 - 4 ft	2 - 4 ft	5/5/2020	**5.16**	**0.623 J**	**90.8**	0	**0.847**	0.107 U	**0.785**
HF1-B2-(4-6)	4 - 6 ft	4 - 6 ft	5/5/2020	**6.05**	1.09	**94**	0	**1.5**	0.0943 U	**0.955**
HF1-B2-(6-8)	6 - 8 ft	6 - 8 ft	5/5/2020	**5.98**	1.1	**45.9**	0.00658 U	**0.926**	0.0131 U	**0.218**
HF1-B2-(8-10)	8 - 10 ft	8 - 10 ft	5/5/2020	**6.17**	**0.8 J**	**23.4**	0	**1.52**	0.0407 U	**0.421**
HF1-B3-(1-2)	1 - 2 ft	1 - 2 ft	5/5/2020	**4.82**	**6.24**	**285**	0	**3.52**	0.0795 U	**1.13**
HF1-B3-(2-4)	2 - 4 ft	2 - 4 ft	5/5/2020	**4.08**	**683**	**589**	0	**3,510**	**159**	**582**
HF1-B3-(4-6)	4 - 6 ft	4 - 6 ft	5/5/2020	**3.96**	**1020**	**1290**	0	**5,600**	**264**	**948**
HF1-B3-(6-8)	6 - 8 ft	6 - 8 ft	5/5/2020	**4.11**	**546**	**700**	0	**2,790**	**171**	**632**
HF1-B3-(8-10)	8 - 10 ft	8 - 10 ft	5/5/2020	**4.25**	**343**	**398**	0	**2,600**	**139**	**636**
HF1-B4-(1-2)	1 - 2 ft	1 - 2 ft	5/6/2020	**5.46**	**65.8**	**69.3**	0	**563**	**29**	**110**
HF1-B4-(2-4)	2 - 4 ft	2 - 4 ft	5/6/2020	**3.97**	**335**	**70.4**	0.171 U	**511**	**22.1**	**105**
HF1-B4-(4-5.33)	4 - 5.33 ft	4 - 5.33 ft	5/6/2020	**3.29**	**359**	**82.5**	2.6 U	**700**	**31.9**	**139**
HF1-B5-(1-2)	1 - 2 ft	1 - 2 ft	5/6/2020	**5.07**	**1.55**	**232**	0	**9.36**	**0.396**	**2.56**
HF1-B5-(2-4)	2 - 4 ft	2 - 4 ft	5/6/2020	**4.39**	**135**	**288**	0	**1,520**	**82.8**	**246**
HF1-B5-(4-6)	4 - 6 ft	4 - 6 ft	5/6/2020	**4.28**	**21.7**	**440**	0	**1,250**	**50.9**	**224**
HF1-B5-(6-8)	6 - 8 ft	6 - 8 ft	5/6/2020	**5.67**	1.11	**150**	0	**9.67**	**0.587**	**1.61**
HF1-B5-(8-10)	8 - 10 ft	8 - 10 ft	5/6/2020	**4.35**	**0.879 J**	**54.3**	0	**2.65**	**0.294**	**1.02**
HF1-B6-(0-2)	0 - 2 ft	0-1.90 ft	5/6/2020	**8.09**	NA	NA	NA	NA	NA	NA
HF1-B6-(2-4)	2 - 4 ft	1.90-3.79 ft	5/6/2020	**6.35**	**5.67**	**14.5**	0	**403**	**19.3**	**78.5**
HF1-B6-(4-5.67)	4 - 5.67 ft	3.79-5.37 ft	5/6/2020	**6.22**	**43.8**	**38**	0	**226**	**9.66**	**41.6**
HF1-B7-(0-2)	0 - 2 ft	0-1.88 ft	5/6/2020	**4.72**	**40.4**	**127**	0	**2,140**	**93.5**	**313**
HF1-B7-(2-4)	2 - 4 ft	1.88-3.75 ft	5/6/2020	**4.41**	**158**	**178**	3.15 U	**2,020**	**92**	**355**
HF1-B7-(4-5.42)	4 - 5.42 ft	3.75-5.08 ft	5/6/2020	**5.21**	**121**	**83**	0.627 U	**799**	**46.5**	**158**
HF1-B7-REFUSAL	5.42 - 5.42 ft	5.08 ft	5/6/2020	**4.58**	NA	NA	NA	NA	NA	NA
Industrial Use Remedial Action Level					3,100	130,000	89,400	3,310	39	179

Notes:
SU - standard units
mg/kg - milligram per kilogram
pCi/g - picocuries per gram
BSS - below soil surface
ft - feet
U - not detected above the minimum detectible concentration
Shaded cells exceed the remedial action screening level

Source: 2020 AECOM HF Spiking Station #1 Assessment Report

2021 Westinghouse Sanitary Lagoon Sludge Characterization Report

Site sanitary sewage is treated in an extended aeration package plant prior to discharge to the Sanitary Lagoon. The Sanitary Lagoon was installed in 1968 and is not lined. The Sanitary Lagoon is approximately 240 feet (ft) by 240 ft and approximately 6-7 ft deep. Sludge in the Sanitary Lagoon was characterized in 2021 in support of the planned closure of the Sanitary Lagoon.

To characterize the lagoon sludge for removal, the *Sanitary Lagoon Sludge Characterization Work Plan* (Westinghouse, 2021a) was submitted to DHEC in January 2021 and following approval, implemented in June 2021. The intent was for the characterization data to be used to prepare a Closure Plan. The analytical data was also used to identify COPCs that potentially could have impacted soil and groundwater underlying the lagoon.

The Sanitary Lagoon was gridded into five rows and five columns creating 25 grid squares. A total of 26 sludge samples were collected with 25 samples from the middle of each grid square and one sample at the lagoon influent. The samples were collected by pushing a PVC tube into the sludge, sealing the open end, and retrieving the sample. The samples were analyzed for isotopic U, Tc-99, fluoride, nitrate, and ammonia. Five samples were analyzed by the Toxicity Characteristic Leaching Procedure (TCLP) and the EPA's Target Compound List/Target Analyte List.

The laboratory radiological data was compared to the Residential Use Screening Levels and the Industrial Use Screening Levels using the sum of fractions (SOFs) approach. Values less than or equal to 1.0 for SOFs indicated that the screening level was not exceeded and results greater than 1.0 indicated that the SOFs was exceeded. The radiological results were reported in two ways, dried sample activity and moisture included. Based on dried sample activity, the results for all 26 samples exceeded the residential SOFs and 14 samples exceeded the industrial SOFs. However, the report indicated that the dried results did not represent risk to the work force since the lagoon is not dry. Therefore, the report recommended that moisture-included activity results should be considered with respect to the risk evaluation. These results indicated that the residential SOFs was exceeded in the 26 sludge samples, but the industrial SOFs was exceeded in only one sample.

The chemical analytical data was compared to EPA residential and industrial screening levels for fluoride, nitrate, and ammonia. The results indicated that none of the residential and industrial screening levels were exceeded. TCLP results indicated that four of the TCLP constituents were detected at concentrations less than TCLP hazardous waste limits for barium, methyl ethyl ketone, PCE, and TCE. These results were documented in the *Sanitary Lagoon Sludge Characterization Report* (Westinghouse, 2021b).

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Appendix D
Historical Remediation Report Summaries and Excerpts

Historical Remediation Activities

Previous environmental remediation activities were performed beginning in 1998. Brief summaries of these remediation activities are below.

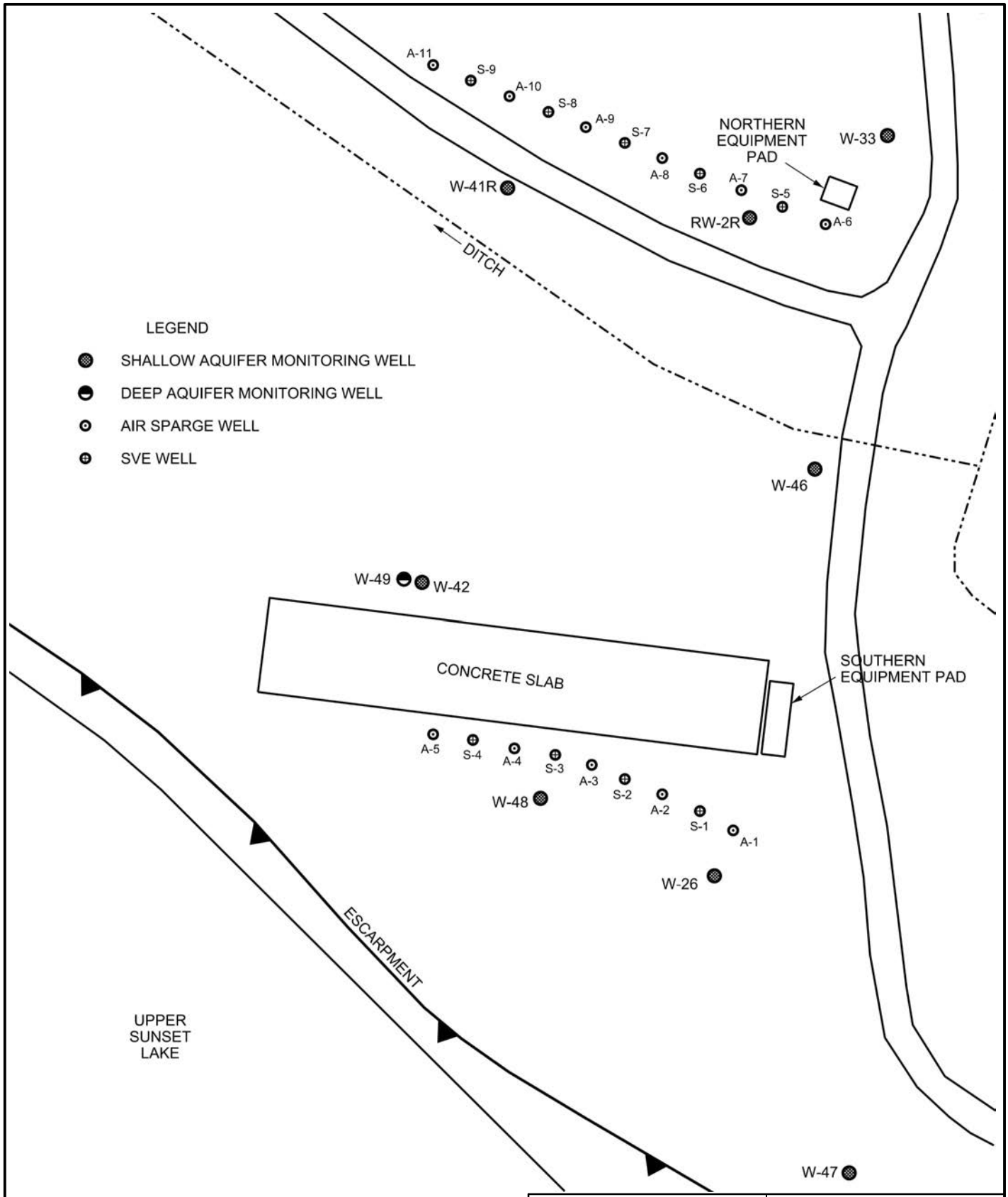
Air Sparge/Soil Vapor Extraction System

An air sparge/soil vapor extraction (AS/SVE) pilot study was conducted in 1996 that indicated AS/SVE technology was effective for removing chlorinated volatile organic compounds (CVOCs) from the shallow aquifer and unsaturated zone. A full-scale AS/SVE system was constructed in 1997 in downgradient areas of the CVOC plume. The system consisted of a southern area of five AS wells and four SVE wells and a northern area of six AS wells and five SVE wells. The locations of these wells are shown below. Monitoring wells W-26, W-42, W-48, and W-49 are located in the southern AS/SVE area, and monitoring wells W-33, RW-2, and W-41 are located in the northern AS/SVE area.

The AS/SVE system blew air into the surficial aquifer at the top of the confining clay. This air migrated upward through groundwater impacted with volatile organic compounds (VOCs). A vacuum was applied to the vadose zone that removed the VOC impacted air from the subsurface which was exhausted through a stack that did not require additional treatment to meet air quality standards.

A system performance evaluation in 2009 (AECOM, 2009) indicated that the AS/SVE system appeared to have reached a plateau phase with reduced efficiency and decreased ability to further reduce VOC concentrations. According to the evaluation, the operation of the system resulted in decreasing CVOC concentrations in groundwater and reduced the estimated total mass in the AS/SVE areas by approximately 76 percent. Estimated mass reduction in the areas influenced by the AS/SVE system was 97 percent in the southern AS/SVE area and 44 percent in the northern AS/SVE area. The mass removal in these areas were likely attributable to air sparging, biodegradation of the CVOCs, and other natural attenuation mechanisms.

The South Carolina Department of Health and Environmental Control (DHEC) agreed to the shutdown of the system in 2011, and it was turned off.



Source: 2009 AECOM, Remediation Performance Evaluation and Application for Groundwater Mixing Zone

AECOM
810 Dutch Square Blvd., Suite 202
Columbia, SC 29210
T: (803) 798-1073 F: (803) 216-0708

AIR SPARGE/SVE SYSTEM LAYOUT

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	DRAWN BY:	DATE:	
60302740	RJS	December 2013	FIGURE 1-4

2019 HF Spiking Station #2 Soil Removal

The data provided in the *HF Spiking Station #2 Assessment Report* (AECOM, 2018) and the *Technical Basis Document – Site-Specific Clean-up for Uranium in Soil at HF Spiking Station #2 at the Westinghouse Columbia Fuel Fabrication Facility (WCFFF)* (Leidos, 2018) concluded that some of the soil below the concrete floor within the Hydrofluoric Acid (HF) Spiking Station #2 (HFSS#2) area was impacted with fluoride, nitrate, uranium (U) and had localized areas of low pH (<5 standard units). Except for soil from borehole HF-B1, the analytes did not indicate impact below 7-9 feet below concrete surface (bcs) within the HFSS#2 footprint. In borehole HF-B1, impacted soil was detected to a depth of 11-12 feet bcs.

Based on the data, WCFFF completed the following:

- Removed impacted soil below the HFSS#2 to a practical excavation depth of approximately 9-12 feet to eliminate risk to WCFFF employees and risk of potential future migration to the groundwater. Soil samples were collected from the bottom of the excavation to confirm completion of the remedial activities.
- Filled the area underneath HFSS#2, where impacted soil was removed with a suitable fill material.
- Disposed of the impacted soil in an approved facility and submitted copies of the waste disposal manifests to DHEC.
- Developed and implemented a conceptual site model to assist the Columbia Fuel Fabrication Facility (CFFF) in developing and implementing monitoring and remediation strategies needed for constituents of potential concern (COPC).

2021 East Lagoon Closure

CFFF uses lined lagoons as part of the wastewater treatment process. The liner in the East Lagoon had reached the end of its useful life, and CFFF decided to close the East Lagoon and conduct the primary wastewater treatment function that the lagoon accomplished in an above ground storage tank. Therefore, the *East Lagoon Closure Plan* (GEL, 2020) was developed to specify the process to accomplish closure. East Lagoon closure was submitted as Addendum 2 of the overall Remedial Investigation being performed under Consent Agreement (CA) CA-19-02-HW.

To characterize the sludge in the East Lagoon, sampling for U, technetium-99 (Tc-99), fluoride, nitrate, and ammonia was conducted in October 2019. The sludge sample analyses were used to develop remediation plans and to inform decisions regarding sludge disposal. East Lagoon Characterization results are summarized in the *Wastewater Treatment Area Operable Unit East Lagoon Characterization Summary Report* dated December 6, 2019 (Westinghouse, 2019e) and in the *East Lagoon Closure Certification* dated September 29, 2021 (GEL, 2021). Remediation plans were developed using the Westinghouse risk-based *Procedure RA-433, Environmental Remediation* (Westinghouse, 2020a).

The remediation strategy began first in 2020 with lagoon dewatering and sludge stabilization, using calcium fluoride and Portland cement. The removed materials (sludge, liners, soil, and debris) were packaged onsite and shipped offsite for disposal at the properly permitted U.S. Ecology landfill in Grandview, Idaho.

To evaluate soil quality below the liner, sub-liner soil sampling was performed at 16 gridded sludge sampling locations and at 10 additional biased locations. Radiological and chemical concentrations of the 26 soil samples were compared to the RUSLs provided in the facility's *Procedure RA-433, Environmental Remediation* (Westinghouse, 2020a). U and Tc-99 concentrations in sub-liner soil exceeded RUSLs but were lower than those identified in the sludge and were below Industrial Use Screening Levels. Chemical constituent concentrations in sub-liner soil were also lower than those identified in the sludge and all but one of the sample concentrations were below the RUSL.

Plans were developed to excavate radiologically impacted soils exceeding the Residential Use Screening Levels (RUSL) to the maximum extent practical considering existing structures or presence of groundwater. The excavation was performed from June 8 through June 30, 2021. The excavation included removal of the Hypalon® and asphalt liners, and excavation of soils exceeding the RUSL around the lagoon perimeter and in the lagoon bottom to the extent practical. Areas where radiological concentrations in the soil did not exceed the RUSL were not excavated.

Upon completion of soil excavation, additional soil sampling and radiological analyses were performed on soils left in-place in areas where excavation depths were below the initial characterization sample depths. The sum of fractions (SOFs) for U and Tc-99 activity exceeded the RUSL in 7 of the 23 soil samples at SOFs ranging from 1.0 to 4.2. These results are stored in the site's decommissioning records and will be used to guide future remediation planning at the time of facility decommissioning. Restoration activities, including placement of clean backfill, grading and site stabilization, were completed in August 2021 and DHEC approval of the closure was received on November 1, 2021 (DHEC, 2021).

The *East Lagoon Closure Certification* (GEL, 2021) is included below.

Westinghouse Electric Company
Nuclear Fuel
Columbia Fuel Fabrication Facility
5801 Bluff Road
Hopkins, South Carolina 29061
USA

Mr. Samuel Jones
Midlands EA Office
State Park Health Center
SC Department of Health and Environmental Control
8500 Farrow Road, Building 12
Columbia, South Carolina 29203

Direct tel: 803.647.3171
Direct 803.695.3964
fax:
e-mail: teaguecj@westinghouse.com
Your ref: NPDES Permit #SC0001848
Our ref: LTR-RAC-21-67

cc:
SCDHEC
Kim Kuhn, Bureau of Land & Waste Management
Crystal Rippy, Bureau of Water
Byron Amick, Bureau of Water
2600 Bull Street
Columbia, SC 29201

cc:
Tom Hutto, GEL
Clark Evers, LEIDOS

cc:
Nancy Parr, Diana Joyner, Brian Pasco

Subject: East Lagoon Closure Certification

September 29, 2021

Please accept the enclosed "East Lagoon Closure Certification," consolidated on Westinghouse's behalf by GEL Engineering.

Once the Department has reviewed the report, Westinghouse would be pleased to schedule the final inspection to achieve final closure of the East Lagoon.

Respectfully,



Cynthia J. Teague
Principal Environmental Engineer
Westinghouse Electric Company, CFFF
803.312.4171 (m)

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September 29, 2021

Mr. Samuel Jones
Midlands EA Office
State Park Health Center
SC Department of Health and Environmental Control
8500 Farrow Road, Building 12
Columbia, South Carolina 29203

Re: **East Lagoon Closure Certification**
Westinghouse Electric Company, LLC
Columbia Fuel Fabrication Facility
NPDES Permit #SC0001848
Richland County, South Carolina

Dear Mr. Jones:

In Byron Amick's letter dated October 14, 2020, Westinghouse received *East Lagoon Closure Plan* Approval # LOA-005497. Approval of the closure plan included seven conditions. Westinghouse implemented the closure activities, as discussed below, except for the final inspection by personnel from the regional office of the Department of Health and Environmental Control (approval condition No. 7). Therefore, Westinghouse requests the final inspection in order to achieve final closure.

Approval of the *East Lagoon Closure Plan* included seven conditions which are shown below in *italics* followed by information pertaining to conformance with these conditions.

1. *Closure shall be completed in accordance with the closure plan submitted to this office on September 11, 2020.*

   East Lagoon Closure activities were conducted in conformance with *East Lagoon Closure Plan* (LTR-RAC-20-57) as described in Attachment 1.

2. *Wastewater will be disposed via the on-site wastewater treatment system and discharge through the permitted NPDES outfall (SC0001848).*

   All wastewater was disposed via the NPDES outfall as described in Attachment 1.

3. *Sludge and the liner will be disposed at US Ecology's landfill in Grand View, Idaho. If the material needs to be taken to a different facility for final disposal, the Department will have to grant approval prior to disposal.*

   The sludge and liner were disposed at US Ecology's Grand View facility as described in Attachment 1.

4. *As indicated in the closure plan, once the lagoon is removed Westinghouse will coordinate with this Office and Department's Site Assessment, Remediation & Revitalization Division to assess the soil beneath the lagoon to determine if additional soil removal or remediation is required. The Department must agree that the constituents in the soil beneath the lagoon are acceptable before the final steps of closure can be taken.*

This required coordination and assessment occurred as described in Attachment 1.

5. *Areas around the waste treatment facility shall remain secured until closeout has been approved by DHEC.*

   The areas around the waste treatment facility remain secured pending DHEC approval of the closeout.

6. *Once closeout construction has begun, it shall be continuous until closeout is completed. Failure to properly proceed with the closeout or properly complete the closeout of this lagoon may result in enforcement action by this Agency. Closeout shall be completed by December 31, 2021. Any request for an extension shall be made in writing and approved by this office in writing. Justification of the need for an extension shall be included with the request.*

   Closeout was conducted in an ongoing manner, and an extension was not requested.

7. *Upon completion of closeout, the facility shall request a final inspection by the regional DHEC office. The request will include a letter from a SC Registered Professional Engineer or a SC Registered Professional Geologist, stating that the closeout has been completed in accordance with the approved closure plan. You may contact Samuel Jones of the Midlands EA office at State Park Health Center, 8500 Farrow Road, Bldg. 12 Columbia SC 29203, 803-896-0620 to set up this inspection. Final closeout will be considered only after written approval from the regional DHEC office.*

   This letter constitutes the required certification and request for final inspection.

Thank you for your assistance in completing this project. We look forward to meeting you onsite.

Yours very truly,

Tom Hutto

Thomas D.W. Hutto, P.G.
Principal

Attachments

cc: Mr. Byron M. Amick, DHEC Bureau of Water
Ms. Kim Kuhn, DHEC Bureau of Land and Waste Management
Ms. Nancy Parr, Westinghouse
Ms. Cynthia Teague, Westinghouse
Ms. Diana Joyner, Westinghouse
Mr. Brian Pasco, Westinghouse

ATTACHMENT 1

Westinghouse Columbia Fuel Fabrication Facility
East Lagoon Closure

Summary

Closure of the East Lagoon at the Westinghouse Columbia Fuel Fabrication Facility (Westinghouse) was performed in accordance with the *East Lagoon Closure Plan* (*Closure Plan*) dated June 30, 2020 (LTR-RAC-20-57). Minor adjustments were made based on field conditions as allowed by the plan. Clean-up of impacted soils was completed in accordance with the Westinghouse risk-based procedure RA-433, *Environmental Remediation*. The removed materials (sludge, liners, soil, and debris) were packaged onsite and shipped offsite for disposal at the properly permitted U.S. Ecology landfill in Grandview, Idaho. Backfill and restoration activities were completed using clean soil, and grass is now growing in the former lagoon footprint.

Site History and Background

Westinghouse manufactures commercial nuclear fuel near Columbia, South Carolina under Nuclear Regulatory Commission (NRC) Special Nuclear Material (SNM) license SNM-1107. The facility treats wastewater generated by its production process in accordance with its National Pollutant Discharge Elimination System (NPDES) permit SC0001848 issued by the South Carolina Department of Health and Environmental Control (DHEC).

The liner in the East Lagoon had reached the end of its useful life, and Westinghouse determined that it would close the East Lagoon and conduct the primary wastewater treatment function that the East Lagoon accomplished in an above ground tank. Therefore, the *East Lagoon Closure Plan* was developed to specify the process to accomplish closure. The *East Lagoon Closure Plan* was approved by DHEC in a letter dated October 14, 2020 (# LOA-005497).

Characterization Sampling

To characterize the sludge in the East Lagoon, sampling was conducted in October 2019. A grid of 16 sample locations was superimposed over the East Lagoon surface. Sludge samples were collected and analyzed for various radiological and chemical parameters at each of the sample locations. Thickness of water and sludge was also measured at each location. The results of these analyses were used to develop remediation plans, as well as to inform decisions regarding the disposal of the sludge. The results of the East Lagoon Characterization are summarized in the *Wastewater Treatment Area Operable Unit East Lagoon [Sludge] Characterization Summary Report* dated December 6, 2019 (LTR-RAC-19-97). The grid and 16 sample points are shown in **Figure 1**.

Figure 1 – East Lagoon Sludge Characterization Sampling Grid



Remediation Planning

Remediation plans were developed using the Westinghouse risk-based procedure RA-433, *Environmental Remediation* and the findings contained in the *Wastewater Treatment Area Operable Unit East Lagoon [Sludge] Characterization Summary Report*. The remediation strategy began first with dewatering the lagoon, and then focused on stabilizing sludge "in place". Sludge stabilization was performed by dividing the East Lagoon into small pockets, or "operating cells" and adding a mixture of calcium fluoride (CaF_2) and portland cement to solidify the sludge, absorb any residual free liquid and prepare the waste for packaging and transportation.

Westinghouse submitted an Alternate Disposal Request (ADR) to the NRC as outlined in 10 CFR 20.2002 to request approval for low activity waste disposal at the US Ecology Disposal Facility in Grandview, Idaho (USE-I). The 10 CFR 20.2002 regulation specifies the process to request permission from the NRC to dispose of low level radioactive waste (LLRW) at this facility. The request was approved by NRC in December of 2020 (ADAMS Accession No. ML20302A341). Subsequent to that, Westinghouse requested a second ADR in February of 2021. The amendment was necessary because the segregated CaF_2 pile approved to be disposed in the initial request was not adequate to meet the volume required in the initial ADR. Test results of a second segregated CaF_2 pile were provided to show that the contents of a second pile were bounded by the data provided in the original request. The second ADR request was approved by the NRC in March of 2021 (ADAMS Accession No. ML21064A225).

Sludge Stabilization and Removal

Dewatering and sludge stabilization began in January 2021 and continued through June 2021. The process of removing water and stabilizing sludge was iterative. After each rainfall event, more water would be pumped out of the East Lagoon for onsite wastewater treatment. As each operating cell of sludge was stabilized and removed, a new cell was created, until all the sludge was stabilized and removed. A photograph of the stabilized sludge being prepared for packaging and transport is shown in **Figure 2**.

Figure 2 – East Lagoon Sludge Stabilization



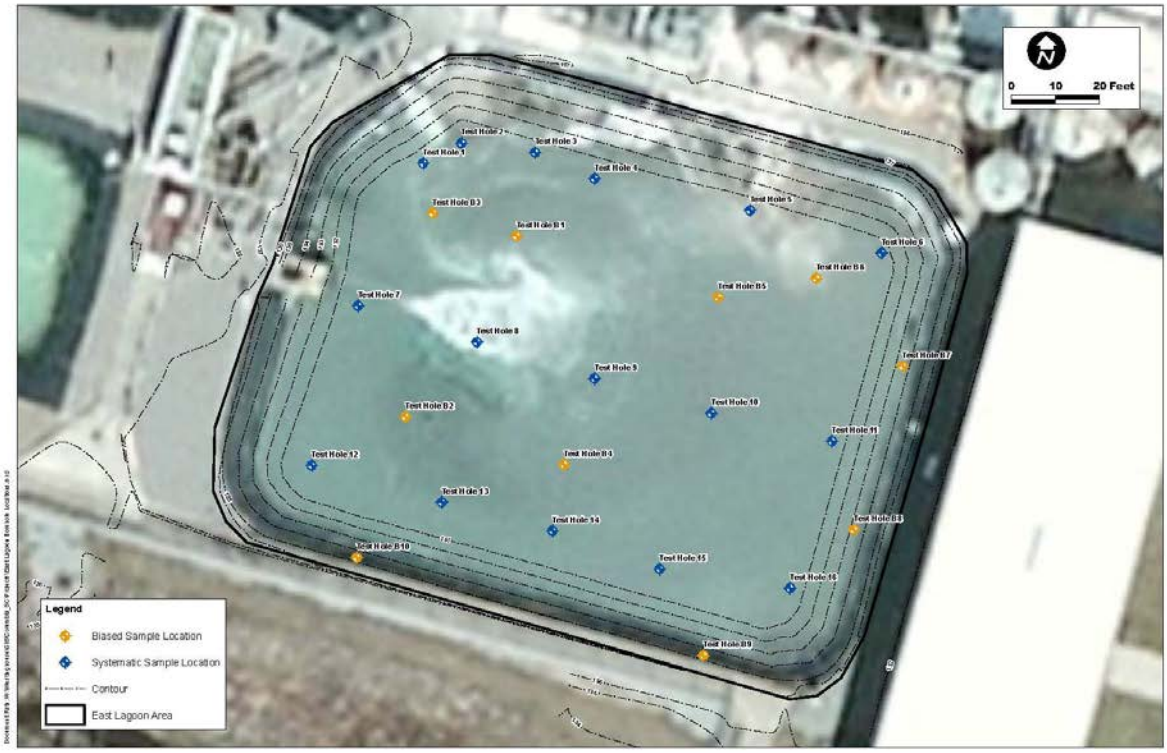
Once removed from the lagoon, the solidified sludge was packaged into 9 cubic yard "super sacks," sampled, and radiologically surveyed in accordance with the *Closure Plan.* Next, the packages were loaded onto flatbed trucks and driven approximately 10 miles to a rail transfer facility in Columbia, SC. At the facility, the super sacks were transferred to rail cars. Full rail cars were transported from Columbia to Grandview, Idaho. The rail cars were received at the USE-I facility where the low activity material was transferred to a landfill that is specifically designed to contain these types of wastes.

In total, 332 super sacks of stabilized East Lagoon sludge were generated and resulted in 17 rail car shipments.

Soil Sampling and Liner Removal

As the sludge stabilization and removal process proceeded, portions of the Hypalon liner became exposed. As the liner was exposed, it was inspected for degradation that could be a potential preferential pathway for constituent migration into the subsurface. To evaluate soil quality below the liner, sub-liner soil systematic sampling was performed at the original 16 sludge sampling locations, and at 10 additional biased locations based on observations of the liner or the professional judgement of the sampling crew. Small openings were cut in the liner, and a hand auger was used to collect soil samples from multiple depths at each location. Sample depths ranged from immediately beneath the liner to a depth of 4.5 feet below soil surface. Groundwater was encountered in some locations, mainly along the northern portion of the lagoon floor. The locations of each systematic and biased sub-liner soil sampling location are shown in **Figure 3**.

Figure 3 – Sub-Liner Soil Sampling Locations



A photograph of the sampling crew collecting sub-liner soil samples is shown in **Figure 4**.

Figure 4 – Sub-Liner Soil Sampling Crew



When sub-liner soil sampling began, an asphalt liner approximately 1 inch thick was identified immediately beneath the rubber Hypalon liner. This liner was likely from the original construction of the East Lagoon. Samples were collected from the asphalt to determine if it contained asbestos, and laboratory analysis showed that the asphalt underlayment was free of asbestos. Low levels of radioactivity were detected within the asphalt liner (possibly from its original use prior to placement of the Hypalon liner). It was removed and disposed of with the impacted soil and liner materials.

Soil Remediation

Radiological and chemical concentrations of the 26 soil sampling locations were compared to the Residential Use Screening Levels (RUSLs) provided in Westinghouse procedure RA-433, *Environmental Remediation*. These screening levels are provided in **Table 1.** Since the CFFF is an active facility, using the

RUSLs as a comparison is a conservative measure. For example, the RUSLs for radiological constituents were determined using highly conservative assumptions to develop an exposure scenario where it is assumed that a person would construct a house on the property, live on the property, drink the groundwater, and eat produce farmed on the property as well as fish caught on the property.

Table 1 – RA-433 Residential Use Screening Levels

Contaminant	Residential Use Screening Level (RUSL)	Basis of Screening Level
Uranium – 234	13 pCi/g (0.002 mg/Kg)	NUREG 1757, Vol. 2, Rev. 1, Appendix H[1]
Uranium – 235	8 pCi/g (3.704 mg/Kg)	NUREG 1757, Vol. 2, Rev. 1, Appendix H[1]
Uranium – 238	14 pCi/g (41.667 mg/Kg)	NUREG 1757, Vol. 2, Rev. 1, Appendix H[1]
Technetium – 99	19 pCi/g (1.110 E -03 mg/Kg)	NUREG 1757, Vol. 2, Rev. 1, Appendix H[1]
Tetrachloroethylene (PCE)	0.0023 mg/Kg	EPA Regional Screening Levels[2]
Fluoride	600 mg/Kg	EPA Regional Screening Levels[2]
Nitrate	130,000 mg/Kg	EPA Regional Screening Levels[3]

[1]NUREG-1757 Vol. 2, Rev.1 Consolidated Decommissioning Guidance, Appendix H: Criteria for Conduction Screening Dose Modeling Evaluations, Table H-2, September 2006. Screening levels are equivalent to 25 mrem/y TEDE to the critical group. These levels are considered suitable for unrestricted use per 10CFR20.1402

[2]USEPA MCL-based Soil Screening Level (TR=1E-06, HQ=1), November 2018.

[3]USEPA Regional Screening Level, Summary Table, Residential Soil Screening (TR=1E-06, HQ=1), November 2018

The radiological screening levels in **Table 1** are based on single contaminant concentrations for each isotope. When multiple radionuclides are present a "sum of fractions" (SOF) approach is used for comparison to the screening levels. The SOF for each unique sample is calculated using the following equation:

$$SOF = \frac{Conc_{U-234}}{SSL_{,U-234}} + \frac{Conc_{U-235}}{SSL_{,U-235}} + \frac{Conc_{U-238}}{SSL_{,U-238}} + \frac{Conc_{Tc-99}}{SSL_{,Tc-99}}$$

Chemical screening levels are compared individually to each chemical parameter, and do not require a sum of fractions.

Concentrations in some samples exceeded the RUSLs. As per procedure, the next step is to compare results above the RUSL to the Industrial Use Screening Levels (IUSLs). These screening levels are provided in **Table 2**. IUSLs are also based on conservative assumptions, but these assumptions better represent the current and future use of the CFFF, as it is assumed that the industrial worker will not live on the property or engage in the consumption of any food or water produced on the property.

For the radiological constituents, the concentrations contained within the sub-liner soil were lower than those identified in the sludge, and all radiological concentrations were below IUSLs. For example, the maximum identified isotopicUranium (U) concentration in the sub-liner soil was 69.4 pCi/g U-234, 2.91 pCi/g U-235, and 16.6 pCi/g U-238, and the maximum Tc-99 concentration in the sub-liner soil was 77.7 pCi/g. While these concentrations exceed the RUSL, they are significantly below IUSLs provided in **Table 2**.

Table 2 – RA-433 Industrial Use Screening Levels

Contaminant	Industrial Use Screening Level (IUSL)	Basis of Screening Level
Uranium – 234	3,310 pCi/g	NUREG 1757, Appendix H[1]
Uranium – 235	39 pCi/g	NUREG 1757, Appendix H[1]
Uranium – 238	179 pCi/g	NUREG 1757, Appendix H[1]
Technetium – 99	89,400 pCi/g	NUREG 1757, Appendix H[1]
Tetrachloroethylene (PCE)	100 mg/kg	EPA Regional Screening Levels[2]
Fluoride	3,100 mg/kg	EPA Regional Screening Levels[3]
Nitrate	130,000 mg/kg	EPA Regional Screening Levels[3]

[1] NUREG-1757 Vol. 1, Rev.2 Consolidated Decommissioning Guidance, Appendix H: Memorandum of Understanding between the Environmental Protection Agency and the Nuclear Regulatory Commission, Final Report September 2006. The individual isotope limits are based on carcinogenic risk.

[2] USEPA Regional Screening Level, Summary Table, Industrial Soil Standard (TR=1E-06, HQ=1), November 2018.

[3] USEPA Regional Screening Level, Summary Table, Residential Soil Standard (TR=1E-06, HQ=1), November 2018

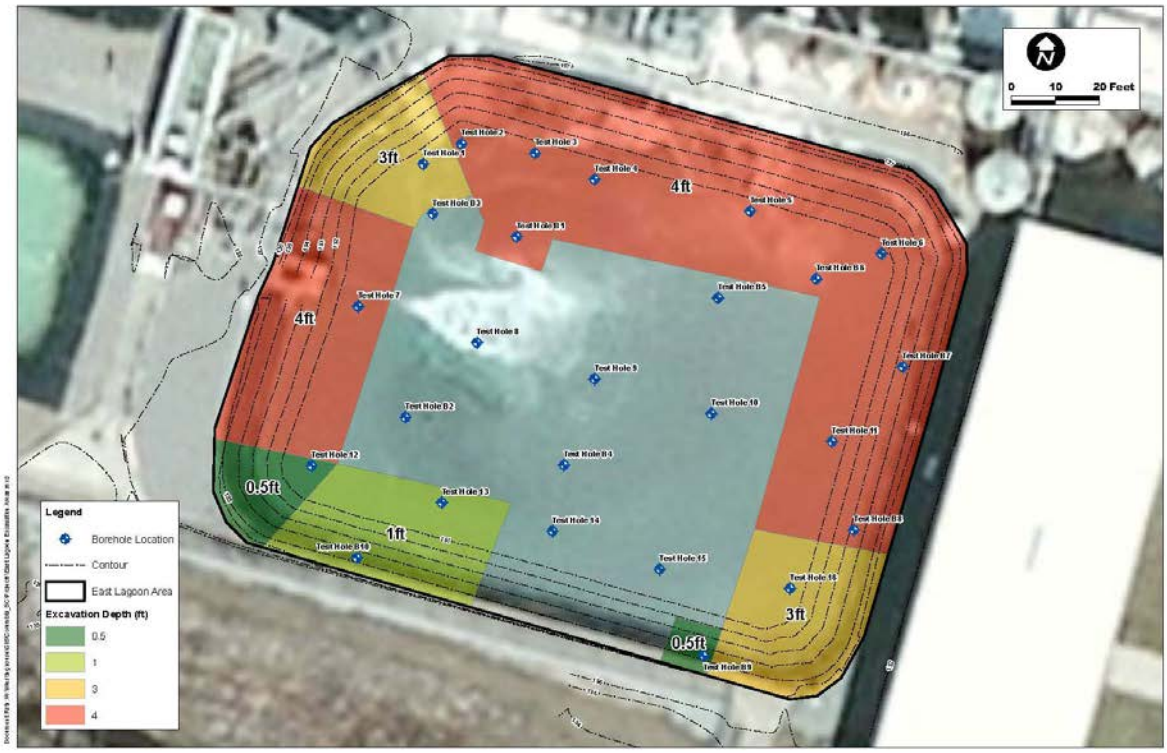
For the chemical constituents, the concentrations contained within the sub-liner soil also were lower than those identified in the sludge, and all but one of the chemical sample concentrations (PCE with a result of 0.0044 mg/Kg compared to the RUSL of 0.0023 mg/Kg) were below the RUSL specified in RA-433. Based on this small exceedance, and the sample location approximately 10 ft below the ground surface, it presents very little risk to the workers or the environment; therefore, no remediation was necessary for the soil based on chemical constituent concentrations. The full table of all chemical sampling results are provided for reference in **Appendix 1**.

Soil Removal

A large area in the center of the lagoon exhibited radiological concentrations below the RUSL. Portions of the banks of the lagoon were above the radiological RUSL, but below the IUSL.

Excavation plans were developed to remediate radiologically impacted areas based on the soil concentrations identified in each area and the depths to which they extended. Areas that were identified as below the RUSL in Table 1 did not require any remedial action. Areas that exceeded the RUSL were excavated to the maximum extent practical as described in the steps below (i.e., excavations were proceeded as far as possible without undermining existing structures or encountering groundwater). These results are shown on **Figure 5**.

Figure 5 – East Lagoon Soil Excavation Areas



The goal of East Lagoon soil remediation efforts was to remove soil containing impacts above the RUSLs wherever it was safely accessible. These remediation plans were discussed with DHEC prior to the start of excavation through site visits, weekly phone calls regarding the Remedial Investigation (RI) status, and monthly progress reports required by Consent Agreement 19-02-HW. In summary the removal included the following:

1) The former East Lagoon Hypalon and asphalt liners were completely removed except where small portions of the asphalt liner extended beneath the concrete sidewalk to the South of the East Lagoon. Soil samples collected from underneath the sidewalk were below the RUSLs. Because the sidewalk was not removed, this area has been noted in decommissioning records and will be investigated and remediated as required at the time of facility decommissioning.

2) Excavation was limited around the perimeter of the East Lagoon because it was surrounded by structures. Excavation of too much soil would undermine the existing structures such as the LLRW storage building, the ammonia distillation columns, and the walkways that support water management for the remaining lagoons. Excavations around the East Lagoon perimeter were limited to a Type C slope as defined by the OSHA Technical Manual (OTM) Section V, Chapter 2 to be a 1.5:1 height to depth ratio. Areas where radiological impacts remain above RUSLs have been noted in decommissioning records and will be investigated and remediated as required at the time of facility decommissioning.

3) During excavation, it was noted that groundwater intrusion occurred at depths greater than approximately 4 ft below the East Lagoon bottom (or approximately 10ft below natural ground surface). Therefore, future excavations within the footprint were limited to 3 feet below the East Lagoon bottom (or approximately 9 ft below the natural ground surface) to avoid encountering additional groundwater.

4) Areas where radiological concentrations in the soil did not exceed the RUSL were not excavated, and the soil was left in place.

Soil remediation concluded in June 2021. A photograph of the East Lagoon following excavation is included as **Figure 6**.

Figure 6 – Sub-Liner Soil Excavation



Soil and liner materials that were removed from the East Lagoon were packaged in the same manner as the East Lagoon sludge and shipped by rail to the USE-I facility.

In total, 165 super sacks were generated of East Lagoon soil, liner material, and small amounts of miscellaneous debris that resulted in 8 rail car shipments.

Three features associated with the East Lagoon were exposed during removal of sludge and underlying soil. These include the following:

- Concrete Sump - During sludge removal, a 3-foot diameter concrete structure was uncovered and removed. The structure resembled a sump and had a closed, concrete bottom protruding through the lagoon liner, and therefore did not create a pathway into the environment. The structure was located in the northwest corner of the lagoon at a low point. Sludge samples collected from the inside of the structure and the surrounding area were consistent with the remainder of the East Lagoon sludge. Soil sample ID EL-SUMP-4.5' was collected from the underlying soil after removal of the concrete sump, and the results are presented in **Table 3**. The results show that the area radiological concentrations are slightly elevated when compared to the RUSLs, which is consistent with the conditions of the surrounding soil.

- Small Diameter Clay Pipe - Discovered during soil excavation, the pipe circled the bottom perimeter of the East Lagoon footprint and was a French drain installed during the original lagoon construction as a means for leak detection. The French drain discharged into the adjacent stormwater ditch and was removed and disposed of with the surrounding soil. Soil sample ID EL-TR-French Drain was collected within the ditch at the French drain outfall, and the results are presented in **Table 3**. The results show that the area radiological concentrations are slightly elevated when compared to the RUSLs, which is consistent with the conditions of the surrounding soil.

- Stainless Steel Pipe - During soil excavation a stainless steel pipe was identified in the southwest corner of the lagoon. The pipe appeared to extend approximately 60 feet towards the stormwater ditch to the south of the lagoon. No elevated radiological readings were identified on the accessible portions of the pipe. The pipe appears to have been previously abandoned in place. At the time of East Lagoon closure, the pipe was capped at the accessible end within the lagoon footprint and information was added to the decommissioning records. Soil sample ID EL-SS-Discharge was collected in the adjacent stormwater ditch where the pipe may have discharged, and the results are presented in **Table 3.** The results show that the area radiological concentrations are slightly elevated when compared to the RUSLs, which is consistent with the conditions of the surrounding soil.

Upon completion of soil excavation, a civil engineering survey was performed using Global Positioning Systems (GPS) to document the various depths of excavation. Additionally, a radiological gamma walkover survey was performed of the excavated areas using a sodium-iodide (NaI) probe. Soil sampling was performed in areas where excavation depths reached the 4 ft interval where the initial characterization sampling terminated. Using the surveyed depth of excavation, **Table 3** shows the "as left" radiological conditions. Sample locations that were completely remediated are not included in **Table 3**. This table, along with this report will be stored in the site's decommissioning records and used to guide future remediation planning at the time of facility decommissioning.

Table 3 – "As Left" Radiological Condition

Sample ID	Gross Analyte Activity (pCi/g)				Sum of Fractions
	U-234	U-235	U-238	Tc-99	RUSL
EL-1-4'	9.4	0.2	3.1	0.3	1.0
EL-2-4.5'	1.6	0.1	0.7	0.0	0.2
EL-3-4.5'	10.3	0.4	2.5	0.1	**1.0**
EL-4-4.5'	18.1	0.9	3.7	0.2	**1.8**
EL-5-4.5'	7.9	0.4	1.8	1.1	0.8
EL-6-4.5'	15.5	0.9	4.0	1.8	**1.7**
EL-7-4.5'	5.9	0.4	1.8	0.5	0.7
EL-8-6"	4.5	0.1	1.5	1.8	0.6
EL-9-6"	1.9	0.0	1.1	1.5	0.3
EL-10-6"	1.0	0.0	0.6	0.0	0.1
EL-11-4.5'	42.4	2.3	9.0	0.4	**4.2**
EL-12-2'	7.0	0.3	4.5	0.8	0.9
EL-13-2'	3.4	0.1	0.9	0.6	0.4
EL-14-6"	5.1	0.3	1.6	3.0	0.7
EL-15-6"	1.0	0.0	0.9	0.0	0.1
EL-16-4'	2.7	0.2	1.3	0.6	0.4
EL-SUMP-4.5'	19.8	1.0	4.5	0.2	**2.0**
EL-B1-4.5'	7.7	0.4	2.1	1.2	0.9
EL-B2-6"	1.4	0.0	0.7	0.2	0.2
EL-B3-6"	5.5	0.2	1.4	3.2	0.7
EL-B5-6"	3.3	0.1	1.4	1.1	0.4
EL-SS-Discharge	12.1	3.0	0.6	0.0	**1.3**
EL-TR-French Drain	21.5	1.0	4.6	10.5	**2.7**

Note: **Bold** indicates sample results $\geq$ the RUSL 'Sum of Fractions' of 1.0

While localized areas of soil remain above the RUSL, the RUSLs assume soil concentrations are present at land surface, and in the case of the former East Lagoon area, most of the localized areas of soil above the RUSL are approximately 10 feet below ground surface. Furthermore, the former East Lagoon area is surrounded by industrial uses and should be considered an Industrial Use area until site decommissioning.

Following excavation, backfill and restoration activities were completed in July and August 2021. All remediation equipment was removed from the area and decontaminated. A free release survey was performed of the as-left work area to ensure that no residual radioactivity remained at land surface above site limits, and radiological postings were removed. Clean fill soil was placed into the excavated areas, and then spread and compacted per the final design specifications developed by Stewart Engineering to support proper drainage. Routine compaction testing was performed to ensure that a compaction percentage of 98% (recommended by the American Society for Testing Materials, ASTM D698) of the soil's maximum dry density (as determined by a standard Proctor) was reached. A photograph of the backfill and compaction process is shown in **Figure 7**.

Figure 7 – Backfill and Compaction Process



Compaction testing field reports were generated by Stewart Engineering after each field test and are saved on file by the Westinghouse Engineering staff. A photograph of the final backfilled surface following hydroseeding is shown in **Figure 8**.

Figure 8 – Final Backfilled Surface



Conclusions and Long-Term Monitoring

Closure of the East Lagoon was performed in accordance with the *Closure Plan*. Minor adjustments were made based on field conditions as allowed by the plan. The removed materials (sludge, soil, liners, and debris) were packaged and disposed offsite at the USE-I facility.

All residual concentrations for radiological and chemical constituents that were left in place were below the IUSL. Limited areas of soil containing concentrations above RUSL were left in place either because removing them would undermine existing structures or they are located below the water table. All but one area of soil contained chemical concentrations below the RUSL. This one exception exceeded the RUSL for PCE, with a result of 0.0044 mg/Kg compared to the RUSL of 0.0023 mg/Kg. In all cases these areas of soil are in the subsurface, and there is no potential route of exposure to site personnel unless the areas are excavated. The locations of these areas have been recorded in the site's decommissioning records.

None of the data acquired during closure suggests a need to modify the existing groundwater monitoring program for the wastewater treatment area. Prior to East Lagoon closure, existing groundwater data suggested the East Lagoon may be a potential source for the Tc-99 that is observed slightly downgradient in two existing monitoring wells. However, based on the Tc-99 concentrations detected during closure sampling, no clear connection can be drawn between the East Lagoon sludge or soil and the Tc-99 impact.

Therefore, groundwater monitoring will continue in accordance with the facility's NPDES permit and the ongoing work being performed as part of the Consent Agreement (19-02-HW) between Westinghouse and DHEC.

Lastly, the land areas disturbed during East Lagoon closure are inspected periodically for stabilization. Once stabilized, a request to terminate the Sediment and Erosion Control Permit will be submitted to Richland County.

Appendix 1 – East Lagoon Chemical Sampling Results

		Sample ID	EL-1-6"	EL-1-6" DUP	EL-3-6"	EL-5-6"	EL-5-6" DUP	EL-9-6"	EL-11-6"	EL-11-6" DUP	EL-15-6"	EL-B1-1-6"	EL-B1-1-6" DUP	EL-B3-6"	EL-B5-6"	EL-B5-6" DUP	EL-B8-6"	EL-B10-6"	EL-B10-6" DUP
		Date	5/13/2021	5/13/2021	5/13/2021	5/18/2021	5/18/2021	5/18/2021	5/27/2021	5/27/2021	5/27/2021	5/25/2021	5/25/2021	5/25/2021	5/25/2021	5/25/2021	5/27/2021	5/27/2021	5/27/2021
		Type	N	FD	N	N	FD	N	N	FD	N	N	FD	N	N	FD	N	N	FD
Group	Analyte	Units																	
Chemical	Fluoride	mg/kg	**66.3**	**71.8**	**30.7**	**149**	**166**	**207**	**98.2**	**65.4**	**17.1**	**152**	**138**	**94.4**	**111**	**112**	**16.2**	**24.5**	**26.9**
Chemical	Nitrate ion	mg/kg	**5.63**	**5.57**	**43.3**	**87.4**	**97.2**	**0.931 J**	**47.8**	**39.8**	**0.760 J**	< 1.10	< 1.10	**48.8**	< 1.09	< 1.10	**0.840 J**	**1.04 J**	**1.19**
Metals	Aluminum	mg/kg	**4860**	**5000**	**6130**	**5700**	**6060**	**4960**	**6920**	**6360**	**7330**	**5340**	**5780**	**4530**	**4850**	**5360**	**12800**	**6350**	**7100**
Metals	Antimony	mg/kg	< 2.15	< 2.1	< 2.18	< 2.15	< 2.1	< 2.05	< 2.1	**0.409 J**	**0.647 J**	< 2.17	< 2.09	< 2.08	< 2.11	< 1.98	< 2.16	**0.542 J**	**0.48 J**
Metals	Arsenic	mg/kg	**0.695 J**	**0.55 J**	**1.07 J**	< 3.22	< 3.14	**0.64 J**	**0.65 J**	**0.788 J**	**1.85 J**	< 3.26	< 3.14	**0.734 J**	**0.747 J**	**0.732 J**	**1.31 J**	**0.896 J**	**0.92 J**
Metals	Barium	mg/kg	**18.1**	**16.2**	**25.1**	**12.5**	**14.6**	**22**	**13.9**	**11.2**	**55.2**	**25.3**	**21.5**	**29**	**26.8**	**27.5**	**45.4**	**29.3**	**25.5**
Metals	Beryllium	mg/kg	**0.133 J**	**0.119 J**	**0.224 J**	< 0.536	< 0.524	< 0.513	< 0.526	< 0.504	**0.415 J**	< 0.544	< 0.523	**0.107 J**	**0.111 J**	**0.119 J**	**0.176 J**	**0.123 J**	**0.122 J**
Metals	Cadmium	mg/kg	< 0.537	< 0.526	< 0.544	< 0.536	< 0.524	< 0.513	< 0.526	< 0.504	< 0.492	< 0.544	< 0.523	< 0.519	< 0.527	< 0.495	< 0.539	< 0.545	< 0.521
Metals	Calcium	mg/kg	**351**	**328**	**707**	**216**	**250**	**300**	**267**	**278**	**592**	**233**	**223**	**259**	**321**	**440**	**2490**	**382**	**355**
Metals	Chromium	mg/kg	**4.13**	**4.25**	**5.09**	**4.23**	**5.63**	**4.64**	**6.68**	**5.21**	**20.8**	**6.41**	**5.92**	**5.64**	**4.73**	**4.98**	**12.2**	**9.7**	**9.56**
Metals	Cobalt	mg/kg	**0.611**	**0.503 J**	**1.51**	**0.232 J**	**0.316 J**	**0.747**	**0.413 J**	**0.323 J**	**3.7**	**0.56**	**0.514 J**	**1.2**	**0.792**	**0.813**	**2.11**	**1.47**	**1.51**
Metals	Copper	mg/kg	**1.47 J**	**1.12 J**	**1.53 J**	**0.78 J**	**1.17 J**	**1.31 J**	**0.898 J**	**0.905 J**	**3.04**	**1.1 J**	**1.13 J**	**1.56 J**	**1.33 J**	**1.42 J**	**3.55**	**2.7**	**2.96**
Metals	Iron	mg/kg	**3080**	**2240**	**4130**	**1530**	**1740**	**3840**	**3890**	**4460**	**9210**	**2540**	**2320**	**3640**	**3520**	**3860**	**9690**	**7220**	**7980**
Metals	Lead	mg/kg	**4.11**	**3.9**	**6.02**	**4.4**	**4.8**	**4.91**	**4.86**	**4.12**	**11**	**5.95**	**5.15**	**6.44**	**5.85**	**5.86**	**8.74**	**6.43**	**6.31**
Metals	Magnesium	mg/kg	**218**	**190**	**126**	**91.2**	**101**	**92.5**	**90.9**	**79.9**	**282**	**104**	**129**	**116**	**136**	**157**	**345**	**168**	**165**
Metals	Manganese	mg/kg	**20.3**	**22.9**	**68.3**	**7.64**	**8.97**	**42.3**	**8.1**	**7.52**	**227**	**28.9**	**26.6**	**47.1**	**52.7**	**54.5**	**180**	**57.2**	**62.8**
Metals	Mercury	mg/kg	**0.0270**	**0.0260**	**0.0259**	**0.0167 J**	**0.0190 J**	**0.0111 J**	**0.0410**	**0.0266**	**0.0183 J**	**0.0177 J**	**0.0186 J**	< 0.0218	**0.0173 J**	**0.0196 J**	< 0.0235	**0.0190 J**	**0.0127 J**
Metals	Nickel	mg/kg	**12.9**	**6.56**	**2.2**	**3.35**	**3.92**	**0.914**	**1.78**	**1.67**	**2.31**	**0.914**	**0.969**	**1.15**	**0.997**	**1.38**	**5.26**	**2.27**	**2.3**
Metals	Potassium	mg/kg	**108**	**106**	**137**	**73.9**	**79.5**	**109**	**75.6**	**70.3**	**241**	**120**	**144**	**103**	**133**	**143**	**302**	**183**	**184**
Metals	Selenium	mg/kg	< 3.22	< 3.15	< 3.27	< 3.22	< 3.14	< 3.08	< 3.16	< 3.02	< 2.95	< 3.26	< 3.14	< 3.11	< 3.16	< 2.97	< 3.24	< 3.27	< 3.13
Metals	Silver	mg/kg	< 0.537	< 0.526	< 0.544	< 0.536	< 0.524	< 0.513	< 0.526	< 0.504	< 2.46	< 0.544	< 0.523	< 0.519	< 0.527	< 0.495	< 0.539	< 0.545	< 0.521
Metals	Sodium	mg/kg	**167**	**159**	**85.7**	**36.8**	**43.5**	**51.5**	**56.5**	**54.4**	**35.5**	**65.5**	**74.4**	**91.5**	**20.6 J**	**27.4**	**52.3**	**166**	**173**
Metals	Thallium	mg/kg	< 2.15	< 2.1	< 2.18	< 2.15	< 2.1	< 2.05	< 2.1	< 2.01	< 1.97	< 2.17	< 2.09	< 2.08	< 2.11	< 1.98	< 2.16	< 2.18	< 2.08
Metals	Vanadium	mg/kg	**10.5**	**8.94**	**13**	**7.24**	**9.44**	**12.7**	**14.2**	**13.3**	**21.2**	**12.8**	**11.3**	**13.9**	**14**	**14.6**	**25.6**	**19**	**20.3**
Metals	Zinc	mg/kg	**3.54**	**2.46**	**3.95**	**2.63**	**2.9**	**2.48**	**2.36**	**2.37**	**7.48**	**2.09 J**	**2.59**	**3.46**	**3.16**	**3.75**	**13**	**6.56**	**7.03**
SVOCs	1,1'-Biphenyl	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	1,2,4,5-Tetrachlorobenzene	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	2,3,4,6-Tetrachlorophenol	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	2,4,5-Trichlorophenol	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	2,4,6-Trichlorophenol	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	2,4-Dichlorophenol	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	2,4-Dimethylphenol	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	2,4-Dinitrophenol	mg/kg	< 0.724	< 0.754	< 0.72	< 14.5	< 14.6	< 14.3	< 0.731	< 3.66	< 0.731	< 0.72	< 0.726	< 0.719	< 0.73	< 0.716	< 0.736	< 0.745	< 0.741
SVOCs	2,4-Dinitrotoluene	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	2,6-Dinitrotoluene	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	2-Chloronaphthalene	mg/kg	< 0.0362	< 0.0377	< 0.0360	< 0.727	< 0.728	< 0.714	< 0.0366	< 0.183	< 0.0365	< 0.0360	< 0.0363	< 0.0359	< 0.0365	< 0.0358	< 0.0368	< 0.0373	< 0.0371
SVOCs	2-Chlorophenol	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	2-Methylnaphthalene	mg/kg	< 0.0362	< 0.0377	< 0.0360	< 0.727	< 0.728	< 0.714	< 0.0366	< 0.183	< 0.0365	< 0.0360	< 0.0363	< 0.0359	< 0.0365	< 0.0358	< 0.0368	< 0.0373	< 0.0371
SVOCs	2-Methylphenol	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	2-Nitroaniline	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	2-Nitrophenol	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	3&4-Methylphenol(m&p Cresol)	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	3,3'-Dichlorobenzidine	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	3-Nitroaniline	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	4,6-Dinitro-2-methylphenol	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	4-Bromophenyl phenyl ether	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	4-Chloro-3-methylphenol	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371

Appendix 1 – East Lagoon Chemical Sampling Results

		Sample ID	EL-1-6"	EL-1-6" DUP	EL-3-6"	EL-5-6"	EL-5-6" DUP	EL-9-6"	EL-11-6"	EL-11-6" DUP	EL-15-6"	EL-B1-1-6"	EL-B1-1-6" DUP	EL-B3-6"	EL-B5-6"	EL-B5-6" DUP	EL-B8-6"	EL-B10-6"	EL-B10-6" DUP
		Date	5/13/2021	5/13/2021	5/13/2021	5/18/2021	5/18/2021	5/18/2021	5/27/2021	5/27/2021	5/27/2021	5/25/2021	5/25/2021	5/25/2021	5/25/2021	5/25/2021	5/27/2021	5/27/2021	5/27/2021
		Type	N	FD	N	N	FD	N	N	FD	N	N	FD	N	N	FD	N	N	FD
Group	Analyte	Units																	
SVOCs	4-Chloroaniline	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	4-Chlorophenyl phenyl ether	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	4-Nitroaniline	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	4-Nitrophenol	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	Acenaphthene	mg/kg	< 0.0362	< 0.0377	< 0.0360	< 0.727	< 0.728	< 0.714	< 0.0366	< 0.183	< 0.0365	< 0.0360	< 0.0363	< 0.0359	< 0.0365	< 0.0358	< 0.0368	< 0.0373	< 0.0371
SVOCs	Acenaphthylene	mg/kg	< 0.0362	< 0.0377	< 0.0360	< 0.727	< 0.728	< 0.714	< 0.0366	< 0.183	< 0.0365	< 0.0360	< 0.0363	< 0.0359	< 0.0365	< 0.0358	< 0.0368	< 0.0373	< 0.0371
SVOCs	Acetophenone	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	Anthracene	mg/kg	< 0.0362	< 0.0377	< 0.0360	< 0.727	< 0.728	< 0.714	< 0.0366	< 0.183	< 0.0365	< 0.0360	< 0.0363	< 0.0359	< 0.0365	< 0.0358	< 0.0368	< 0.0373	< 0.0371
SVOCs	Atrazine	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	Benz(a)anthracene	mg/kg	< 0.0362	< 0.0377	< 0.0360	< 0.727	< 0.728	< 0.714	< 0.0366	< 0.183	< 0.0365	< 0.0360	< 0.0363	< 0.0359	< 0.0365	< 0.0358	< 0.0368	< 0.0373	< 0.0371
SVOCs	Benzaldehyde	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	Benzo(a)pyrene	mg/kg	< 0.0362	< 0.0377	< 0.0360	< 0.727	< 0.728	< 0.714	< 0.0366	< 0.183	< 0.0365	< 0.0360	< 0.0363	< 0.0359	< 0.0365	< 0.0358	< 0.0368	< 0.0373	< 0.0371
SVOCs	Benzo(b)fluoranthene	mg/kg	< 0.0362	< 0.0377	< 0.0360	< 0.727	< 0.728	< 0.714	< 0.0366	< 0.183	< 0.0365	**0.0115 J**	< 0.0363	< 0.0359	< 0.0365	< 0.0358	< 0.0368	< 0.0373	< 0.0371
SVOCs	Benzo(g,h,i)perylene	mg/kg	< 0.0362	< 0.0377	< 0.0360	< 0.727	< 0.728	< 0.714	< 0.0366	< 0.183	< 0.0365	< 0.0360	< 0.0363	< 0.0359	< 0.0365	< 0.0358	< 0.0368	< 0.0373	< 0.0371
SVOCs	Benzo(k)fluoranthene	mg/kg	< 0.0362	< 0.0377	< 0.0360	< 0.727	< 0.728	< 0.714	< 0.0366	< 0.183	< 0.0365	< 0.0360	< 0.0363	< 0.0359	< 0.0365	< 0.0358	< 0.0368	< 0.0373	< 0.0371
SVOCs	Bis(2-chloroethoxy)methane	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	Bis(2-chloroethyl)ether	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	Bis(2-chloroisopropyl)ether	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	Bis(2-ethylhexyl)phthalate	mg/kg	< 0.0362	**0.0245 J**	**0.0270 J**	< 0.727	< 0.728	< 0.714	< 0.0366	< 0.183	< 0.0365	**0.0151 J**	< 0.0363	< 0.0359	< 0.0365	**0.0107 J**	< 0.0368	< 0.0373	< 0.0371
SVOCs	Butyl benzyl phthalate	mg/kg	< 0.0362	< 0.0377	< 0.0360	< 0.727	< 0.728	< 0.714	< 0.0366	< 0.183	< 0.0365	**0.0115 J**	< 0.0363	< 0.0359	< 0.0365	< 0.0358	< 0.0368	< 0.0373	< 0.0371
SVOCs	Caprolactam	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	Carbazole	mg/kg	< 0.0362	< 0.0377	< 0.0360	< 0.727	< 0.728	< 0.714	< 0.0366	< 0.183	< 0.0365	< 0.0360	< 0.0363	< 0.0359	< 0.0365	< 0.0358	< 0.0368	< 0.0373	< 0.0371
SVOCs	Chrysene	mg/kg	< 0.0362	< 0.0377	< 0.0360	< 0.727	< 0.728	< 0.714	< 0.0366	< 0.183	< 0.0365	< 0.0360	< 0.0363	< 0.0359	< 0.0365	< 0.0358	< 0.0368	< 0.0373	< 0.0371
SVOCs	Dibenz(a,h)anthracene	mg/kg	< 0.0362	< 0.0377	< 0.0360	< 0.727	< 0.728	< 0.714	< 0.0366	< 0.183	< 0.0365	< 0.0360	< 0.0363	< 0.0359	< 0.0365	< 0.0358	< 0.0368	< 0.0373	< 0.0371
SVOCs	Dibenzofuran	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	Diethyl phthalate	mg/kg	< 0.0362	< 0.0377	< 0.0360	< 0.727	< 0.728	< 0.714	< 0.0366	< 0.183	< 0.0365	< 0.0360	< 0.0363	< 0.0359	< 0.0365	< 0.0358	< 0.0368	< 0.0373	< 0.0371
SVOCs	Dimethyl phthalate	mg/kg	< 0.0362	< 0.0377	< 0.0360	< 0.727	< 0.728	< 0.714	< 0.0366	< 0.183	< 0.0365	< 0.0360	< 0.0363	< 0.0359	< 0.0365	< 0.0358	< 0.0368	< 0.0373	< 0.0371
SVOCs	Di-n-butyl phthalate	mg/kg	< 0.0362	< 0.0377	**0.0137 J**	< 0.727	< 0.728	< 0.714	< 0.0366	< 0.183	< 0.0365	**0.0115 J**	< 0.0363	< 0.0359	< 0.0365	< 0.0358	< 0.0368	< 0.0373	< 0.0371
SVOCs	Di-n-octyl phthalate	mg/kg	< 0.0362	< 0.0377	< 0.0360	< 0.727	< 0.728	< 0.714	< 0.0366	< 0.183	< 0.0365	< 0.0360	< 0.0363	< 0.0359	< 0.0365	< 0.0358	< 0.0368	< 0.0373	< 0.0371
SVOCs	Diphenylamine	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	Fluoranthene	mg/kg	< 0.0362	< 0.0377	< 0.0360	< 0.727	< 0.728	< 0.714	< 0.0366	< 0.183	< 0.0365	< 0.0360	< 0.0363	< 0.0359	< 0.0365	< 0.0358	< 0.0368	< 0.0373	< 0.0371
SVOCs	Fluorene	mg/kg	< 0.0362	< 0.0377	< 0.0360	< 0.727	< 0.728	< 0.714	< 0.0366	< 0.183	< 0.0365	< 0.0360	< 0.0363	< 0.0359	< 0.0365	< 0.0358	< 0.0368	< 0.0373	< 0.0371
SVOCs	Hexachlorobenzene	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	Hexachlorobutadiene	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	Hexachlorocyclopentadiene	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	Hexachloroethane	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	Indeno(1,2,3-cd)pyrene	mg/kg	< 0.0362	< 0.0377	< 0.0360	< 0.727	< 0.728	< 0.714	< 0.0366	< 0.183	< 0.0365	< 0.0360	< 0.0363	< 0.0359	< 0.0365	< 0.0358	< 0.0368	< 0.0373	< 0.0371
SVOCs	Isophorone	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	Naphthalene	mg/kg	< 0.0362	< 0.0377	< 0.0360	< 0.727	< 0.728	< 0.714	< 0.0366	< 0.183	< 0.0365	< 0.0360	< 0.0363	< 0.0359	< 0.0365	< 0.0358	< 0.0368	< 0.0373	< 0.0371
SVOCs	Nitrobenzene	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	N-Nitrosodi-n-propylamine	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	Pentachlorophenol	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	Phenanthrene	mg/kg	< 0.0362	< 0.0377	< 0.0360	< 0.727	< 0.728	< 0.714	< 0.0366	< 0.183	< 0.0365	< 0.0360	< 0.0363	< 0.0359	< 0.0365	< 0.0358	< 0.0368	< 0.0373	< 0.0371
SVOCs	Phenol	mg/kg	< 0.362	< 0.377	< 0.36	< 7.27	< 7.28	< 7.14	< 0.366	< 1.83	< 0.365	< 0.36	< 0.363	< 0.359	< 0.365	< 0.358	< 0.368	< 0.373	< 0.371
SVOCs	Pyrene	mg/kg	< 0.0362	< 0.0377	< 0.0360	< 0.727	< 0.728	< 0.714	< 0.0366	< 0.183	< 0.0365	< 0.0360	< 0.0363	< 0.0359	< 0.0365	< 0.0358	< 0.0368	< 0.0373	< 0.0371
VOCs	(1-Methylethyl)-Benzene	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	**0.000339 J**	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	1,1,1-Trichloroethane	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150

Appendix 1 – East Lagoon Chemical Sampling Results

		Sample ID	EL-1-6"	EL-1-6" DUP	EL-3-6"	EL-5-6"	EL-5-6" DUP	EL-9-6"	EL-11-6"	EL-11-6" DUP	EL-15-6"	EL-B1-1-6"	EL-B1-1-6" DUP	EL-B3-6"	EL-B5-6"	EL-B5-6" DUP	EL-B8-6"	EL-B10-6"	EL-B10-6" DUP
		Date	5/13/2021	5/13/2021	5/13/2021	5/18/2021	5/18/2021	5/18/2021	5/27/2021	5/27/2021	5/27/2021	5/25/2021	5/25/2021	5/25/2021	5/25/2021	5/25/2021	5/27/2021	5/27/2021	5/27/2021
		Type	N	FD	N	N	FD	N	N	FD	N	N	FD	N	N	FD	N	N	FD
Group	Analyte	Units																	
VOCs	1,1,2,2-Tetrachloroethane	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	1,1,2-Trichlor-1,2,2-trifluoroethane	mg/kg	< 0.00371	< 0.00444	< 0.00428	< 0.00402	< 0.00458	< 0.00375	< 0.00536	< 0.00485	< 0.00454	< 0.00396	< 0.00457	< 0.00390	< 0.00435	< 0.00384	< 0.00368	< 0.00464	< 0.00752
VOCs	1,1,2-Trichloroethane	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	1,1-Dichloroethane	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	1,1-Dichloroethene	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	1,2,3-Trichlorobenzene	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	1,2,4-Trichlorobenzene	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	1,2-Dibromo-3-chloropropane	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	1,2-Dibromoethane	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	1,2-Dichlorobenzene	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	1,2-Dichloroethane	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	1,2-Dichloropropane	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	1,3-Dichlorobenzene	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	1,4-Dichlorobenzene	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	1,4-Dioxane	mg/kg	< 0.0371	< 0.0444	< 0.0428	< 0.0402	< 0.0458	< 0.0375	< 0.0536	< 0.0485	< 0.0454	< 0.0396	< 0.0457	< 0.0390	< 0.0435	< 0.0384	< 0.0368	< 0.0464	< 0.0752
VOCs	2-Butanone	mg/kg	< 0.00371	< 0.00444	**0.00256 J**	< 0.00402	< 0.00458	**0.00603**	< 0.00536	< 0.00485	< 0.00454	**0.00747**	**0.0121**	< 0.00390	**0.0118**	**0.0101**	< 0.00368	< 0.00464	< 0.00752
VOCs	2-Hexanone	mg/kg	< 0.00371	< 0.00444	< 0.00428	< 0.00402	< 0.00458	< 0.00375	< 0.00536	< 0.00485	< 0.00454	< 0.00396	< 0.00457	< 0.00390	< 0.00435	< 0.00384	< 0.00368	< 0.00464	< 0.00752
VOCs	4-Methyl-2-pentanone	mg/kg	< 0.00371	< 0.00444	< 0.00428	< 0.00402	< 0.00458	< 0.00375	< 0.00536	< 0.00485	< 0.00454	< 0.00396	< 0.00457	< 0.00390	< 0.00435	< 0.00384	< 0.00368	< 0.00464	< 0.00752
VOCs	Acetone	mg/kg	**0.00394**	< 0.00444	**0.00336 J**	**0.00323 J**	**0.00289 J**	**0.0234**	**0.00665**	**0.0147**	**0.0105**	**0.0242**	**0.0406**	**0.00442**	**0.0267**	**0.0386**	**0.00890**	**0.00875**	**0.0117**
VOCs	Benzene	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	Bromochloromethane	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	Bromodichloromethane	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	Bromoform	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	Bromomethane	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	Carbon disulfide	mg/kg	< 0.00371	< 0.00444	< 0.00428	< 0.00402	< 0.00458	< 0.00375	< 0.00536	< 0.00485	< 0.00454	< 0.00396	< 0.00457	< 0.00390	< 0.00435	**0.00145 J**	< 0.00368	< 0.00464	< 0.00752
VOCs	Carbon tetrachloride	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	Chlorobenzene	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	Chloroethane	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	Chloroform	mg/kg	< 0.000741	**0.000665 J**	**0.00135**	< 0.000805	**0.000385 J**	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	Chloromethane	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	cis-1,2-Dichloroethene	mg/kg	< 0.000741	< 0.000887	**0.000488 J**	< 0.000805	**0.000485 J**	**0.00303**	< 0.00107	< 0.000971	**0.000345 J**	**0.00124**	**0.00162**	**0.0255**	**0.0158**	**0.00303**	< 0.000736	< 0.000927	< 0.00150
VOCs	cis-1,3-Dichloropropene	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	Cyclohexane	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	Dibromochloromethane	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	Dichlorodifluoromethane	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	Ethylbenzene	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	**0.00101**	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	Methyl acetate	mg/kg	< 0.00371	< 0.00444	< 0.00428	< 0.00402	< 0.00458	< 0.00375	< 0.00536	< 0.00485	< 0.00454	**0.00311 J**	< 0.00457	< 0.00390	**0.00958**	< 0.00384	< 0.00368	< 0.00464	< 0.00752
VOCs	Methyl tert-butyl ether	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	Methylcyclohexane	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	**0.00101**	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	Methylene chloride	mg/kg	**0.00163 J**	< 0.00444	< 0.00428	< 0.00402	< 0.00458	< 0.00375	< 0.00536	< 0.00485	< 0.00454	< 0.00396	< 0.00457	< 0.00390	< 0.00435	< 0.00384	**0.00200 J**	< 0.00464	< 0.00752
VOCs	Styrene	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	Tetrachloroethylene	mg/kg	< 0.000741	< 0.000887	**0.00132**	< 0.000805	**0.000421 J**	**0.000450 J**	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	**0.000491 J**	**0.00436**	**0.000284 J**	< 0.000736	< 0.000927	< 0.00150
VOCs	Toluene	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	**0.00170**	< 0.00107	< 0.000971	< 0.000908	< 0.000792	**0.000329 J**	**0.00204**	**0.00594**	**0.000522 J**	< 0.000736	< 0.000927	< 0.00150
VOCs	trans-1,2-Dichloroethene	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	**0.000593 J**	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	trans-1,3-Dichloropropene	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	Trichloroethylene	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	**0.000850**	**0.000696 J**	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	Trichlorofluoromethane	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150

Appendix 1 – East Lagoon Chemical Sampling Results

		Sample ID	EL-1-6"	EL-1-6" DUP	EL-3-6"	EL-5-6"	EL-5-6" DUP	EL-9-6"	EL-11-6"	EL-11-6" DUP	EL-15-6"	EL-B1-1-6"	EL-B1-1-6" DUP	EL-B3-6"	EL-B5-6"	EL-B5-6" DUP	EL-B8-6"	EL-B10-6"	EL-B10-6" DUP
		Date	5/13/2021	5/13/2021	5/13/2021	5/18/2021	5/18/2021	5/18/2021	5/27/2021	5/27/2021	5/27/2021	5/25/2021	5/25/2021	5/25/2021	5/25/2021	5/25/2021	5/27/2021	5/27/2021	5/27/2021
		Type	N	FD	N	N	FD	N	N	FD	N	N	FD	N	N	FD	N	N	FD
Group	Analyte	Units																	
VOCs	Vinyl chloride	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	< 0.000751	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	**0.00431**	< 0.000870	< 0.000768	< 0.000736	< 0.000927	< 0.00150
VOCs	Xylenes, m- & p-	mg/kg	< 0.00148	< 0.00177	< 0.00171	< 0.00161	< 0.00183	**0.000758 J**	< 0.00215	< 0.00194	< 0.00182	< 0.00158	< 0.00183	< 0.00156	**0.00397**	< 0.00154	< 0.00147	< 0.00185	< 0.00301
VOCs	o-Xylene	mg/kg	< 0.000741	< 0.000887	< 0.000856	< 0.000805	< 0.000916	**0.000330 J**	< 0.00107	< 0.000971	< 0.000908	< 0.000792	< 0.000915	< 0.000780	**0.00152**	< 0.000768	< 0.000736	< 0.000927	< 0.00150

Notes: **Bold concentrations indicate detections**

J - Result below reporting limit

mg/kg - milligrams per kilogram

SVOCs - semi volatile organic compounds

VOCs - volatile organic compounds

FD - field duplicate sample

N - regular sample

2019-2021 Southern Storage Area Operable Unit Investigation Reports

On June 18, 2019, CFFF submitted a work plan (Westinghouse, 2019a) to DHEC to investigate the Southern Storage Area Operable Unit (SSAOU). The SSAOU investigation was submitted as Addendum 1 of the overall Remedial Investigation being performed under Consent Agreement CA-19-02-HW. Historically, the SSAOU was partially used for intermodal storage of materials awaiting U reclamation.

On May 30, 2019, a scheduled inspection of intermodal containers (sealands) within the SSAOU was completed and identified impaired roofing and degraded drums due to rainwater intrusion in one sealand, C-40. The drums within this sealand included solid combustible materials, such as mop heads and filters, awaiting U reclamation by onsite incineration and dissolution. C-40 was safely emptied of its contents by June 5, 2019; the drums were transferred to the main building for processing; and C-40 was wrapped with tarps to minimize further water intrusion.

Three soil samples were collected at 1 foot below land surface (BLS) in the area of the degraded drums beneath C-40, with U concentrations ranging from 2-4 picocuries per gram. In addition, groundwater wells associated with the SSAOU (W-7A, W-10, W-11, 13R, W-15, W-16, and W-32) were sampled on June 4-5, 2019. The results were received on June 21, 2019, and submitted to DHEC on August 1, 2019 as part of the July 2019 CA Progress Report (Westinghouse, 2019b). These results indicated that the intermodal storage did not impact groundwater. Further review and comparison of groundwater well data from 2004 by CFFF personnel indicated that gross beta, Tc-99, and VOC concentrations had not changed during the time of sealand occupancy. On August 8, 2019, CFFF submitted the "*Southern Storage Area Operable Unit Remedial Investigation Work Plan Addendum 1 Assessment Report*" (Westinghouse, 2019c), and the report was approved by DHEC on September 4, 2019.

A risk-based action plan was developed by CFFF to empty the remaining intermodal containers containing U-bearing material in the SSAOU and remove the emptied intermodal containers from the site. On October 30, 2019, CFFF submitted the "*Southern Storage Area Operable Unit Intermodal Container Work Plan*" (Westinghouse, 2019d), which detailed how Westinghouse would sample the soil underneath sealand containers once they were removed from the site. The work plan was approved by DHEC on November 5, 2019.

According to the plan following container removal, Health Physics (HP) personnel completed direct radiological surveys of the soil using an Eberline E-600 with an alpha/beta probe instrument. If survey results indicated alpha contamination above background levels, the top layer of soil ("surficial soil") was removed until the survey results were at or below background levels. In these instances where surficial soil was removed, CFFF notified DHEC per the communication protocol and discussed the next steps.

Additionally, systematic soil sampling was completed in the footprint of the area formerly occupied by the container. As needed, biased sampling was performed in areas of potential impact based on the as-found condition of the sealand container and the direct-read radiological surveys of the soil underneath. Soil sampling and analysis was performed as described in the approved work plans. Soil sampling procedures and analytical methods in the *Final Remedial Investigation Work Plan* (AECOM, 2019) and the facility's *Procedure RA-433 Environmental Remediation Revision 1* (Westinghouse, 2020a) were followed during this scope of work. Soil samples were initially collected from 0-1 foot BLS and were analyzed by a state certified laboratory with a chain of custody maintained throughout the process to ensure sample integrity. Analyses were performed on the samples according to the COPC(s) that could be present in the soil based on materials stored in the intermodal containers. The COPCs in the SSAOU included isotopic U, Tc-99, fluoride and CVOCs.

If the soil sample results were above the RUSL, impacted soil was excavated to 1 foot BLS and additional soil sampling was conducted. The additional sampling included vertical delineation of soil impact by hand augering borings deeper into the subsurface in the assessment area until results below the RUSL were achieved. Excavated soils from the SSAOU were transported to two different facilities for disposal. Soil containing U only was transported to Waste Control Solutions in Texas for proper disposal. Soil containing tetrachloroethylene (PCE) only was transported to Clean Harbors, Chattanooga facility for proper disposal. No excavated soil contained both U and PCE. Therefore, no excavated soil was characterized as a mixed waste. More information regarding the soil under intermodal container C-21, which contained PCE, can be found in the February 2021 CA progress report (Westinghouse, 2021b).

As of February 2023, 79 intermodal containers (62 of which previously contained accountable U or equipment contaminated with U) were removed from the SSAOU. The results of the soil sampling conducted below the intermodal containers were reported to DHEC in CA monthly progress reports spanning from 2019-2021. Soil in the SSAOU where intermodal containers were once located is no longer impacted above applicable standards and does not have restrictions on its use. Below is a visual showing the progression of this work through November 2021.

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Sealand Removal

11/7/19



9/24/20



11/8/21



Westinghouse

A detailed description of the historical use of sealand containers at the CFFF as well as soil data tables from the removal of sealands in the Southern Storage Area Operable Unit (SSAOU) and other areas of the site follows.

Sealand Removal Background Information

At the CFFF, sealand containers were categorized into two types:

- "C" which can potentially contain U, and
- "S" which are not allowed to contain U (also known as sheds).

A risk-based approach was used to empty and remove sealand containers in the SSAOU.

When CFFF started the sealand elimination project in June of 2019, there were 62 "C" sealands. These were:

- 49 sealands containing accountable quantities of U,
- 11 sealands with equipment contaminated with low levels of residual U, and
- 2 empty (at the start of the project).

CFFF also had a total of 47 "S" sealands containing items such as maintenance and project spare parts, janitorial supplies, and miscellaneous tools, equipment and consumables used at the plant.

CFFF prioritized emptying the sealands according to the type of material it contained and the potential risk for environmental impact. A three-phased plan was implemented to empty and remove the "C" and "S" sealands.

Phase I: Accountable Quantities of Uranium
CFFF established a goal to remove the 49 "C" sealands containing accountable quantities of U by November 16, 2020 and exceeded the goal by completing this phase of work on September 24, 2020. The "C" sealands with accountable quantities of U included:

- 29 sealands containing Wet Combustible Material (WCM)
- 10 sealands containing Dry Combustible Material (DCM),
- 6 sealands containing contaminated zirconium (zirc) tubing,
- 2 sealands containing drums of oil, contaminated with low levels of U and stored in overpacks, and
- 2 sealands containing shipping packages with ash material for U recovery.

Phase II: Contaminated Equipment
The second phase of the risk reduction project was to remove the 11 "C" sealands containing contaminated equipment by the end of the 2020. CFFF met this goal when the last "C" sealand was removed on November, 13, 2020.

The "C" sealands containing contaminated equipment were:

- 4 sealands containing excess manufacturing equipment contaminated with low levels of residual U,
- 1 sealand containing empty plastic containers, also known as polypaks (PP), that had previously been used for storing U dioxide powder, and
- 6 sealands containing shipping containers referred to as "2901s."

The "C" sealand identification numbers from both phase I and II of the project are listed in the table below by the type of material it contained.

"C" Sealands											
Accountable Quantities of Uranium							Contaminated Equipment				
WCM			DCM	Zirc Tubes	Contaminated Oil	Ash	Excess Manufacturing Equipment	Empty PPs	2901	Empty at start	TOTAL
29			10	6	2	2	4	1	6	2	62
C-4	C-34	C-54	C-18	WEC-400	C-13	C-17	C-15	C-16	C-7	C-26	
C-19	C-35	C-57	C-20	WEC-500	C-36	C-38	C-47		C-8	C-46	
C-23	C-37	C-58	C-21	WEC-700			C-48		C-9		
C-28	C-39	C-61	C-25	WEC-800			C-49		C-10		
C-29	C-41	C-62	C-52	WEC-1000					C-11		
C-30	C-42	C-63	C-53	WEC-1001					C-24		
C-31	C-43	C-64	C-56								
C-32	C-45	C-65	C-59								
C-33	C-51	C-66	C-60								
C-44	C-40		C-67								

Phase III: Sheds

The third phase of the risk reduction project was to reduce or eliminate sheds, "S" sealands. At project initiation, there were 47 "S" sealands on site. To support Phase I and Phase II activities at the start of the SSAOU project, four new sealands with metal floors were purchased as contingency planning. Two have since been removed, and two (S-52, S-53) were kept for storage of consumable items used in waste packaging operations, bringing the total number of S sealands to 49.

Since the start of the project, 17 "S" sealands have been emptied and removed from the site, and 32 remain onsite in various areas of the site. It should be noted that in 2020, the CFFF procedure for control of sealand containers was revised to explicitly prohibit storage of radioactive/contaminated materials or hazardous materials in new sealands.

The "S" sealand identification numbers are listed below.

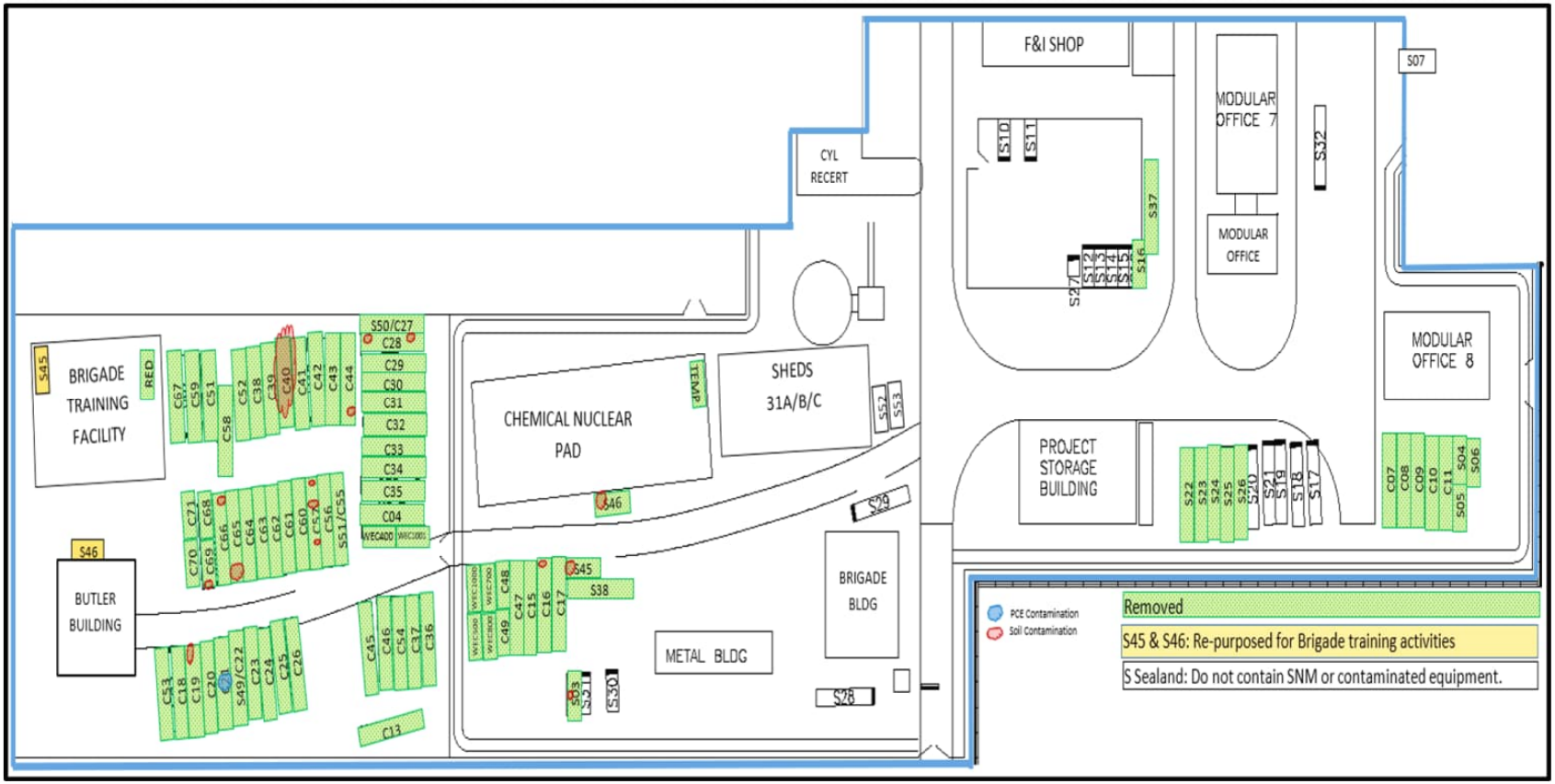
"S" Sealands				
Currently in Use			Removed/Relocated	
32			17	
S-02	S-19	S-34	S-03	S-38
S-07	S-20	S-35	S-04	S-45
S-08	S-21	S-36	S-05	S-46
S-09	S-27	S-39	S-06	S-49
S-10	S-28	S-45	S-16	S-50
S-11	S-29	S-46	S-22	S-51
S-12	S-30	S-47	S-23	ERT (RED)
S-13	S-31	S-48	S-24	
S-14	S-32	S-52	S-25	
S-15	S-33	S-53	S-26	
S-17				
S-18				

Note: S-45 and S-46 were previously used to store non-uranium bearing development materials and tool room equipment and parts. During the shed and sealand removal campaign, these units were removed, surveyed, and the soil underneath them sampled. Because S-45 and S-46 containers were in good condition and not contaminated, they were repurposed and relocated by the site for emergency preparedness supplies. Therefore, S-45 & S-46 show up in both the "Currently in Use" and "Removed/Relocated" columns.

Soil Sampling Results

The information that follows summarizes the soil sampling data collected when sealand containers were removed from the SSAOU at CFFF.

Removal of "C" designated sealands in the SSAOU was the first priority for the project. "S" sealands in the SSAOU as well as in other areas of the plant were also removed. In total, soil underneath the footprint of thirteen sealands in the SSAOU was remediated, twelve for U impact and one for PCE impact. No soil impact was identified in areas where sealands were removed outside of the SSAOU. The diagram below represents a focused view of the SSAOU where the "C" sealands were located. The red and blue circles indicate the small areas of impact for U and PCE, respectively.



The following table summarizes the results from impacted soil underneath the footprint of the thirteen sealands in the SSAOU.

Sealands Requiring Remediation							
Sea land	Sealand Removed	HP Direct Radiological Survey Results	Soil Sample Results	Westinghouse Letter #	DHEC Website Posted Date	DHEC Website Title	GEL Analytical Results
C-40	6/28/19	Most of back half of sealand: 15k to 100k dpm Beta, excavated 6-9" for HP. Additional 2' excavated based on GEL results.	GEL data required additional soil removal-final results below residential limit.	LTR-RAC-19-65	August 9, 2019	Remedial Investigation (RI) Work Plan Addendum 1 Assessment Report on the Southern Storage Area Operable Unit	Attachment C
C-44	11/6/19	1.5' DIA: 200,000 dpm beta, excavated 8-12" for HP. Additional 2' excavated based on GEL results.	GEL data required additional soil removal-final results below residential limit.	LTR-RAC-20-15	February 5, 2020	January 2020 Consent Agreement Progress Report	Attachment B
C-28	11/13/19	3' x 5' NW corner: 2k to 500k dpm beta 1,500 dpm Alpha (Max)	GEL data-results below residential limit-No further action required.	LTR-RAC-20-15	February 5, 2020	January 2020 Consent Agreement Progress Report	Attachment B
	11/13/19	1.5' DIA, ~10' back on North side: 150k dpm Beta 1,000 dpm Alpha	GEL data-results below residential limit-No further action required.	LTR-RAC-20-15	February 5, 2020	January 2020 Consent Agreement Progress Report	Attachment B
C-65	11/14/19	Acceptable HP soil sample results. Excavated ~2' based on GEL results & resampled.	GEL data required soil removal-final results below residential limit.	LTR-RAC-20-15	February 5, 2020	January 2020 Consent Agreement Progress Report	Attachment B
S-3	1/15/20	Acceptable HP soil sample results. Excavated ~2' initially based on GEL results & resampled. Excavated again for confirmatory testing.	GEL data required soil removal-final results below residential limit.	LTR-RAC-20-34	April 8, 2020	March 2020 Consent Agreement Progress Report	Attachment B
C-16	1/16/20	Acceptable HP soil sample results. Excavated ~2' based on GEL results & resampled.	GEL data required soil removal-final results below residential limit.	LTR-RAC-20-34	April 8, 2020	March 2020 Consent Agreement Progress Report	Attachment B
C-57	3/25/20	1.5' DIA, 80k dpm Beta, excavated 8-12" for HP.	GEL data-results below residential limit-No further action required.	LTR-RAC-20-47	May 12, 2020	April 2020 Consent Agreement Progress Report	Attachment B
	3/25/20	1' DIA, 25k dpm Beta, excavated 8-12" for HP.	GEL data-results below residential limit-No further action required.	LTR-RAC-20-47	May 12, 2020	April 2020 Consent Agreement Progress Report	Attachment B
	3/25/20	1' x 3': 25k dpm Beta, excavated 8-12" for HP.	GEL data-results below residential limit-No further action required.	LTR-RAC-20-47	May 12, 2020	April 2020 Consent Agreement Progress Report	Attachment B
C-66	3/25/20	2' x 2': 120k dpm Beta, excavated 2' for HP.	GEL data-results below residential limit-No further action required.	LTR-RAC-20-47	May 12, 2020	April 2020 Consent Agreement Progress Report	Attachment B
C-69	9/2/20	Acceptable HP soil sample results. Excavated ~2' based on GEL results & resampled.	GEL data required soil removal-final results below residential limit.	LTR-RAC-20-90	December 9, 2020	November Consent Agreement Progress Report	Attachment B
C-19	9/9/20	Acceptable HP soil sample results. Excavated ~2' based on GEL results & resampled.	GEL data required soil removal-final results below residential limit.	LTR-RAC-20-90	December 9, 2020	November Consent Agreement Progress Report	Attachment B
C-21	9/9/20	Acceptable HP soil sample results. Excavated ~2' based on GEL results & resampled. Excavated an additional ~2'.	GEL data required soil removal for PCE only-final data below residential limit.	LTR-RAC-20-90 (Radiological)	December 9, 2020	November Consent Agreement Progress Report	Attachment B
				LTR-RAC-21-24 (PCE)	March 11, 2021	February 2021 Consent Agreement Progress Report	Attachment B
S-45	9/16/20	Acceptable HP soil sample results. Excavated ~2' based on GEL results & resampled.	GEL data required soil removal-final results below residential limit.	LTR-RAC-20-90	December 9, 2020	November Consent Agreement Progress Report	Attachment B
S-46	9/16/20	Acceptable HP soil sample results. Excavated ~2' based on GEL results & resampled.	GEL data required soil removal-final results below residential limit.	LTR-RAC-20-90	December 9, 2020	November Consent Agreement Progress Report	Attachment B

Note: Throughout the report, sheds with single digit numbers may be referred to as “S-X” or “S-0X” (e.g., “S-3” and “S-03” refer to the same physical shed).

The table below summarizes the sealands which did not require remediation due to U or PCE impact.

Sealands Not Requiring Remediation						
Sealand	Sealand Removed	Figure #	Westinghouse Letter #	DHEC Website Posted Date	DHEC Website Title	GEL Analytical Results
C-18	11/5/19	13	LTR-RAC-20-15	February 5, 2020	January 2020 Consent Agreement Progress Report	Attachment B
C-20	11/6/19	13				
C-25	11/6/19	13				
C-26	11/5/19	13				
C-46	11/5/19	13				
C-35	11/5/19	13				
C-32	11/14/19	13				
C-31	11/6/19	13				
C-30	11/5/19	13				
C-29	11/5/19	13				
C-43	1/17/20	14	LTR-RAC-20-34	April 8, 2020	March 2020 Consent Agreement Progress Report	Attachment B
C-58	1/16/20	14				
S-50	1/15/20	14				
C-33	1/15/20	14				
C-51	1/16/20	14				
C-59	1/15/20	14				
C-39	1/16/20	14				
C-52	1/15/20	14				
C-67	1/15/20	14				
WEC-1000	3/26/20	15	LTR-RAC-20-47	May 12, 2020	April 2020 Consent Agreement Progress Report	Attachment B
WEC-500	3/27/20	15				
WEC-700	3/26/20	15				
WEC-800	3/27/20	15				
WEC-400	3/26/20	15				
WEC-1001	3/27/20	15				
C-45	3/27/20	15				
C-42	3/27/20	15				
C-53	3/26/20	15				
C-63	3/26/20	15				
S-16	3/27/20	15				
C-60	6/23/20	16	LTR-RAC-20-68	August 12, 2020	July 2020 Consent Agreement Progress Report	Attachment B
C-56	6/23/20	16				
C-41	6/23/20	16				
C-48	9/2/20	17	LTR-RAC-20-90	December 9, 2020	November Consent Agreement Progress Report	Attachment B
C-49	9/2/20	17				
C-68	9/2/20	17				
C-70	9/2/20	17				
C-71	9/2/20	17				
C-24	9/21/20	17				
C-62	9/23/20	17				
C-13	9/22/20	17				
C-36	9/22/20	17				
C-37	9/23/20	17				
C-54	9/23/20	17				
ERT (RED)	9/22/20	17				
C-09	9/21/20	17				
S-5	9/22/20	17				
C-23	9/22/20	17				
C-22	9/24/20	17				
C-61	9/22/20	17				
C-64	9/22/20	17				
C-04	9/21/20	17				
C-55	9/22/20	17				
C-15	9/23/20	17				
C-17	9/21/20	17				
C-34	9/21/20	17				
C-38	9/23/20	17				
S-38	9/23/20	17				
C-47	9/23/20	17				
C-8	9/24/20	17				
C-7	11/13/20	17				
C-10	11/13/20	17				
C-11	11/13/20	17				
S-22	6/28/21	18	LTR-RAC-21-62	September 2, 2021	August 2021 Consent Agreement Progress Report	Attachment A
S-23	6/28/21	18				
S-24	6/28/21	18				
S-25	6/28/21	18				
S-26	6/28/21	18				
S-04	9/13/22	19	LTR-RAC-22-22	April 5, 2022	March 2022 Consent Agreement Progress Report	Attachment A
S-06	9/13/22	19				

Areas of Impact

Sealand Container C-40

In preparation for removal of the first sealand, C-40, and adjacent sealands, gravel was laid to make the work area safe for forklift travel. Prior to gravel placement, soil samples were taken in the work area and identified to have no impact by CFFF COPCs as displayed in the table below. These sample locations are identified by numbers 1-11 in the image below. Refer to correspondence previously submitted to the Department for more information entitled *Southern Storage Area Operable Unit Remedial Investigation Work Plan Addendum 1 Assessment Report* (LTR-RAC-19-65, Westinghouse, 2019c).



C-40 Gravel Area Sampling														
Systematic (S) or Bias (B) Sample	Sample Location	pH		U_{234} (ug/g)	U_{235} (ug/g)	U_{238} (ug/g)		Total Isotopic Uranium (µg/g)		Tc-99 (pCi/g)	Ammonia (mg/kg)	Nitrate (mg/kg)		Fluoride (mg/kg)
S	1	5.55	<	0.00207	0.055	2.58	<	2.64	<	3.62	86.4	2.15		1.32
S	2	5.23	<	0.00231	0.00958	0.903	<	0.915	<	5.16	134	0.799		0.724
S	3	4.48	<	0.00211	0.0609	2.74	<	2.80	<	0.785	84.8	1.19	<	0.382
S	4	4.63	<	0.00221	0.00829	0.804	<	0.815	<	4.81	55.4	1.30	<	0.363
S	5	5.23	<	0.00207	0.00661	0.802	<	0.811	<	4.22	53.5	1.08	<	0.362
S	6	4.75	<	0.00216	0.0162	1.35	<	1.37	<	-4.81	58.8	0.722		0.405
S	7	5.49	<	0.00211	0.0345	1.79	<	1.83	<	3.60	149	1.6		1.36
S	8	4.95	<	0.00219	0.00752	0.671	<	0.681	<	2.21	46.1	0.873	<	0.372
B	9	4.92	<	0.00215	0.0362	1.82	<	1.86	<	2.07	53.0	2.17		0.778
B	10	5.00	<	0.0021	0.0519	3.37	<	3.42	<	-2.3	76.1	1.88		0.832
B	11	4.72	<	0.00223	0.279	8.07	<	8.35	<	4.46	51.0	2.84		0.702

COPC	Industrial Use Screening Level	Basis of Screening Level
Uranium - 234	3,310 pCi/g	NUREG 1757 Vol.1, Rev.2, Appendix H[1]
Uranium - 235	39 pCi/g	NUREG 1757 Vol.1, Rev.2, Appendix H[1]
Uranium - 238	179 pCi/g	NUREG 1757 Vol.1, Rev.2, Appendix H[1]
Technetium - 99	89,400 pCi/g	NUREG 1757 Vol.1, Rev.2, Appendix H[1]
Tetrachloroethylene (PCE)	100 mg/kg	EPA Regional Screening Levels[2]
Fluoride	47,000 mg/kg	EPA Regional Screening Levels[2]
Nitrate	1,900,000 mg/kg	EPA Regional Screening Levels[2]

[1] NUREG-1757 Vol. 1, Rev.2 Consolidated Decommissioning Guidance, Appendix H: Memorandum of Understanding between the Environmental Protection Agency and the Nuclear Regulatory Commission, Final Report September 2006. The individual isotope limits are based on carcinogenic risk.
[2] USEPA Regional Screening Level, Summary Table, Industrial Soil Standard (TR=1E-06, HQ=1), May 2022.
[3] USEPA Regional Screening Level Table is updated semiannually.

Afterwards, Sealand C-40 was emptied and removed. Based on the HP radiological survey, a small area of impacted surficial soil was identified underneath the sealand footprint and immediately removed. Subsequent soil sample analysis also identified a result above residential screening levels; the impact in this small area was remediated by removing the soil. Please refer to the aforementioned LTR-RAC-19-65 (Westinghouse, 2019c) for more information. C-40 (R1-R3) samples were taken following soil removal to confirm remediation to residential screening levels. The table below summarizes the results.

Phase 2 Southern Storage Area Operable Unit - Soil Sampling - Beneath Sea-land C-40

July 1, 2019 Sampling

	1 mg/kg = 1 ppm			SU	pCi/g	1 ug/g = 1 ppm			
	Fluoride	Ammonia	Nitrate	pH (H)	Tc-99	U238	U234	U235	Total U
C-40-1	1.52	28.8	2.05	4.76	*14.0*	0.763	*0.00212*	0.00727	0.772
C-40-2	0.593	37.6	1.77	4.75	*14.0*	2.77	*0.00218*	0.0925	2.86
C-40-3	1.00	50.2	2.60	4.95	*11.9*	0.706	*0.00207*	0.00618	0.714
C-40-4	1.36	33.3	1.75	5.52	*12.1*	0.768	*0.00206*	0.0059	0.776
C-40-5	0.851	35.9	2.14	4.73	*16.3*	0.630	*0.00218*	0.00532	0.638
C-40-6	*0.396*	76.9	2.23	4.84	*16.5*	2.46	*0.00228*	0.0513	2.51
C-40-7	0.900	49.9	5.00	4.52	*13.4*	0.660	*0.00211*	0.00508	0.667
C-40-8	*0.375*	50.0	1.95	4.66	*22.9*	1.15	*0.00207*	0.0193	1.17
C-40-9	*0.391*	81.3	2.18	4.53	*22.5*	20.4	0.00881	0.905	21.31
C-40-10	0.658	38.2	3.23	4.63	*16.8*	6.46	0.00238	0.240	6.70
C-40-11	1.98	36.3	15.4	4.15	*19.3*	2.20	*0.00213*	0.0641	2.27
C-40-12	*0.366*	42.3	1.26	4.79	*20.9*	1.27	*0.00216*	0.0215	1.29
C-40-13	*0.374*	44.9	2.27	4.66	*15.1*	1.46	*0.00221*	0.019	1.48
C-40-14	1.06	91.0	2.43	4.74	*15.2*	6.63	*0.00218*	0.179	6.81
C-40-15	0.495	87.8	2.69	4.60	*22.2*	4.47	*0.0021*	0.118	4.59
C-40-16	0.957	56.5	2.22	4.65	*21.9*	2.87	*0.00217*	0.0439	2.92
C-40-17	*0.391*	88.6	2.58	4.75	*13.7*	3.83	*0.00225*	0.0838	3.92
C-40-18	1.1	46.1	2.69	4.85	*20.0*	7.14	0.00258	0.248	7.39

July 30, 2019 Sampling

Re-sampling following soil excavation of Sample #9 Area

	ug/kg				1000 ug/kg = 1 ppm			
	U238	U234	U235	Total U	U238	U234	U235	Total U
C-40-R1	667	*2.11*	4.61	673.720	0.667	*0.00211*	0.00461	**0.674**
C-40-R2	659	*2.18*	4.93	666.110	0.659	*0.00218*	0.00493	**0.666**
C-40-R3	562	*2.16*	4.02	568.180	0.562	*0.00216*	0.00402	**0.568**

NOTE: *italicized = non-detectable, reported at detection limit*

(H): out of holding

C-40 REAR

6.81	4.59	2.92	3.92	7.39
#14	#15	#16	#17	#18
		#13		
		1.48		
#11				#12
2.27				1.29
			R3	
		#10	**0.568**	
3.85		6.70		
#7		#8	R2	#9
0.667		1.17	**0.666**	21.31
		2.93		
			R1	
			0.674	
0.638				2.51
#5				#6
		#4		
2.91		0.776		
#1		#2		#3
0.772		2.86		0.714

C-40 FRONT

SAMPLE RESULTS ARE IN PPM U

initial Chem Lab samples

systematic samples

bias samples

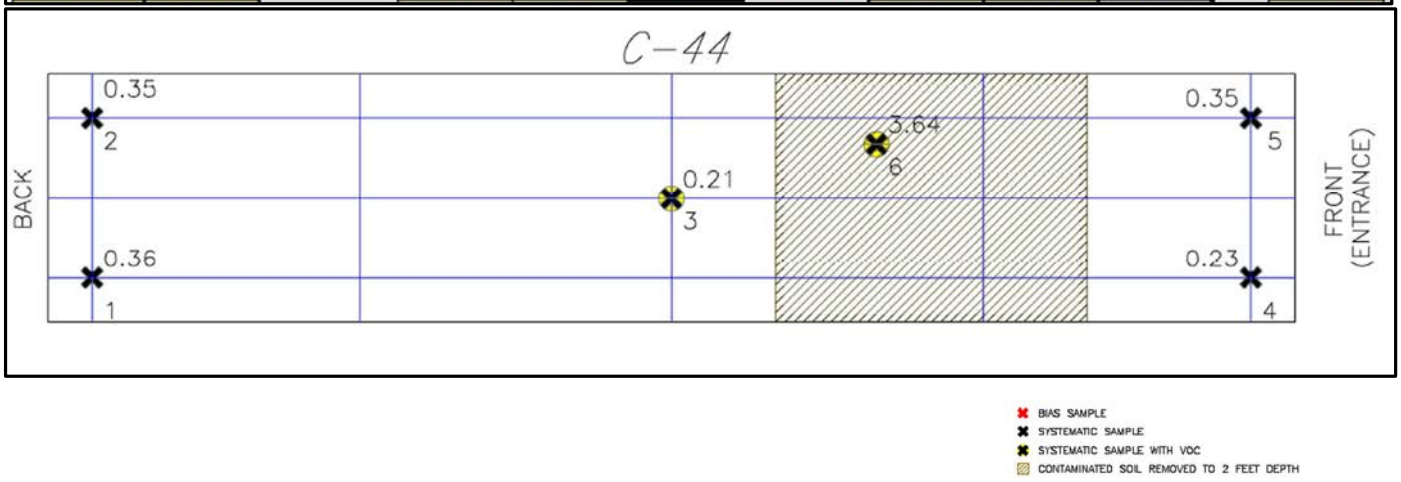
excavated area following first round of sampling

Areas of Impact

Sealand Container C-44

Based on the HP radiological survey, a small area of surficial soil impact was found underneath C-44 and immediately removed. Subsequent soil sample analysis also identified one result (highlighted in yellow in the table below) above RUSL, and the impact in this area was remediated by removing the soil. Refer to correspondence previously submitted to the Department for more information entitled *January 2020 Consent Agreement Progress Report* (LTR-RAC-20-15, Westinghouse, 2020b). Samples were taken following soil removal to confirm remediation to below RUSL. The table below summarizes the results.

Sample ID	Analyte (pCi/g)							SOF	SOF	mg/kg	
	U-234		U-235	U-238	Sum U		Tc-99	Resid.	Ind.	Fluoride	
C-44-1	3.36		0.245	0.982	4.587	< 3.60	0	0.36	0.01		0.58
C-44-2	3.02		0.227	1.32	4.567	< 3.84	0	0.35	0.01	<	0.39
C-44-3	1.55	< 0.1030	0.0594	1.22	2.8294	< 3.92	0	0.21	0.01		0.71
C-44-4	1.84		0.142	0.942	2.924	< 3.86	0	0.23	0.01		0.73
C-44-5	3.21		0.112	1.27	4.592	< 4.11	0	0.35	0.01		0.73
C-44-6	38.5		1.92	6.07	46.49	< 4.12	0	3.64	0.09		1.92



Resampling in January 2020 for isotopic U following soil excavation in the C-44-6 area produced the following tabulated results below RUSL and industrial use screening levels (IUSL). The sketch depicting the exact location of confirmatory sampling locations C-#44-1 and C#44-2 is unavailable but would have been taken in close proximity to original sample location C-44-6.

Confirmatory Soil Sampling Results After Soil Excavation											
Sample ID	Analyte (pCi/g)									SOF	SOF
	U-234		U-235 DL	U-235	U-238	Sum U		Tc-99 DL	Tc-99	Resid.	Ind.
WO 500519											
C-#44-1	0.237	<	0.117	0.0391	0.864	1.14		NS	NS	0.08	0.01
C-#44-2	1.20	<	0.402	0.0537	1.14	2.39		NS	NS	0.18	0.01

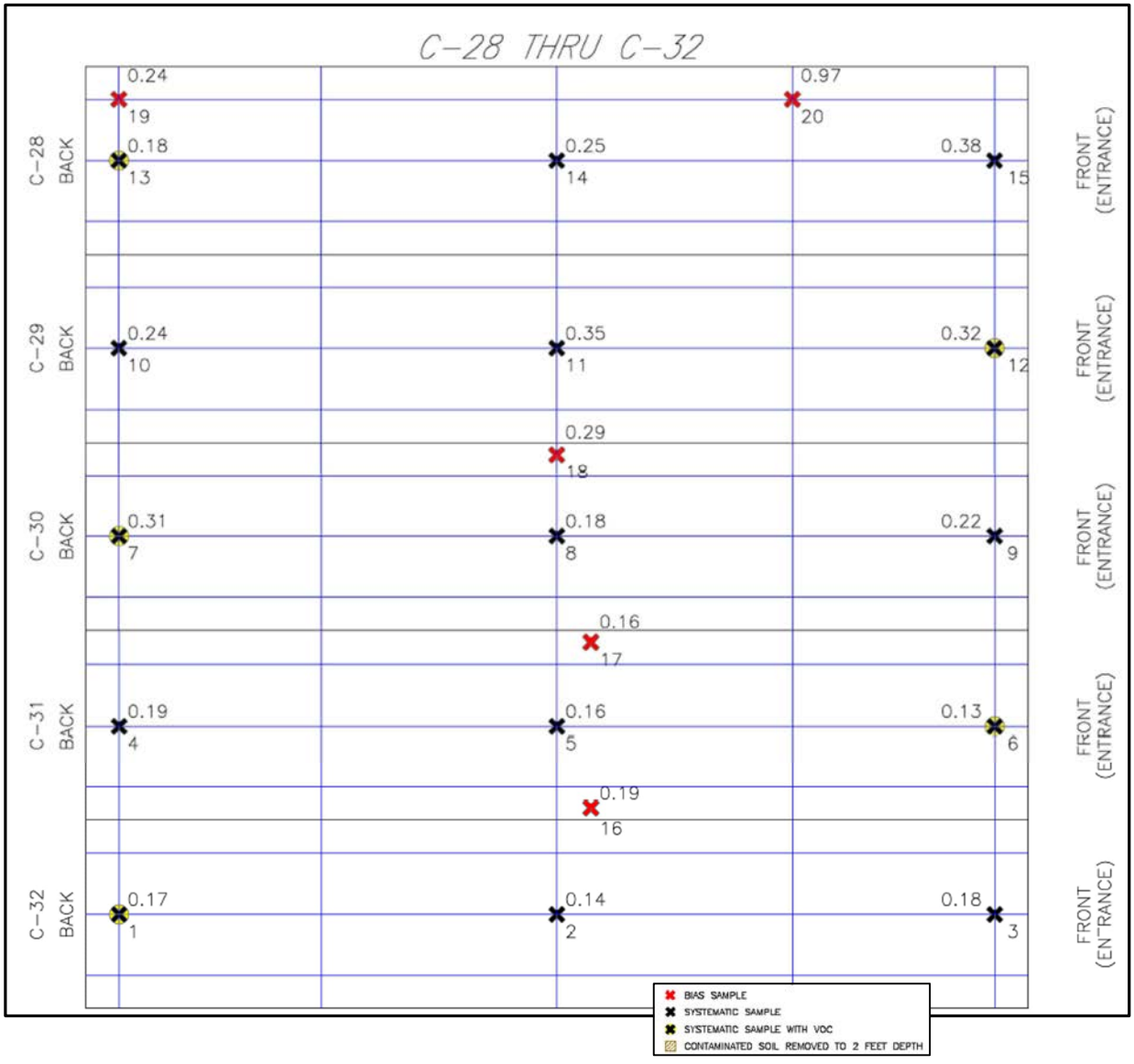
NS Not Sampled

Areas of Impact

Sealand Container C-28

Based on the HP radiological survey, a small area of surficial soil impact was found underneath C-28 and immediately removed. Subsequent soil sample analysis displayed in the table below confirmed that the impact was surficial, and no further action was required. The soil sample results were below RUSL and IUSL. Refer to correspondence previously submitted to the Department for more information entitled *January 2020 Consent Agreement Progress Report* (LTR-RAC-20-15). The table below summarizes the results.

Sample ID	Analyte (pCi/g)							SOF	SOF	mg/kg
	U-234		U-235	U-238	Sum U		Tc-99	Resid.	Ind.	Fluoride
C-28-13	1.49	< 0.0758	0.0436	0.797	2.3306	< 3.36	0	0.18	0.01	2.08
C-28-14	1.96		0.138	1.2	3.298	< 3.50	0	0.25	0.01	2.29
C-28-15	3.31		0.262	1.23	4.802	< 3.28	0	0.38	0.01	2.90
C-28-19	2.18	< 0.0576	0.0384	0.887	3.1054	< 3.27	0	0.24	0.01	1.13
C-28-20	9.14		0.672	2.11	11.922	< 3.30	0.565	0.97	0.03	3.00

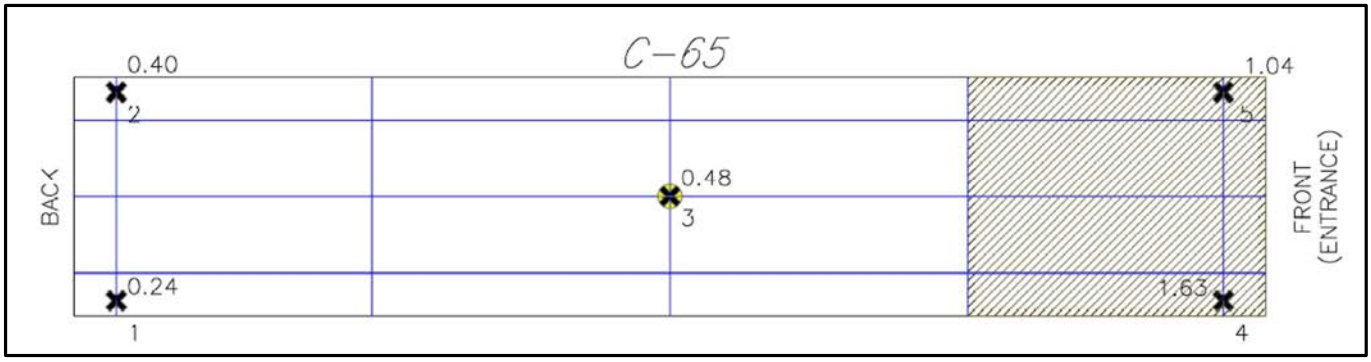


Areas of Impact

Sealand Container C-65

There was no surficial soil impact detected by direct HP radiological surveys underneath C-65. Soil sample analysis indicated two U results above RUSL, and the impact in this area was remediated by removing the soil to a depth of two feet. Refer to correspondence previously submitted to the Department for more information entitled *January 2020 Consent Agreement Progress Report* (LTR-RAC-20-15, Westinghouse, 2020b). Samples were taken following soil removal to confirm remediation to RUSL. The table below summarizes the results.

Sample ID	Analyte (pCi/g)							SOF	SOF	mg/kg
	U-234		U-235	U-238	Sum U		Tc-99	Resid.	Ind.	Fluoride
C-65-1	2.09	< 0.1480	0.0938	0.958	3.1418	< 4.32	0	0.24	0.01	0.98
C-65-2	3.35		0.0801	1.9	5.3301	< 4.07	0	0.40	0.01	1.03
C-65-3	4.32		0.265	1.65	6.235	< 3.79	0	0.48	0.02	0.89
C-65-4	15.5		0.773	4.79	21.063	< 3.68	0	1.63	0.05	2.79
C-65-5	9.85		0.608	2.88	13.338	< 3.37	0	1.04	0.03	1.10



Resampling in January 2020 for isotopic U following soil excavation in the C-65-4 and C-65-5 areas produced the following tabulated results below RUSL and IUSL. The sketch depicting the exact location of confirmatory sampling locations C-#65-1 and C#65-2 is unavailable but would have been taken in close proximity to original sample locations C-65-4 and C-65-5.

Confirmatory Soil Sampling Results After Soil Excavation											
Sample ID	Analyte (pCi/g)									SOF	SOF
	U-234		U-235 DL	U-235	U-238	Sum U		Tc-99 DL	Tc-99	Resid.	Ind.
WO 500519											
C-#65-1	1.10	<	0.260	0.1200	0.609	1.83				0.14	0.01
C-#65-2	1.20	<	0.189	0.109	0.936	2.25				0.17	0.01

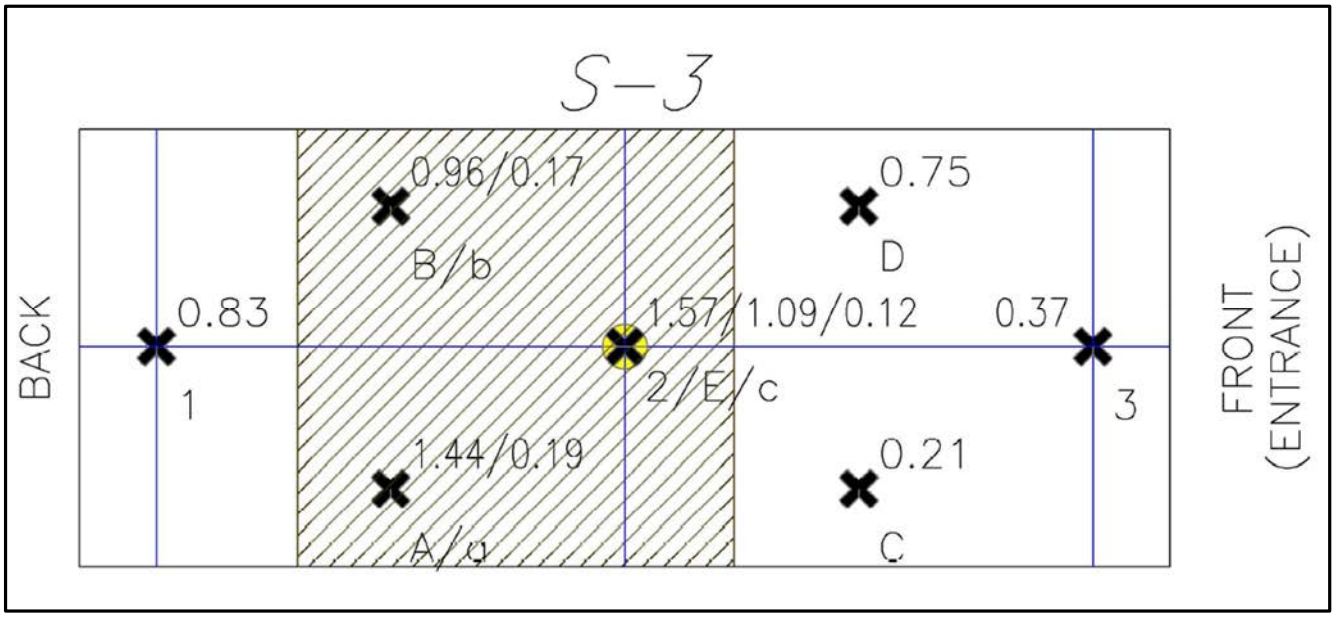
NS Not Sampled

Areas of Impact

Sealand Container S-3

There was no surficial soil impact underneath S-3 detected by the HP radiological surveys. Soil sample analysis found three results above RUSL, and the soil in this area was remediated by removing the soil to a depth of two feet. Refer to correspondence previously submitted to the Department for more information entitled *March 2020 Consent Agreement Progress Report* (LTR-RAC-20-34, Westinghouse, 2020c). The initial soil samples taken are labeled S-3-1 through S-3-3. Following assessment of these results, samples S-3-A through S-3-E were taken to bound the impacted area. Following soil removal, samples S-3-a through S-3-c were taken to confirm remediation to below RUSL. The table below summarizes the results.

Sample ID	Analyte (pCi/g)								SOF	SOF		mg/kg
	U-234		U-235 DL	U-235	U-238	Sum U		Tc-99 DL	Tc-99	Resid.	Ind.		Fluoride
S-3-1	7.14			0.387	3.24	10.767	<	3.76	0	0.83	0.03		1.19
S-3-2	13			0.52	7.08	20.6	<	3.40	0	1.57	0.06		4.16
S-3-3	3.38	<	0.1310	0.113	1.4	4.893	<	3.54	0	0.37	0.01		0.775
S-3-A	12.5			0.513	5.87	18.883				1.44	0.05		
S-3-B	7.81			0.302	4.53	12.642				0.96	0.04		
S-3-C	1.69	<	0.2070	0.0327	1.11	2.8327				0.21	0.01		
S-3-D	7.18	<	0.3120	0.255	2.34	9.775				0.75	0.02		
S-3-E	9.67			0.308	4.32	14.298				1.09	0.03		
S-3-a	1.19			0.0955	1.17	2.4555				0.19	0.01		
S-3-b	1.05	<	0.2870	0.201	0.840	2.091				0.17	0.01		
S-3-c	0.821	<	0.1240	0.0414	0.738	1.6004				0.12	0.01		

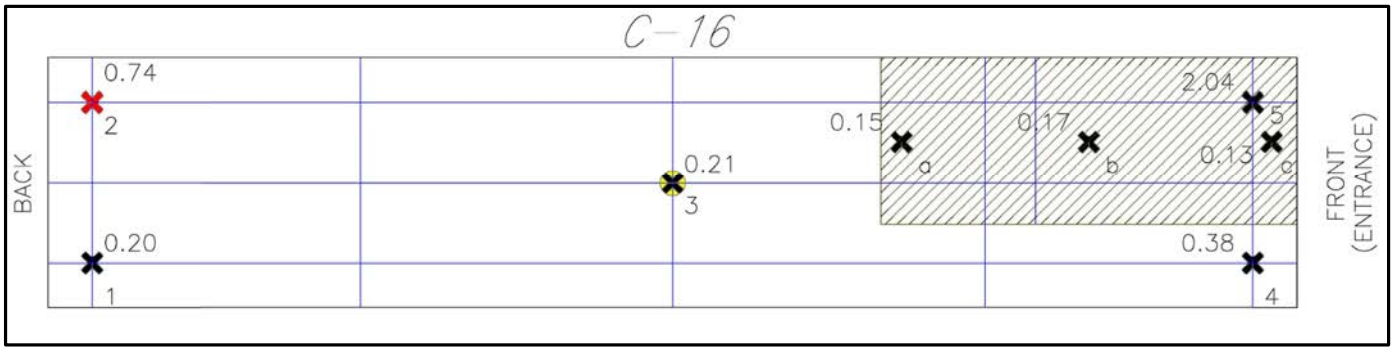


Areas of Impact

Sealand Container C-16

There was no surficial soil impact underneath C-16 detected by the HP radiological surveys. Subsequent soil sample analysis found one result above RUSL, and the impact in this small area was remediated by soil removal to a depth of two feet. Refer to correspondence previously submitted to the Department for more information entitled *March 2020 Consent Agreement Progress Report* (LTR-RAC-20-34, Westinghouse, 2020c). The initial soil samples taken are labeled C-16-1 through C-16-5. Samples C-16-a through C-16-c were taken following soil removal to confirm remediation to below RUSL. The table below summarizes the results.

Sample ID	Analyte (pCi/g)								SOF	SOF		mg/kg
	U-234		U-235 DL	U-235	U-238	Sum U		Tc-99 DL	Tc-99	Resid.	Ind.		Fluoride
C-16-1	1.7			0.105	0.718	2.523	<	3.53	0.0268	0.20	0.01	<	0.385
C-16-2	6.7			0.371	2.24	9.311	<	4.00	0.267	0.74	0.02		0.925
C-16-3	1.46			0.134	1.2	2.794	<	3.93	0	0.21	0.01		1.11
C-16-4	3			0.121	1.84	4.961	<	3.68	0	0.38	0.01	<	0.375
C-16-5	19.2			0.638	6.74	26.578	<	3.49	0	2.04	0.06		10.4
C-16-a	1.01	<	0.2180	0.0599	0.895	1.9649				0.15	0.01		
C-16-b	1.29	<	0.2670	0.122	0.823	2.235				0.17	0.01		
C-16-c	0.885	<	0.2050	0	0.834	1.719				0.13	0.00		

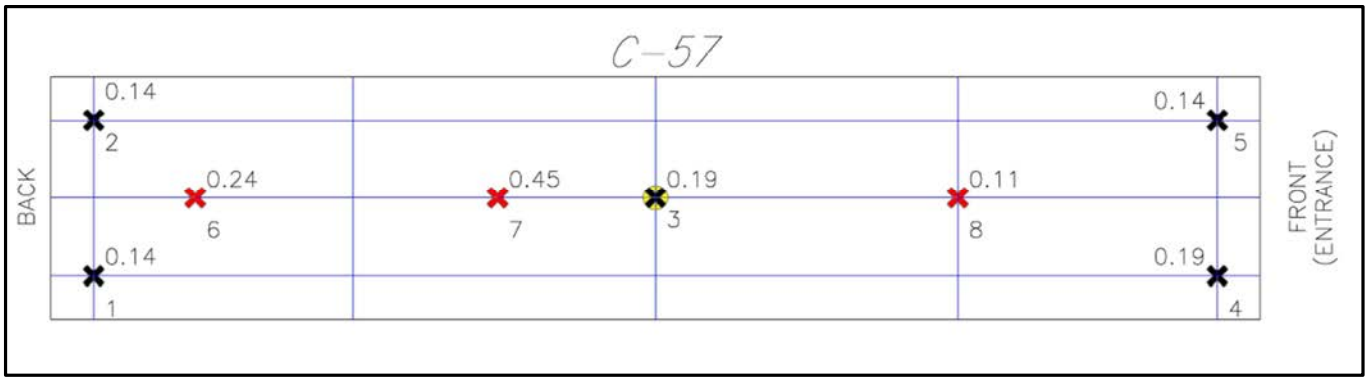


Areas of Impact

Sealand Container C-57

Surficial soil impact was detected by the HP radiological surveys and immediately removed underneath C-57. Subsequent soil sample analysis confirmed that the impact was surficial; therefore, no excavation or further action was required because the soil sample results were below RUSL. Refer to correspondence previously submitted to the Department for more information entitled *April 2020 Consent Agreement Progress Report* (LTR-RAC-20-47, Westinghouse, 2020d). The table below summarizes the results.

Sample ID	Analyte (pCi/g)									SOF	SOF		mg/kg
	U-234		U-235 DL	U-235	U-238	Sum U		Tc-99 DL	Tc-99	Resid.	Ind.		Fluoride
C-57-1	0.842	<	0.183	0.143	0.472	1.46	<	3.93	0.411	0.14	0.01	<	0.371
C-57-2	1.01	<	0.221	0.118	0.622	1.75	<	3.98	0	0.14	0.01	<	0.365
C-57-3	1.73	<	0.281	0.105	0.561	2.40	<	4.08	0	0.19	0.01		0.689
C-57-4	1.53	<	0.131	0.0873	0.857	2.47	<	4.16	0	0.19	0.01		2.33
C-57-5	0.981	<	0.221	0.119	0.647	1.75	<	4.40	0	0.14	0.01		0.490
C-57-6	2.08	<	0.277	0.102	0.948	3.13	<	4.09	0	0.24	0.01		0.850
C-57-7	3.64			0.302	1.11	5.05	<	4.20	0.999	0.45	0.02		0.898
C-57-8	0.624	<	0.169	0.0268	0.570	1.22	<	4.10	0.316	0.11	0.00		1.71

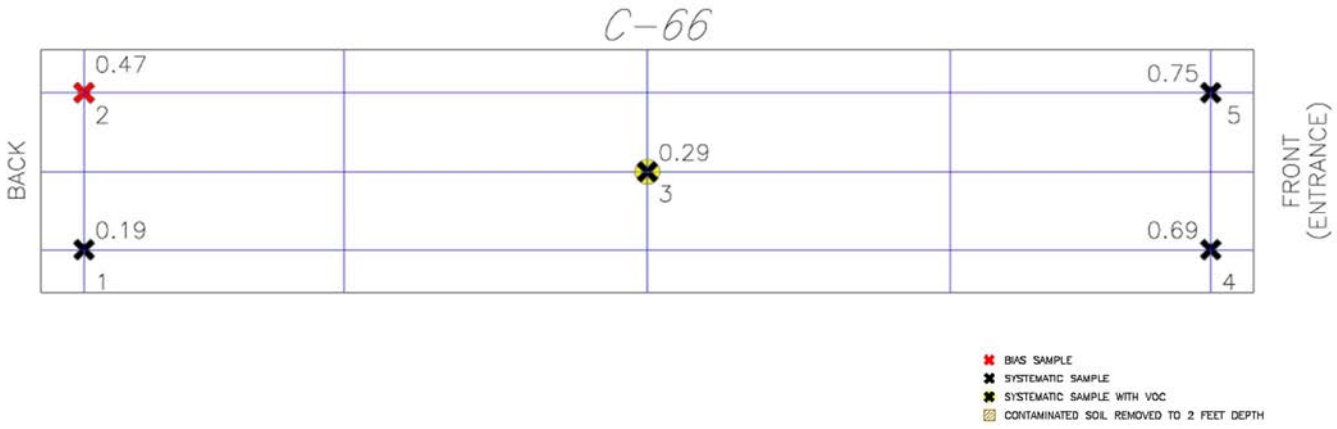


Areas of Impact

Sealand Container C-66

Soil surface impact was detected by the HP radiological surveys and immediately removed underneath C-66. Soil sample analysis confirmed that the impact was surficial, and no further action was required. The soil sample results met RUSL. Refer to correspondence previously submitted to the Department for more information entitled *April 2020 Consent Agreement Progress Report* (LTR-RAC-20-47). The table below summarizes the results.

Sample ID	Analyte (pCi/g)									SOF	SOF		mg/kg
	U-234		U-235 DL	U-235	U-238	Sum U		Tc-99 DL	Tc-99	Resid.	Ind.		Fluoride
C-66-1	1.67	<	0.189	0.0299	0.822	2.52	<	3.58	0	0.19	0.01		0.724
C-66-2	4.26	<	0.264	0.105	0.951	5.32	<	3.46	1.16	0.47	0.01		0.972
C-66-3	2.14	<	0.298	0	1.49	3.63	<	4.08	0.416	0.29	0.01		0.928
C-66-4	6.08			0.376	2.42	8.88	<	4.04	0	0.69	0.02		8.84
C-66-5	7.08			0.314	2.36	9.75	<	4.00	0	0.75	0.02		2.72



Resampling in January 2020 for isotopic U following soil excavation in the C-66-2 area produced the following tabulated results below RUSL and IUSL. The sketch depicting the exact location of confirmatory sampling location C-#66 is unavailable but would have been taken in close proximity to original bias sample location C-66-2.

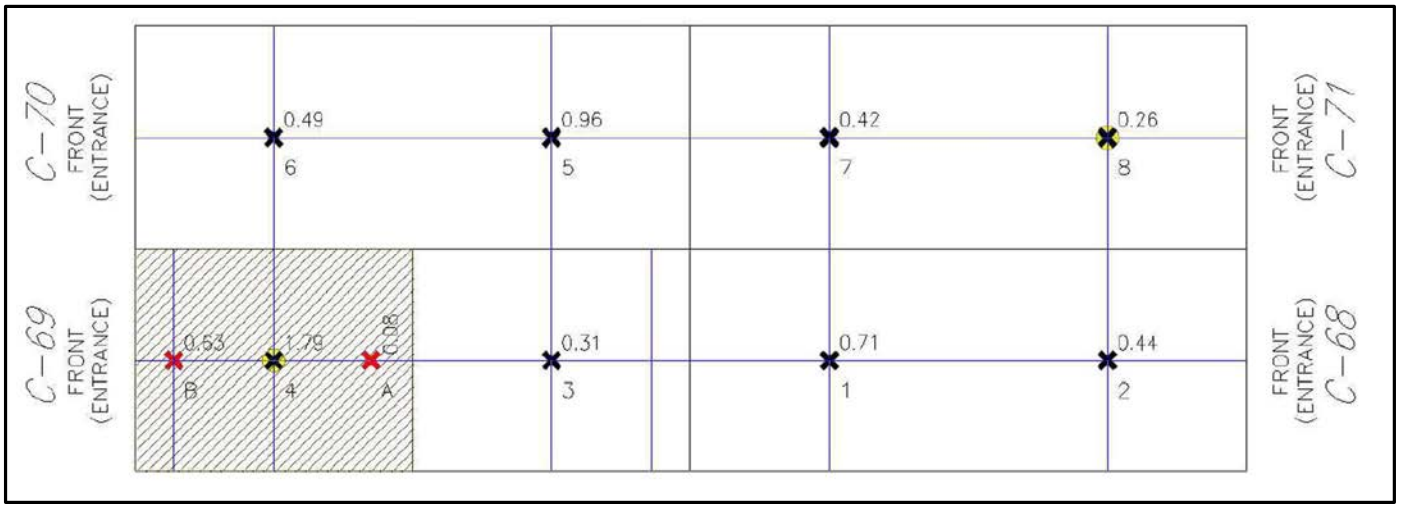
Confirmatory Soil Sampling Results After Soil Excavation											
Sample ID	Analyte (pCi/g)									SOF	SOF
	U-234		U-235 DL	U-235	U-238	Sum U		Tc-99 DL	Tc-99	Resid.	Ind.
WO 500519											
C-#66	4.56	<	0.202	0.348	2.02	6.93				0.54	0.02

Areas of Impact

Sealand Container C-69

Sealands C-68 through C-71 were removed at the same time, and the area was sampled as a single unit. There was no soil surface impact underneath these containers detected by the HP radiological surveys. One soil sample (C-69-4) was above the RUSL and the area was remediated by removing the soil to a depth of two feet. Refer to correspondence previously submitted to the Department for more information entitled *November 2020 Consent Agreement Progress Report* (LTR-RAC-20-90, Westinghouse, 2020f). C-69 (A-B) samples were taken following soil removal to confirm remediation to below RUSL. The table below summarizes the results. Note that there was no impact underneath Sealands, C-68, C-70 and C-71 and these results are included in the "Areas of No Impact" section of this appendix.

Sample ID	Analyte (pCi/g)									SOF	SOF		mg/kg
	U-234		U-235 DL	U-235	U-238	Sum U		Tc-99 DL	Tc-99	Resid.	Ind.		Fluoride
C-69-3	2.50	<	0.248	0.0681	1.49	4.06	<	0.870	0	0.31	0.01		4.45
C-69-4	17.3			0.996	4.650	22.95	<	0.936	0	1.79	0.06		7.07
C-69-A	0.444	<	0.220	0.0807	0.503	1.03	<	0.906	0	0.08	0.01		
C-69-B	5.99	<	0.291	0.132	1.91	8.03	<	0.795	0.232	0.63	0.02		

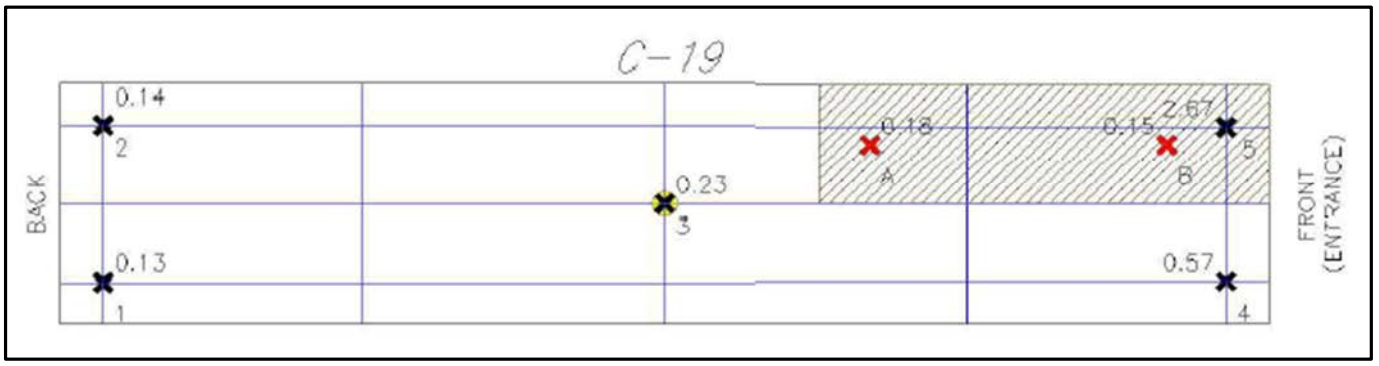


Areas of Impact

Sealand Container C-19

There was no soil surface impact underneath C-19 detected by the HP radiological surveys. Soil sample analysis found one result above RUSL and the impact in this area was remediated by soil removal to a depth of two feet. Refer to correspondence previously submitted to the Department for more information entitled *November 2020 Consent Agreement Progress Report* (LTR-RAC-20-90, Westinghouse, 2020f). Samples C-19 (A-B) were taken following the removal of soil to confirm remediation to below RUSL. The table below summarizes the results.

Sample ID	Analyte (pCi/g)									SOF	SOF		mg/kg
	U-234		U-235 DL	U-235	U-238	Sum U		Tc-99 DL	Tc-99	Resid.	Ind.		Fluoride
C-19-1	0.552			0.137	0.996	1.69	<	0.678	0	0.13	0.01		0.724
C-19-2	0.964	<	0.157	0.0523	0.871	1.89	<	0.741	0	0.14	0.01	<	0.352
C-19-3	1.86	<	0.139	0.0926	1.07	3.02	<	0.777	0	0.23	0.01	<	0.369
C-19-4	5.04			0.321	2.01	7.37	<	0.699	0	0.57	0.02		3.25
C-19-5	25.7			1.43	7.27	34.40	<	0.749	0	2.67	0.09		1.66
C-19-A	1.25	<	0.252	0.160	0.710	2.12	<	0.845	0.169	0.18	0.01		
C-19-B	1.03	<	0.145	0.000	0.872	1.90	<	0.841	0.233	0.15	0.01		



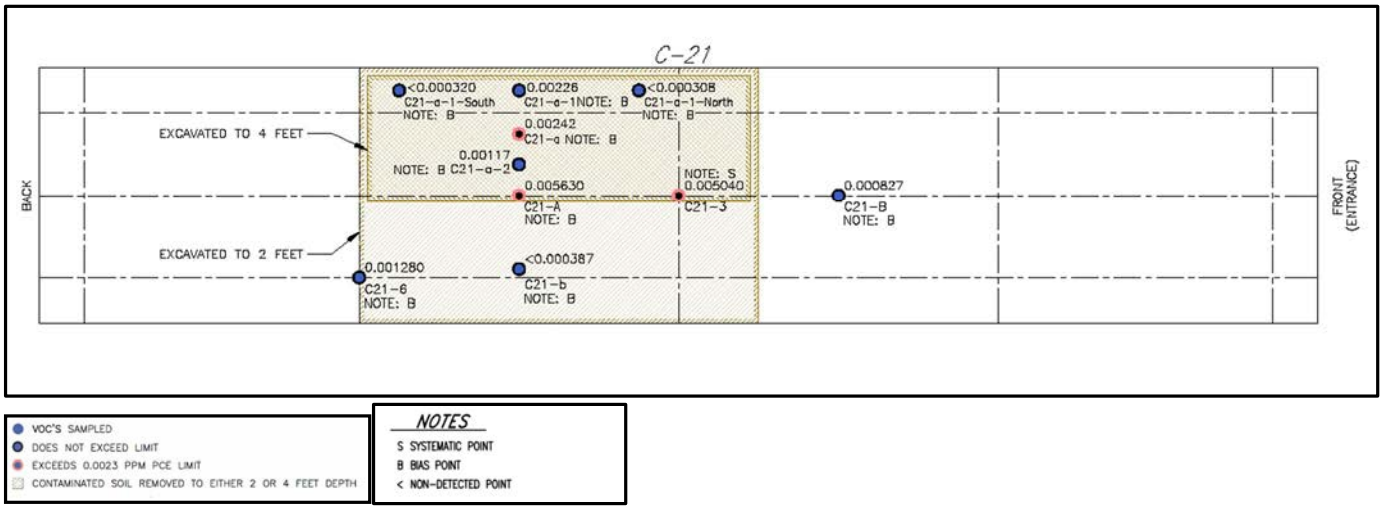
Areas of Impact

Sealand Container C-21

There was no soil surface impact underneath C-21 detected by the HP radiological surveys and there was no U impact in the soil based upon U analytical results. The initial soil samples taken on September 10, 2020 (C-21-3 and C-21-6) identified PCE above the residential screening level (RSL) in a one sample (C-21-3) and the impact was remediated by soil removal. Multiple rounds of soil removal and sampling were completed to remediate this area for the PCE impact as described in the paragraph below. Refer to correspondence previously submitted to the Department for more information entitled *November 2020 Consent Agreement Progress Report* (LTR-RAC-20-90, Westinghouse, 2020f) for radiological content and *February 2021 Consent Agreement Progress Report* (LTR-RAC-21-24, Westinghouse, 2021a) for discussion of PCE.

Following the first iteration of soil removal in the area of sample C-21-3, samples C-21 (A-B) were taken on November 5, 2020. Upon receipt of these results, additional soil was removed and samples C-21 (a-b) were taken on January 26, 2021. Upon receipt of these results, more soil was removed and samples C-21 (a-1, a-2) were taken on February 8, 2021. Upon receipt of these results, because the soil sample result for C-21-a-1 rounded to the residential screening level, out of an abundance of caution, additional soil was removed (a fourth time). Samples C-21 (a-1-North, A-1-South) were taken on February 23, 2021 and confirmed remediation to below RSL.

Sealand Soil Analysis Tetrachloroethylene Results Compilation				
C-21	Date Sampled Lab Report #	< or =	Result (mg/kg)	Notes
C-21-3	9/10/2020 GEL WO 521515	=	0.005040	Systematic excavation required
C-21-6	9/10/2020 GEL WO 521515	=	0.001280	Bias
C-21-A	11/5/2020 GEL WO 526713	=	0.005630	Bias excavation required
C-21-B	11/5/2020 GEL WO 526713	=	0.000827	Bias
C-21-a	1/26/2021 GEL WO 533288	=	0.002420	Bias excavation required
C-21-b	1/26/2021 GEL WO 533288	<	0.000387	Bias
C-21-a-1	2/8/2021 GEL WO 534641	=	0.002260	Bias
C-21-a-2	2/8/2021 GEL WO 534641	=	0.001170	Bias
C-21-a-1-North	2/23/2021 GEL WO 525611	<	0.000308	bias
C-21-a-1-South	2/23/2021 GEL WO 525611	<	0.000320	Bias
Residential Use Screening Level (RUSL): 0.0023 mg/kg				



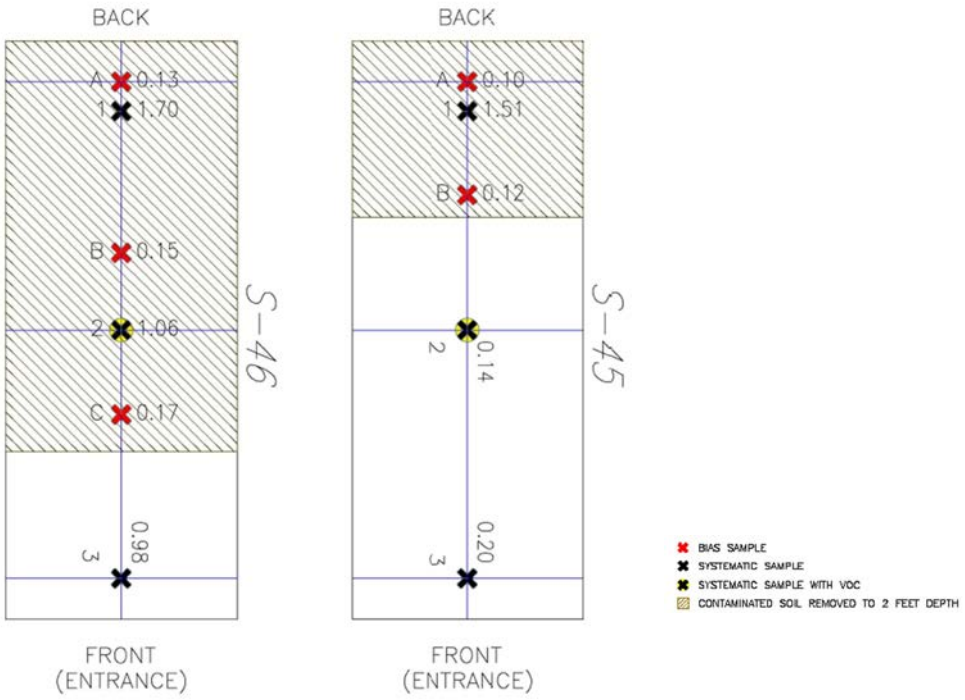
Areas of Impact

Sealand Containers S-45 & S-46

There was no soil surface impact underneath S-45 and S-46 detected by the HP radiological surveys. Soil sample analysis found three results above RUSL under both containers and these areas were remediated by removing the soil to a depth of two feet. Refer to correspondence previously submitted to the Department for more information entitled *November 2020 Consent Agreement Progress Report* (LTR-RAC-20-90, Westinghouse, 2020f). Samples S-45 (A-B) and S-46 (A-C) were taken after soil removal to confirm remediation to below RUSL.

Sample ID	Analyte (pCi/g)									SOF	SOF		mg/kg
	U-234		U-235 DL	U-235	U-238	Sum U		Tc-99 DL	Tc-99	Resid.	Ind.		Fluoride
S-45-1	14.5			0.791	4.16	19.45	<	0.734	0	1.51	0.05		8.76
S-45-2	0.777	<	0.273	0.100	0.933	1.81	<	0.730	0	0.14	0.01		1.43
S-45-3	1.69	<	0.189	0.0862	0.723	2.50	<	0.643	0.140	0.20	0.01		4.61
S-46-1	16.2			0.932	4.49	21.62	<	0.697	0.293	1.70	0.05		16.8
S-46-2	9.56			0.417	3.75	13.73	<	0.799	0.175	1.06	0.03		24.8
S-46-3	8.89			0.491	3.20	12.58	<	0.620	0.192	0.98	0.03		10.1

Sample ID	Analyte (pCi/g)											SOF	SOF
		U-234 DL	U-234		U-235 DL	U-235	U-238	Sum U		Tc-99 DL	Tc-99	Resid.	Ind.
S-45-A	<	0.431	0.429	<	0.199	0.000	0.873	1.30	<	0.858	0	0.10	0.01
S-45-B			0.636	<	0.259	0	0.929	1.57	<	0.871	0	0.12	0.01
S-46-A			0.852	<	0.132	0.0441	0.688	1.58	<	0.773	0.245	0.13	0.01
S-46-B			0.997	<	0.181	0.0604	0.879	1.94	<	0.827	0.0127	0.15	0.01
S-46-C			1.34	<	0.197	0.0724	0.593	2.01	<	0.832	0.361	0.17	0.01

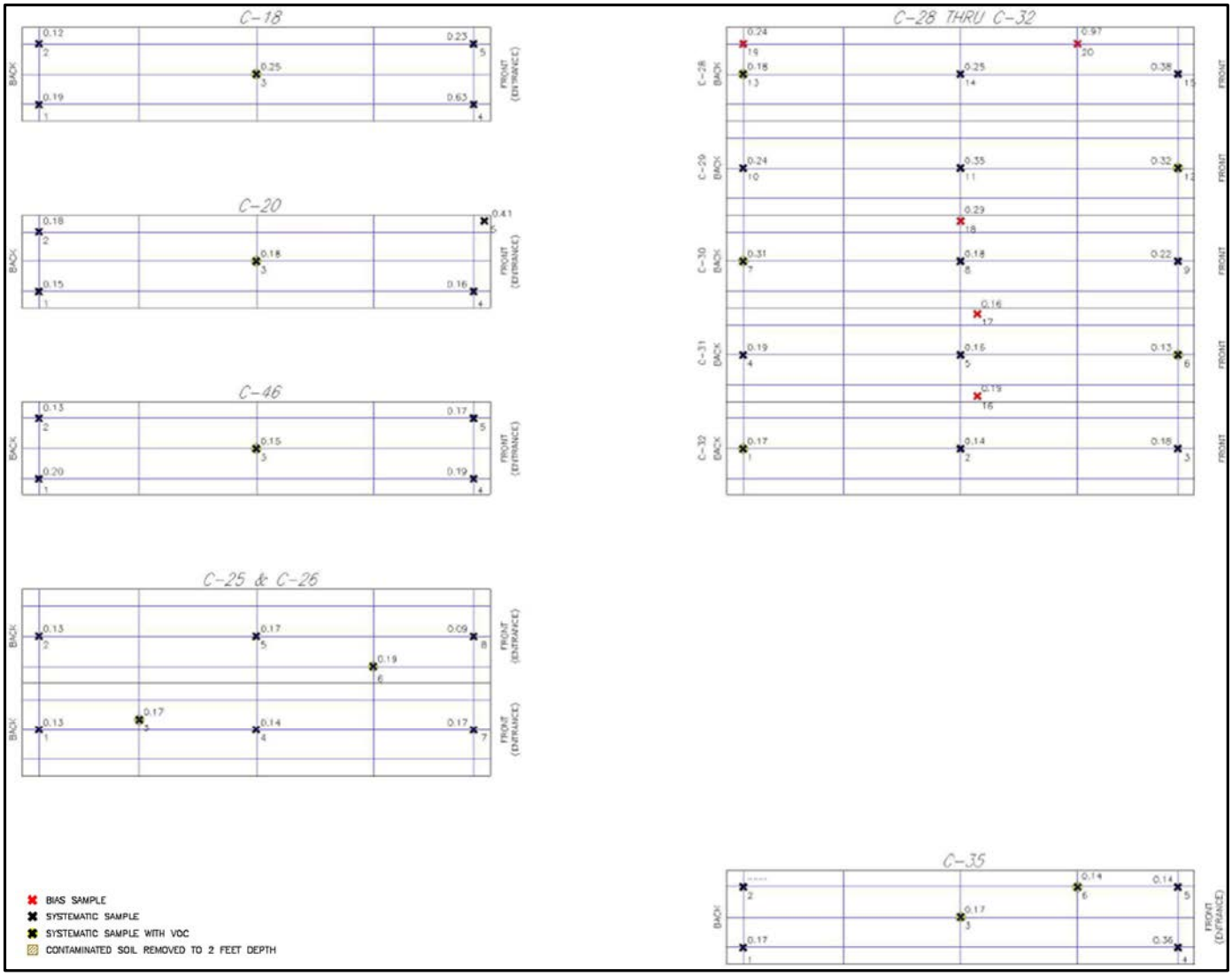


Areas of No Impact

Sealand Containers C-18, C-20, C-25, C-26, C-29, C-30, C-31, C-32, C-35 and C-46

The soil underneath these sealands was not impacted (as detected by the HP radiological surveys) and sample results were below RUSL. Refer to correspondence previously submitted to the Department for more information entitled *January 2020 Consent Agreement Progress Report* (LTR-RAC-20-15, Westinghouse, 2020b).

Sample ID	Analyte (pCi/g)								SOF	SOF		mg/kg
	U-234		U-235 DL	U-235	U-238	Sum U		Tc-99 DL	Tc-99	Resid.	Ind.		Fluoride
C-18-1	1.6	<	0.0725	0.0417	0.845	2.4867	<	4.64	0	0.19	0.01	<	0.39
C-18-2	0.862	<	0.0829	0.0477	0.675	1.5847	<	4.25	0	0.12	0.01		1.08
C-18-3	1.56	<	0.0851	0.0313	0.787	2.3783	<	4.29	1.32	0.25	0.01		0.37
C-18-4	6.09			0.132	2.08	8.302	<	4.33	0	0.63	0.02		1.24
C-18-5	1.8			0.0613	1.14	3.0013	<	4.48	0	0.23	0.01		1.90
C-20-1	1.21	<	0.0480	0.032	0.774	2.016	<	4.45	0	0.15	0.01	<	0.37
C-20-2	1.61	<	0.0880	0.069	0.717	2.396	<	4.54	0	0.18	0.01	<	0.35
C-20-3	1.43			0.11	0.773	2.313	<	4.53	0	0.18	0.01	<	0.36
C-20-4	1.18	<	0.1050	0.0289	0.881	2.0899	<	4.32	0	0.16	0.01		0.86
C-20-5	3.37			0.227	1.72	5.317	<	4.37	0.0546	0.41	0.02		3.46
C-25+26-1	0.888	<	0.0951	0.0355	0.734	1.6575	<	4.66	0	0.13	0.01	<	0.39
C-25+26-2	0.777	<	0.0707	0.0259	0.937	1.7399	<	4.14	0	0.13	0.01		0.48
C-25+26-3	1.38	<	0.0988	0.0271	0.845	2.2521	<	4.03	0	0.17	0.01		1.27
C-25+26-4	1.05			0.115	0.601	1.766	<	4.36	0	0.14	0.01	<	0.37
C-25+26-5	1.57	<	0.1490	0.0312	0.701	2.3022	<	4.17	0	0.17	0.01		0.48
C-25+26-6	1.6	<	0.1240	0.0562	0.831	2.4872	<	4.14	0	0.19	0.01		0.80
C-25+26-7	1.15	<	0.1030	0.0281	0.997	2.1751	<	4.20	0.167	0.17	0.01		2.04
C-25+26-8	0.622	<	0.1170	0.0322	0.494	1.1482	<	4.33	0	0.09	0.00		3.80
Sample ID	Analyte (pCi/g)								SOF	SOF		mg/kg
	U-234			U-235	U-238	Sum U			Tc-99	Resid.	Ind.		Fluoride
C-46-1	1.26			0.228	1.1	2.588	<	3.57	0	0.20	0.01		0.79
C-46-2	0.685			0.102	0.942	1.729	<	3.50	0	0.13	0.01	<	0.36
C-46-3	1.23			0.154	0.522	1.906	<	3.89	0	0.15	0.01		0.93
C-46-4	1.4			0.195	0.796	2.391	<	3.79	0	0.19	0.01		1.13
C-46-5	1.07	<	0.1180	0.0826	0.785	1.9376	<	3.74	0.382	0.17	0.01		1.70
C-35-1	1.31	<	0.0908	0.0902	0.851	2.2512	<	3.55	0	0.17	0.01	<	0.41
C-35-2	1.54	<	0.1130	0.0514	0.901	2.4924	<	4.03	0	0.19	0.01	<	0.40
C-35-3	1.49	<	0.0873	0	0.83	2.32	<	3.71	0	0.17	0.01		1.59
C-35-4	2.5			0.241	1.85	4.591	<	3.70	0.172	0.36	0.02		4.73
C-35-5	1.07			0.0655	0.696	1.8315	<	3.78	0	0.14	0.01	<	0.37
C-35-6	1.05	<	0.0963	0.0612	0.686	1.7972	<	3.76	0	0.14	0.01		1.37
Sample ID	Analyte (pCi/g)								SOF	SOF		mg/kg
	U-234			U-235	U-238	Sum U			Tc-99	Resid.	Ind.		Fluoride
C-32-1	1.18			0.146	0.814	2.14	<	3.06	0	0.17	0.01	<	0.38
C-32-2	0.917	<	0.0832	0.0305	0.523	1.4705	<	2.95	0.513	0.14	0.00	<	0.39
C-32-3	1.33			0.118	0.832	2.28	<	3.63	0	0.18	0.01	<	0.38
C-31-4	1.21			0.102	0.858	2.17	<	2.87	0.342	0.19	0.01		1.22
C-31-5	1.1			0.0837	0.855	2.0387	<	3.15	0	0.16	0.01		2.03
C-31-6	0.89			0.0684	0.512	1.4704	<	3.16	0.321	0.13	0.00		1.01
C-30-7	1.24			0.095	0.688	2.023	<	2.94	2.87	0.31	0.01		1.76
C-30-8	1.52	<	0.0863	0.0317	0.761	2.3127	<	3.20	0	0.18	0.01		0.89
C-30-9	1.59			0.13	0.966	2.686	<	3.17	0.287	0.22	0.01		0.76
C-29-10	1.82			0.144	0.831	2.795	<	3.20	0.446	0.24	0.01		1.34
C-29-11	3.39			0.135	0.969	4.494	<	3.20	0	0.35	0.01		3.75
C-29-12	2.84			0.0928	1.26	4.1928	<	3.07	0	0.32	0.01		1.60
Sample ID	Analyte (pCi/g)								SOF	SOF		mg/kg
	U-234			U-235	U-238	Sum U			Tc-99	Resid.	Ind.		Fluoride
C-31-16	1.27	<	0.1050	0.0854	1.08	2.4354	<	3.28	0	0.19	0.01		0.77
C-31-17	1.19	<	0.0458	0.0306	0.835	2.0556	<	3.51	0	0.16	0.01		1.66
C-30-18	2.44			0.125	1.22	3.785	<	3.13	0	0.29	0.01		2.21

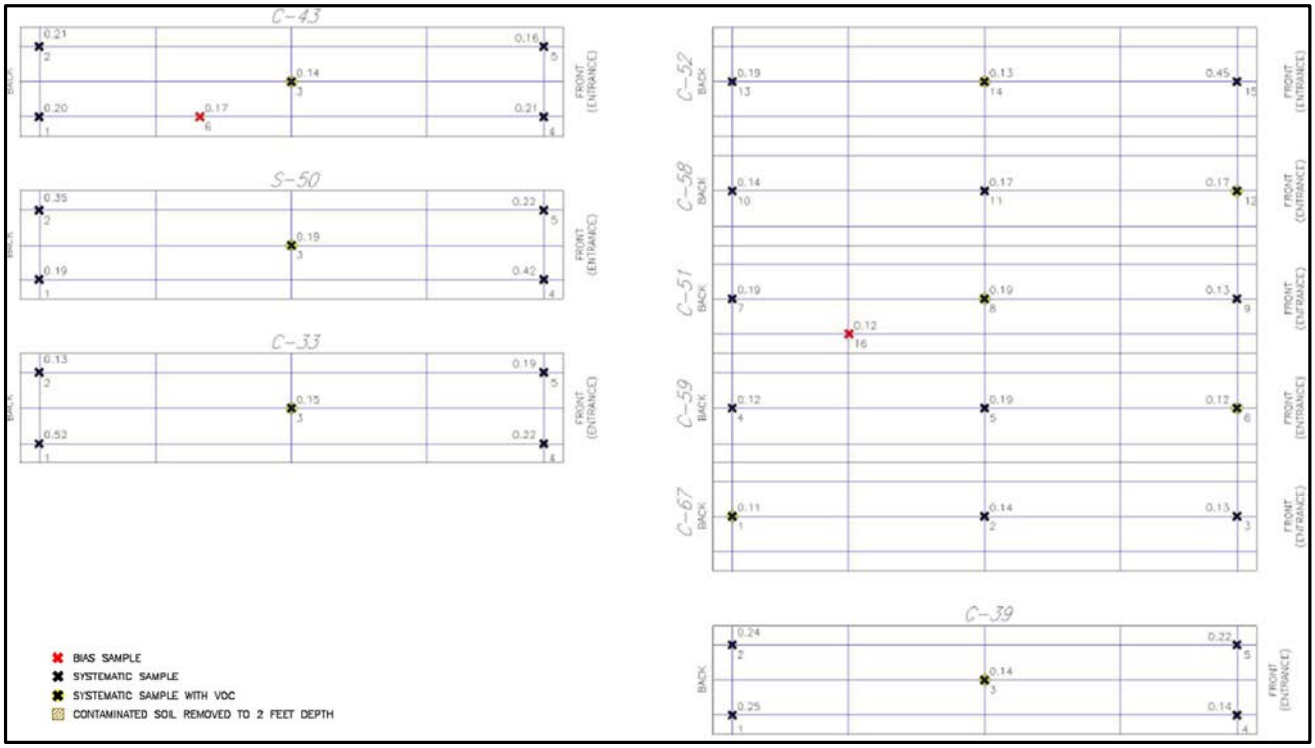

C-18
BACK
FRONT (ENTRANCE)
0.12
2
0.25
3
0.23
5
0.19
1
0.63
4
C-20
BACK
FRONT (ENTRANCE)
0.18
2
0.18
3
0.41
5
0.15
1
0.16
4
C-46
BACK
FRONT (ENTRANCE)
0.13
2
0.15
3
0.17
5
0.20
1
0.19
4
C-25 & C-26
BACK
FRONT (ENTRANCE)
0.13
2
0.17
5
0.09
8
0.19
6
0.13
1
0.17
5
0.14
4
0.17
7
C-28 THRU C-32
C-28
C-29
C-30
C-31
C-32
BACK
FRONT
0.24
19
0.97
20
0.18
13
0.25
14
0.38
15
0.24
10
0.35
11
0.32
12
0.29
18
0.31
7
0.18
8
0.22
9
0.16
17
0.19
4
0.16
5
0.13
6
0.19
16
0.17
1
0.14
2
0.18
3
C-35
BACK
FRONT (ENTRANCE)
0.14
6
0.14
5
0.17
3
0.17
1
0.36
4
BIAS SAMPLE
SYSTEMATIC SAMPLE
SYSTEMATIC SAMPLE WITH VOC
CONTAMINATED SOIL REMOVED TO 2 FEET DEPTH

Areas of No Impact

Sealand Containers S-50, C-33, C-39, C-43, C-51, C-52, C-58, C-59, and C-67

The soil underneath these sealands was not impacted (as detected by the HP radiological surveys) and sample results were below RUSL Refer to correspondence previously submitted to the Department for more information entitled *March 2020 Consent Agreement Progress Report* (LTR-RAC-20-34, Westinghouse, 2020c).

Sample ID	Analyte (pCi/g)							SOF	SOF	mg/kg	
	U-234		U-235	U-238	Sum U		Tc-99	Resid.	Ind.		Fluoride
C-33-1	4.15		0.212	1.66	6.022	< 3.82	1.08	0.52	0.02		1.86
C-33-2	0.629	< 0.0761	0.00714	0.698	1.33414	< 3.52	0.593	0.13	0.00		3.37
C-33-3	1.06	< 0.0963	0.0554	0.918	2.0334	< 3.77	0	0.15	0.01		1.07
C-33-4	1.38		0.135	1.25	2.765	< 3.71	0.147	0.22	0.01	<	0.394
C-33-5	1.53		0.0652	0.983	2.5782	< 3.89	0	0.20	0.01	<	0.384
S-50-1	1.2		0.0469	0.929	2.1759	< 3.59	0.413	0.19	0.01	<	0.366
S-50-2	3.24		0.119	1.27	4.629	< 3.89	0	0.35	0.01		0.970
S-50-3	1.48	< 0.0939	0.0766	0.978	2.5346	< 2.67	0	0.19	0.01		1.15
S-50-4	3.83		0.253	1.32	5.403	< 2.45	0	0.42	0.02		2.60
S-50-5	1.66	< 0.0906	0.0555	1.19	2.9055	< 2.77	0	0.22	0.01		2.90
C-43-1	1.75	< 0.0858	0.0461	0.849	2.6451	< 2.79	0	0.20	0.01		0.751
C-43-2	1.74	< 0.0724	0.0568	0.983	2.7798	< 2.69	0	0.21	0.01	<	0.380
C-43-3	1.19	< 0.0944	0.0436	0.664	1.8976	< 2.76	0	0.14	0.01	<	0.376
C-43-4	1.76	< 0.1120	0.0604	0.905	2.7254	< 2.57	0	0.21	0.01		1.79
C-43-5	1.23	< 0.0888	0.0882	0.802	2.1202	< 2.65	0	0.16	0.01		0.949
C-43-6	1.32	< 0.1270	0.0974	0.743	2.1604	< 2.68	0	0.17	0.01	<	0.363
C-39-1	1.96	< 0.1060	0.0675	1.3	3.3275	< 2.54	0	0.25	0.01		0.721
C-39-2	1.76		0.221	1.1	3.081	< 2.70	0	0.24	0.01	<	0.369
C-39-3	1.03		0.0921	0.692	1.8141	< 2.83	0	0.14	0.01		0.851
C-39-4	0.873		0.177	0.721	1.771	< 2.81	0.0304	0.14	0.01	<	0.397
C-39-5	1.35		0.16	0.835	2.345	< 2.69	0.619	0.22	0.01	<	0.388
C-67-1	0.763	< 0.0754	0.012	0.707	1.482	< 2.72	0	0.11	0.00	<	0.378
C-67-2	1.1		0.0777	0.68	1.8577	< 3.41	0	0.14	0.01		1.48
C-67-3	0.861	< 0.0972	0.0618	0.746	1.6688	< 3.12	0	0.13	0.01	<	0.389
C-59-4	0.739	< 0.1280	0.00589	0.736	1.48089	< 2.93	0.221	0.12	0.00	<	0.385
C-59-5	1.4	< 0.1150	0.114	0.959	2.473	< 2.95	0	0.19	0.01		2.59
C-59-6	0.952	< 0.1210	0.0113	0.582	1.5453	< 3.20	0	0.12	0.00		1.76
C-51-7	1.53		0.0602	0.871	2.4612	< 2.70	0	0.19	0.01		0.926
C-51-8	1.65	< 0.0570	0.038	0.781	2.469	< 3.19	0	0.19	0.01		4.49
C-51-9	1.04	< 0.0954	0.0151	0.633	1.6881	< 3.13	0	0.13	0.00		3.08
C-58-10	0.714	< 0.9900	0.045	0.764	1.523	< 3.08	0.547	0.14	0.01		1.27
C-58-11	1.09	< 0.1550	0.00708	0.913	2.01008	< 2.94	0.309	0.17	0.01		1.29
C-58-12	1.28	< 0.0673	0.0388	0.983	2.3018	< 3.11	0	0.17	0.01		0.375
C-52-13	1.31	< 0.0988	0.0906	1.04	2.4406	< 3.10	0.0198	0.19	0.01		0.820
C-52-14	0.898	< 0.0863	0.0237	0.732	1.6537	< 3.10	0.0994	0.13	0.00		0.596
C-52-15	4.22		0.159	1.42	5.799	< 3.04	0	0.45	0.01		1.77
C-51-16	0.853		0.044	0.661	1.558	< 3.09	0	0.12	0.01		1.16

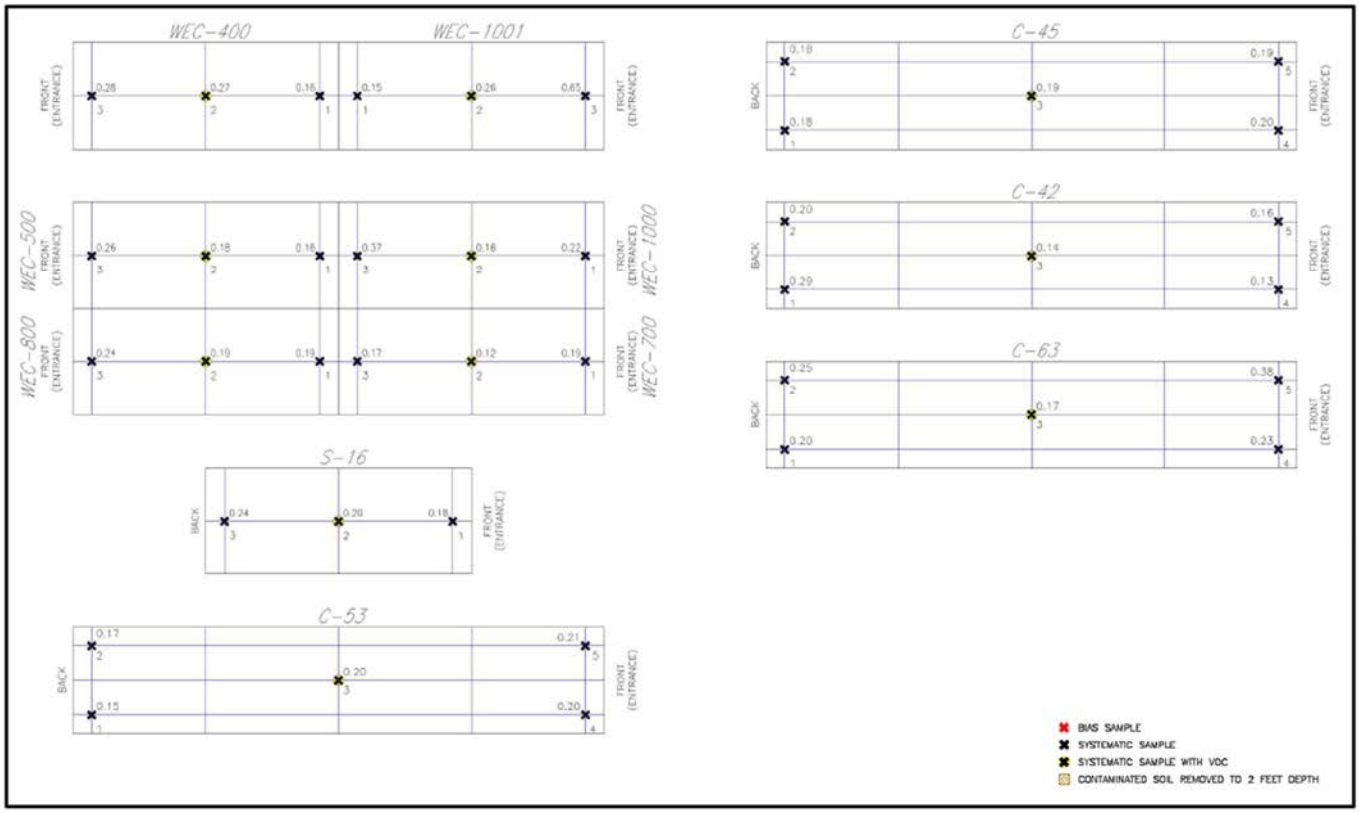

C-43
0.21
2
0.16
5
0.14
3
0.20
1
0.17
6
0.21
4
BACK
FRONT (ENTRANCE)
S-50
0.35
2
0.22
5
0.19
3
0.19
1
0.42
4
C-33
0.13
2
0.19
5
0.15
3
0.52
1
0.22
4
C-52
0.19
13
0.13
14
0.45
15
C-58
0.14
10
0.17
11
0.17
12
C-51
0.19
7
0.19
8
0.13
9
0.12
16
C-59
0.12
4
0.19
5
0.12
6
C-67
0.11
1
0.14
2
0.13
3
C-39
0.24
2
0.22
5
0.14
3
0.25
1
0.14
4
BIAS SAMPLE
SYSTEMATIC SAMPLE
SYSTEMATIC SAMPLE WITH VOC
CONTAMINATED SOIL REMOVED TO 2 FEET DEPTH

Areas of No Impact

Sealand Containers WEC-1000, WEC-500, WEC-700, WEC-800, WEC-400, WEC-1001, C-45, C-42, C-53, C-63 and S-16

The soil underneath these sealands was not impacted (as detected by the HP radiological surveys) and sample results were below RUSL. Refer to correspondence previously submitted to the Department for more information entitled *April 2020 Consent Agreement Progress Report* (LTR-RAC-20-47, Westinghouse, 2020d).

Sample ID	Analyte (pCi/g)									SOF	SOF		mg/kg
	U-234		U-235 DL	U-235	U-238	Sum U		Tc-99 DL	Tc-99	Resid.	Ind.		Fluoride
WEC1000-1	1.42	<	0.254	0.115	1.33	2.87	<	3.66	0	0.22	0.01		11.7
WEC1000-2	0.991	<	0.381	0	1.11	2.10	<	3.76	0	0.16	0.01		5.54
WEC1000-3	1.86	<	0.177	0.175	1.10	3.14	<	3.91	2.43	0.37	0.01		3.08
WEC500-1	0.946	<	0.563	0	1.12	2.07	<	4.01	0.0546	0.16	0.01		3.13
WEC500-2	1.13	<	0.473	0.0445	1.23	2.40	<	3.69	0	0.18	0.01		1.16
WEC500-3	2.59	<	0.312	0.0857	0.755	3.43	<	3.98	0	0.26	0.01		3.46
WEC700-1	1.27			0.119	0.841	2.23	<	3.99	0.289	0.19	0.01		1.18
WEC700-2	0.715	<	0.357	0.0407	0.794	1.55	<	4.20	0	0.12	0.01		13.0
WEC700-3	0.754	<	0.311	0.142	1.26	2.16	<	3.98	0.125	0.17	0.01		1.06
WEC800-1	0.806	<	0.213	0	1.10	1.91	<	4.23	1.01	0.19	0.01		1.49
WEC800-2	1.31	<	0.198	0.0726	1.08	2.46	<	3.85	0	0.19	0.01		1.80
WEC800-3	1.52	<	0.257	0.0958	1.06	2.68	<	3.66	0.584	0.24	0.01		9.08
WEC400-1	0.894	<	0.247	0.0517	1.18	2.13	<	4.14	0	0.16	0.01		2.72
WEC400-2	1.93	<	0.123	0.204	1.33	3.46	<	4.00	0	0.27	0.01		3.78
WEC400-3	2.05	<	0.226	0.0845	1.56	3.69	<	3.54	0	0.28	0.01		2.89
WEC1001-1	1.06	<	0.178	0.0652	0.788	1.91	<	3.84	0	0.15	0.01		1.73
WEC1001-2	2.13			0.0989	0.941	3.17	<	4.06	0.306	0.26	0.01		3.92
WEC1001-3	5.77			0.243	1.64	7.65	<	3.69	1.08	0.65	0.02		1.56
C-45-1	1.18			0.122	0.961	2.26	<	4.08	0.176	0.18	0.01		1.11
C-45-2	1.39	<	0.256	0.0938	0.864	2.35	<	3.86	0	0.18	0.01	<	0.380
C-45-3	1.04	<	0.189	0.0695	1.14	2.25	<	3.48	0.425	0.19	0.01		0.807
C-45-4	1.29	<	0.293	0	0.720	2.01	<	3.45	0.997	0.20	0.00		0.841
C-45-5	1.51	<	0.231	0.147	0.836	2.49	<	3.59	0	0.19	0.01		0.552
C-42-1	2.48	<	0.230	0.105	1.26	3.85	<	3.62	0	0.29	0.01		0.782
C-42-2	1.43			0.124	0.981	2.54	<	3.38	0.0987	0.20	0.01	<	0.383
C-42-3	1.02	<	0.304	0.0781	0.677	1.78	<	3.62	0	0.14	0.01		0.550
C-42-4	0.839	<	0.246	0.0675	0.819	1.73	<	3.28	0	0.13	0.01		0.565
C-42-5	1.27	<	0.163	0.0597	0.810	2.14	<	3.26	0	0.16	0.01		0.589
C-53-1	1.05	<	0.187	0.108	0.829	1.99	<	3.75	0	0.15	0.01		0.572
C-53-2	1.15	<	0.225	0.158	0.902	2.21	<	3.58	0	0.17	0.01		0.519
C-53-3	1.38	<	0.277	0.0581	0.994	2.43	<	3.46	0.221	0.20	0.01		0.853
C-53-4	1.39	<	0.137	0.0458	1.16	2.60	<	3.49	0.152	0.20	0.01		1.08
C-53-5	0.795	<	0.211	0.183	1.35	2.33	<	3.90	0.639	0.21	0.01		0.903
C-63-1	1.50	<	0.170	0.134	0.957	2.59	<	3.36	0	0.20	0.01		0.513
C-63-2	1.37			0.111	0.814	2.30	<	3.27	1.36	0.25	0.01		0.736
C-63-3	1.21	<	0.183	0.0290	0.958	2.20	<	3.21	0	0.17	0.01		1.14
C-63-4	1.73			0.148	1.05	2.93	<	3.52	0	0.23	0.01		1.03
C-63-5	2.84	<	0.210	0.121	1.24	4.20	<	3.54	1.12	0.38	0.01		0.984
S-16-1	1.12	<	0.107	0.0710	1.13	2.32	<	4.22	0	0.18	0.01		7.10
S-16-2	1.31	<	0.203	0.160	1.10	2.57	<	4.31	0	0.20	0.01		3.07
S-16-3	1.58	<	0.114	0.0378	1.57	3.19	<	4.29	0	0.24	0.01		9.51

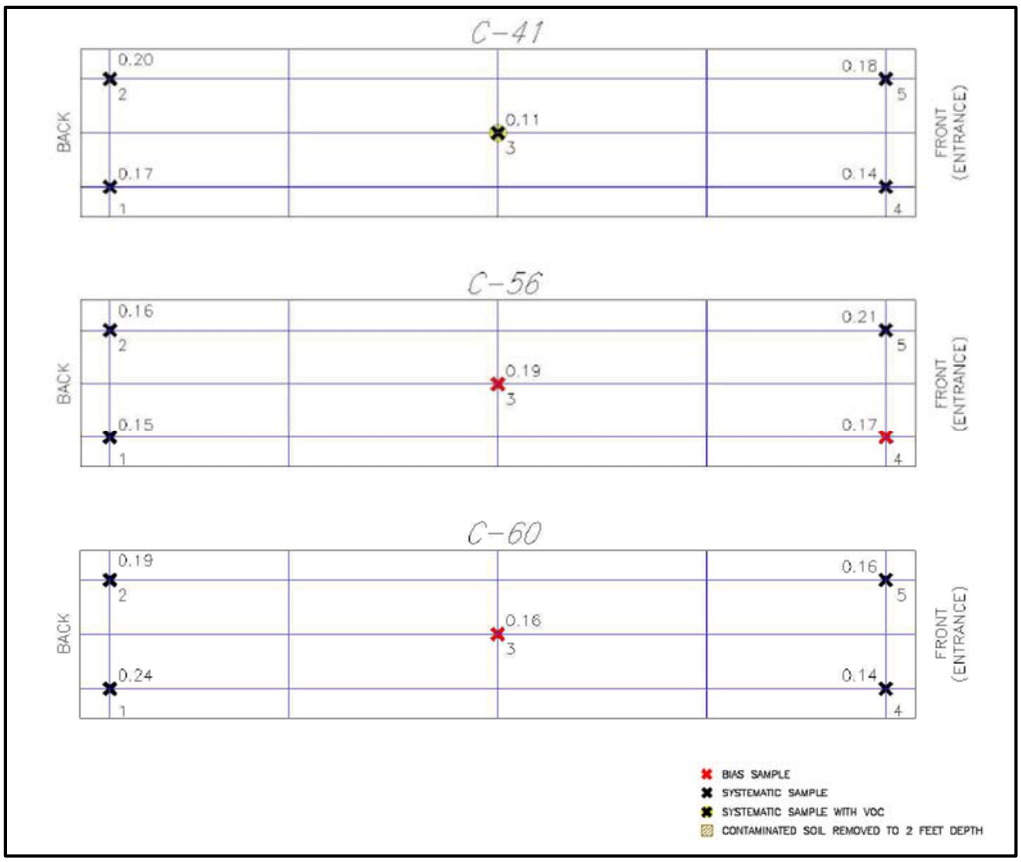

WEC-400
WEC-1001
FRONT (ENTRANCE)
0.28
0.27
0.16
0.15
0.26
0.65
WEC-500
WEC-1000
WEC-800
WEC-700
0.26
0.18
0.15
0.37
0.16
0.23
0.24
0.19
0.19
0.17
0.12
0.19
S-16
BACK
0.24
0.20
0.18
C-53
0.17
0.20
0.15
0.21
0.20
C-45
0.18
0.19
0.18
0.19
0.20
C-42
0.20
0.29
0.14
0.16
0.13
C-63
0.25
0.17
0.20
0.38
0.23
BIAS SAMPLE
SYSTEMATIC SAMPLE
SYSTEMATIC SAMPLE WITH VOC
CONTAMINATED SOIL REMOVED TO 2 FEET DEPTH

Areas of No Impact

Sealand Containers C-41, C-56 and C-60

The soil underneath these sealands was not impacted (as detected by the HP radiological surveys) and sample results were below RUSL. Refer to correspondence previously submitted to the Department for more information entitled *July 2020 Consent Agreement Progress Report* (LTR-RAC-20-68, Westinghouse, 2020e).

Sample ID	Analyte (pCi/g)									SOF	SOF		mg/kg
	U-234		U-235 DL	U-235	U-238	Sum U		Tc-99 DL	Tc-99	Resid.	Ind.		Fluoride
C-41-1	1.33	<	0.173	0.136	0.679	2.15	<	0.751	0	0.17	0.01		1.31
C-41-2	1.73	<	0.116	0.0773	0.868	2.68	<	0.791	0	0.20	0.01		1.17
C-41-3	0.899	<	0.280	0	0.577	1.48	<	0.759	0	0.11	0.00		1.03
C-41-4	0.886	<	0.258	0	1.06	1.95	<	0.762	0	0.14	0.01	<	0.378
C-41-5	1.16	<	0.207	0.0329	1.20	2.39	<	0.708	0	0.18	0.01		1.190
C-56-1	0.994	<	0.261	0.0717	0.870	1.94	<	0.725	0	0.15	0.01	<	0.362
C-56-2	1.07	<	0.259	0.0712	1.01	2.15	<	0.708	0	0.16	0.01		0.443
C-56-3	1.07	<	0.242	0	1.56	2.63	<	0.786	0	0.19	0.01		1.91
C-56-4	1.35	<	0.236	0.0108	0.890	2.25	<	0.759	0	0.17	0.01		1.69
C-56-5	1.51	<	0.263	0.127	1.15	2.79	<	0.759	0	0.21	0.01		3.43
C-60-1	1.34	<	0.249	0.216	1.47	3.03	<	0.751	0	0.24	0.01	<	0.383
C-60-2	1.29	<	0.395	0.0299	1.18	2.50	<	0.768	0	0.19	0.01	<	0.369
C-60-3	0.957	<	0.227	0.0622	1.14	2.16	<	0.749	0	0.16	0.01		0.957
C-60-4	1.12	<	0.246	0.0113	0.685	1.82	<	0.761	0	0.14	0.00		0.753
C-60-5	0.851			0.150	1.02	2.02	<	0.754	0	0.16	0.01		1.68



Areas of No Impact

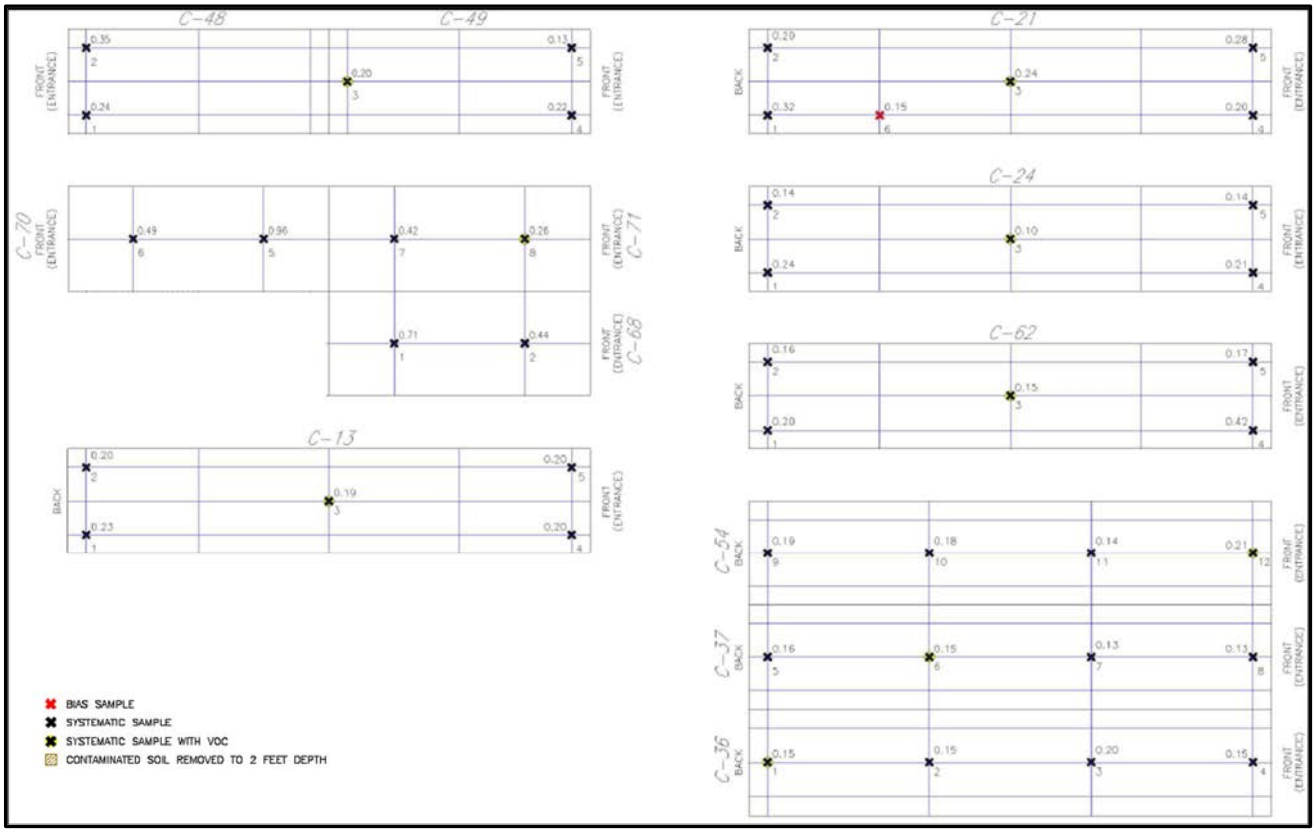
Sealand Containers C-48, C-49, C-68, C-70, C-71, C-24, C-62, C-13, C-36, C-37, C-54, ERT (RED), C-09, S-5, C-23, C-22, C-61, C-64, C-04, C-55, C-15, C-17, C-34, C-38, S-38, C-47, C-8, C-7, C-10 and C-11

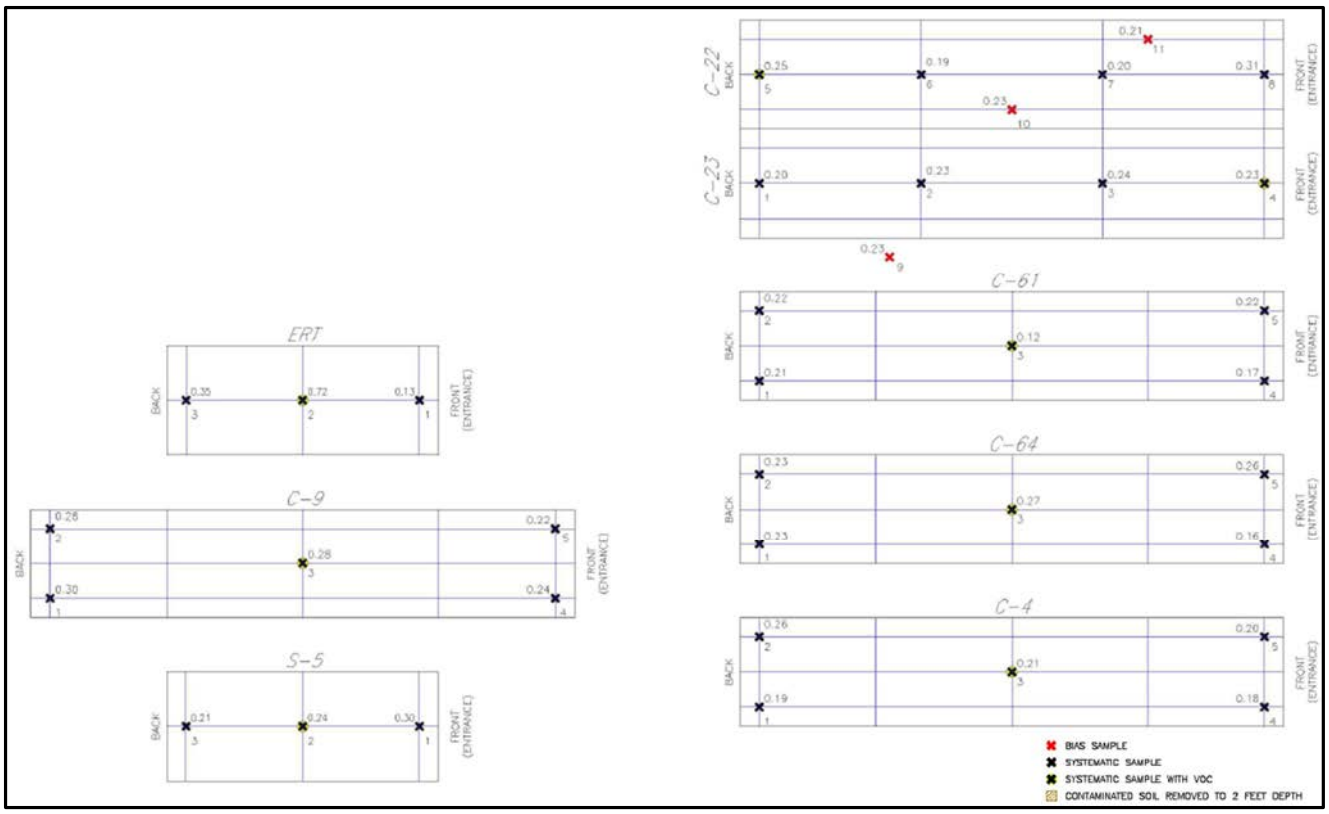
The soil underneath these sealands was not impacted (as detected by the HP radiological surveys) and sample results met RUSL. Refer to correspondence previously submitted to the Department for more information entitled *November 2020 Consent Agreement Progress Report* (LTR-RAC-20-90, Westinghouse, 2020f)).

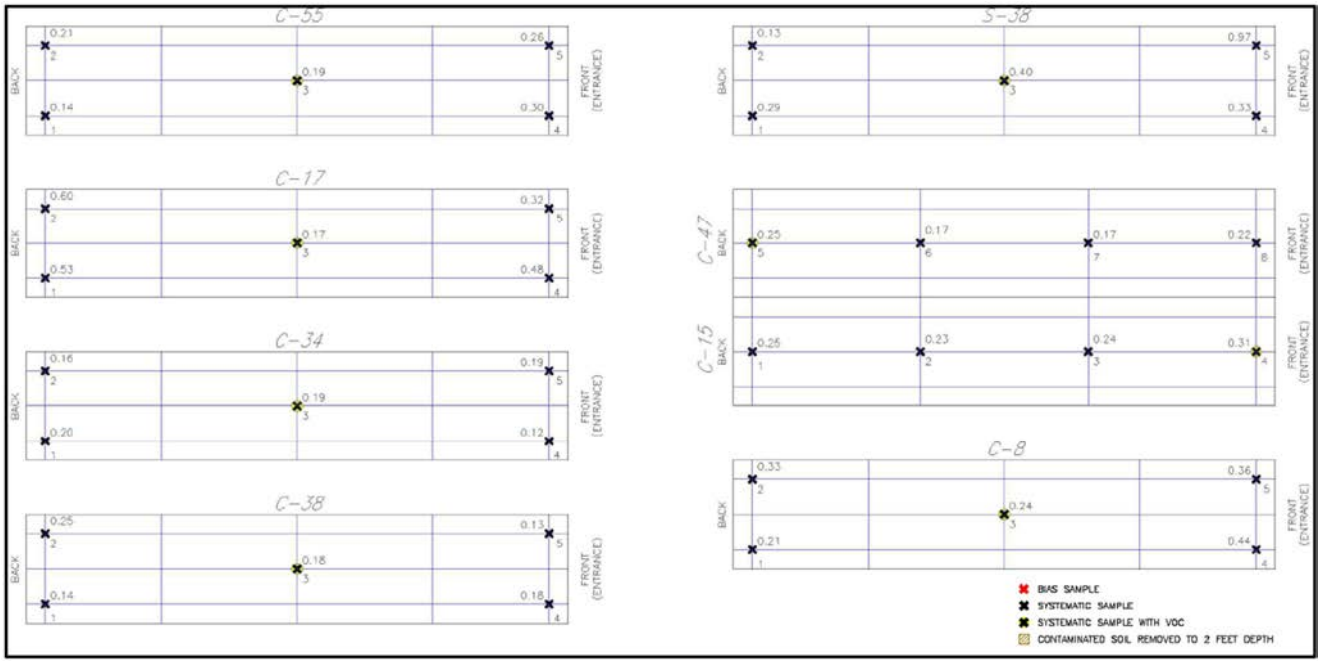
Sample ID	Analyte (pCi/g)									SOF	SOF		mg/kg
	U-234		U-235 DL	U-235	U-238	Sum U		Tc-99 DL	Tc-99	Resid.	Ind.		Fluoride
C-48-1	1.99	<	0.258	0.148	0.985	3.12	<	0.790	0.0128	0.24	0.01		0.866
C-48-2	2.62	<	0.353	0.0403	2.00	4.66	<	0.837	0	0.35	0.01		2.16
C-49-3	1.31	<	0.341	0.261	0.966	2.54	<	0.749	0	0.20	0.01		2.20
C-49-4	1.71	<	0.275	0.00167	1.17	2.88	<	0.787	0.0356	0.22	0.01		13.9
C-49-5	0.946	<	0.233	0.0370	0.751	1.73	<	0.821	0.00368	0.13	0.01		2.97
C-68-1	5.43			0.307	3.430	9.17	<	0.419	0.212	0.71	0.03		5.94
C-68-2	3.74			0.302	1.59	5.63	<	0.917	0	0.44	0.02		4.46
C-70-5	9.06			0.437	2.92	12.42	<	0.487	0	0.96	0.03		6.93
C-70-6	4.43			0.380	1.47	6.28	<	0.932	0	0.49	0.02		6.61
C-71-7	3.35			0.308	1.69	5.35	<	0.894	0	0.42	0.02		5.95
C-71-8	2.29	<	0.104	0.0347	1.17	3.49	<	0.750	0	0.26	0.01		4.40
C-24-1	1.84	<	0.155	0.000	1.34	3.18	<	0.752	0	0.24	0.01	<	0.376
C-24-2	1.04	<	0.161	0.000	0.871	1.91	<	0.752	0	0.14	0.01	<	0.370
C-24-3	0.410			0.128	0.667	1.21	<	0.695	0	0.10	0.01		1.27
C-24-4	1.64	<	0.151	0.101	1.04	2.78	<	0.684	0	0.21	0.01		0.536
C-24-5	0.991	<	0.138	0.0459	0.837	1.87	<	0.658	0	0.14	0.01	<	0.363
C-62-1	1.19	<	0.508	0	1.46	2.65	<	0.745	0	0.20	0.01	<	0.372
C-62-2	1.19	<	0.143	0.000	0.973	2.16	<	0.719	0	0.16	0.01	<	0.377
C-62-3	1.01	<	0.277	0	1.03	2.04	<	0.724	0.0390	0.15	0.01	<	0.349
C-62-4	4.03	<	0.298	0.0923	1.36	5.48	<	0.706	0	0.42	0.01		0.727
C-62-5	1.44	<	0.132	0.0439	0.712	2.20	<	0.695	0.102	0.17	0.01	<	0.370
C-13-1	2.10	<	0.226	0.0904	0.798	2.99	<	0.706	0	0.23	0.01		2.92
C-13-2	1.24			0.237	1.09	2.57	<	0.698	0	0.20	0.01		1.74
C-13-3	1.40	<	0.190	0.109	0.907	2.42	<	0.770	0	0.19	0.01		2.25
C-13-4	1.52	<	0.198	0.0313	1.08	2.63	<	0.867	0	0.20	0.01		1.43
C-13-5	1.27			0.208	1.08	2.56	<	0.749	0	0.20	0.01		1.10
C-36-1	1.03	<	0.284	0.0448	0.958	2.03	<	0.717	0	0.15	0.01	<	0.382
C-36-2	0.942	<	0.261	0.0245	0.982	1.95	<	0.681	0	0.15	0.01		1.50
C-36-3	1.66	<	0.267	0	0.992	2.65	<	0.679	0	0.20	0.01		1.80
C-36-4	1.19	<	0.132	0.0879	0.694	1.97	<	0.820	0	0.15	0.01		2.05
C-37-5	0.862	<	0.152	0.101	1.12	2.08	<	0.748	0	0.16	0.01	<	0.388
C-37-6	1.16	<	0.240	0.0381	0.782	1.98	<	0.686	0	0.15	0.01		3.14
C-37-7	0.790	<	0.150	0.000	0.994	1.78	<	0.657	0	0.13	0.01		5.86
C-37-8	1.05	<	0.135	0.000	0.718	1.77	<	0.686	0	0.13	0.00		3.57
C-54-9	1.21			0.141	1.09	2.44	<	0.711	0.0786	0.19	0.01		1.56
C-54-10	1.41	<	0.311	0	1.02	2.43	<	0.663	0	0.18	0.01		2.03
C-54-11	0.996	<	0.236	0.0866	0.757	1.84	<	0.896	0	0.14	0.01		1.56
C-54-12	1.56	<	0.226	0	1.24	2.80	<	0.678	0	0.21	0.01		1.77
ERT-1	1.11	<	0.266	0.0122	0.552	1.67	<	0.674	0.0316	0.13	0.00		1.44
ERT-2	6.74			0.456	1.96	9.16	<	0.731	0.153	0.72	0.02		7.11
ERT-3	3.17	<	0.283	0.154	1.19	4.51	<	0.721	0.109	0.35	0.01		1.42

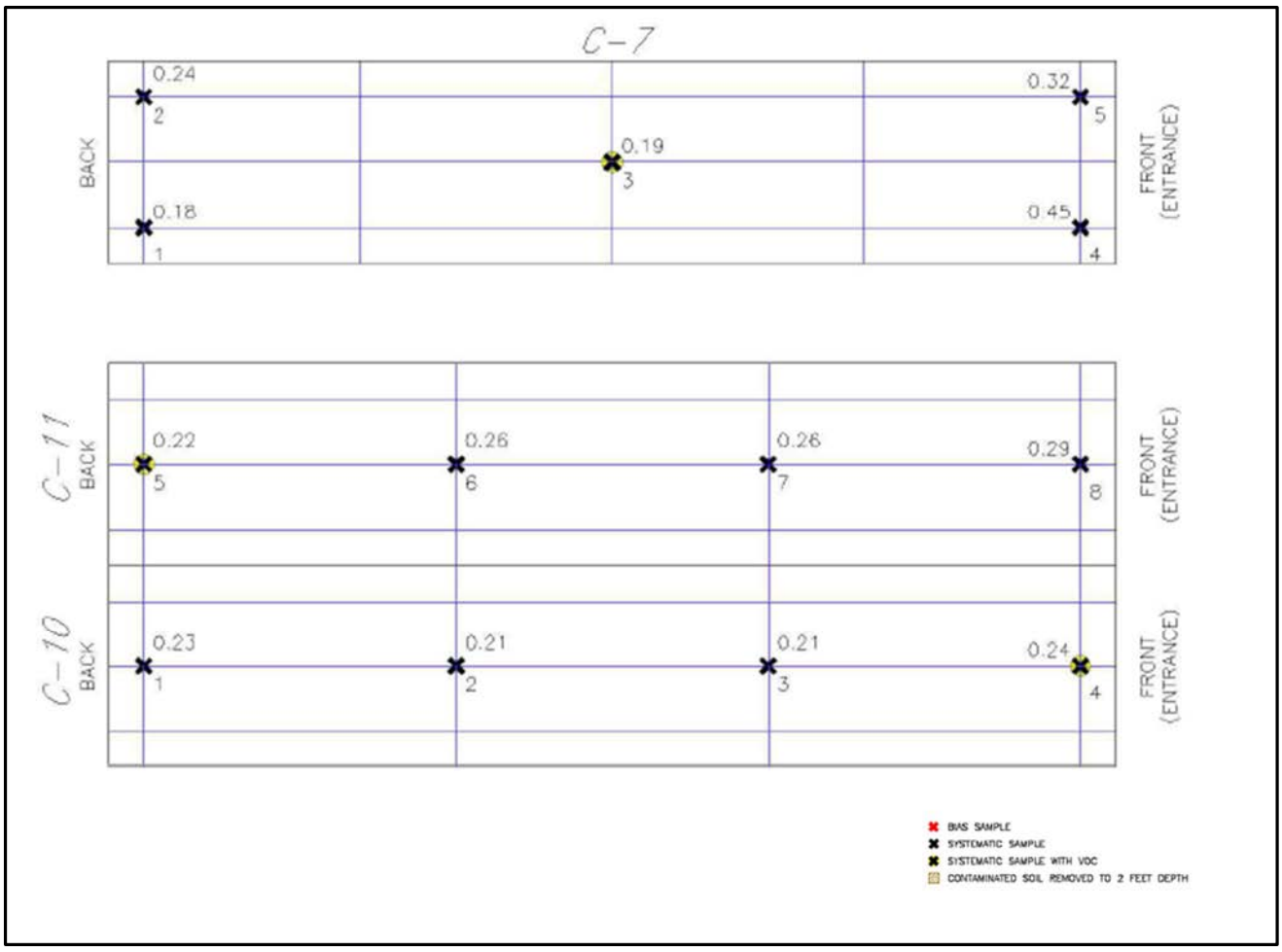
Sample ID	Analyte (pCi/g)									SOF	SOF		mg/kg
	U-234		U-235 DL	U-235	U-238	Sum U		Tc-99 DL	Tc-99	Resid.	Ind.		Fluoride
C-9-1	2.08	<	0.210	0.0783	1.76	3.92	<	0.832	0	0.30	0.01		10.4
C-9-2	1.74	<	0.224	0.142	1.76	3.64	<	0.796	0	0.28	0.01		11.9
C-9-3	1.87	<	0.360	0	1.89	3.76	<	0.848	0	0.28	0.01		8.55
C-9-4	1.57	<	0.284	0.131	1.43	3.13	<	0.851	0.107	0.24	0.01		11.4
C-9-5	1.59	<	0.164	0.129	1.17	2.89	<	0.789	0	0.22	0.01		5.32
S-5-1	2.11	<	0.295	0.206	1.61	3.93	<	0.847	0	0.30	0.01		6.58
S-5-2	1.51	<	0.265	0	1.43	2.94	<	0.824	0.397	0.24	0.01		2.41
S-5-3	1.60	<	0.215	0.0591	1.14	2.80	<	0.876	0	0.21	0.01		5.43
C-34-1	1.68	<	0.251	0.145	0.716	2.54	<	0.887	0.0190	0.20	0.01		0.491
C-34-2	1.32	<	0.282	0.0322	0.768	2.12	<	0.858	0	0.16	0.01	<	0.399
C-34-3	1.33	<	0.106	0.0709	0.928	2.33	<	0.849	0.241	0.19	0.01		0.828
C-34-4	0.947	<	0.191	0	0.727	1.67	<	0.845	0	0.12	0.00	<	0.390
C-34-5	1.16	<	0.244	0.0973	1.08	2.34	<	0.814	0.182	0.19	0.01	<	0.384
C-38-1	0.965	<	0.252	0.0288	0.904	1.90	<	0.883	0	0.14	0.01	<	0.380
C-38-2	1.68	<	0.251	0.159	1.24	3.08	<	0.960	0.229	0.25	0.01		0.510
C-38-3	1.54	<	0.224	0.102	0.682	2.32	<	0.883	0	0.18	0.01		0.505
C-38-4	1.10	<	0.234	0.0372	1.01	2.15	<	0.830	0.266	0.18	0.01	<	0.387
C-38-5	1.08	<	0.207	0.0327	0.551	1.66	<	0.774	0.121	0.13	0.00		0.439
S-38-1	2.07	<	0.204	0.166	1.50	3.74	<	0.776	0	0.29	0.01		6.56
S-38-2	1.09	<	0.191	0.0701	0.534	1.69	<	0.861	0	0.13	0.01		0.877
S-38-3	3.48	<	0.361	0.201	1.51	5.19	<	0.832	0	0.40	0.01		5.45
S-38-4	3.30	<	0.314	0.109	0.834	4.24	<	0.879	0	0.33	0.01		8.09
S-38-5	9.76	<	0.333	0.151	2.76	12.67	<	0.832	0	0.97	0.02		7.47
C-47-5	1.62	<	0.220	0.219	1.29	3.13	<	0.824	0.0508	0.25	0.01		1.65
C-47-6	0.901			0.192	1.08	2.17	<	0.896	0.0778	0.17	0.01		0.733
C-47-7	1.31	<	0.268	0	0.932	2.24	<	0.852	0	0.17	0.01		0.766
C-47-8	1.68			0.147	1.06	2.89	<	0.940	0	0.22	0.01		1.16
C-8-1	1.33	<	0.264	0.0247	1.47	2.82	<	0.912	0	0.21	0.01		6.65
C-8-2	2.58			0.150	1.57	4.30	<	0.758	0	0.33	0.01		17.3
C-8-3	1.22			0.324	1.44	2.98	<	0.738	0	0.24	0.02		6.13
C-8-4	2.72	<	0.278	0.128	3.07	5.92	<	0.714	0	0.44	0.02		11.8
C-8-5	2.54			0.325	1.71	4.58	<	0.847	0.0000	0.36	0.02		14.9
C-64-1	1.63	<	0.383	0.0605	1.39	3.08	<	0.923	0	0.23	0.01		1.09
C-64-2	1.73	<	0.179	0.000	1.36	3.09	<	0.703	0	0.23	0.01		1.07
C-64-3	2.23	<	0.184	0.0615	1.24	3.53	<	0.744	0	0.27	0.01		0.804
C-64-4	1.30	<	0.156	0.0520	0.779	2.13	<	0.727	0	0.16	0.01		1.25
C-64-5	2.09	<	0.212	0.122	1.20	3.41	<	0.777	0	0.26	0.01		1.94
C-4-1	0.933	<	0.275	0.267	1.22	2.42	<	0.764	0	0.19	0.01	<	0.369
C-4-2	1.71	<	0.342	0.0877	1.66	3.46	<	0.778	0	0.26	0.01		0.529
C-4-3	1.60	<	0.268	0.170	0.968	2.74	<	0.776	0	0.21	0.01		0.941
C-4-4	1.31	<	0.340	0.155	0.884	2.35	<	0.827	0	0.18	0.01		8.58
C-4-5	1.58	<	0.205	0.0754	0.955	2.61	<	0.748	0	0.20	0.01		5.70
C-55-1	0.889	<	0.211	0.166	0.742	1.80	<	0.786	0	0.14	0.01	<	0.379
C-55-2	1.66	<	0.308	0.0846	0.969	2.71	<	0.796	0	0.21	0.01	<	0.384
C-55-3	1.33	<	0.226	0.0831	1.09	2.50	<	0.798	0	0.19	0.01		1.01
C-55-4	2.45	<	0.360	0.154	1.32	3.92	<	0.793	0	0.30	0.01		3.34
C-55-5	1.90	<	0.328	0.0691	1.48	3.45	<	0.725	0	0.26	0.01		5.63
C-15-1	1.77	<	0.269	0.268	1.18	3.22	<	0.726	0	0.25	0.01		1.32
C-15-2	1.82	<	0.253	0.145	0.960	2.93	<	0.774	0	0.23	0.01	<	0.357
C-15-3	1.70	<	0.251	0.144	1.30	3.14	<	0.753	0	0.24	0.01		1.15
C-15-4	2.24	<	0.329	0.150	1.70	4.09	<	0.739	0.000	0.31	0.01		1.34
C-17-1	4.37			0.283	2.28	6.93	<	0.806	0	0.53	0.02		11.4
C-17-2	5.18			0.357	2.16	7.70	<	0.808	0	0.60	0.02		10.1
C-17-3	0.862	<	0.401	0.0376	1.33	2.23	<	0.727	0	0.17	0.01		1.09
C-17-4	3.92			0.289	2.06	6.27	<	0.757	0	0.48	0.02		6.39
C-17-5	2.43			0.252	1.46	4.14	<	0.779	0	0.32	0.02		6.94
C-23-1	1.54			0.164	0.863	2.57	<	0.658	0	0.20	0.01		3.99
C-23-2	1.63			0.213	1.00	2.84	<	0.679	0.108	0.23	0.01	<	0.378
C-23-3	1.79			0.199	1.04	3.03	<	0.688	0	0.24	0.01	<	0.381
C-23-4	1.83	<	0.346	0.242	0.792	2.86	<	0.733	0.108	0.23	0.01		2.28
C-22-5	1.43	<	0.194	0.129	1.71	3.27	<	0.751	0	0.25	0.01		1.18
C-22-6	1.27	<	0.284	0.0781	1.09	2.44	<	0.693	0	0.19	0.01		1.00
C-22-7	1.59			0.198	0.801	2.59	<	0.706	0	0.20	0.01	<	0.367
C-22-8	2.51	<	0.322	0.279	1.18	3.97	<	0.706	0	0.31	0.01		2.46
C-23-9	1.93	<	0.246	0.0390	1.10	3.07	<	0.703	0	0.23	0.01		1.10
C-22-10	1.85			0.180	0.936	2.97	<	0.738	0	0.23	0.01	<	0.375
C-22-11	1.60	<	0.325	0.0515	1.11	2.76	<	0.676	0	0.21	0.01		1.78
C-61-1	1.77	<	0.349	0.0554	0.87	2.70	<	0.716	0.0848	0.21	0.01	<	0.384
C-61-2	1.76	<	0.194	0.0648	1.01	2.83	<	0.699	0	0.22	0.01		1.06
C-61-3	0.662	<	0.249	0.0395	0.957	1.66	<	0.683	0	0.12	0.01		1.76
C-61-4	1.15			0.305	0.670	2.13	<	0.711	0	0.17	0.01	<	0.356
C-61-5	1.78	<	0.262	0.0415	1.08	2.90	<	0.685	0	0.22	0.01	<	0.375

Sample ID	Analyte (pCi/g)									SOF	SOF		mg/kg
	U-234		U-235 DL	U-235	U-238	Sum U		Tc-99 DL	Tc-99	Resid.	Ind.		Fluoride
C-7-1	1.18	<	0.191	0.134	1.00	2.31	<	0.790	0	0.18	0.01		6.96
C-7-2	1.64	<	0.238	0.0271	1.53	3.20	<	0.766	0	0.24	0.01		6.45
C-7-3	0.877	<	0.255	0.208	1.41	2.50	<	0.822	0	0.19	0.01		9.00
C-7-4	3.58	<	0.302	0.0139	2.45	6.04	<	0.802	0	0.45	0.02		6.36
C-7-5	2.07	<	0.248	0.215	1.84	4.13	<	0.829	0	0.32	0.02		9.94
C-10-1	1.43	<	0.193	0.152	1.45	3.03	<	0.825	0	0.23	0.01		7.13
C-10-2	1.43	<	0.173	0.0931	1.17	2.69	<	0.760	0	0.21	0.01		8.84
C-10-3	1.37	<	0.220	0.0207	1.43	2.82	<	0.796	0	0.21	0.01		6.42
C-10-4	1.58	<	0.223	0.101	1.52	3.20	<	0.805	0	0.24	0.01		8.28
C-11-5	1.58	<	0.264	0.0791	1.29	2.95	<	0.763	0	0.22	0.01		8.04
C-11-6	2.10	<	0.231	0.0106	1.35	3.46	<	0.749	0	0.26	0.01		3.66
C-11-7	1.62	<	0.180	0.0661	1.82	3.51	<	0.857	0	0.26	0.01		4.58
C-11-8	1.97	<	0.120	0.0400	1.83	3.84	<	0.776	0	0.29	0.01		10.5




C-22
C-23
C-61
C-64
C-4
ERT
C-9
S-5
BACK
FRONT (ENTRANCE)
BIAS SAMPLE
SYSTEMATIC SAMPLE
SYSTEMATIC SAMPLE WITH VOC
CONTAMINATED SOIL REMOVED TO 2 FEET DEPTH


C-55
C-17
C-34
C-38
S-38
C-47
C-15
C-8
BACK
FRONT (ENTRANCE)
BIAS SAMPLE
SYSTEMATIC SAMPLE
SYSTEMATIC SAMPLE WITH VOC
CONTAMINATED SOIL REMOVED TO 2 FEET DEPTH

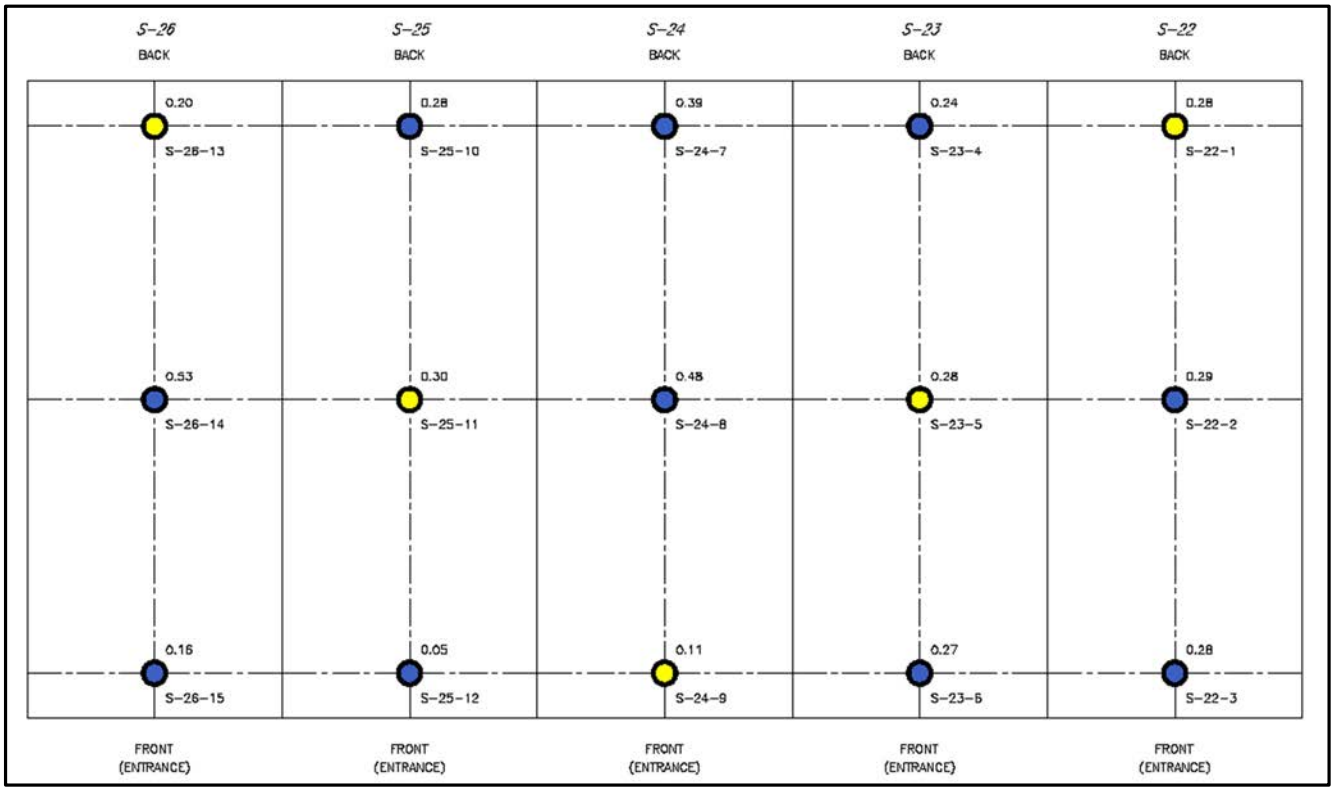

C-7
0.24
2
0.19
3
0.18
1
0.32
5
0.45
4
BACK
FRONT (ENTRANCE)
C-11
0.22
5
0.26
6
0.26
7
0.29
8
C-10
0.23
1
0.21
2
0.21
3
0.24
4
BIAS SAMPLE
SYSTEMATIC SAMPLE
SYSTEMATIC SAMPLE WITH VOC
CONTAMINATED SOIL REMOVED TO 2 FEET DEPTH

Areas of No Impact

Sealand Containers S-22, S-23, S-24, S-25 and S-26

The soil underneath these sealands was not impacted (as detected by the HP radiological surveys) and sample results were below RUSL. Refer to correspondence previously submitted to the Department for more information entitled *August 2021 Consent Agreement Progress Report* (LTR-RAC-21-62, Westinghouse, 2021c).

Sample ID	Analyte (pCi/g)											SOF	SOF
		U-234 DL	U-234		U-235 DL	U-235	U-238	Sum U		Tc-99 DL	Tc-99	Resid.	Ind.
S-22-1			1.78	<	0.384	0.0716	1.85	3.70	<	0.530	0.0303	0.28	0.01
S-22-2			1.99			0.147	1.58	3.72	<	0.506	0.0640	0.29	0.01
S-22-3			2.11	<	0.231	0.0834	1.54	3.73	<	0.505	0	0.28	0.01
S-23-4			1.51	<	0.222	0.181	1.37	3.06	<	0.519	0.101	0.24	0.01
S-23-5			1.88	<	0.276	0.112	1.58	3.57	<	0.541	0.0880	0.28	0.01
S-23-6			1.62	<	0.235	0.0637	1.92	3.60	<	0.467	0.0394	0.27	0.01
S-24-7			2.85			0.133	2.13	5.11	<	0.484	0	0.39	0.02
S-24-8			3.33	<	0.301	0.196	2.77	6.30	<	0.481	0	0.48	0.02
S-24-9			0.626	<	0.153	0.0200	0.792	1.44	<	0.541	0.121	0.11	0.01
S-25-10			1.77	<	0.331	0.0897	1.89	3.75	<	0.501	0	0.28	0.01
S-25-11			1.88			0.201	1.72	3.80	<	0.488	0.109	0.30	0.02
S-25-12	<	0.351	0.220	<	0.169	0.000	0.481	0.70	<	0.472	0	0.05	0.00
S-26-13			1.18	<	0.309	0.0429	1.42	2.64	<	0.471	0.0111	0.20	0.01
S-26-14			3.63	<	0.252	0.225	3.07	6.93	<	0.487	0	0.53	0.02
S-26-15			0.922	<	0.274	0.000	1.24	2.16	<	0.486	0	0.16	0.01



SYSTEMATIC ISOTOPIC URANIUM

SYSTEMATIC ISOTOPIC URANIUM & VOC

NOTES

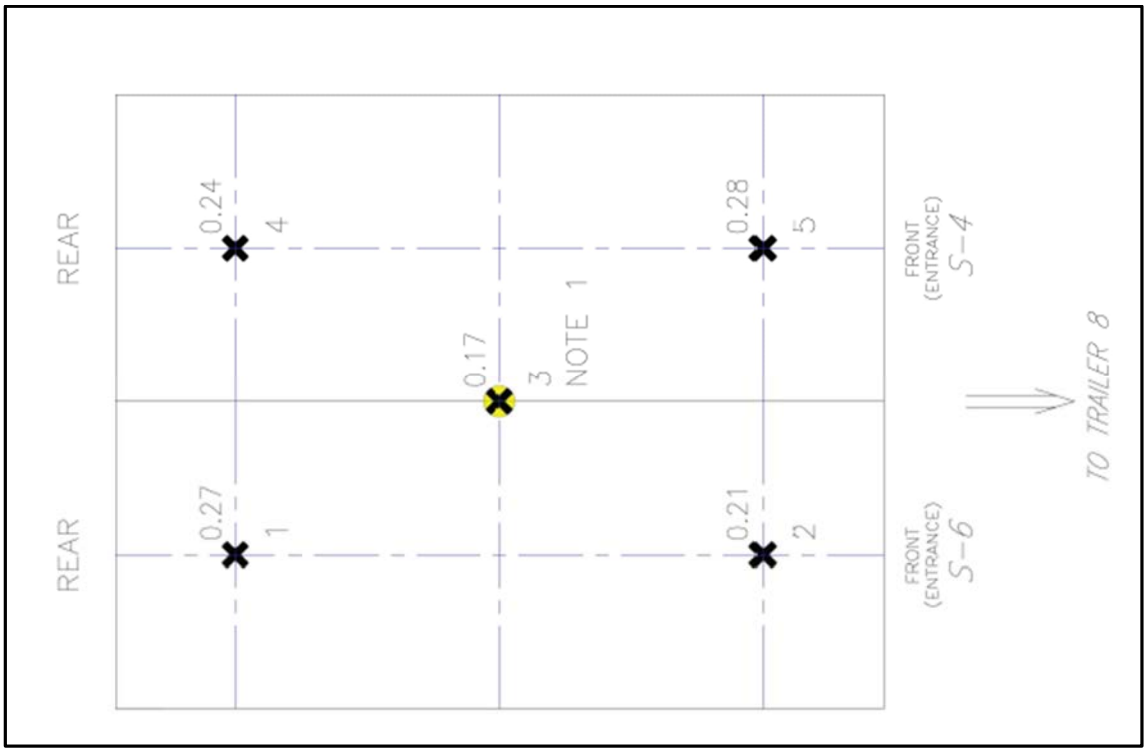
1) All CVOC RESULTS WERE BELOW DETECTION LIMITS.
2) VALUES SHOWN ARE RESIDENTAL SOF

Areas of No Impact

Sealand Containers S-04 and S-06

The soil underneath these sealands was not impacted (as detected by the HP radiological surveys) and sample results were below RUSL. Refer to correspondence previously submitted to the Department for more information entitled *March 2022 Consent Agreement Progress Report* (LTR-RAC-22-22 Westinghouse, 2022).

Sample ID	Analyte (pCi/g)									SOF Resid.	SOF Ind.
	U-234		U-235 DL	U-235	U-238	Sum U		Tc-99 DL	Tc-99		
S-6-1	1.68	<	0.231	0.229	1.51	3.42	<	0.734	0	0.27	0.01
S-6-2	1.39	<	0.247	0	1.45	2.84	<	0.771	0	0.21	0.01
S-4/6-3	1.36	<	0.141	0.0471	0.813	2.22	<	0.706	0	0.17	0.01
S-4-4	1.65	<	0.216	0.0984	1.41	3.16	<	0.667	0	0.24	0.01
S-4-5	1.60	<	0.213	0.211	1.86	3.67	<	0.686	0	0.28	0.02



BIAS SAMPLE
SYSTEMATIC SAMPLE
SYSTEMATIC SAMPLE WITH VOC
CONTAMINATED SOIL REMOVED TO 2 FEET DEPTH

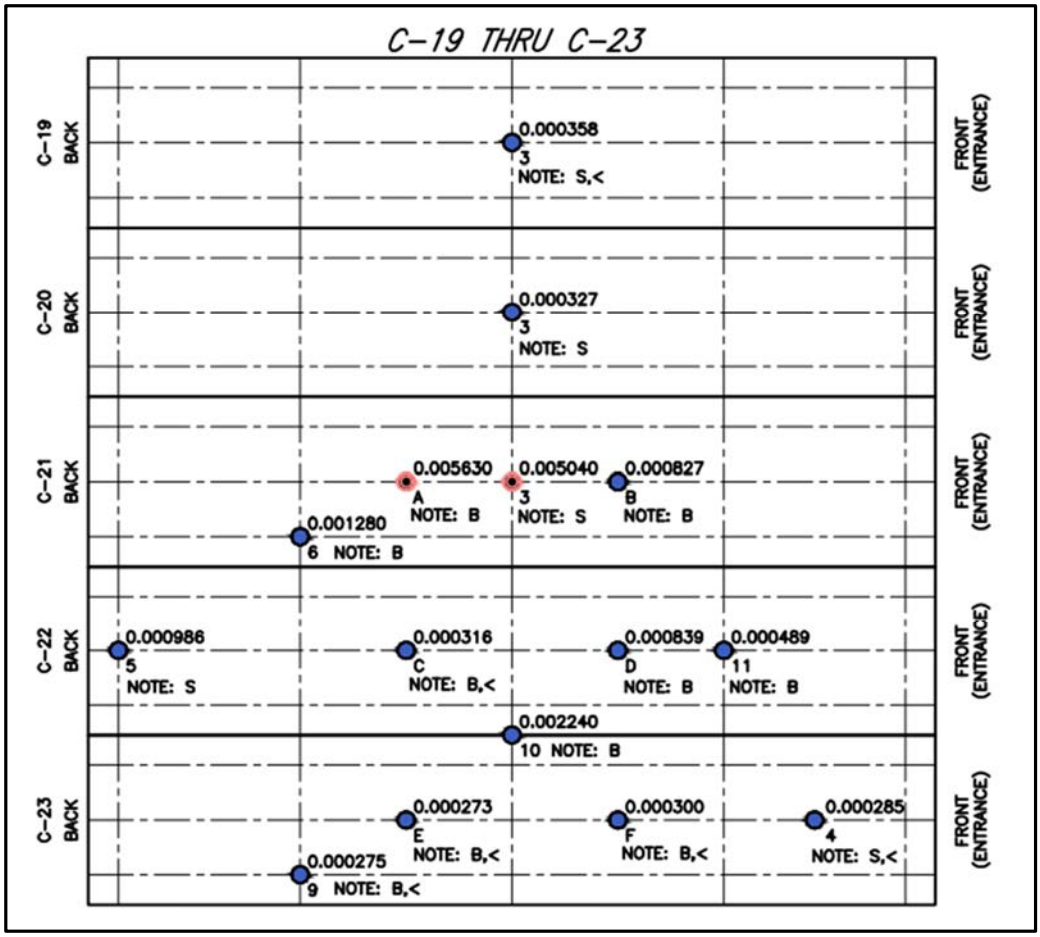
NOTES
1) PCE IS NON-DETECTABLE: <0.299 ug/kg
2) RESULTS AT EACH SAMPLE POINT ARE RESIDENTIAL SUM OF FRACTIONS.

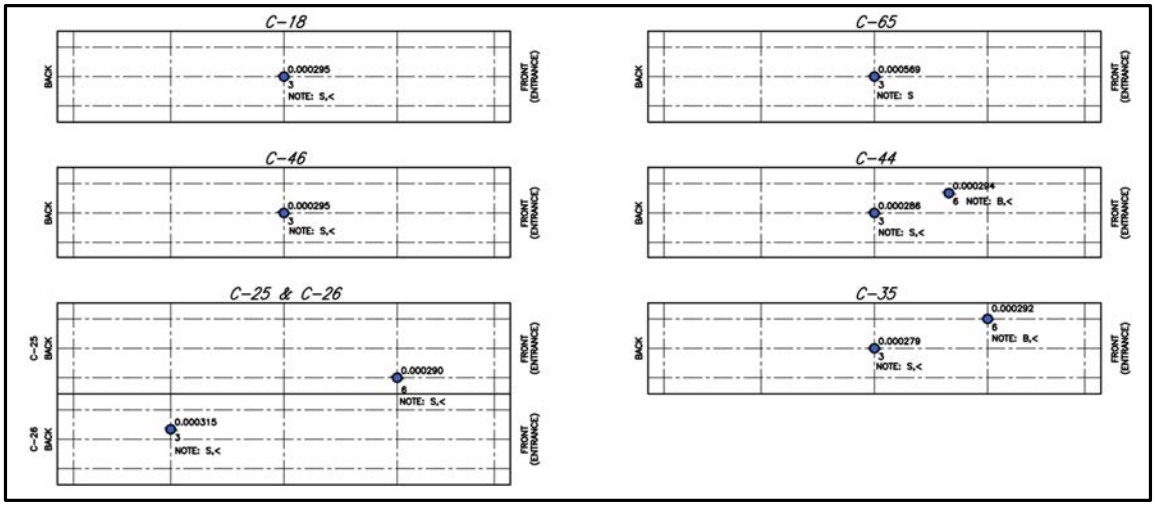
Summary of all SSAOU PCE Results

Below is a consolidated table of the PCE detections in soil in the SSAOU. This data was submitted in LTR-RAC-21-01, *December 2020 Consent Agreement Progress Report* dated January 8, 2021 (Westinghouse, 2021a). The GEL analytical results are included in Appendix A of the December 2020 progress report. As discussed previously, soil impacted with PCE above the RSL below C-21 was removed until analytical results were below RSL.

SSAOU Tabulated Soil Sampling Results – Tetrachloroethylene Detections							
ID	< or =	Result (mg/kg)	Notes	ID	< or =	Result (mg/kg)	Notes
C-4-3	<	0.000273	Systematic	C-42-3	<	0.000279	Systematic
C-7-3	<	0.000315	Systematic	C-43-3	<	0.000309	Systematic
C-8-3	<	0.000321	Systematic	C-43-6	<	0.000280	Bias
C-9-3	<	0.000268	Systematic	C-44-3	<	0.000286	Systematic
C-10-4	<	0.000297	Systematic	C-44-6	<	0.000294	Bias
C-11-5	<	0.000274	Systematic	C-45-3	<	0.000305	Systematic
C-13-3	<	0.000320	Systematic	C-46-3	<	0.000295	Systematic
C-15-4	<	0.000281	Systematic	C-47-5	<	0.000265	Systematic
C-16-2	<	0.000369	Bias	C-49-3	<	0.000314	Systematic
C-16-3	<	0.000301	Systematic	C-51-16	<	0.000296	Bias
C-17-3	<	0.000285	Systematic	C-51-8	<	0.000399	Systematic
C-18-3	<	0.000295	Systematic	C-52-14	<	0.000304	Systematic
C-19-3	<	0.000358	Systematic	C-53-3	<	0.000294	Systematic
C-20-3	=	0.000327	Systematic	C-54-12	<	0.000268	Systematic
C-21-3	=	0.005040	Systematic; excavation required	C-55-3	<	0.000389	Systematic
C-21-6	=	0.001280	Bias	C-56-3	<	0.000291	Bias
C-21-A	=	0.005630	bias; excavation required	C-56-4	=	0.000277	Bias
C-21-B	=	0.000827	bias	C-57-3	<	0.000297	Systematic
C-22-10	=	0.002240	Bias	C-57-6	<	0.000281	Bias
C-22-11	=	0.000489	Bias	C-57-7	<	0.000280	Bias
C-22-5	=	0.000986	Systematic	C-57-8	<	0.000277	Bias
C-22-C	<	0.000316	bias	C-58-12	<	0.000301	Systematic
C-22-D	=	0.000839	bias	C-59-6	<	0.000426	Systematic
C-23-4	<	0.000285	Systematic	C-60-3	<	0.000277	Bias
C-23-9	<	0.000275	Bias	C-61-3	<	0.000281	Systematic
C-23-E	<	0.000273	bias	C-62-3	<	0.000388	Systematic
C-23-F	<	0.000300	bias	C-63-3	<	0.000278	Systematic
C-24-3	<	0.000295	Systematic	C-64-3	=	0.001490	Systematic
C-25+26-3	<	0.000315	Systematic	C-65-3	=	0.000569	Systematic
C-25+26-6	<	0.000290	Systematic	C-66-2	<	0.000272	Bias
C-28-13	<	0.000297	Systematic	C-66-3	<	0.000285	Systematic
C-28-19	<	0.000289	Bias	C-67-1	<	0.000371	Systematic
C-28-20	<	0.000289	Bias	C-69-4	<	0.000269	Systematic
C-29-12	<	0.000262	Systematic	C-71-8	<	0.000315	Systematic
C-30-18	<	0.000268	Bias	ERT-2	<	0.000240	Systematic
C-30-7	<	0.000273	Systematic	S-16-2	<	0.000256	Systematic
C-31-16	<	0.000291	Bias	S-3-2	<	0.000336	Systematic
C-31-17	<	0.000292	Bias	S-38-3	<	0.000330	Systematic
C-31-6	<	0.000282	Systematic	S-45-2	<	0.000262	Systematic
C-32-1	<	0.000300	Systematic	S-46-2	<	0.000359	Systematic
C-33-3	<	0.000298	Systematic	S-50-3	<	0.000346	Systematic
C-34-3	<	0.000286	Systematic	S-5-2	<	0.000309	Systematic
C-35-3	<	0.000279	Systematic	WEC1000-2	<	0.000270	Systematic
C-35-6	<	0.000292	Bias	WEC-1001-2	<	0.000270	Systematic
C-36-1	<	0.000336	Systematic	WEC400-2	<	0.000275	Systematic
C-37-6	<	0.000310	Systematic	WEC500-2	<	0.000275	Systematic
C-38-3	<	0.000307	Systematic	WEC700-2	<	0.000283	Systematic
C-39-3	<	0.000444	Systematic	WEC800-2	<	0.000279	Systematic
C-41-3	<	0.000268	Systematic				

PCE Residential Screening Level: 0.0023 mg/kg

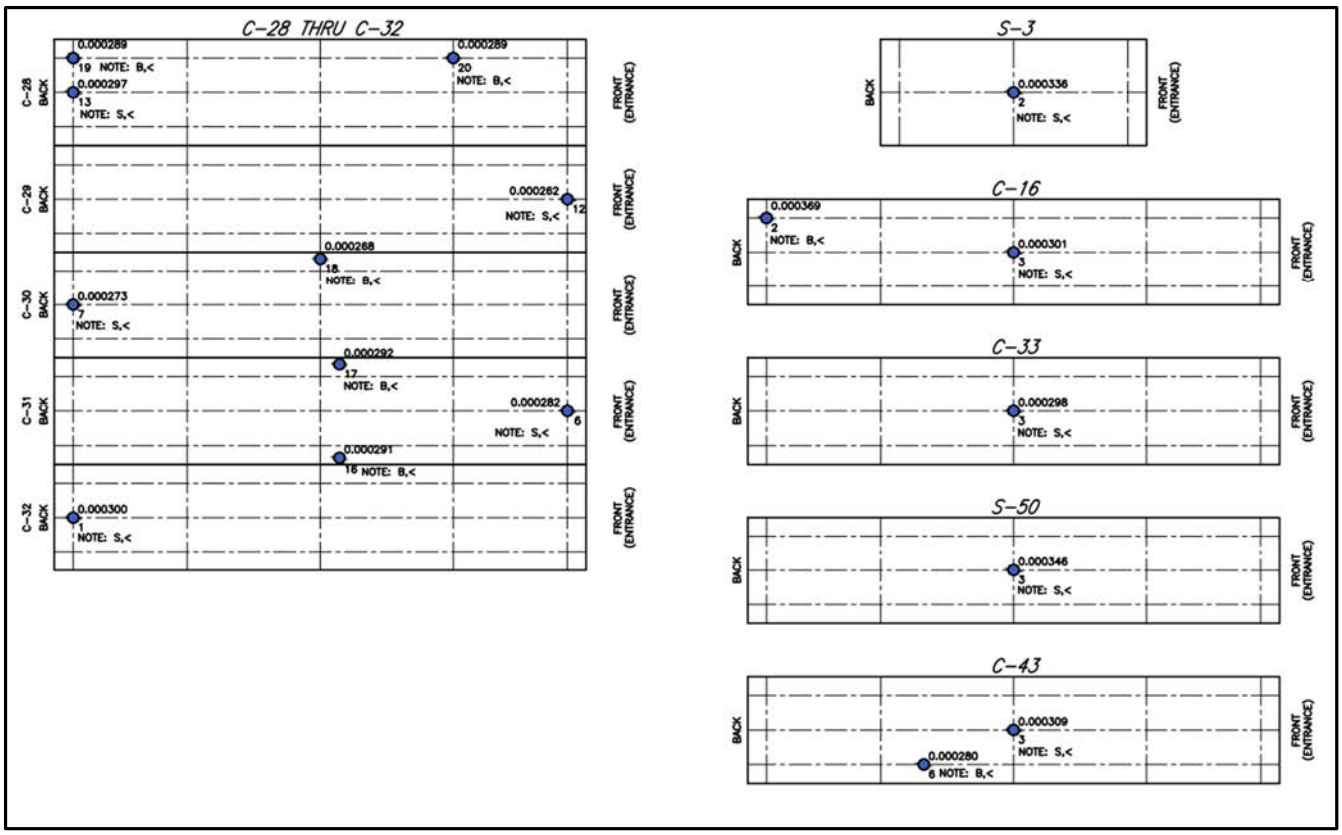


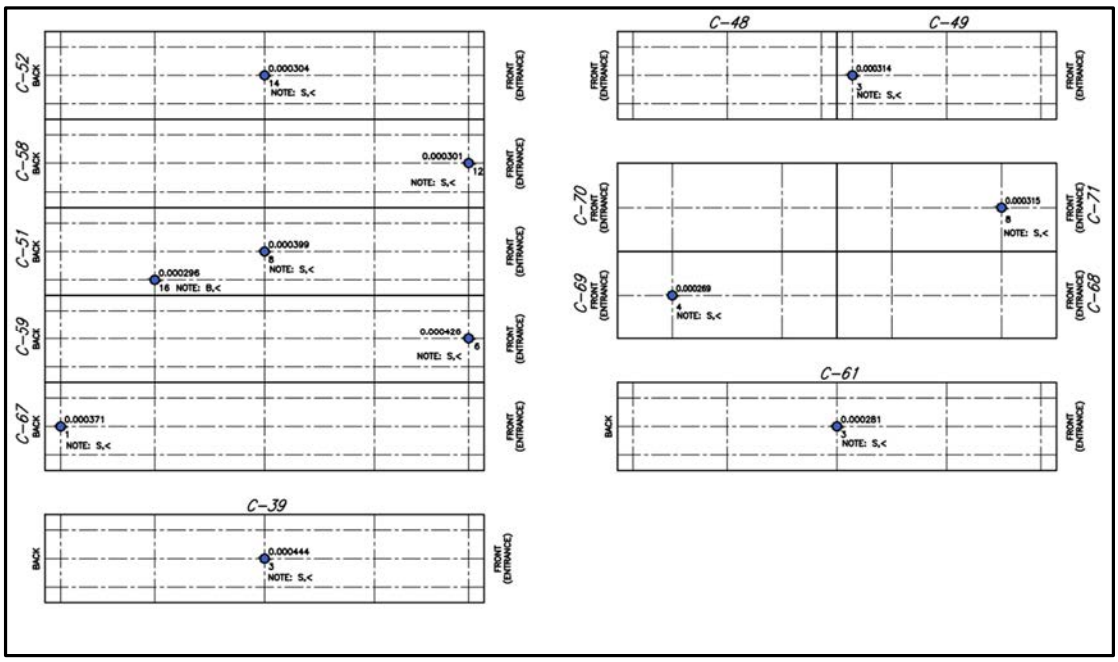


- VOC'S SAMPLED
- DOES NOT EXCEED LIMIT
- EXCEEDS 0.0023 PPM PCE LIMIT
- CONTAMINATED SOIL REMOVED TO 2 FEET DEPTH

NOTES

S SYSTEMATIC POINT
B BIAS POINT
< NON-DETECTED POINT





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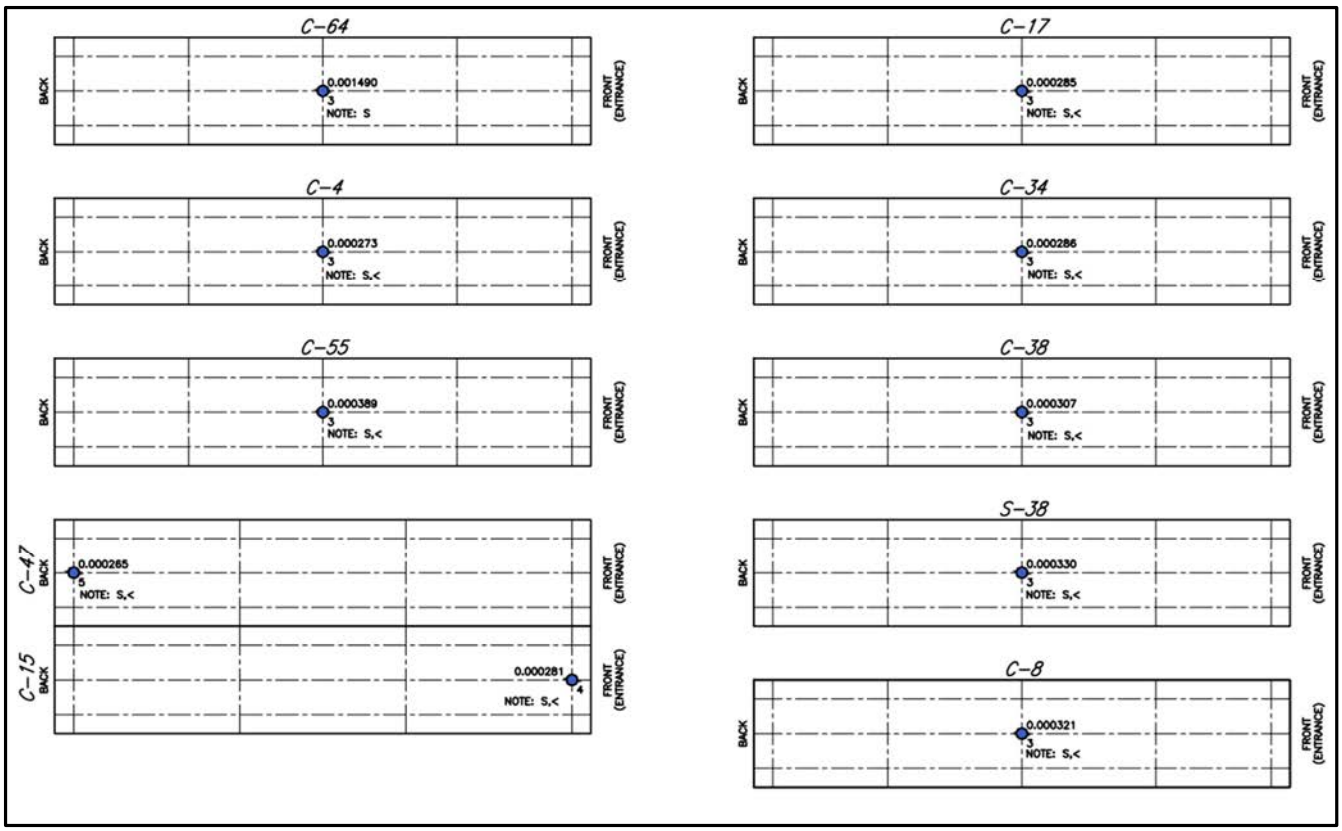

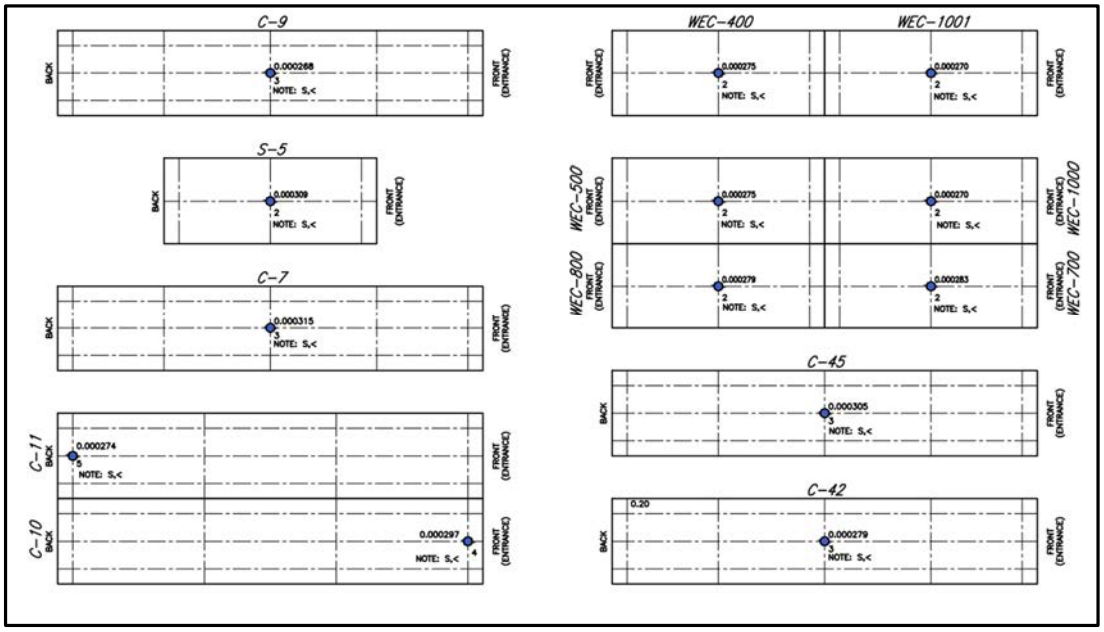

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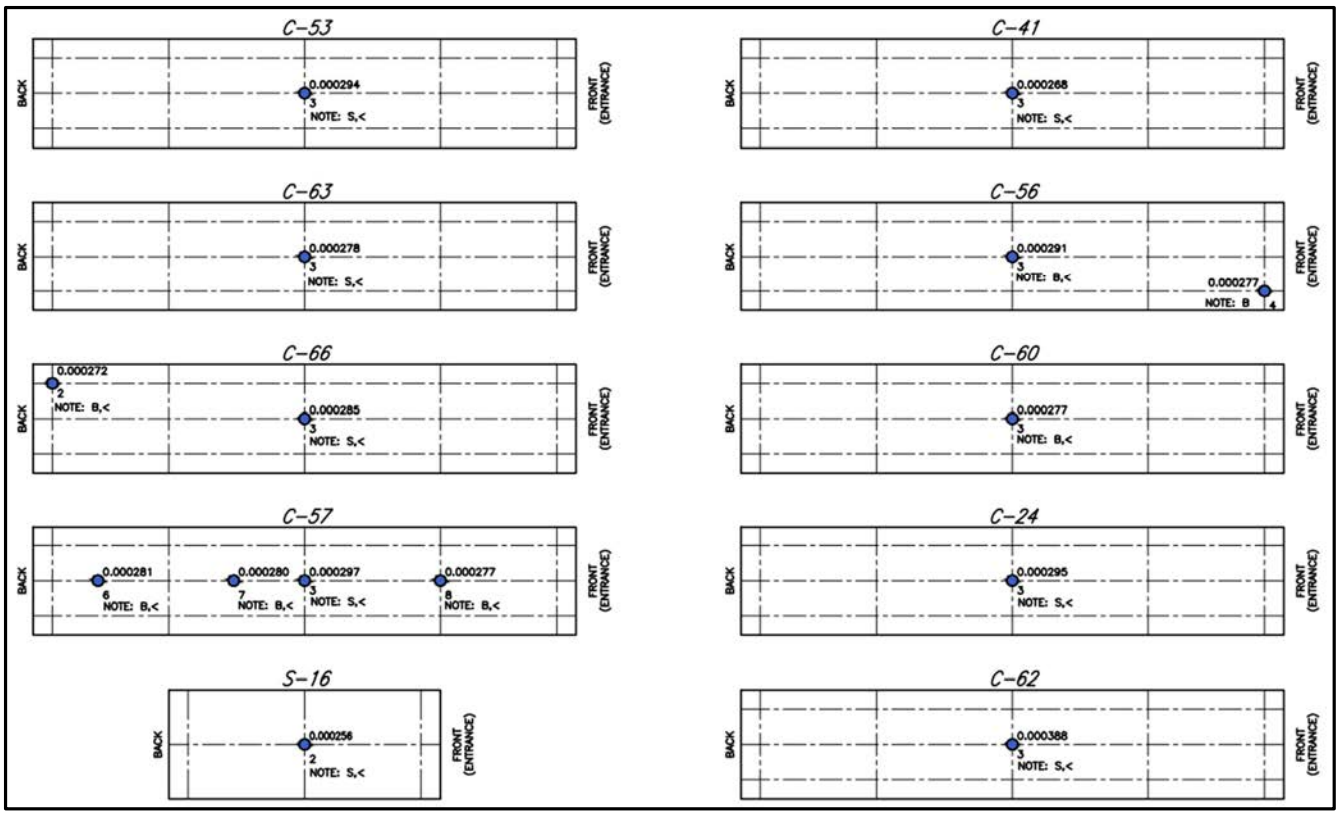

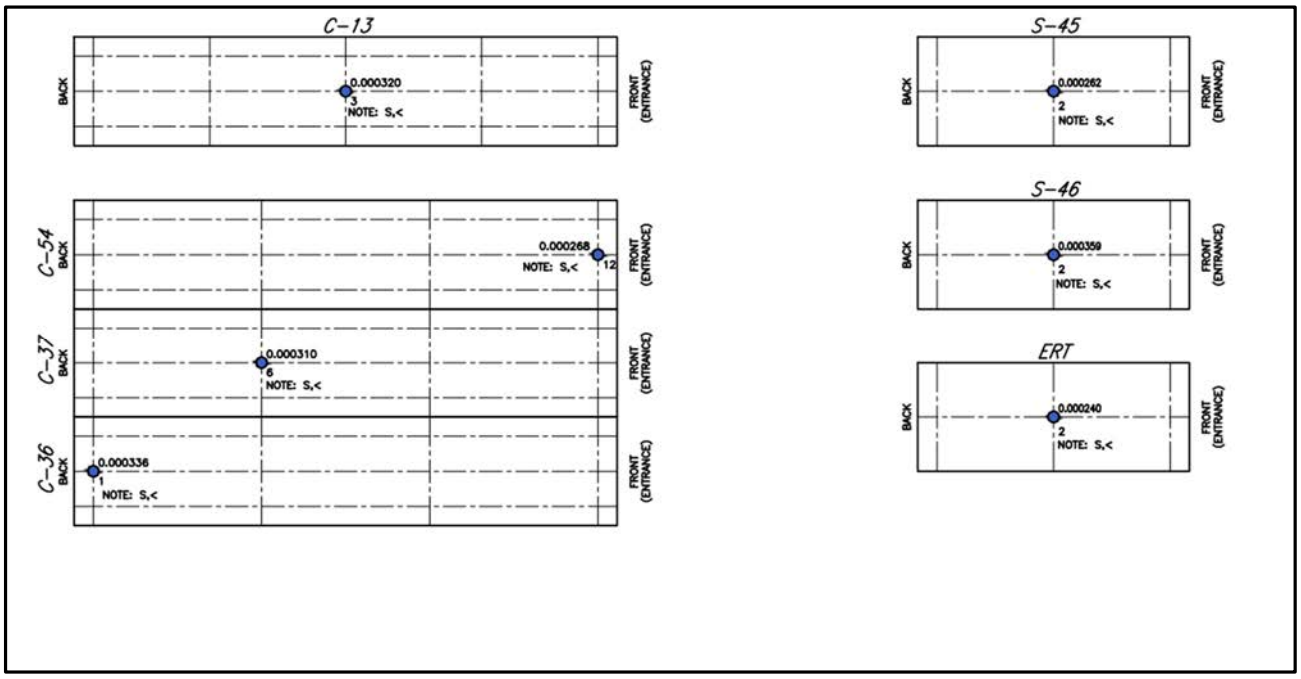

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NOTES

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B BIAS POINT
< NON-DETECTED POINT

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Appendix E
Remedial Investigation Methodologies

Remedial Investigation Methodologies

Utility Clearance

Reed Tech, Inc., a private utility location contractor, utilized a combination of electromagnetic survey and ground penetrating radar (GPR) to scan the proposed drilling locations for buried underground utilities. Additionally, prior to drilling each boring, three-inch diameter hand auger borings were completed to approximately five feet below land surface (BLS) or the boreholes were cleared to an approximate depth of 5 feet BLS using a vacuum extraction truck. Boring advancement was initiated once a location was cleared using these procedures. Utility clearance efforts completed by Columbia Fuel Fabrication Facility (CFFF), AECOM Technical Services, Inc. (AECOM), and Reed Tech, Inc. allowed intrusive boring/drilling to be completed without encountering and/or damaging any underground utilities.

Soil Boring Advancement Methods

Borings were advanced using a variety of tools and technologies including a stainless steel hand auger, direct push technology (DPT) using a Geoprobe™ 7820 or 8041 drill rig, and a Geoprobe™ 8140 or 8150 rotosonic drill rig. Three inch diameter, stainless steel hand augers were used to advance soil borings to allow collection of surface and shallow subsurface soil samples.

The Geoprobe™ 7820 and 8041 drill rigs allowed the collection of continuous soil core samples in acetate sleeves using a dual tube soil core sampling system or a single tube system with a piston point. Using the dual-tube system, a 2.25 inch outside diameter (OD) stainless steel core barrel fitted with a disposable acetate liner is advanced inside a slightly larger (3 inch OD) outer casing to the desired depth. The inner core barrel was retrieved from the borehole, leaving the outer core barrel in the borehole. Using the single-tube system, a 2.25 inch OD stainless steel core barrel is fitted with a disposable acetate liner. A piston point is held inside the liner and cutting shoe by rods extending to the drive head. When the sampler has been driven to the desired depth to begin soil sampling, a stop pin and extension rods are released, and the sample is driven. The core liner could then be cut open by field personnel allowing screening for the presence of volatile organic compounds using an organic vapor analyzer photoionization device (OVA PID), collection of samples for laboratory analysis, and/or visual examination of the contents.

Rotosonic drilling techniques were also utilized for advancement of soil and well borings. The sonic drilling technology allows collection of continuous soil cores utilizing a 10-foot long, four-inch inside diameter (ID) core barrel with a six-inch ID temporary (over-ride) casing. The boring advancement process using rotosonic drilling technology entails the advancement of the core barrel through a desired depth interval. Upon reaching the bottom of the interval a six-inch diameter outer casing was then advanced over the core barrel to the same depth. Once the outer casing was in place the core barrel was removed from the boring and the soil core was then dispensed from the core barrel into a clear polyethylene bag. Contents of the soil core bag were utilized by field personnel for screening for the presence of volatile organic compounds using an OVA PID, visual examination of the contents, and collection of soil samples, if necessary.

During Phase I and II of the RI, 19 and 43 borings, respectively, were advanced at the site using the techniques described above. Soil cores were collected from each boring for field screening with an OVA-PID, visually examined, classified, and described using the Unified Soil Classification System ([USCS], ASTM, 2017). These borings were used to collect groundwater samples, as described below in the Groundwater Screening Section, from temporary wells in sand zones where COPCs would most likely migrate. Lithologic borings not converted to a permanent monitoring well were abandoned in accordance with South Carolina Well Standards and Regulations (R.61-71(H)(2)(e). This included backfilling of a borehole with a bentonite-cement (up to 5% bentonite) grout to land surface.

Soil Gas Survey

In accordance with the *Phase II Remedial Investigation Work Plan* (AECOM, 2020), soil gas survey (SGS) samples were obtained during the first phase of the survey from 25 locations (SG-1 through SG-25) spaced on a generally 75-foot offset grid. Some locations had to be shifted from their proposed locations due to obstructions, however the alternate locations were typically within 5 to 10 feet of the originally proposed sample point.

The SGS devices remained in the ground for approximately 14 days to allow CVOC vapors to pass through the permeable membrane of the SGS vial and equilibrate. A sorbent material within the vial adsorbed concentrations of

CVOCs and this material was analyzed to assess the relative vapor concentration at each location. The initial phase of the SGS indicated two areas of higher subsurface vapor concentrations.

To refine the area for confirmatory soil sample collection, a second passive SGS phase was completed in the vicinity of the two areas of higher subsurface vapor concentrations. This phase included collection of samples from 28 SGS locations (SG-26 through SG-53) on a 25-foot offset grid.

Soil Sample Collection

During Phase I of the RI, 59 soil samples were collected from the 14 soil borings advanced (SS-1 through SS-14) to assess potential Tc-99 source areas. Four soil samples including a surface soil sample (collected from 0 to 1 ft BLS) and three subsurface soil samples (collected from 1-3 ft, 3-5 ft, and 5-7 ft BLS) were collected from each of the 14 borings. Sample collection, homogenization and containerization were completed for each sample in accordance with the procedures described in the *Final Remedial Investigation Work Plan* (AECOM, 2019a).

During Phase II of the RI, 32 subsurface soil samples were collected from 13 soil borings (SS-17 through SS-29) advanced in the primary SGS area. The confirmatory soil boring locations were selected based on the results of the SGS. Soil samples were collected for confirmatory laboratory analysis from the sample interval within each boring that had the highest OVA-PID reading and at the total boring depth of 8 feet BLS in accordance with the *Phase II Remedial Investigation Work Plan* (AECOM, 2020).

Groundwater Screening

Each screening boring was advanced using DPT or sonic drilling methods which allowed for the collection of continuous soil cores that were used to assess the subsurface lithology. Lithologic information as well as PID organic vapor screening results were used to determine intervals from which groundwater screening samples would be collected. Boring advancement, soil core evaluations, and screening for organic vapors were completed in accordance with procedures described in the *Final Remedial Investigation Work Plan* (AECOM, 2019a) and *Phase II Remedial Investigation Work Plan* (AECOM, 2020). Methods used to collect groundwater samples for the screening efforts are described below.

Phase I Groundwater Screening

After review of the initial Phase I groundwater and lithologic data, CFFF with concurrence from the South Carolina Department of Health and Environmental Control (DHEC) implemented a limited groundwater screening effort that allowed comparison of groundwater conditions between the sands of the surficial aquifer and the sands within the floodplain aquifer. An *Additional Floodplain Assessment Plan* (AECOM, 2019b) was submitted to DHEC on August 2, 2019 and this plan was approved by DHEC on August 7, 2019.

Groundwater samples were collected in borings advanced near previous lithologic boring locations L-1 and L-8 through L-10 using a rotosonic drill rig. In addition, lithologic information and groundwater samples were also collected from multiple depth intervals within three new borings (L-17 through L-19) advanced in the floodplain.

Groundwater screening methodology using a rotosonic drill rig was as follows:

- Advancement of a 10 foot long 4-inch inner core barrel to desired depth;
- Advancement of an over-ride 6-inch casing to same depth as inner barrel;
- Removal of inner core barrel followed by lithologic descriptions of the soil core;
- Installation of 5-foot long, 2-inch diameter steel, slotted screen attached to a 2-inch diameter steel riser pipe to the bottom of the over-ride casing. The riser pipe was fitted with an inflatable packer that was connected to an air compressor at land surface via polyethylene air supply line;
- The over-ride casing was pulled up approximately five feet, exposing the screen interval to the bottom of the borehole, and the packer was inflated to seal off the over-ride casing above the bottom of the borehole and screen;
- A small submersible pump with disposable polyethylene tubing was lowered into the two-inch riser to a depth just above the screen interval and used to purge water from the aquifer. The purpose of the purging was to remove drilling fluids introduced to the aquifer and obtain groundwater samples that are representative of the water quality within each discrete screened interval.

- Water quality parameters were measured approximately every 5 minutes using a YSI water quality meter equipped with a flow-through cell and a HF Scientific turbidity meter. The water quality parameters included temperature, pH, specific conductivity (SC), dissolved oxygen (DO), oxidation reduction potential (ORP), and turbidity.
- Purging proceeded until water quality parameters stabilized. pH was required to be within 0.2 standard units (SU) and specific conductivity and temperature were within 3% of the previous reading. If water quality parameters did not stabilize (particularly when the borehole was pumped dry), the field geologist decided when purging was complete. Although turbidity was measured during the purging, it was not used as a stabilization parameter because these temporary wells did not have a sand pack to assist in the reduction of turbidity.
- Once field measurements indicated stable groundwater conditions were achieved, a groundwater sample was collected in laboratory supplied sample bottles.
- After the groundwater sample is collected, the boring was advanced to the next screening interval or properly abandoned if the total groundwater screening depth was reached.

Phase II Groundwater Screening

Upon completion of Phase I of the RI, CFFF and AECOM determined that additional data was required to delineate the extent of COPCs in groundwater beneath the site. Therefore, 43 lithologic/groundwater screening borings (L-20 through L-62) were advanced/sampled during Phase II of the RI in accordance with the DHEC approved *Phase II Remedial Investigation Work Plan* (AECOM, 2020).

Groundwater screening samples during phase II of the RI were collected using a DPT drill rig. DPT groundwater sample tooling consisted of a 2-inch outside diameter stainless steel drive rod with a 4-foot long, 1¼ inch diameter inner retractable screen. Once the DPT rods reached the desired screening depth, the rods were retracted four feet to expose the screen.

Groundwater was purged within the DPT rods using a peristaltic pump and dedicated tubing. Water quality parameters were measured approximately every five minutes using an In-Situ Aqua TROLL 600 water quality meter equipped with a flow-through cell. Groundwater samples were collected after the water quality parameters stabilized as described above.

Well Installation Methods

The monitoring wells were installed using either rotosonic or hollow stem auger drilling techniques. Well installations were completed in accordance with procedures specified in the *Final Remedial Investigation Work Plan* (AECOM, 2019) and the *Phase II Remedial Investigation Work Plan* (AECOM, 2020).

Monitoring wells consisted of schedule 40 polyvinyl chloride (PVC) slotted screen attached to a schedule 40 PVC riser pipe. Monitoring wells installed during the RI effort screened in the upper zone of the surficial aquifer have 10-foot screens and wells screened within the lower zone of the surficial aquifer have 5-foot screens with the exception of upper zone of the surficial aquifer monitoring wells W-96, W-97, W-100 and W-119. Monitoring wells W-96, W-97, and W-119 were installed with 5-foot screens to screen the same portion of the surficial aquifer where groundwater screening samples indicated impacts to groundwater. Due to the short thickness of the surficial aquifer in the vicinity of W-100, it was not possible to install an upper and lower zone of the surficial aquifer monitoring well pair without both wells having 5-foot screens.

Generally, monitoring wells installed within the operational area of the plant were completed as flush mount wells with a bolt down, steel well cover surrounded by a two foot by two foot (by six inch thick) concrete pad. Wells installed outside of the operational area were completed above-grade with a steel protective casing, also surrounded at land surface by a two foot by two foot (by six inch thick) concrete pad.

Well Development

Prior to the start of development, the depth to water and total depth of a well were measured and recorded on a monitoring well development log. An electric submersible pump with ½ inch diameter polyethylene tubing was lowered into the well and initially placed within 1-2 feet of the bottom of the well. Once the pump was turned on, a

small volume of water was evacuated to allow collection of a sample used to measure water quality indicator parameters. Once this sample was collected the pump was then used to surge the well (pulled up and lowered back down through the screen interval) four to five times. This surging action agitated and mobilized/suspended any sediments/solids that collected in the well pipe and filter pack during installation. The initial surging action was followed by placement of the pump at the bottom of the screen interval and pumping to remove sediment from the well.

The surging action was performed periodically while the pump continued to operate. Water quality indicator parameters (e.g., pH, temperature, SC, DO, ORP, and turbidity) were measured during development using calibrated water quality meters. Development was performed until pH was within 0.2 SU, specific conductivity and temperature is within 3%, and the turbidity is <10 nephelometric turbidity units or is stable within 10% if greater than 10 nephelometric turbidity units (only if specifically approved by the Project Manager on a well by well basis) when compared to the previous reading. Water quality parameter measurements were documented on monitoring well development logs.

Monitoring Well Sampling

Prior to the monitoring well network sampling campaign, water levels were measured in each monitoring well using an electric water level indicator. The water levels were measured as quickly as practical on one day. The water level data was used to determine groundwater elevations and flow direction in each groundwater zone.

As indicated in the *Final Remedial Investigation Work Plan* (AECOM, 2019) and *Phase II Remedial Investigation Work Plan* (AECOM, 2020), low flow, low volume well purging and sampling procedures were used to sample the permanent monitoring wells. Either a peristaltic or a variable speed submersible pump were used to purge the permanent wells. Water quality parameters including pH, temperature, SC, DO, ORP, and turbidity were measured during purging using an Aqua TROLL 600 water quality meter.

Well purging efforts were performed until water quality parameters stabilized as described in the Phase I Groundwater Screening section above. Depth to water, depth to well bottom and water quality parameter measurements were documented on groundwater sampling logs generated while sampling at each well.

Private Water Well Sampling

Water well samples were collected from each well utilizing the procedures described in the *Final Remedial Investigation Work Plan* (AECOM, 2019B). This effort included well purging and measurement of water quality indicator parameters (pH, temperature, SC, DO, ORP, and turbidity). Groundwater sample stabilization for the private wells was the same as for the monitoring wells. Well purging and sample collection efforts at each water well were documented on groundwater sampling logs.

Hydraulic Data Collection and Conductivity Testing

Both falling and rising head tests were performed at each well. The slug test procedure initially included installation of a pressure transducer data logger (In-Situ Level TROLL® 700 or similar) into the well. The pressure transducer was programmed to measure a monitoring well's water level over a time interval.

Falling head tests were conducted by quickly inserting a 1.5 inch diameter, 60-inch length solid PVC cylinder (slug) into a well. As a result, water level within the well rises and is monitored over time as it declines back toward static level. Rising head tests were conducted by quickly removing the submerged slug from a well. The resulting water level declines and is monitored over time as it rises back to static level. The changes in water levels logged by the pressure transducer were downloaded for evaluation. The testing methods and data analysis followed the procedures described by Bouwer and Rice (1976) and Bouwer (1989).

Surface Water Sample Collection

Two background samples (SW-11 and SW-12) were collected from upstream locations within the Eastern Ditch where the ditches enter the northern side of the property from Bluff Road. Samples were also collected from four additional locations (SW-13, SW-14, SW-17 and SW-18) within the Eastern Ditch and two locations (SW-15 and SW-16) within the Middle Ditch. Surface water samples SW-19 and SW-20 were collected from Upper Sunset Lake. Surface water

samples SW-21 and SW-22 were collected from within Lower Sunset Lake. Surface water sample SW-23 was collected in the Gator Pond.

In accordance with the *Final Remedial Investigation Work Plan* (AECOM, 2019), surface water (and sediment) sampling was performed from the most down-stream location to the most up-stream location to preclude disturbing sediments which could become suspended and wash downstream potentially biasing other samples.

Surface Water-Groundwater Interaction Evaluation

Groundwater quality and elevation data collected during the RI suggested that the Gator Pond influences COPC migration in groundwater in the vicinity of the pond. To better understand this influence, pressure transducers were installed in monitoring wells W-4/W-4R, W-15, W-16, W-27, and W-92 to assess the horizontal and vertical effect of this surface water body on the surficial aquifer. Pressure transducers measure the water level data in each of these wells every hour.

A pressure transducer is also attached to the staff gage in the Gator Pond. Using both top of casing elevation and the elevation of the top of the staff gage, groundwater and surface elevations were calculated. These data were used to develop groundwater and surface water elevation trend graphs. To assess the fluctuation of the surficial aquifer without the influence of surface water bodies above the bluff and what affect that may have on groundwater migration around the Gator Pond, pressure transducers were installed in monitoring well pair W-60 and W-61.

To assess surface water elevations and flow direction within Mill Creek, staff gages were installed in the canal, at the Entrance Dike, two within Upper Sunset Lake, in Lower Sunset Lake, and in Mill Creek beyond the Lower Sunset Lake Dike. During Phase II of the RI, AECOM installed pressure transducers at the Lower, Upper, Upper 2, Entrance and Canal staff gages to allow collection of real-time surface water elevation data from this portion of Mill Creek. This data has been evaluated to assess if “upstream” flow has been occurring from Upper Sunset Lake to the canal.

Additionally, pressure transducers were installed in piezometer PZ-1 and monitoring well W-96, W-104, W-105, W-124, W-125 and W-126 near Lower Sunset Lake to assess the groundwater to surface water interaction in this area. Because of the elevation of the screen of monitoring well W-92 (lower zone of the surficial aquifer) located between the Gator Pond and Lower Sunset Lake, this monitoring well was also used in this evaluation. These pressure transducers collect water level data that was converted to an elevation. Data collected from these locations were used to develop groundwater and surface water elevation trend graphs.

Sediment Boring Advancement

During Phase I of the RI, sediment samples were collected using a hand auger or multistage sediment sampler. Surficial sediment samples (0-6 inches) were collected using a hand auger in sediment sample locations SED-11 through SED-28 (sediment samples SED-25 through SED-28 are sludge samples from the East and Sanitary Lagoons) and SED-38 through SED-50.

A multistage sampler consists of a two-foot long stainless steel tube with an acetate sleeve inside. The multistage sediment sampler was attached to a slide hammer that was used to manually drive it into the sediment. Sediment samples from the core were collected at six-inch intervals (e.g. 0-6 inch, 6-12 inch) with a minimum of 1-foot of sediment core being collected.

During Phase II of the RI, both surface and subsurface sediment samples (collected from deeper intervals - ranging from between 6 and 24 inches) were obtained using Specialty Devices, Inc.’s Vibracore Mini sampler (Vibracore). The Vibracore contains a box that vibrates an aluminum tube into the sediment. The bottom of the aluminum tube was placed on top of the sediment surface and a mark was made on the rod connecting the vibrating box to the tube at a height 3 feet above the top of the surface water.

The aluminum tube was then vibrated into the sediment until the mark was at the top of the surface water. Once the aluminum tube was extracted, field personnel measured the amount of sediment within the tube. A minimum of 2 feet of sediment was measured in each tube.

A hand auger was also used during Phase II of the RI to collect sediment samples from the Middle Ditch at sediment sample locations SED-16, SED-60 and SED-61. These samples were collected in six-inch intervals to a depth of 12 inches BLS.

Sediment Sample Collection

When the multistage sampler was removed from the subsurface, the acetate sleeves were extracted. The sleeves were cut open to allow visual examination of the sediment and collection of samples. The multistage sampler was used to collect sediment samples SED-29 through SED-37 and SED-51 through SED-56.

After field personnel assessed the thickness of sediment with the Vibracore tube, the tube was cut into 6 inch sections. The Vibracore was used to collect sediment samples SED-19 through SED-50, SED-57 through SED-68 and B1 through B8.

Sediment samples to be analyzed for VOCs were immediately collected after the sleeves and tubes were cut open. Once the VOC samples were collected, the remaining material was placed on dedicated HDPE mixing squares and homogenized in accordance with the procedures discussed and/or referenced in the *Final Remedial Investigation Work Plan* (AECOM, 2019). After homogenization was complete sediment was distributed to appropriate remaining sample containers.

Quality Assurance and Quality Control

The sample quality assurance (QA) and quality control (QC) processes during the RI included field documentation, usage and calibration of field measurement devices, usage of designated sampling nomenclature, sample collection and field QC sampling, handling, and shipping procedures, sample custody and documentation, laboratory handling, and data management. These processes were completed in accordance with processes described in the *Final Remedial Investigation Work plan* (AECOM, 2019).

Field documentation and data management efforts included collection and management of field measurements and observations using standardized field forms and electronic recording devices. Field equipment used to collect data (including a PID, water quality meter, and turbidity meter) were calibrated prior to each use (usually at the beginning of each day). Instruments were calibrated, maintained, and operated in accordance with the manufacturer's specifications.

Information about locations, field measurements, samples, laboratory tests, and data results is maintained in the site's EQuIS database, managed by AECOM. Access to the database is restricted to project personnel, and the ability to view and/or add or change data were granted to only those individuals designated to perform those tasks. Original data documents and electronic files have been archived in the computerized project filing system.

Sample identification information was assigned in accordance with guidance provided in the *Final Remedial Investigation Work Plan* (AECOM, 2019).

Sample Point Location and Surveying

Surface water and sediment sample locations were surveyed using submeter GPS methods. Borings, wells, staff gages and sample locations on land were surveyed by South Carolina Registered Land Surveyors using survey-grade equipment.

Surveying was performed by AECOM and survey data was reviewed and saved in the site's EQuIS database in accordance with QA procedures. Horizontal locations were reported in South Carolina State Plane Coordinates referenced to the North American Datum of 1983 to the nearest 0.01 foot. Elevations were referenced to the North American Vertical Datum of 1988 to the nearest 0.01 foot.

Equipment Decontamination

In accordance with the *Final Remedial Investigation Work Plan* (AECOM, 2019) drilling equipment and reusable equipment was cleaned between borings and/or sample locations. This included hand augers, Geoprobe™, and

rotosonic drilling tools (core barrels, drive rods casing), hollow stem augers, soil and sediment sampling tools, well development and sampling equipment (water level meters, submersible pumps, flow though cells for water quality meters). Decontamination procedures used for these various pieces of equipment are described in the *Final Remedial Investigation Work Plan* (AECOM, 2019).

Investigative Derived Waste Management

Solid IDW was containerized in Department of Transportation (DOT) approved 55-gallon drums and temporarily staged at a central location pending results of laboratory analyses and selection of final disposition according to CFFF procedures RA-136 (Westinghouse, 2021), *Soil Sampling and Disposal* and RA-433, *Environmental Remediation* (Westinghouse, 2022).

Soil cuttings generated during soil and well boring efforts were containerized individually. Cuttings from separate locations were not combined/mixed in a drum. A composite sample was collected from each drum containing soil IDW and analyzed as specified in the *Final Remedial Investigation Work Plan* (AECOM, 2019).

Liquid IDW, consisting of drilling fluids, decontamination water, and well development/purge water, was containerized in totes provided by CFFF and staged at a central location pending results of laboratory analyses. Fluid IDW was processed through the CFFF wastewater treatment system once CFFF received approval from DHEC.

Background Concentration Calculation

Surface water and sediment data were compared to background values in addition to regulatory screening values. Background surface water (SW-11 and SW-12) and sediment samples (SED-11 and SED-12) for the stormwater ditches were collected upstream in the Eastern Ditch in locations far enough away from the facility to not be impacted by operations. Background sediment samples for Mill Creek (including Upper Sunset Lake and Lower Sunset Lake) were collected from locations SED-51 through SED-56 for 2-Butanone, acetone, ammonia, nitrate, and fluoride and from locations SED-51 through SED-59 for U.

Background concentrations were calculated using two-times the mean concentration for detection and one-half of the reporting limit for non-detected results.

Pressure Transducer Data Download

During Phase II of the RI, pressure transducers were attached to staff gages in surface water bodies on the CFFF property, installed in monitoring wells and installed in a piezometer.

The transducers in the monitoring wells and the piezometer, its cable, and associated desiccant (keeps moisture from getting into the cable which could short circuit data transmission) are attached to the bottom of the monitoring well's expandable cap. When the cap was removed to download data from the transducer, field personnel collected a water level measurement in each well or piezometer for use in comparison to the transducer data as quality assurance measure.

To download data from the transducer, the expandable cap was removed from the top of the well to expose the semirigid cable, the desiccant was removed from the cable's end and a Wireless TROLL Com was connected to the end of the cable. The data was then transmitted by a Bluetooth connection to a tablet (iPad or similar tablet) containing the VuSitu mobile application. Once the data is downloaded, the communication device was removed, the desiccant placed back on the end of the cable, and upper foot or two of the cable was bent in a U shape to fit back into the well.

Because there was friction of the cable on the sides of the well due to the U shaped bend and the attachment to the well cap has a little room for movement, the transducer may not end up in the same exact position in the well as it was before the cap was removed. This shift in position in the well results in the transducer reading a higher or lower elevation than the actual surficial aquifer elevation in the well/piezometer. Comparing the field measured water elevation to the transducer data allows for adjustment of the transducer data, if necessary, to match and/or verify the field measured elevation thereby eliminating the error caused by the shift in the transducer's position in the well. Transducer and field measurements that were within 0.1 foot of each other did not require the data to be adjusted.

Each time data was download, field and transducer elevations were compared to ensure that each data set accurately reflected fluctuations in the surficial aquifer.

Transducers on the staff gages are connected via the same cable to a VuLink®. VuLink® is a data logger and cellular telemetry device manufactured by In-Situ Inc. to transmit data into the cloud where it can be accessed via the internet. The VuLink takes the place of the Wireless TROLL Com because field personnel can connect directly to the VuLink via Bluetooth on the tablet and download the transducer data.

References

AECOM, 2019a. Final Remedial Investigation Work Plan, Westinghouse Columbia Fuel Fabrication Facility, 5801 Bluff Road, Hopkins, South Carolina, June 2019.

AECOM, 2019b. Columbia Fuel Fabrication Facility, Additional Floodplain Assessment, Richland County, S.C., Consent Agreement CA-19-02-HW, File # 51377, August 2, 2019.

AECOM, 2020. Phase II Remedial Investigation Work Plan, Westinghouse Columbia Fuel Fabrication Facility, 5801 Bluff Road, Hopkins, South Carolina, September 2020.

ASTM International, 2017. ASTM D2487-17 Standard Practice For Classification Of Soils For Engineering Purposes (Unified Soil Classification System)

Bouwer, H., 1989. The Bouwer and Rice slug test - an update, Ground Water, vol. 27, no. 3, pp. 304-309.

Bouwer, H. and R.C. Rice, 1976. A slug test method for determining hydraulic conductivity of unconfined aquifers with completely or partially penetrating wells, Water Resources Research, vol. 12, no. 3, pp. 423-428.

Westinghouse, 2021. Procedure RA-136 Soil Sampling and Disposal Revision 4, April 8, 2021.

Westinghouse, 2022. Procedure RA-433 Environmental Remediation Revision 2, April 28, 2022.

Appendix F
Boring Logs

WELL NUMBER L-1

AECOM

TOTAL DEPTH 86 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/13/2019 **COMPLETED** 06/13/2019
SURVEYING BY/DATE AECOM / 10-03-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 744366.85 **NORTHING** 2022545.46
DRILLING EQUIPMENT GP 3230 DT/GP 8140 LS
GROUND ELEVATION 113.53 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe/Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
0.00					Silt (ML), strong brown 7.5YR 5/6, soft few clay, moist	113.5	**Backfill** Type: Cement / Bentonite Grout 0-86 ft bgs
3.00			0.0		Silt, (ML) strong brown 7.5YR 5/6, soft, trace clay, moist	110.5	
5.00			0.0		Silt (ML), strong brown 7.5YR 4/6, soft, wet	108.5	
8.50			0.0		Sand (SP), yellowish brown 10YR 5/8, fine grained, poorly graded, wet	105.0	
13.50			0.0		Sand (SP), light yellowish brown 10YR 6/4, medium grained, poorly graded, saturated	100.0	
18.50			0.1		Sand (SP), yellow 10YR 7/6, medium grained, poorly graded, saturated	95.0	
23.50			0.0		Sand (SP), very pale brown 10YR 7/3, medium grained, poorly graded, saturated	90.0	
25.50			0.0		Sand (SW), very pale brown 10YR 7/3, fine to coarse grained, well graded, saturated	88.0	
28.50			0.0		Sand (SW) light gray 10YR 7/1, medium to coarse grained, well graded, saturated	85.0	
34.00			0.0		Silt (ML), gray 10YR 6/1, soft, wet	79.5	

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WELL NUMBER L-1

TOTAL DEPTH 86 FT BGS

AECOM

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36			0.0				
37					37.00 Silt (ML), gray 5Y 6/1, soft, wet	76.5	
38							
39							
40							
41			0.0				
42							
43							
44			0.0				
45							
46			4.9		45.00 Sand (SW) gray 5Y 6/1, fine to medium grained, well graded, saturated	68.5	
47							
48							
49			5.6				
50					49.00 Sand (SW), gray 10YR 6/1, fine to coarse grained, well graded, saturated	64.5	
51							
52			5.1				
53							
54							
55			4.2				
56							
57							
58			4.6				
59							
60					59.00 Sand (SW) gray 10YR 6/1, fine to coarse grained, well graded, saturated	54.5	
61			3.7				
62					61.00 Sand (SW) light gray, fine to medium grained, well graded, saturated	52.5	
63			8.2				
64					63.00 Sand (SW), fine to medium grained, few silt, well graded, saturated	50.5	
65			3.7		64.00 Wood, black 5Y 2.5/1	49.5	
66					64.30 Sand (SP), gray 10YR 5/1, fine grained, few silt, poorly graded, saturated	49.2	
67			8.2				
68					67.50 Sand,(SW), gray 10YR 5/1, fine to medium grained, well graded, saturated	46.0	
69			0.0				
70							
71							
72			0.0				
73							
74							
75			0.0		74.00 Sand (SW), gray 10YR 5/1, fine grained, trace silt, poorly graded, saturated	39.5	

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WELL NUMBER L-1

TOTAL DEPTH 86 FT BGS

AECOM

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
75							
76							
77							
78			0.0				
79							
80			4.6		79.00 Sand (SW) gray 10YR 5/1, fine to medium grained, well graded, chemical odor, saturated	34.5	
81							
82			23.6				
83			2.2		82.00 Sand (SW), medium to coarse grained, well graded, Saturated	31.5	
84					83.00 Clay (CL) dark gray 2.5Y 4/1, very stiff, moderate plasticity, dry	30.5	
85							
86							

Bottom of borehole at 86 feet.

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WELL NUMBER L-2

AECOM

TOTAL DEPTH 49 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/24/2019 **COMPLETED** 06/24/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 744470.67 **NORTHING** 2023425.91
DRILLING EQUIPMENT Geoprobe 8140 LS
GROUND ELEVATION 116.66 ft **CASING ELEVATION** N/A
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
1–4					0.00 Clayey Sand (SC), fill, yellowish red 5YR 4/6, fill, fine to medium grained, some clay, well graded, moist	116.7	**Backfill** Type: Cement / Bentonite Grout 0-49 ft bgs
5–6			0.0		3.50 Clayey Sand (SC), fill, strong brown 7.5YR 5/6, fine to medium grained, little clay, well graded, moist	113.2	
7			0.0		6.50 Clayey Sand (SC), fill, strong brown 7.5 YR 5/6, fine to coarse grained, little clay, well graded, moist	110.2	
8–9			0.0				
10–12			0.0		10.00 Clay (CH), very dark gray 2.5 Y 3/1, soft, high plasticity, wet	106.7	
13–15			0.0		14.00 Clay (CH), very dark gray 5Y 3/1, soft, high plasticity, wet	102.7	
16–18			0.0		17.00 Silty Clay (CL-ML) very dark gray 5Y 3/1, soft, high plasticity, wet	99.7	
19–20			0.3		18.00 Sand (SP), grayish brown 2.5Y 5/2, medium to coarse grained, well graded, saturated	98.7	
21–23			0.4				
24–25			1.4		24.00 Sand (SW), light gray 10YR 7/2, fine to medium grained, well graded, saturated	92.7	
26–28			0.1				
29			0.6				
30–33			0.0		29.50 Clay (CH) very dark gray 7.5YR 3/1, stiff, high plasticity, moist	87.2	
34–35							

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WELL NUMBER L-2

TOTAL DEPTH 49 FT BGS

AECOM

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36							
37							
38			0.0				
39							
40					39.50 Clay (CH) dark gray 7.5YR 4/1, very stiff, moderate plasticity, few silt, moist	77.2	
41							
42							
43			0.0				
44							
45					44.00 Clay (CL), gray 7.5YR 5/1, very stiff, low plasticity, dry	72.7	
46							
47							
48							
49							

Bottom of borehole at 49 feet.

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WELL NUMBER L-3

AECOM

TOTAL DEPTH 49 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/24/2019 **COMPLETED** 06/24/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 744381.22 **NORTHING** 2023323.26
DRILLING EQUIPMENT Geoprobe 8140 LS
GROUND ELEVATION 115.33 ft **CASING ELEVATION** N/A
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
0.00			0.0		Clayey Sand (SC), Fill, yellowish red 5YR 4/6, fine to medium grained, some clay, well graded, fill	115.3	**Backfill** Type: Cement / Bentonite Grout 0-49 ft bgs
5.00			0.0		Clayey Sand (SC), Fill, yellowish red 5YR 4/6, fine to coarse grained, little clay, moist to wet, fill	110.3	
8.00			0.0		Clayey Sand (SC), Fill, dark grayish brown 2.5Y 4/2, fine to medium grained, little clay, saturated	107.3	
17.00			0.5		Sand (SW), grayish brown 2.5Y 5/2, fine to medium grained, well graded, saturated	98.3	
20.50			1.0		Clay (CL), dark gray 5Y 4/1, soft, plastic, moist	94.8	
21.00			0.4		Sand (SW), gray 2.5Y 5/1, fine to coarse grained, well graded, saturated	94.3	
27.50			0.7		Sand (SW), gray 2.5Y 5/1, fine to coarse grained, few gravel, few cobbles, well graded, saturated	87.8	
30.00			0.3		Clay (CL), very dark gray 10YR 3/1, stiff, low plasticity, dry	85.3	
35			0.0				

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WELL NUMBER L-3

AECOM

TOTAL DEPTH 49 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36			0.0		35.00 Clay (CL), very dark gray 10 YR 4/1, stiff, low plasticity, dry	80.3	
37							
38							
39							
40							
41			0.0		40.50 Clay (CH) dark gray 2.5 Y 4/1, very stiff, moderate plasticity, damp to moist	74.8	
42							
43							
44							
45					44.50 Clay (CH) very dark gray, as above	70.8	
46							
47							
48							
49							

Bottom of borehole at 49 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-4

TOTAL DEPTH 39 FT BGS

AECOM

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/25/2019 **COMPLETED** 06/25/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 744252.61 **NORTHING** 2023227.28
DRILLING EQUIPMENT Geoprobe 8140 LS
GROUND ELEVATION 114.49 ft **CASING ELEVATION** N/A
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
1			0.0		0.00 Clayey Sand (SC), Fill, yellowish red 5YR 4/6, fine to medium grained, some clay, well graded, moist	114.5	**Backfill** Type: Cement / Bentonite Grout 0-39 ft bgs
2							
3							
4							
5							
6							
7			0.1		6.50 Clayey Silt (ML), gray 2.5Y 5/1 to light olive brown 2.5Y 5/3, soft, little clay, moist	108.0	
8							
9							
10							
11							
12			0.2				
13					12.50 Silt (ML), dark gray 10YR 4/1, soft, wet	102.0	
14							
15							
16							
17			0.9		16.00 Sand (SW), gray 10YR 5/1, fine to medium grained, well graded, saturated	98.5	
18							
19			2.7				
20							
21							
22			0.5				
23							
24							
25					24.00 Silt (ML), dark gray 10YR 4/1, soft, wet	90.5	
26			0.4		25.00 Sand (SW), gray 10YR 6/1, fine to coarse grained, few gravel, few cobbles, well graded, saturated	89.5	
27							
28							
29			1.5				
30							
31					30.00 Clay (CL), dark gray 10YR 4/1, very stiff, low plasticity, dry	84.5	
32							
33							
34					33.50 Clay (CL), very dark gray 2.5Y 3/1, very stiff, low plasticity, dry	81.0	
35							

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-4

AECOM

TOTAL DEPTH 39 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36							
37					37.00 Clay (CL), as above with slightly higher plasticity	77.5	
38							
39							

Bottom of borehole at 39 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-5

AECOM

TOTAL DEPTH 38.5 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/14/2019 **COMPLETED** 06/14/2019
SURVEYING BY/DATE AECOM / 10-03-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 743820.34 **NORTHING** 2022922.26
DRILLING EQUIPMENT GP 3230 DT
GROUND ELEVATION 112.26 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
1			0.0		0.00 Clayey Silt (ML), dark yellowish brown 10YR 4/6, medium stiff, moderate plasticity, moist	112.3	**Backfill** Type: Cement / Bentonite Grout 0-38.5 ft bgs
2							
3							
4							
5			0.0				
6							
7					6.50 Sand (SP), dark yellowish brown 10YR 4/6, fine grained, poorly graded, saturated	105.8	
8							
9							
10			0.0				
11							
12							
13			0.0				
14							
15			0.0				
16							
17					16.50 Sand (SP) light gray 10YR 7/1, medium grained, poorly graded, saturated	95.8	
18			0.0				
19					18.50 Sand (SW), light yellowish brown 2.5Y 6/4, fine to medium grained, well graded, saturated	93.8	
20			0.0				
21			0.0				
22							
23			0.0		22.50 Silty Sand (SM), dark gray 7.5YR 4/1, fine to medium grained, little silt, well graded, saturated	89.8	
24							
25					24.00 Sand (SP), light gray 10YR 7/1, medium grained, poorly graded, saturated	88.3	
26			0.1				
27							
28			0.1				
29					28.50 Sand (SW), light gray 10YR 7/1, medium to coarse grained, well graded, saturated	83.8	
30			0.1				
31					30.50 Sand (SW), light gray 10YR 7/1, medium to coarse grained, few gravel, few cobbles, well graded, saturated	81.8	
32							
33			0.2				
34							
35							

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-5

TOTAL DEPTH 38.5 FT BGS

AECOM

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36			0.2				
37			0.2				
38					37.50 Clay (CL), dark gray 7.5YR 4/1, very stiff, low plasticity, dry	74.8	

Bottom of borehole at 38.5 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-6

AECOM

TOTAL DEPTH 38.5 FT BGS
PAGE 1 OF 2

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/14/2019 **COMPLETED** 06/14/2019
SURVEYING BY/DATE AECOM / 10-03-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 743648 **NORTHING** 2023441.65
DRILLING EQUIPMENT GP 3230 DT
GROUND ELEVATION 111.5 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
1					0.00 Silt (ML), dark reddish brown 5YR 3/4, soft, low plasticity, moist	111.5	**Backfill** Type: Cement / Bentonite Grout 0-38.5 ft bgs
2			0.0				
3					2.00 Clayey Silt (ML), reddish brown 5YR 4/4, soft, moderate plasticity, little clay, moist	109.5	
4							
5			0.0				
6					5.00 Silt (ML), strong brown 7.5YR 5/6, soft, low plasticity, moist	106.5	
7			0.0				
8					7.50 Silt (ML), strong brown 7.5YR 5/6, soft, low plasticity, wet	104.0	
9							
10							
11			0.0		10.00 Silt (ML), dark gray 5Y 4/1, soft, wet	101.5	
12					10.50 Sandy Silt (ML), dark gray 5Y 4/1, soft, some fine sand, wet	101.0	
13					12.50 Sand (SP), light gray 7.5Y 7/1, fine grained, poorly graded, saturated	99.0	
14							
15			2.8				
16							
17			3.5		17.00 Silt (ML), very dark gray 10YR 3/1, few fine sand, soft, wet	94.5	
18					17.50 Sand (SP), light gray 10YR 7/1, fine grained, poorly graded, saturated	94.0	
19			0.0				
20					19.50 Sand (SW), light gray 10YR 7/1, medium to coarse grained, well graded, saturated	92.0	
21			3.1				
22							
23			4.3		22.50 Wood	89.0	
24					22.75 Sand (SW), gray 10YR 5/1, medium to coarse grained, well graded, saturated	88.8	
25			0.3		24.00 Sand (SW), gray 10YR 5/1, fine to medium grained, well graded, saturated	87.5	
26							
27							
28			0.7		27.00 Sand (SW), as above with cobbles	84.5	
29					28.00 Sand (SW), light gray 10YR 7/1, medium to coarse grained, well graded, saturated	83.5	
30							
31			0.0				
32					31.00 Sand (SW) light gray 10YR 7/1, medium to coarse grained, few cobbles, well graded, saturated	80.5	
33			0.0		32.50 Clay (CH) very dark gray 10YR 3/1, stiff, high plasticity, moist	79.0	
34							
35					34.00 Clay (CH) dark gray 10YR 4/1, very stiff, moderate plasticity, moist	77.5	

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-6

AECOM

TOTAL DEPTH 38.5 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36							
37							
38							

Bottom of borehole at 38.5 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-7

AECOM

TOTAL DEPTH 46.5 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/10/2019 **COMPLETED** 06/11/2019
SURVEYING BY/DATE AECOM / 10-02-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 743790.7 **NORTHING** 2024199.57
DRILLING EQUIPMENT GP 3230 DT
GROUND ELEVATION 114.59 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
					0.00 Silt (ML), dark yellowish brown 10YR 3/4, soft, moist	114.6	
			0.0		1.00 Silt (ML), strong brown 7.5 YR 5/6, soft, moist	113.6	
			0.0		5.00 Silt (ML), yellowish brown 10 YR 5/6, medium stiff, trace clay, moist	109.6	
			0.0		7.50 Sandy Silt (ML), dark yellowish brown 10YR 4/6, little fine sand, solt, saturated	107.1	
			0.0		8.50 Silt (ML), dark yellowish brown 10YR 4/6, stiff, moist	106.1	
			0.0		10.50 Clay (CH), yellowish brown 10YR 5/4, few silt, medium stiff, high plasticity, moist	104.1	
			0.0		13.50 Clay (CH), very dark grayish brown 10YR 3/2, as above	101.1	
			0.0		15.00 Clay (CH), greenish gray GLEY1 6/1, medium stiff, high plasticity, moist	99.6	
			0.0		16.50 Silt (ML), yellowish brown 10YR 5/4, soft, micaceous, saturated	98.1	
			0.0		18.50 Sandy Silt (ML), dark yellowish brown 10YR 4/4, some fine sand, saturated	96.1	
			0.0		20.00 Sandy Silt (ML), greenish gray GLEY1 5/1, little fine sand, soft, saturated	94.6	
			0.0		21.50 Silt (ML), very dark greenish gray GLEY1 3/1, soft	93.1	
			0.0		26.50 Sand (SW), greenish gray GLEY1 6/1, fine to medium grained, well graded, saturated	88.1	
			0.0				
			0.0				
			0.0				
35							

Backfill
Type: Cement / Bentonite Grout
0-46.5 ft bgs

AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

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WELL NUMBER L-7

TOTAL DEPTH 46.5 FT BGS

AECOM

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36							
37							
38			0.0				
39					38.00 Gravel and Cobbles (GW), light gray 10YR 7/1, gravel to cobbles, few sand, well graded, saturated	76.6	
40			0.0		38.50 Sand (SW), light gray 10YR 7/1, fine to coarse grained, well graded, saturated	76.1	
41							
42			0.0				
43							
44					43.50 Clay (CL), black 10YR 2/1, very stiff, low plasticity, dry	71.1	
45							
46							

Bottom of borehole at 46.5 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-8

AECOM

TOTAL DEPTH 47 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/11/2019 **COMPLETED** 06/12/2019
SURVEYING BY/DATE AECOM / 10-02-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 743727.35 **NORTHING** 2024656.33
DRILLING EQUIPMENT GP 3230 DT
GROUND ELEVATION 113.4 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0					0.00 Silt (ML), dark yellowish brown 10YR 4/4, trace clay, medium stiff, moist	113.4	**Backfill** Type: Cement / Bentonite Grout 0-47 ft bgs
1–3			0.0				
					3.00 Silt (ML), dark yellowish brown 10YR 4/6, soft, micaceous, moist	110.4	
4–6			0.0				
7			0.0		6.00 Sand (SP), dark yellowish brown 10YR 4/6, fine grained, poorly graded, wet	107.4	
8					7.00 Sand (SW), yellowish brown 10YR 5/6, fine to medium grained, well graded, wet	106.4	
9–18			0.0		8.50 Sand (SW), red 2.5YR 5/6, fine to medium grained, well graded, wet to saturated	104.9	
19–21					18.50 Sand (SW), greenish gray GLEY1 6/1, medium to coarse grained, few gravel, well graded, saturated	94.9	
22					21.00 Sandy Gravel (GW) greenish gray GLEY1 6/1, little coarse sand, well graded, saturated	92.4	
23					22.00 Clayey Silt (MH), greenish gray GLEY1 6/1, soft, low plasticity, wet	91.4	
24					22.75 Silty Clay (CL-ML), greenish gray GLEY1 6/1, high plasticity, moist	90.7	
25			0.0		24.50 Silt (ML), dark greenish gray GLEY1 4/1, soft, wet	88.9	
26					25.00 Sand (SP), greenish gray GLEY1 5/1, fine grained, poorly graded, saturated	88.4	
27–33			0.0		26.50 Sand (SW), greenish gray GLEY1 5/1, fine to medium grained, well graded, wet	86.9	
34–35			0.0		33.50 Sand (SW), light gray 2.5Y 7/1, medium to coarse grained, well graded, saturated	79.9	

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-8

TOTAL DEPTH 47 FT BGS

AECOM

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36			0.0				
37					37.00 Sand (SW), light gray 2.5Y 7/1, medium to coarse grained, trace gravel and cobbles, well graded, saturated	76.4	
38					37.50	75.9	
39			1.5		Sand (SW), light gray 5Y 7/1, medium to coarse grained, well graded, saturated		
40							
41							
42			2.5		41.50 Sand (SW), light gray 5 Y 7/1, medium to coarse grained, trace gravel, well graded, saturated	71.9	
43							
44							
45			3.2				
46					45.00 Sand (SW), light gray 5Y 7/1, medium to coarse grained, trace gravel, well graded, saturated	68.4	
47					46.00 Clay, (CL), very dark gray 10YR 3/1, very stiff, low plasticity, damp	67.4	

Bottom of borehole at 47 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-9

AECOM

TOTAL DEPTH 43.5 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/13/2019 **COMPLETED** 06/13/2019
SURVEYING BY/DATE AECOM / 10-02-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 744230.32 **NORTHING** 2024553.8
DRILLING EQUIPMENT GP 3230 DT
GROUND ELEVATION 113.72 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0.00					Silt (ML), dark yellowish brown 10YR 4/4, soft, moist	113.7	**Backfill** Type: Cement / Bentonite Grout 0-43.5 ft bgs
1.50			0.0		Silty Clay (CL), reddish brown 5YR 4/4, soft, moderate plasticity, moist	112.2	
			0.0				
			0.0				
10.00			0.0		Sand (SP), very pale brown 10YR 8/4, medium grained, poorly graded, moist to wet	103.7	
13.50			0.0		Sand (SP), very pale brown 10YR 8/4, medium grained, poorly graded, saturated	100.2	
			0.0				
18.50			0.0		Sand (SW), gray 10YR 6/1, medium to coarse grained, well graded, saturated	95.2	
20.00			0.0		Sand (SW), gray 10YR 6/1, medium to coarse grained, few gravel, trace cobbles, well graded, saturated	93.7	
23.50			0.0		Sand (SP), dark grayish brown 2.5Y 4/2, medium grained, poorly graded, saturated	90.2	
			0.1				
28.50			0.0		Interbedded Sand (SP) and Silty Clay (CL-ML): Sand, light brownish gray 2.5Y 6/2, medium grained, wet; Silty Clay, very dark gray 2.5Y 3/1, soft, moist	85.2	
32.00			0.0		Sand and Gravel (GW), light gray 10YR 7/1, medium grained to gravel, trace cobbles, well graded, saturated	81.7	
34.50							

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-9

TOTAL DEPTH 43.5 FT BGS

AECOM

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36			0.0		Clayey Sand (SC), greenish gray GLEY2 6/1, medium grained, some clay, saturated	79.2	
37							
38			0.0		37.50 Clay (CL), dark gray 10YR 4/1, very stiff, low plasticity, dry	76.2	
39							
40							
41			0.0				
42							
43			0.0				

Bottom of borehole at 43.5 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-10

AECOM

TOTAL DEPTH 38.5 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/13/2019 **COMPLETED** 06/13/2019
SURVEYING BY/DATE AECOM / 10-02-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 744108.54 **NORTHING** 2025009.77
DRILLING EQUIPMENT Geoprobe 8140 LS
GROUND ELEVATION 113.8 ft **CASING ELEVATION** N/A
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
1			0.0		0.00 Silt (ML), dark yellowish brown 10YR 4/6, medium stiff, trace clay, moist	113.8	**Backfill** Type: Cement / Bentonite Grout 0-38.5 ft bgs
2							
3							
4							
5							
6							
7							
8							
9					8.50 Silt (ML), dark yellowish brown 10YR 4/6, medium stiff, trace clay, moist	105.3	
10			3.2		9.00 Sand and Gravel (SW) yellowish red 5YR 5/6 to light gray 10YR 7/2, medium grained to gravel, well graded, wet	104.8	
11							
12			3.7				
13							
14					13.50 Sand and Gravel (GW), light gray 10YR 7/2, medium grained to gravel, well graded, saturated	100.3	
15							
16			1.8				
17							
18			2.1		17.00 Sand (SW), as above except fine to coarse grained,	96.8	
19					18.50 Sand (SW), light gray 10YR 7/2, medium to coarse grained, well graded, saturated	95.3	
20			0.5				
21							
22			0.3				
23					22.50 Clay (CH), very dark grayish brown 2.5Y 3/2, soft, high plasticity, moist	91.3	
24					23.50 Silty Clay (CL-ML), very dark grayish brown 2.5Y 3/2, soft, little silt, moderate plasticity, moist	90.3	
25					24.50 Sand (SP), gray 10YR 6/1, medium grained, poorly graded, saturated	89.3	
26			1.5				
27					26.00 Sand (SW), gray 10YR 6/1, medium to coarse grained, well graded, saturated	87.8	
28			1.0		27.50 Sand (SP), light gray 10YR 7/1, medium grained, poorly graded, saturated	86.3	
29							
30							
31			0.6		30.00 Sand (SW), light gray 10YR 7/1, medium to coarse grained, well graded, saturated	83.8	
32							
33			0.1		32.00 Sand (SW), gray 10YR 7/1, as above	81.8	
34					33.50 Clay (CL), black 2.5Y 2.5/1, very stiff, low plasticity, dry	80.3	
35							

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:46 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-10

TOTAL DEPTH 38.5 FT BGS

AECOM

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36			0.0				
					36.00 Clay (CL), dark gray 10YR 4/1, very stiff, low plasticity, dry	77.8	
37							
38			0.0				

Bottom of borehole at 38.5 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:46 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-11

AECOM

TOTAL DEPTH 39 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/19/2019 **COMPLETED** 06/19/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 745596.98 **NORTHING** 2023639.86
DRILLING EQUIPMENT Geoprobe 8140 LS
GROUND ELEVATION 138.22 ft **CASING ELEVATION** N/A
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
0.00					Silty Clay (CL), yellowish brown 10YR 5/8, medium stiff, moderate plasticity, little silt, moist	138.2	**Backfill** Type: Cement / Bentonite Grout 0-39 ft bgs
5.00			14.5		Silt (ML) strong brown 7.5YR 5/8, stiff, few clay, moist	133.2	
8.00			21.5		Clayey Sand (SC) pale brown 10YR 6/3, fine to medium grained, little clay, well graded, saturated	130.2	
			13.1				
20.00			2.3		Sand (SW), very pale brown 10YR 7/4, medium to coarse grained, trace gravel, well graded, saturated	118.2	
			15.0				
25.00					Sand (SW), as above with dark stained layer at 25 ft	113.2	
26.00					Silt (ML), light gray 10YR 7/1, soft, wet	112.2	
26.50			6.7		Clayey Sand (SC), yelowish brown, medium to coarse grained, little clay, few gravel, wet	111.7	
			25.7				
31.00					Clay (CL), light brownish gray 2.5Y 6/2, very stiff, low plasticity, dry	107.2	
34.00					Clay (CL), light olive brown 2.5Y 5/3, very stiff, low plasticity, dry	104.2	

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:46 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-11

AECOM

TOTAL DEPTH 39 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36							
37							
38							
39							

Bottom of borehole at 39 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:46 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-12

AECOM

TOTAL DEPTH 49 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/25/2019 **COMPLETED** 06/25/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 746159 **NORTHING** 2023442.12
DRILLING EQUIPMENT Geoprobe 8140 LS
GROUND ELEVATION 138.07 ft **CASING ELEVATION** N/A
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
1					0.00 Clay (CL), yellowish brown 10YR 5/8, medium stiff, few silt, high plasticity	138.1	**Backfill** Type: Cement / Bentonite Grout 0-49 ft bgs
2							
3							
4					3.00 Clayey Sand (SC), reddish yellow 10YR 6/8, fine grained, some clay, dry	135.1	
5							
6			0.4				
7					6.00 Sand (SW), strong brown 7.5YR 5/8, fine to medium grained, few clay, well graded, moist	132.1	
8							
9			7.4				
10					9.00 Sand (SW) pale brown 10Y 6/3, fine to medium grained, well graded, moist	129.1	
11			0.2				
12					11.50 Sand (SP), light gray 2.5Y 7/2, fine grained, poorly graded, saturated	126.6	
13			0.4				
14							
15					14.00 Sand (SW), olive yellow 2.5Y 6/6, fine to medium grained, well graded, saturated	124.1	
16			0.2				
17					16.50 Sand (SW), light gray 2.5 Y7/1, fine to medium grained, well graded, saturated	121.6	
18			0.1				
19							
20							
21							
22			0.1				
23							
24					23.00 Sand (SW) light gray 2.5Y 7/1, fine to coarse grained, few gravel, well graded, saturated	115.1	
25			0.1				
26							
27					26.00 Sand (SW), gray 2.5Y 5/1, fine to coarse grained, few gravel well graded, saturated	112.1	
28			0.1				
29							
30							
31					30.50 Silt (ML) dark gray 5 Y 4/1, medium stiff, moist	107.6	
32			0.0				
33							
34					33.00 Clayey Silt (ML), dark gray 5Y 4/1, medium stiff, little clay, moderate plasticity, moist	105.1	
35			0.0				

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:46 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-12

AECOM

TOTAL DEPTH 49 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36							
37					36.00 Clay (CL), dark gray 5Y 4/1, stiff, high plasticity, moist	102.1	
38			0.0				
39					38.00 Sand (SP), gray 5Y 5/1, fine grained, poorly graded, saturated	100.1	
40					39.50 Sand (SW), pale brown 2.5Y 7/3, fine to medium grained, well graded, saturated	98.6	
41			0.1				
42							
43							
44			0.1				
45					44.00 Clay (CL), very dark gray 2.5Y 7/1, very stiff, high plasticity, moist	94.1	
46							
47							
48							
49							

Bottom of borehole at 49 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:46 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-13

AECOM

TOTAL DEPTH 49 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/25/2019 **COMPLETED** 06/25/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 745515.57 **NORTHING** 2023429.34
DRILLING EQUIPMENT Geoprobe 8140 LS
GROUND ELEVATION 135.85 ft **CASING ELEVATION** N/A
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
1			0.0		0.00 Clayey Sand (SC), light yellowish brown 2.5Y 6/4, fine grained, some clay	135.9	**Backfill** Type: Cement / Bentonite Grout 0-49 ft bgs
2							
3							
4			0.0		3.50 Clayey Sand (SC), light yellowish brown 2.5Y 6/4, fine grained, little clay, damp	132.4	
5							
6			0.2				
7							
8			0.2		7.00 Silty Sand (SM), light yellowish brown 10YR 6/4, fine grained, some silt, moist	128.9	
9							
10					9.00 Sand (SW), brownish yellow 10YR 6/6, fine to medium grained, few clay, well graded, moist	126.9	
11			0.7				
12					11.50 Sand (SW), light gray 10YR 7/2, fine to coarse grained, well graded, saturated	124.4	
13							
14			1.2				
15					14.00 Sand (SW), light gray 10YR 7/2, fine to medium grained, well graded, saturated	121.9	
16			1.7				
17							
18			1.1				
19							
20					19.00 Sand (SW), light gray 10YR 7/2, fine to coarse grained, well graded, saturated	116.9	
21			1.0				
22							
23					22.50 Silt (ML), yellowish brown 10YR 5/8 to pale brown 2.5Y 7/3, soft, few clay, moist	113.4	
24			0.1				
25							
26							
27							
28			0.9				
29							
30					29.50 Silty Sand (SM), yellowish brown 10YR 5/8, fine grained, little silt, wet	106.4	
31					30.00 Clay (CL), olive yellow 2.5Y 6/6, very stiff, few silt, low plasticity, dry	105.9	
32							
33							
34							
35					34.00 Clay (CL), light brownish gray 2.5Y 6/2, very stiff, low plasticity, dry	101.9	

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:46 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-13

AECOM

TOTAL DEPTH 49 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36							
37							
38							
39							
40					39.00 Clay (CL), gray 2.5Y 5/1, very stiff, low plasticity, dry	96.9	
41							
42							
43							
44							
45					44.50 Clay (CL), black 2.5Y 5/1, very stiff, low plasticity, dry	91.4	
46							
47							
48							
49							

Bottom of borehole at 49 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:46 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-14

AECOM

TOTAL DEPTH 49 FT BGS
PAGE 1 OF 2

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/26/2019 **COMPLETED** 06/26/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 745991.72 **NORTHING** 2022741.83
DRILLING EQUIPMENT Geoprobe 8140 LS
GROUND ELEVATION 139.52 ft **CASING ELEVATION** N/A
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
0.00					Silty Clay (CL-ML), strong brown 7.5YR 5/8, stiff, moist, (1' of recovery 9-14), trace fine to medium grained sand	139.5	**Backfill** Type: Cement / Bentonite Grout 0-49 ft bgs
			4.1				
			22.1				
12.00					Sandy Clay (CL), light yellowish brown 2.5Y 6/4, brittle, dry (1' of recovery 9-14), fine grained sand	127.5	
			22.4				
16.00					Sand (SP), white 7.5YR 8/1, fine grained, poorly graded, very loose, trace silt	123.5	
25.00					Clay (CL), dark gray 7.5YR 4/1, few silt, highly plastic, (3' of recovery 19-29)	114.5	
26.00					Sand (SW), very pale brown 10YR 7/4, medium to coarse grained, some gravel, few silt, (3' of recovery 19-29)	113.5	
28.50					Sand (SW), orange (7.5YR 5/8) pale brown (2.5Y 8/2), m-c sand, few silt	111.0	
29.00			2.1		Sand (SW), very pale brown 10YR 7/4, few silt, (3' of recovery 19-29), medium to coarse grained	110.5	
29.50					Silty Sand (SM), 2.5Y 8/2, fine to medium sand, 3 dark gray 7.5YR 4/1, plastic clay (CL) few silt ~31'	110.0	
35			0.9				

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:46 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-14

AECOM

TOTAL DEPTH 49 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36							
37							
38							
39					38.00 Sand (SP), 2.5Y 8/1, medium to coarse grained, few silt	101.5	
					38.50 Silty Sand (SM), 7.5YR 6/8 reddish yellow, fine to medium grained	101.0	
40			0.2		39.00 Sand (SP), pale brown 2.5Y 8/2, medium to coarse grained, trace silt	100.5	
41					40.50 Silty Sand (SM), 2.5Y 4/1 dark gray, fine grained, coarsening downward, some gravel, trace cobbles	99.0	
42							
43							
44							
45			0.0				
46							
47							
48					47.50 Silty Clay (CL-ML), very dark gray 2.5Y 3/1, stiff (Black Mingo Clay)	92.0	
49							

Bottom of borehole at 49 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:46 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-15

AECOM

TOTAL DEPTH 49 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/26/2019 **COMPLETED** 06/26/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 746109.34 **NORTHING** 2022761.74
DRILLING EQUIPMENT Geoprobe 8140 LS
GROUND ELEVATION 139.32 ft **CASING ELEVATION** N/A
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0					0.00 Clayey Silt (MH), light gray (5YR 7/1) and reddish yellow (5YR 6/8), mottled, trace fine sand	139.3	**Backfill** Type: Cement / Bentonite Grout 0-49 ft bgs
5			7.7				
10			3.6		8.00 Clayey Silt (MH) 7.5YR 5/8 strong brown and light gray 5YR 7/1 mottled	131.3	
12					12.00 Silty Sand (SM), 2.5Y 8/1 White, fine grained, poorly graded	127.3	
15			0.5		15.00 Sandy Silt (ML), same color as above (5YR7/1 + 5YR 6/8)	124.3	
18			0.1		17.00 Sand (SP), 2.5Y 8/3 pale brown, medium to coarse grained, trace qtz gravel, trace silt	122.3	
22					22.00 Sand (SP), 2.5Y 8/3, coarse, some gravel, poorly graded	117.3	
25			0.2		24.00 Sandy Silt (ML), strong brown (7.5YR 6/8) and (10YR 7/2) light gray, fine grained	115.3	
26					25.00 Sandy Silt (SP), 2.5Y 8/2, medium to coarse grained, few gravel, poorly graded	114.3	
29					28.50 Sandy Silt (ML), brownish yellow (10YR 6/8), some gravel, coarse grained	110.8	
30			0.0				
31					30.00 Sand (SW), pale brown (2.5Y 8/2), trace mica, fine to medium grained	109.3	
35			0.1				

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:46 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-15

AECOM

TOTAL DEPTH 49 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36							
37							
38							
39			0.0		38.00 Silt (ML), black (10YR 2/1), orange (7.5YR 5/8) + pale brown (2.5Y 8/2), few fine sand	101.3	
40					38.50 Sand (SP), coarse grained, some silt, trace gravel, reddish yellow 7.5YR 6/8, transition to pale brown	100.8	
41							
42					41.00 Silty Clay (CL-ML), very dark gray 2.5Y 3/1, stiff	98.3	
43							
44							
45			0.2				
46							
47							
48							
49							

Bottom of borehole at 49 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:46 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-16

AECOM

TOTAL DEPTH 49 FT BGS
PAGE 1 OF 2

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/26/2019 **COMPLETED** 06/26/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 746180.41 **NORTHING** 2022798.57
DRILLING EQUIPMENT Geoprobe 8140 LS
GROUND ELEVATION 139.15 ft **CASING ELEVATION** N/A
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0.00					Clayey Silt (MH), light gray and reddish brown (5YR 7/1 and 5YR 6/8), mottled, trace fine sand	139.2	**Backfill** Type: Cement / Bentonite Grout 0-49 ft bgs
8.00			0.1		Clayey Silt (MH), strong brown (7.5YR 5/8) and light gray (5YR 7/1), mottled	131.2	
12.00			0.0		Sandy Silt (ML), reddish brown (5YR 6/8) and light gray (5YR 7/1)	127.2	
17.00			0.1		Silty Sand (SM), brownish yellow (10YR 6/6), fine grained	122.2	
18.50					Sand (SW), fine to medium grained, few silt, few mic, loose	120.7	
19.00			0.2		Silty Sand (SM), light gray (5YR 7/1) and reddish brown (5YR 6/8), fined grained sand, trace clay	120.2	
20.50					Sand (SP), brownish yellow (10YR 6/8), fine to medium grained, trace gravel	118.7	
21.50			0.2		Sand (SW), pale brown (2.5Y 7/3), fine to coarse grained, few gravel, well graded	117.7	
28.50					Sand (SW), brownish yellow (10YR 6/8), medium to coarse grained, little gravel, few silt, rounded to subrounded	110.7	
29.50			0.0		Sandy Clay (CL), greenish gray (GLEY, 5G5/1) and strong brown (7.5YR 4/6), medium to coarse grained	109.7	
30.50					Sand (SW), pale brown (2.5Y 8/2), fine to coarse grained, trace silt, well graded, trace mica	108.7	
			0.1				

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:46 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-16

AECOM

TOTAL DEPTH 49 FT BGS
PAGE 2 OF 2

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36							
37							
38							
39							
40			0.4				
41							
42							
43							
44							
45			3.6		44.00 Sand (SW), reddish yellow (7.5YR 6/8), fine to coarse grained, few silt, little rounded cobbles	95.2	
46					45.00 Silty Clay (CL-ML), very dark gray 2.5Y 3/1, stiff	94.2	
47							
48							
49							

Bottom of borehole at 49 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:46 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-17

AECOM

TOTAL DEPTH 47 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 08/15/2019 **COMPLETED** 08/16/2019
SURVEYING BY/DATE AECOM / 10-03-19
DRILLING CONTRACTOR SAEDACCO
EASTING 744713.16 **NORTHING** 2022000.38
DRILLING EQUIPMENT Geoprobe 8150 LS
GROUND ELEVATION 115.3 ft **CASING ELEVATION** N/A
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0.00			0.0		Silt (ML), brown 10YR 4/3, soft, moist	115.3	**Backfill** Type: Cement / Bentonite Grout 0-47 ft bgs
10.50			0.0		Sand (SP), grayish brown 10YR 5/2, fine grained, poorly graded, saturated, few silt	104.8	
12.50			0.0		Sand (SP), brown 10YR 4/3, fine grained, poorly graded, saturated, few silt	102.8	
16.00			0.0		Sand (SW), yellowish brown 10YR 5/6, fine to medium grained, few silt, well graded, saturated	99.3	
17.50			34.0		Sand (SW), pale brown 2.5Y 7/3, fine to coarse grained, well graded, saturated	97.8	
18.00						97.3	
19.00					Sand and Cobbles (SW), gray 2.5Y 4/1, medium grained to cobbles, well graded, saturated	96.3	
20.00			30.3		Sandy Silt (ML), very dark grayish brown, soft, wet	95.3	
			12.7		Silty Sand (SM), dark grayish brown 2.5Y 4/2, fine grained, little silt, saturated		
26.50			10.6		Sand (SW), light gray 5Y7/1, fine to medium grained, few silt, well graded, saturated	88.8	
29.00			2.7		Clay (CH), black 2.5Y 2.5/1, stiff, moderate plasticity, moist	86.3	
34.00					Clay (CH) gray 7.5 YR 5/1, as above	81.3	

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:46 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-17

AECOM

TOTAL DEPTH 47 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36							
37							
38					37.00 Clay (CH) gray 10YR 6/1, stiff, high plasticity, moist	78.3	
39							
40							
41							
42							
43							
44							
45							
46							
47							

Bottom of borehole at 47 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:46 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-18

AECOM

TOTAL DEPTH 37 FT BGS
PAGE 1 OF 2

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 08/19/2019 **COMPLETED** 08/19/2019
SURVEYING BY/DATE AECOM / 10-03-19
DRILLING CONTRACTOR SAEDACCO
EASTING 744180.95 **NORTHING** 2022886.5
DRILLING EQUIPMENT Geoprobe 8150 LS
GROUND ELEVATION 113.18 ft **CASING ELEVATION** N/A
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
1–4					0.00 Silt (ML), brown 7.5YR 4/4, moist, soft	113.2	**Backfill** Type: Cement / Bentonite Grout 0-37 ft bgs
5–6			0.5		5.00 Silt (ML), dark yellowish brown 10YR 4/4, soft, moist	108.2	
7–9			0.0		9.00 Clayey Silt (MH), grayish brown 10 YR 5/2, soft, little clay, saturated	104.2	
10–12			0.0		11.00 Silty Sand (SM), dark yellowish brown 10YR 4/4, fine grained, little silt, poorly graded, saturated	102.2	
13–14			0.0		14.00 Sand (SW), yellowish brown 10YR 5/6, fine to course grained, well graded, saturated	99.2	
15–17			0.0				
18–22			10.2				
23			11.4		22.00 Sand (SW), gray 2.5Y 6/1, fine to coarse grained, well graded, saturated	91.2	
24–25			12.5		24.00 Sand (SW), gray 2.5Y 6/1, medium to coarse grained, few gravel, well graded, saturated	89.2	
26–28			14.2		27.00 Sand (SW) gray 2.5 Y 6/1, few gravel, well graded, saturated, fine to coarse grained	86.2	
29–31			13.3				
32			13.7				
33–35			0.0		32.00 Clay (CL), dark gray 10YR 4/1, very stiff, low plasticity, damp	81.2	

(Continued Next Page)

AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:46 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-18

AECOM

TOTAL DEPTH 37 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36							
37							

Bottom of borehole at 37 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:46 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-19

AECOM

TOTAL DEPTH 29 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 08/20/2019 **COMPLETED** 08/20/2019
SURVEYING BY/DATE AECOM / 10-02-19
DRILLING CONTRACTOR SAEDACCO
EASTING 744295.39 **NORTHING** 2024208.02
DRILLING EQUIPMENT Geoprobe 8150 LS
GROUND ELEVATION 114.64 ft **CASING ELEVATION** N/A
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
1					0.00 Silt (ML), light yellowish brown 10YR 6/4, soft, damp	114.6	**Backfill** Type: Cement / Bentonite Grout 0-29 ft bgs
2			0.0				
3					2.00 Clayey Silt (ML), light yellowish brown 10YR 6/4, medium stiff, low plasticity, damp	112.6	
4			0.0				
5							
6			0.0				
7							
8							
9			45.3		8.00 Silty Sand (SM), dark gray 2.5Y 4/1, fine grained, little silt, poorly graded, saturated	106.6	
10							
11							
12			21.3		12.00 Clay (CH), very dark grayish brown 10 YR 3/2, soft, high plasticity, wet	102.6	
13							
14			0.0				
15							
16							
17							
18							
19							
20							
21							
22					21.00 Clayey Sand (SC), very dark gray 10YR 3/1, fine grained, little clay, poorly graded, saturated	93.6	
23			0.0				
24					23.00 Sand (SP), gray 2.5Y5/1, fine grained, poorly graded, saturated	91.6	
25							
26							
27					26.00 Clay (CL), very dark gray 10YR 3/1, very stiff, low plasticity, damp	88.6	
28							
29							

Bottom of borehole at 29 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:46 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-20

AECOM

TOTAL DEPTH 34 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 11/23/2020 **COMPLETED** 11/23/2020
SURVEYING BY/DATE AECOM / 03-30-21
DRILLING CONTRACTOR Elite Techniques
EASTING 744448.67 **NORTHING** 2024757.66
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 123.64 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0					0.00 Sandy Silt (ML), reddish yellow 5YR 6/8 and light brown 7.5YR 6/3, fine to medium grained, moist	123.6	**Backfill** Type: Cement / Bentonite Grout 0-34 ft bgs
4			0.0		3.00 Silty Sand (SM), very pale brown 10YR 8/3 and strong brown 7.5YR 5/8, fine to coarse, trace angular to rounded gravel, saturated at 4'	120.6	
8			0.0		8.00 Sandy Silt (ML), very pale brown, fine to coarse grained, few clay, few to little white angular quartz	115.6	
12			0.0		12.00 Silty Sand (SM), very pale brown 10YR 8/3 and white 10YR 8/1, fine to coarse, few angular quartz gravel	111.6	
18			0.0		18.00 Silty Sand (SM), reddish yellow 7.5YR 6/8, fine to coarse, few angular quartz gravel	105.6	
19			0.0		19.00 Silty Sand (SM) white 10YR 8/1, fine to coarse, few angular quartz gravel	104.6	
20			0.0		20.00 Sand (SP), white 10YR 8/1 and reddish yellow 7.5YR 6/8, fine grained, poorly graded, little silt	103.6	
28			0.0		28.00 Sand (SW) yellow 10YR 8/6, fine to medium grained, trace silt	95.6	
32					32.00 Silty Clay (CL) gray 5YR 5/1 and brownish yellow 10YR 6/8, dense	91.6	
34					Bottom of borehole at 34 feet.		

AECOM SMART LOG 8X11 NO WL - WH CFFF RI IMPLEMENTATIONV3.GPJ - 5/26/22 11:46 - C:\GINT\WESTINGHOUSE\WH CFFF RI IMPLEMENTATIONV7.GPJ

WELL NUMBER L-21

AECOM

TOTAL DEPTH 33 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 11/18/2020 **COMPLETED** 11/18/2020
SURVEYING BY/DATE AECOM / 03-31-21
DRILLING CONTRACTOR Elite Techniques
EASTING 746119.31 **NORTHING** 2024425.94
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 135.29 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0.00					Sandy Silt (ML), yellowish red 5YR 4/6 and red 10R 4/8 and reddish gray mottled, fine to medium grained	135.3	**Backfill** Type: Cement / Bentonite Grout 0-33 ft bgs
2.00			0.0		Sand (SW), yellow 10YR 7/6 and white 5YR 8/1, fine to medium grained, trace silt, moist	133.3	
8.00			0.0		Sand (SW), as above except saturated at 8'	127.3	
11.50					Sand (SW), as above with flowing sands	123.8	
14.00			0.0		Sand (SW), yellow 10YR 7/6 and light gray 10YR 7/1, fine to coarse grained, trace subangular gravel, few silt	121.3	
15.00					Sand (SW), yellow 10YR 7/6, fine to medium grained, flowing sand	120.3	
21.00			0.0		Sand (SW), brown 10YR 5/3, fine to coarse grained, trace subangular to subrounded gravel, trace silt, coarsening downard, well graded	114.3	
28.00			0.2		Silty Sand (SM), light gray 5YR 7/1, fine grained, poorly graded	107.3	
29.50			0.2		Sand (SW), yellow 10YR 7/6, fine to coarse, angular quartz, few silt	105.8	
32.00					Sand (SW), reddish yellow 5YR 6/8, fine to coarse sand, little silt	103.3	
32.50					Clay (CL), dark reddish gray 10YR 4/1, very dense, hard, dry	102.8	

Bottom of borehole at 33 feet.

AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:46 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-22

AECOM

TOTAL DEPTH 30.5 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 11/18/2020 **COMPLETED** 11/18/2020
SURVEYING BY/DATE AECOM / 03-31-21
DRILLING CONTRACTOR Elite Techniques
EASTING 746006.08 **NORTHING** 2024197.36
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 135.33 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
0.00					Silty Sand (SM), yellowish red 5YR 6/8, fine to medium grained, dry	135.3	**Backfill** Type: Cement / Bentonite Grout 0-30.5 ft bgs
4.00			0.3		Silty Sand (SM), as above, moist at 4'	131.3	
7.00					Silty Sand (SM), as above, saturated at 7'	128.3	
8.00			105.5		Silty Sand (SM), gray 7.5YR 6/1, light yellowish brown 10YR 6/4, fine to coarse, very strong chemical odor at 9'	127.3	
11.00			8.2		Sand (SW), yellow 10YR 8/6, fine to coarse, little silt	124.3	
14.00			1.3		Sand (SW), very pale brown 10YR 8/2, fine to medium, coarsening downward, flowing sands	121.3	
17.00			0.2		Sand (SW), very pale brown 10YR 8/2, fine to coarse, trace rounded gravel, few silt	118.3	
23.00			0.3		Sand (SW), brown 10YR 5/3, medium to coarse, trace subangular to subrounded gravel	112.3	
26.00					Sand (SW), white 10YR 8/1, medium to coarse, little subangular to rounded gravel, few silt	109.3	
30.00			0.1		Silty Clay (CH), brown 7.5YR 5/3 and reddish yellow 7.5YR 6/8	105.3	

Bottom of borehole at 30.5 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:46 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-23

AECOM

TOTAL DEPTH 40 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 11/19/2020 **COMPLETED** 11/19/2020
SURVEYING BY/DATE AECOM / 03-30-21
DRILLING CONTRACTOR Elite Techniques
EASTING 745968.46 **NORTHING** 2024027.07
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 139.24 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0.00					Sandy Silt (ML), red 2.5YR 4/8, fine to medium grained, moist	139.2	**Backfill** Type: Cement / Bentonite Grout 0-40 ft bgs
3.00			0.3		Silty Sand (SM), reddish yellow 7.5YR 6/8 and red 2.5YR 4/8, fine to medium, moist	136.2	
7.00					Sand (SW), reddish yellow 7.5YR 6/8 and pale brown 2.5Y 8/13, fine to medium, little silt, moist	132.2	
9.50			9.7		Sand (SW), reddish yellow 7.5 YR 6/8 and pale brown 2.5 Y 8/13, fine to coarse, well graded, saturated at 9'	129.7	
12.00					Sand (SW), very pale brown 10YR 8/4, fine to coarse, few to little silt, trace angular gravel	127.2	
14.00			1.5		Sand (SW), white 2.5Y 8/1, fine to coarse, few silt	125.2	
16.00					Sand (SW), white 2.5Y 8/1, fine to coarse, some silt, trace subrounded gravel	123.2	
19.50			0.0		Sand (SW), reddish yellow 7.5YR 6/8, fine to medium, few silt	119.7	
20.00					Sand (SW), very pale brown 10YR 8/3, fine to medium, few silt, few mica	119.2	
22.00					Sand (SW), very pale brown 10YR 8/3 to white 10YR 8/1, fine to coarse, few to little silt, trace subrounded to rounded quartz gravel	117.2	
27.00			0.2		Sand (SW), white 10YR 8/1, medium to coarse, few rounded quartz gravel	112.2	
34.00			0.1		Sand (SW), reddish yellow 7.5YR 6/8, medium to coarse, some quartz gravel	105.2	

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:46 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-23

AECOM

TOTAL DEPTH 40 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36					35.00 and cobbles Clay (CH), gray 7.5YR 5/1, few silt, highly plastic	104.2	
37							
38							
39							
40							

Bottom of borehole at 40 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:46 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-24

AECOM

TOTAL DEPTH 32 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 11/20/2020 **COMPLETED** 11/20/2020
SURVEYING BY/DATE AECOM / 03-30-21
DRILLING CONTRACTOR Elite Techniques
EASTING 745988.79 **NORTHING** 2023772.07
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 137.63 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
0.00					Silty Sand (SM), reddish yellow 7.5YR 6/8 and gray 7.5YR 6/1, fine to medium, dry-moist	137.6	**Backfill** Type: Cement / Bentonite Grout 0-32 ft bgs
4.00			0.4		Sand (SW) reddish yellow 7.5YR 6/8 and light gray 7.5YR 7/1, fine to medium, few silt, moist	133.6	
7.00					Sand (SW), very pale brown 10YR 8/4, fine to coarse, few silt, moist	130.6	
9.50			21.3		Sand (SW), white 10YR 8/1, fine to medium, very moist to saturated	128.1	
10.00					Silty Sand (SM), very pale brown 10YR 8/2, fine to medium, coarsening downward	127.6	
13.00					Silty Sand (SM), very pale brown 10YR 8/2, fine to coarse	124.6	
15.50			22.7		Sand (SW), gray 2.5Y 5/1, fine to coarse, few silt, trace angular quartz gravel, subangular to subrounded	122.1	
24.50			6.8		Sand (SW), light brownish gray 2.5Y 6/2, fine to medium, trace silt, coarsening downward	113.1	
26.00			46.5		Sand (SW), fine to coarse, trace silt, trace angular to rounded quartz gravel, some well rounded quartz gravel	111.6	
29.00			1.8		Sand (SW), fine to coarse, trace silt, some well rounded quartz gravel	108.6	
29.50			0.1		Clay (CL), dark greenish gray 5GY 4/2, light gray 5Y 7/2, dark yellowish brown 10YR 4/6, few silt, dense, slight plasticity	108.1	
32							

Bottom of borehole at 32 feet.

AECOM SMART LOG 8X11 NO WL - WH CFFF RI IMPLEMENTATIONV3.GPJ - 5/26/22 11:46 - C:\GINT\WESTINGHOUSE\WH CFFF RI IMPLEMENTATIONV7.GPJ

WELL NUMBER L-25

AECOM

TOTAL DEPTH 47 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 11/16/2020 **COMPLETED** 11/16/2020
SURVEYING BY/DATE AECOM / 03-31-21
DRILLING CONTRACTOR SAEDACCO
EASTING 746263.95 **NORTHING** 2023148.46
DRILLING EQUIPMENT Geoprobe 8150 LS Sonic
GROUND ELEVATION 139.27 ft **CASING ELEVATION** N/A
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
1			0.7		0.00 Silt (ML), brownish yellow 10YR 6/6, medium stiff, damp	139.3	**Backfill** Type: Cement / Bentonite Grout 0-47 ft bgs
2					1.50 Silty Clay (CL-ML), reddish yellow 7.5YR 6/6, some silt, stiff, damp	137.8	
3							
4			0.1				
5							
6			0.1		5.50 Clayey Silt (MH), strong brown 7.5YR 5/6, stiff	133.8	
7			0.1		6.00 Clayey Silt (MH), very pale brown 10 YR 7/3, stiff	133.3	
8							
9					8.00 Silty Sand (SM), pale brown 2.5Y 7/3, fine grained, little silt, poorly graded, dry	131.3	
10			0.1		8.75 Sand (SP), strong brown 7.5 YR 5/6, fine grained, poorly graded, dry	130.5	
11							
12							
13							
14			0.1		13.00 Sand (SW), pale brown 2.5Y 7/3, fine to medium grained, well graded, saturated	126.3	
15							
16					15.50 Sand (SW), light gray 2.5Y 7/2, fine to medium grained, well graded, saturated	123.8	
17			0.2		17.00 Sand (SW), yellow 10YR 7/6, medium to coarse, trace cobbles, well graded, saturated	122.3	
18					17.50 Sand (SW), yellow 10YR 7/6, fine to coarse grained, well graded, saturated	121.8	
19							
20			0.2				
21			0.2		20.00 Sand (SW), yellow 10YR 7/6, fine to medium grained, well graded, saturated	119.3	
22							
23					22.00 Sand (SW), brownish yellow 10YR 6/6, medium to coarse grained, well graded, saturated	117.3	
24			0.2				
25							
26					25.50 Silty Clay (CL-ML), brownish yellow 10YR 6/6, little silt, medium stiff, moderate plasticity	113.8	
27							
28			0.2		27.00 Clayey Silt (MH), light gray 10YR 7/2, little clay, stiff, wet	112.3	
29					28.50 Silt (ML), light gray 10YR 7/2, medium stiff, wet	110.8	
30							
31			0.2				
32							
33					31.50 Silty Sand (SM), light gray 10YR 7/2, fine grained, saturated	107.8	
34			0.2				
35							

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:46 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-25

TOTAL DEPTH 47 FT BGS
PAGE 2 OF 2

AECOM

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36			0.2		35.00 Sand (SP), light gray 2.5Y 7/1, fine grained, poorly graded, saturated	104.3	
37							
38			0.2				
39							
40							
41					40.50 Sand (SW), light gray 2.5Y 7/2, fine to coarse grained, well graded, saturated	98.8	
42			0.2				
43					42.50 Clay (CH), dark gray 10 YR 4/1, very stiff, moderate plasticity, damp	96.8	
44							
45							
46							
47							

Bottom of borehole at 47 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:46 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-26

AECOM

TOTAL DEPTH 47 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 11/17/2020 **COMPLETED** 11/17/2020
SURVEYING BY/DATE AECOM / 03-31-21
DRILLING CONTRACTOR SAEDACCO
EASTING 746119.68 **NORTHING** 2023022.52
DRILLING EQUIPMENT Geoprobe 8150 LS Sonic
GROUND ELEVATION 137.61 ft **CASING ELEVATION** N/A
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
0.00					Silt (ML), brownish yellow 10YR 6/6, soft, damp	137.6	**Backfill** Type: Cement / Bentonite Grout 0-47 ft bgs
1.50					Silt (ML), strong brown 7.5 YR 5/6, medium stiff, damp	136.1	
3.00					Silty Sand (SM), very pale brown 10YR 7/4, fine grained, some silt, damp	134.6	
4.50					Silty Sand (SM), dark yellowish brown 10YR 3/6, fine grained, some silt, damp	133.1	
5.00			3.2		Silt (ML), very pale brown 10YR 7/4, medium stiff, damp	132.6	
7.50			0.8		Sand (SP), brownish yellow 10YR 6/8, medium grained, poorly graded, moist	130.1	
10.50					Silty Sand (SM), brownish yellow 10YR 4/6, medium grained, little silt, moist	127.1	
12.00			0.7		Silty Sand (SM), brownish yellow 10YR 4/6, medium grained, little silt, wet	125.6	
15.00			0.8		Sand (SW), yellow 10YR 7/6, medium to coarse grained, well graded, saturated	122.6	
17.00			0.4		Sand (SW), yellow 10YR 7/6, fine to coarse grained, well graded, saturated	120.6	
			0.3				
			0.3				
27.00			0.8		Sand (SW), dark yellowish brown 10YR 4/4, fine to coarse grained, well graded, saturated	110.6	
29.00			0.3		Clay (CH), greenish gray GLEY1 5/1, stiff, high plasticity, moist	108.6	
33.00			0.9		Sand (SP), light gray 2.5Y 7/2, fine grained, poorly graded, saturated	104.6	
35							

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:46 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-26

AECOM

TOTAL DEPTH 47 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36							
37							
38							
39			0.4				
40					38.50 Sand (SW), light gray 2.5Y 7/2, fine to coarse grained, well graded, saturated	99.1	
41							
42							
43			0.7				
44					43.00 Clay (CH), dark gray 10YR 4/1, with interlayered silt, very stiff, moderate plasticity	94.6	
45							
46							
47							

Bottom of borehole at 47 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:46 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-27

AECOM

TOTAL DEPTH 47 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 11/17/2020 **COMPLETED** 11/17/2020
SURVEYING BY/DATE AECOM / 03-31-21
DRILLING CONTRACTOR SAEDACCO
EASTING 745936.45 **NORTHING** 2022935.33
DRILLING EQUIPMENT Geoprobe 8150 LS Sonic
GROUND ELEVATION 134.8 ft **CASING ELEVATION** N/A
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
					0.00 Silt (ML), yellowish brown 10YR 5/4, soft, damp	134.8	**Backfill** Type: Cement / Bentonite Grout 0-47 ft bgs
					2.00 Silt (ML), yellowish brown 10YR 5/4, trace clay, soft, damp	132.8	
					4.00 Clayey Silt (MH), strong brown 7.5YR 5/6 to yellowish brown 10YR 5/4, little clay, damp	130.8	
					5.50 Silty Clay (CL-ML), strong brown 7.5YR 5/6, some silt, stiff, moderate plasticity, damp	129.3	
			0.5		6.00 Silty Sand (SM), light gray 2.5Y 7/1, fine grained, damp	128.8	
					7.50 Silt (ML), light gray 2.5Y 7/2, stiff, damp	127.3	
			0.6		10.00 Clayey Silt (MH), light gray 2.5Y 7/2, little clay, very stiff	124.8	
			4.9		14.00 Sand (SP), strong brown 7.5Y 4/6, medium grained, poorly graded, saturated	120.8	
			2.1		15.00 Silty Sand (SM), brown 10YR 5/3, fine grained, some silt, saturated	119.8	
			0.9		17.50 Sand (SW), brown 10YR 5/3, fine to coarse grained, well graded, saturated	117.3	
					19.00 Silty Sand (SM), light olive brown 2.5Y 5/3, fine to medium grained, some silt, saturated	115.8	
			1.4		21.50 Sand (SW), yellowish red 5YR 5/6 to yellowish brown 10YR 5/4, medium to coarse grained, well graded, saturated	113.3	
					27.00 Clay (CH), light yellowish brown 10YR 6/4, soft, high plasticity, moist to wet	107.8	
			0.5		28.00 Sand (SP), pale brown 2.5Y 8/2, fine grained, poorly graded, saturated	106.8	
			1.1		33.50 Sand (SW), pale brown 2.5Y 8/2, fine to medium grained, well graded, saturated	101.3	
35							

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:46 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-27

AECOM

TOTAL DEPTH 47 FT BGS
PAGE 2 OF 2

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36			0.4				
37							
38			0.5				
39							
40			2.9				
41							
42			3.1		41.00 Sand (SW), pale brown 2.5 7/4, medium to coarse grained, few gravel, well graded, saturated	93.8	
43					42.50 Gravel and Cobbles (GW), light brownish gray 2.5Y 6/2, few coarse sand, few clay, well graded, saturated	92.3	
44			0.2		43.50 Clay (CH), gray 5Y 6/1, very stiff, high plasticity, damp	91.3	
45							
46							
47							

Bottom of borehole at 47 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:46 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-28

AECOM

TOTAL DEPTH 47 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 11/18/2020 **COMPLETED** 11/18/2020
SURVEYING BY/DATE AECOM / 03-31-21
DRILLING CONTRACTOR SAEDACCO
EASTING 745759.21 **NORTHING** 2022850.59
DRILLING EQUIPMENT Geoprobe 8150 LS Sonic
GROUND ELEVATION 136.55 ft **CASING ELEVATION** N/A
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
1					0.00 Silt (ML), yellowish brown 10YR 5/6, soft, damp	136.6	**Backfill** Type: Cement / Bentonite Grout 0-47 ft bgs
2							
3							
4			0.5		3.00 Sandy Silt (ML), light gray 10YR 7/2, little fine sand, soft, damp	133.6	
5							
6			0.7				
7							
8					7.50 Silty Sand (SM), brownish yellow 10YR 6/8, fine grained, little silt, moist	129.1	
9			0.1				
10							
11							
12			0.1				
13							
14			0.1		13.00 Sand (SP), pale brown 2.5Y 7/3, fine grained, few silt, poorly graded, saturated	123.6	
15							
16							
17			0.1				
18					17.00 Sand (SW), light gray 2.5Y 7/2, medium to coarse grained, well graded, saturated	119.6	
19			0.4				
20							
21							
22			0.1				
23							
24			0.1				
25					24.50 Clay (CH), brownish yellow 10YR 6/8, medium stiff, high plasticity, wet	112.1	
26							
27			0.1				
28					27.00 Sand (SP), light gray 2.5Y 7/1, fine grained, poorly graded, saturated	109.6	
29			0.2		27.50 Silty Sand (SM), very pale brown 10YR 7/4, fine grained, some silt, saturated	109.1	
30					28.00 Sand (SP), light gray 2.5Y 7/1, medium grained, poorly graded, saturated	108.6	
31			0.3				
32							
33			0.5				
34							
35			0.2				

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-28

AECOM

TOTAL DEPTH 47 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36			0.1				
37					37.00 Sand (SW), yellow 10YR 7/8, medium to coarse grained, well graded, saturated	99.6	
38			0.7				
39			0.5				
40					40.00 Clay (CH), dark gray 2.5Y 4/1, very stiff, moderate plasticity, damp	96.6	
41							
42							
43							
44							
45							
46							
47							

Bottom of borehole at 47 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-29

AECOM

TOTAL DEPTH 37 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 11/23/2020 **COMPLETED** 11/23/2020
SURVEYING BY/DATE AECOM / 04-01-21
DRILLING CONTRACTOR SAEDACCO
EASTING 744678.92 **NORTHING** 2022143.04
DRILLING EQUIPMENT Geoprobe 8150 LS Sonic
GROUND ELEVATION 115.22 ft **CASING ELEVATION** N/A
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
1					0.00 Silt (ML), yellowish brown 10YR 5/4, soft, damp to moist	115.2	**Backfill** Type: Cement / Bentonite Grout 0-37 ft bgs
2							
3			0.1				
4					3.00 Silt (ML), dark yellowish brown 10YR 4/4, soft, moist	112.2	
5			0.3				
6							
7			0.9				
8					7.00 Silt (ML), dark yellowish brown 10YR 4/4, soft, wet	108.2	
9			0.0				
10							
11					10.00 Sand (SP), gray 10YR 6/1, fine grained, few silt, saturated	105.2	
12			0.1				
13							
14			0.1				
15							
16			0.2		15.50 Sand (SW), brown 10YR 4/3, fine to medium grained, well graded, saturated	99.7	
17							
18							
19			0.0				
20					19.50 Sand and Gravel (SW) gray 10YR 6/1, medium grained to gravel, few cobbles, well graded, saturated	95.7	
21							
22			0.1				
23					22.50 Silt (ML), dark gray 10YR 4/1, stiff, few clay, moist	92.7	
24			0.3				
25					24.00 Sand (SP), gray 10YR 6/1, fine grained, poorly graded, saturated	91.2	
26							
27			0.3				
28					27.00 Sand (SP), gray 10YR 6/1, fine grained, trace cobbles at 30.5, poorly graded, saturated	88.2	
29			0.1				
30			0.1				
31					30.50 Clay (CH), black 10YR 2/1, very stiff, high plasticity, moist	84.7	
32							
33					33.00 Clay (CH), dark gray 10YR 4/1, very stiff, high plasticity, moist	82.2	
34							
35							

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AECOM SMART LOG 8X11 NO WL - WH CFFF RI IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH CFFF RI IMPLEMENTATIONV7.GPJ

WELL NUMBER L-29

AECOM

TOTAL DEPTH 37 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36							
37							

Bottom of borehole at 37 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-30

AECOM

TOTAL DEPTH 42 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 11/23/2020 **COMPLETED** 11/23/2020
SURVEYING BY/DATE AECOM / 04-01-21
DRILLING CONTRACTOR SAEDACCO
EASTING 744504.82 **NORTHING** 2022330.93
DRILLING EQUIPMENT Geoprobe 8150 LS Sonic
GROUND ELEVATION 114.33 ft **CASING ELEVATION** N/A
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
1					0.00 Silt (ML), yellowish brown 10YR 5/6, medium stiff, damp	114.3	**Backfill** Type: Cement / Bentonite Grout 0-42 ft bgs
2							
3							
4					3.00 Silt (ML), brown 7.5YR 5/4, soft, few clay, moist	111.3	
5			0.1				
6							
7			0.1				
8					7.00 Silt (ML) brown 7.5YR 5/4, soft, few clay, wet	107.3	
9			0.1		7.50 Silty Sand (SM), yellowish brown 10YR 5/4, fine grained, some silt, wet	106.8	
10					9.50 Silty Sand (SM), yellowish brown 10YR 5/4, fine grained, some silt, saturated	104.8	
11			0.1				
12							
13			1.0		12.00 Sand (SW), brown 10YR 5/3, fine to medium grained, well graded, saturated	102.3	
14							
15			0.6				
16							
17			1.2				
18					17.00 Sand (SW), brownish yellow 10YR 6/6, fine to coarse grained, well graded, saturated	97.3	
19			2.0				
20			0.8				
21			1.7		20.00 Sand (SW), yellowish brown 10YR 5/4, fine to coarse grained, few gravel, saturated	94.3	
22							
23			1.9				
24							
25			1.7		24.00 Sand (SW), light gray 2.5Y 7/2, medium to coarse grained, few gravel, well graded, saturated	90.3	
26							
27			2.4				
28							
29			0.3				
30							
31					30.00 Sand and Gravel (SW), gray 10YR 5/1, coarse grained to gravel, trace cobbles, saturated	84.3	
32			0.3				
33							
34			0.3				
35			0.3				

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-30

AECOM

TOTAL DEPTH 42 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36					35.00 Clay (CH), dark gray 10YR 4/1, stiff, high plasticity, damp	79.3	
37					37.00 Clay (CH), black 10YR 2/1, stiff, few silt, high plasticity	77.3	
38							
39					39.00 Clay (CH), dark gray 10YR 4/1, stiff, few silt, high plasticity	75.3	
40							
41							
42							

Bottom of borehole at 42 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-31

AECOM

TOTAL DEPTH 42 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 11/25/2020 **COMPLETED** 11/25/2020
SURVEYING BY/DATE AECOM / 04-01-21
DRILLING CONTRACTOR SAEDACCO
EASTING 744413.33 **NORTHING** 2021933.16
DRILLING EQUIPMENT Geoprobe 8150 LS Sonic
GROUND ELEVATION 113.2 ft **CASING ELEVATION** N/A
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
1					0.00 Silt (ML), yellowish brown 10YR 5/6, medium stiff, damp	113.2	**Backfill** Type: Cement / Bentonite Grout 0-42 ft bgs
2							
3							
4							
5							
6			0.1		5.00 Silt (ML), strong brown 7.5YR 5/6, soft, damp	108.2	
7							
8			0.1		7.00 Silt (ML), dark yellowish brown 10YR 4/4, soft, wet, few clay	106.2	
9							
10			0.1				
11							
12			0.1		11.50 Silty Sand (SM), dark yellowish brown 10 YR 4/6, fine grained, little silt, saturated	101.7	
13							
14			0.2				
15							
16			0.2		15.00 Silty Sand (SM), gray 10YR 6/1, fine grained, little silt, saturated	98.2	
17			0.2				
18			0.2		17.00 Sand (SP), gray 10YR 6/1, fine grained, few silt, poorly graded, saturated	96.2	
19							
20			0.2				
21							
22							
23			0.9		22.50 Snad (SW), gray 10YR 5/1, fine to medium grained, well graded, saturated	90.7	
24							
25			0.4		24.00 Sand (SW), gray 10YR 5/1, fine to medium grained, few cobbles (24'-24.5'), well graded, saturated	89.2	
26					25.00 Sand (SW), gray 10YR 5/1, medium to coarse grained, few gravel, few cobbles, saturated	88.2	
27			0.5				
28			0.2				
29					28.50 Sand (SW), gray 10YR 6/1, medium to coarse grained, well graded, saturated	84.7	
30			0.2				
31			2.2				
32			1.4				
33			0.9		32.00 Sand (SW), gray 10YR 6/1, fine to coarse grained, well graded, saturated	81.2	
34			0.5				
35					34.00 Clay (CH), gray2.5 Y 5/1, very stiff, high plasticity, moist	79.2	

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-31

AECOM

TOTAL DEPTH 42 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36							
37					36.00 Clay (CH), black 10YR 2/1, very stiff, high plasticity, damp	77.2	
38					37.00 Clay (CH), dark gray 10YR 4/1, very stiff, high plasticity, damp	76.2	
39							
40							
41					40.50 Clay (CH), gray 10YR 5/1, very stiff, high plasticity, damp	72.7	
42							

Bottom of borehole at 42 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-32

AECOM

TOTAL DEPTH 57 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 11/19/2020 **COMPLETED** 11/19/2020
SURVEYING BY/DATE AECOM / 04-01-21
DRILLING CONTRACTOR SAEDACCO
EASTING 744208.05 **NORTHING** 2022151.73
DRILLING EQUIPMENT Geoprobe 8150 LS Sonic
GROUND ELEVATION 112.86 ft **CASING ELEVATION** N/A
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
1–6			0.2		0.00 Silt (ML), dark yellowish brown 10YR 4/4, soft, moist,	112.9	**Backfill** Type: Cement / Bentonite Grout 0-57 ft bgs
7			0.0		6.00 Sand (SP), brown 10YR 5/3, fine grained, few silt, saturated	106.9	
8–9			0.7		7.50 Sand (SP), brownish yellow 10YR 6/6, medium grained, poorly graded, saturated	105.4	
10–12			0.4				
13–14			0.1		12.00 Sand (SP), pale olive 5Y 6/4, fine grained, poorly graded, saturated	100.9	
15–17			0.0		15.00 Sand (SW), olive yellow 5Y 6/6, fine to medium grained, well graded, saturated	97.9	
18–20			0.8		18.00 Sand (SP), pale brown 2.5Y 8/2, medium grained, poorly graded, saturated	94.9	
21			0.7		20.00 Sand (SW), pale brown 2.5Y 7/3, medium to coarse grained, few fine sand, few gravel, well graded, saturated	92.9	
22–26			1.3		21.50 Sand (SW), gray 2.5Y 6/1, medium to very coarse grained, few gravel and cobbles, well graded, saturated	91.4	
27–30			0.7				
31			0.1		27.00 Sand (SW), light gray 2.5Y 7/1, medium to coarse grained, well graded, saturated	85.9	
32–34			0.1		31.00 Gravel and Cobbles (GW), light gray 2.5Y 7/1, few coarse sand, well graded, saturated	81.9	
35			0.0				

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-32

AECOM

TOTAL DEPTH 57 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36			0.3		35.50 Clay (CH), dark gray 10YR 4/1, stiff, few silt, high plasticity	77.4	
37							
38			0.0		38.00 Silt and Clay (ML-CH), gray 10YR 5/1 to dark gray 10YR 4/1, soft, 1-2 mm layers of silt and clay, clays are high plastcity, moist	74.9	
39							
40							
41					40.50 Silt (ML), gray 2.5Y 6/1, soft, with occassional interlayering of 1-2 mm clays	72.4	
42			0.0				
43							
44							
45			0.0				
46					45.00 Clay (CH), very dark gray 10YR 3/1, stiff, interlayered with silt (<1mm) within clay matrix, damp, high plasticity	67.9	
47			0.0				
48							
49			0.0				
50					49.50 Silt and Clay (ML-CH) dark gray 7.5YR 4/1, stiff to very stiff, silt and clay layers 1mm or less, moderate to high plasticity, damp	63.4	
51							
52			0.0				
53							
54							
55			0.0				
56							
57			0.0				

Bottom of borehole at 57 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-33

AECOM

TOTAL DEPTH 77 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 11/19/2020 **COMPLETED** 11/20/2020
SURVEYING BY/DATE AECOM / 04-01-21
DRILLING CONTRACTOR SAEDACCO
EASTING 744071.73 **NORTHING** 2022375.04
DRILLING EQUIPMENT Geoprobe 8150 LS Sonic
GROUND ELEVATION 113.43 ft **CASING ELEVATION** N/A
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
1					0.00 Silt (ML), brown 7.5YR 4/4, soft, moist	113.4	**Backfill** Type: Cement / Bentonite Grout 0-77 ft bgs
2							
3							
4			0.1		3.50 Silt (ML), brown 7.5YR 4/4, soft, wet	109.9	
5							
6							
7			0.2		7.00 Silt (ML), brown 7.5YR 4/4, soft, moist	106.4	
8							
9			0.2		9.00 Silty Sand (SM), brown 7.5YR 5/4, fine grained, little silt, saturated	104.4	
10							
11							
12			0.3		12.00 Sand (SP) yellowish brown 10YR 5/4, fine grained, poorly graded, saturated	101.4	
13							
14			0.8				
15							
16							
17			0.0				
18					17.50 Sand (SW), light yellowish brown 10YR 6/4, medium to coarse grained, few cobbles, well graded, saturated	95.9	
19			0.6				
20			0.9		19.00 Sand (SW), light yellowish brown 10YR 6/4, medium to coarse grained, well graded, saturated	94.4	
21					20.00 Sand (SW), gray 10YR 5/1, medium to coarse grained, well graded, saturated	93.4	
22			0.2				
23					22.50 Sand (SW), light gray 10YR 7/1, medium to coarse grained, well graded, saturated	90.9	
24			0.2				
25							
26			0.2		25.00 Sand (SW), light gray 10YR 7/1, medium to coarse grained, few cobbles, well graded, saturated	88.4	
27							
28							
29			0.2		28.00 Clay (CH), dark gray 10YR 4/1, stiff, high plasticity, moist	85.4	
30							
31							
32			0.2				
33					32.00 Silt (ML), light gray 2.5Y 7/1, soft, occassional clay lenses, saturated	81.4	
34							
35			0.2				

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-33

AECOM

TOTAL DEPTH 77 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36							
37							
38			0.1		37.00 Silt (ML), light gray 2.5Y 7/1, soft, saturated	76.4	
39							
40							
41			0.2				
42							
43							
44			0.1				
45							
46							
47			0.1				
48					47.00 Silt (ML), gray 10 YR 5/1, soft	66.4	
49					48.50 Silt (ML), as above with dark organic material at 48.5'	64.9	
50			0.1				
51					50.00 Silt (ML), as above with dark organic material at 50'	63.4	
52							
53			0.1				
54					53.00 Sand (SP), light gray 10YR 7/1, fine grained, poorly graded, wet	60.4	
55					53.50 Silt (ML), gray 10 YR 5/1, soft, saturated	59.9	
56			0.2		55.00 Sand (SP), light gray 10YR 7/1, fine grained, poorly graded, wet	58.4	
57					55.50 Silt (ML), light gray 10YR 7/1, soft	57.9	
58			0.1		57.00 Silt (ML), as above with dark organic material (57-58)	56.4	
59							
60			0.1				
61					60.00 Silty Sand (SM), light gray 10YR 7/1, fine grained, some silt, saturated	53.4	
62			0.2		60.50 Silt (ML), light gray 10 YR 7/1, soft	52.9	
63							
64							
65							
66							
67					66.00 Silt (ML), as above with dark organic material (66-67)	47.4	
68			0.3		67.00 Sand (SW), gray 10YR 6/1, fine to medium grained, well graded, saturated	46.4	
69							
70			0.5				
71							
72			0.3				
73							
74			0.5				
75					74.00 Clay (CL), gray 10YR 5/1, very stiff, moderate plasticity, dry	39.4	

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-33

AECOM

TOTAL DEPTH 77 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
75							
76							
77							

Bottom of borehole at 77 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-34

AECOM

TOTAL DEPTH 87 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 11/20/2020 **COMPLETED** 11/23/2020
SURVEYING BY/DATE AECOM / 04-01-21
DRILLING CONTRACTOR SAEDACCO
EASTING 744116.13 **NORTHING** 2022555.13
DRILLING EQUIPMENT Geoprobe 8150 LS Sonic
GROUND ELEVATION 113.15 ft **CASING ELEVATION** N/A
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
1					0.00 Silt (ML), brown 7.5YR 4/4, soft, moist	113.2	**Backfill** Type: Cement / Bentonite Grout 0-87 ft bgs
2							
3							
4			0.1				
5							
6					5.00 Clayey Silt (MH), brown 7.5YR 5/4, soft, little clay, wet	108.2	
7			0.1				
8					7.00 Silt (ML), brown 7.5YR 5/4, soft, saturated	106.2	
9			0.2				
10							
11			0.1				
12					11.00 Sand (SP), yellowish brown 10YR 5/6, fine grained, poorly graded, saturated	102.2	
13			0.2				
14							
15			0.1				
16							
17			0.2				
18					17.00 Sand (SW), yellow 10YR 7/8, fine to medium grained, well graded, saturated	96.2	
19							
20			0.3		19.50 Sand and Cobbles (SW), gray 2.5Y 5/1, medium grained to cobbles, well graded, saturated	93.7	
21					20.50 Silty Sand (SM), gray 2.5Y 6/1, fine to medium grained, some silt, well graded, saturated	92.7	
22			0.2		21.50 Sand (SW), light gray 2.5Y 7/2, fine to coarse grained, well graded, saturated	91.7	
23							
24							
25			0.5				
26					25.50 Sand (SW), light gray 2.5Y 7/2, fine to coarse grained with few cobbles, well graded, saturated	87.7	
27			1.3				
28					27.00 Sand and Gravel (SW), light gray 10YR 7/2, medium grained to gravel, few cobbles, well graded, saturated	86.2	
29			1.9				
30			1.1				
31			0.1		30.00 Clay and Silt (CH-ML) dark gray 10YR 4/1 clay to gray 10 YR 6/1 silt, soft, layers range <1 to 2 mm thick, high plasticity clays, wet	83.2	
32			0.1				
33					31.50 Silt (ML), light gray 2.5Y 7/1, soft, wet to saturated	81.7	
34			0.1		33.00 Silt (ML), as above with organic layer 33.0'-33.5',	80.2	
35					33.50 Silt (ML), light gray 2.5Y 7/1, soft, wet to saturated	79.7	

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-34

AECOM

TOTAL DEPTH 87 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36							
37			0.1				
38					37.00 Silt (ML), light gray 2.5Y 7/2, soft, saturated	76.2	
39			0.8				
40							
41							
42			0.3		41.00 Silt (ML), as above with dark organic layer at 41'	72.2	
43					41.25 Silt (ML), gray 2.5Y 7/2, soft, saturated	71.9	
44			0.2				
45							
46							
47							
48			0.0		47.00 Silt (ML), gray 2.5Y 6/1, soft, occaisional darker lenses, saturated	66.2	
49							
50							
51			0.0				
52							
53							
54			0.0				
55							
56							
57			0.0				
58					57.00 Silt (ML), gray 10YR 6/1, soft, wet	56.2	
59			0.0				
60							
61							
62			0.0				
63			0.0				
64					63.00 Clay (CH), very dark gray 2.5Y 7/1, medium stiff, moderate plasticity, damp	50.2	
65			0.1		63.25 Silt (ML), gray 10YR 6/1, soft, wet	49.9	
66					64.00 Clay (CH), very dark gray 2.5Y 7/1, medium stiff, moderate plasticity, damp	49.2	
67			0.0		64.25 Sandy Silt (ML), gray 10YR 5/1, little fine sand, soft, saturated	48.9	
68							
69			0.3		68.00 Clay (CH), dark gray 10YR 4/1, very stiff, moderate plasticity, moist	45.2	
70					69.00 Silty Sand (SM), gray 10YR 5/1, fine to medium grained, some silt, well graded, saturated	44.2	
71							
72			0.1				
73							
74			0.0				
75					74.00 Clay (CH), dark gray 7.5YR 4/1, very stiff, moderate plasticity, damp	39.2	

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-34

AECOM

TOTAL DEPTH 87 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
75							
76					74.50 Sand (SW), gray 10YR 6/1, fine to medium grained, well graded, saturated	38.7	
77			0.1				
78			0.0		77.00 Sand (SW), gray 10YR 6/1, medium to coarse grained, well graded, saturated	36.2	
79			0.0				
80					79.00 Clay (CH), very dark gray 10 YR 3/1, very stiff, moderate plasticity, damp	34.2	
81							
82							
83							
84					83.50 Sand (SW), light brownish gray 10 YR 6/2, medium to coarse grained, well graded, saturated	29.7	
85					84.00 Clay (CH), very dark gray 10YR 3/1, very stiff, moderate plasticity, damp	29.2	
86					85.00 Clay (CH), gray 10YR 6/1, very stiff, moderate plasticity, damp	28.2	
87							

Bottom of borehole at 87 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-35

AECOM

TOTAL DEPTH 77 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 11/24/2020 **COMPLETED** 11/24/2020
SURVEYING BY/DATE AECOM / 04-01-21
DRILLING CONTRACTOR SAEDACCO
EASTING 744134.55 **NORTHING** 2022739.57
DRILLING EQUIPMENT Geoprobe 8150 LS Sonic
GROUND ELEVATION 112.87 ft **CASING ELEVATION** N/A
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0					0.00 Silt (ML), strong brown 7.5YR 4/6, soft, moist	112.9	**Backfill** Type: Cement / Bentonite Grout 0-77 ft bgs
1							
2							
3							
4			0.2		3.00 Silt (ML), yellowish brown 10YR 5/6, soft, moist	109.9	
5							
6					5.00 Silt (ML), dark yellowish brown 10YR 4/6, soft, few clay, wet	107.9	
7			0.2				
8							
9			0.5				
10							
11							
12			1.2		11.00 Sand (SP), yellowish brown 10YR 5/8, fine grained, poorly graded, saturated	101.9	
13			0.1				
14					13.50 Silty Sand (SM), yellowish brown 10YR 5/6, fine grained, little silt, saturated	99.4	
15			0.1				
16					15.50 Sand (SP), brownish yellow 10YR 6/6, fine grained, poorly graded, saturated	97.4	
17			1.5				
18							
19			0.4		18.00 Sand (SW), yellowish brown 10YR 5/6, fine to medium grained, well graded, saturated	94.9	
20							
21			0.1				
22							
23			2.1		22.00 Sand (SW), pale brown 10 YR 6/3, medium to coarse grained, well graded, saturated	90.9	
24							
25			1.3		24.00 Sand (SW), pale brown 10YR 6/3, medium to coarse grained, few gravel, well graded, saturated	88.9	
26			0.7				
27			1.2		25.50 Sand (SW), light gray 10YR 7/2, fine to coarse grained, few gravel, few cobbles, well graded, saturated	87.4	
28							
29			1.2				
30							
31			1.7				
32			2.0				
33			1.3		32.00 Sand and Cobbles (SW), light gray 10YR 7/2, fine grained to cobbles, well graded, saturated	80.9	
34			0.6		32.50 Sand (SW), light gray 10YR 7/2, fine to coarse grained, few gravel, well graded, saturated	80.4	
35			0.4				

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-35

AECOM

TOTAL DEPTH 77 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36					35.00 Sand and Cobbles (SW), light brownish gray 10YR 6/2, fine grained to	77.9	
					35.50 cobbles, well graded, saturated	77.4	
37			0.1		Clayey Silt (MH), gray 10YR 6/1, soft, little clay, wet		
38							
39			0.0				
40					39.00 Silt (ML), gray 10YR 6/1, soft, few clay, wet	73.9	
41			0.0				
42							
43			0.0				
44							
45			0.1				
46					45.00 Silt (ML), gray 10YR 6/1, soft, saturated	67.9	
47			0.0				
48							
49					48.00 Silt and Clay (ML-CH), gray 10 YR 6/1 (silt), dark gray 10 YR 4/1 (clay), soft, high plasticity clay, moist	64.9	
50					49.50 Clay (CH), dark gray 10 YR 4/1, soft, high plasticity, moist	63.4	
51			0.0		50.00 Silt (ML), gray 10YR 6/1, soft, saturated	62.9	
52					51.00 Clay (CH), dark gray 10YR 4/1, soft, high plasticity, moist	61.9	
53					51.50 Silt (ML), light gray 10YR 7/1 soft, saturated	61.4	
54			0.0		53.50 Clay (CH), dark gray 10YR 4/1, soft, high plasticity, moist	59.4	
55					53.80 Silt (ML), light gray 10YR 7/1 soft, saturated	59.1	
56					55.00 Clay (CH), dark gray 10YR 4/1, soft, high plasticity, moist	57.9	
57			0.0		55.30 Silt (ML), light gray 10YR 7/1 soft, saturated	57.6	
58							
59					58.50 Clay and Silt (CH-ML), dark gray 10YR 4/1 (clay) to gray 10YR 5/1 (silt), soft, high plasticity clay, moist	54.4	
60			0.0				
61					60.00 Clay (CH), dark gray 10YR 4/1, medium stiff, high plasticity, moist	52.9	
62							
63			0.0				
64							
65							
66			0.0		65.00 Clay (CH), dark gray 10YR 4/1, stiff, high plasticity, damp	47.9	
67							
68							
69			0.1				
70							
71			0.0		70.00 Clay (CH), dark gray 10YR 4/1, very stiff, high plasticity, damp	42.9	
72							
73			1.0		72.00 Clayey Sand (SC), dark gray 10YR 4/1, fine to medium grained, well graded,	40.9	
					72.30 little clay, saturated	40.6	
74					Clay (CL), gray 10YR 6/1, very stiff		
75			0.0				

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-35

AECOM

TOTAL DEPTH 77 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
75							
76							
77							

Bottom of borehole at 77 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-36

AECOM

TOTAL DEPTH 47 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 11/24/2020 **COMPLETED** 11/24/2020
SURVEYING BY/DATE AECOM / 04-01-21
DRILLING CONTRACTOR SAEDACCO
EASTING 744045.22 **NORTHING** 2023174.48
DRILLING EQUIPMENT Geoprobe 8150 LS Sonic
GROUND ELEVATION 112.77 ft **CASING ELEVATION** N/A
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
1					0.00 Silt (ML), strong brown 7.5YR 4/6, soft, moist	112.8	**Backfill** Type: Cement / Bentonite Grout 0-47 ft bgs
2							
3							
4			0.1				
5							
6					5.00 Clayey Silt (MH), brown 7.5YR 5/4, medium stiff, little clay, damp	107.8	
7			0.3				
8							
9			0.0				
10					9.00 Silt (ML), yellowish brown 10YR 5/4, soft, few clay, wet	103.8	
11			0.1				
12							
13			2.6				
14							
15			0.3		14.50 Silty Sand (SM), brown 10YR 5/3, fine grained, some silt, saturated	98.3	
16							
17			0.3		16.00 Sand (SP), light gray 10YR 7/2, fine grained, poorly graded, saturated	96.8	
18					17.00 Sand (SW), light brownish gray 10YR 6/2, fine to coarse grained, trace cobbles, well graded, saturated	95.8	
19			0.3				
20							
21							
22			0.9				
23					22.00 Sand and Gravel (SW), gray 10YR 5/1, fine grained to gravel, well graded, saturated	90.8	
24			0.3				
25					24.00 Sand (SW), light gray 2.5Y 7/2, fine to coarse grained, well graded, saturated	88.8	
26							
27							
28			0.7				
29							
30			0.6				
31							
32			0.6				
33							
34			0.7				
35							

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-36

AECOM

TOTAL DEPTH 47 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36			0.1				
37							
38							
39			0.1				
40							
41							
42					41.00 Clay (CH), very dark gray 10YR 3/1, very stiff, moderate plasticity, damp	71.8	
43							
44							
45					44.00 Clay (CH), dark gray 10YR 4/1, very stiff, high plasticity, damp	68.8	
46							
47							

Bottom of borehole at 47 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-37

AECOM

TOTAL DEPTH 30 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 12/08/2020 **COMPLETED** 12/08/2020
SURVEYING BY/DATE AECOM / 03-30-21
DRILLING CONTRACTOR Elite Techniques
EASTING 744236.16 **NORTHING** 2023212.83
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 114.21 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
					0.00 Clayey Sand (SC), Fill, yellowish red 5YR 4/6, fine to medium grained, some clay, well graded, moist	114.2	**Backfill** Type: Cement / Bentonite Grout 0-30 ft bgs
					6.50 Clayey Silt (ML), gray 2.5Y 5/1 to light olive brown 2.5Y 5/3, soft, little clay, moist	107.7	
					12.50 Silt (ML), dark gray 10YR 4/1, soft, wet	101.7	
					16.00 Sand (SW), gray 10YR 5/1, fine to medium grained, well graded, saturated	98.2	
					24.00 Silt (ML), dark gray 10YR 4/1, soft, wet	90.2	
					25.00 Sand (SW), gray 10YR 6/1, fine to coarse grained, few gravel, few cobbles, well graded, saturated	89.2	
30					Bottom of borehole at 30 feet.		

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-38

AECOM

TOTAL DEPTH 30.5 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 12/08/2020 **COMPLETED** 12/08/2020
SURVEYING BY/DATE AECOM / 03-30-21
DRILLING CONTRACTOR Elite Techniques
EASTING 744431.55 **NORTHING** 2023371.32
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 115.68 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
					0.00 Clayey Sand (SC), yelowish red 5YR 4/6, fine to medium grained, well graded, moist	115.7
			0.2			
			0.1		5.00 Clayey Sand (SC), yelowish red 5YR 4/6, fine to coarse grained, well graded, moist to saturated	110.7
					8.00 Clayey Sand (SC), dark grayish brown 2.5Y 4/2, fine to medium grained, well graded, saturated	107.7
					17.00 Sand (SW), grayish brown 2.5Y 5/2, fine to medium grained, well graded, saturated	98.7
					20.50 Clay (CH), dark gray 5Y 4/1, soft, highly plastic, saturated	95.2
					21.00 Sand (SW), dark gray 5Y 4/1, fine to coarse grained, well graded, saturated	94.7
					27.50 Sand (SW), dark gray 5Y 4/1, fine to coarse grained, few gravel and cobbles, well graded, saturated	88.2
					30.00 Clay (CL), very dark gray 10YR 3/1, stiff, low plasticity, dry. Probe refusal.	85.7

Bottom of borehole at 30.5 feet.

WELL DIAGRAM

Backfill
Type: Cement / Bentonite Grout
0-20.5 ft bgs

Well Seal
Type: Bentonite
20.5-22.5 ft bgs

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-39

AECOM

TOTAL DEPTH 38 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 11/16/2020 **COMPLETED** 11/16/2020
SURVEYING BY/DATE AECOM / 03-31-21
DRILLING CONTRACTOR Elite Techniques
EASTING 744662.98 **NORTHING** 2024277.39
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 136.35 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0					0.00 Gravel (GW)	136.4	**Backfill** Type: Cement / Bentonite Grout 0-38 ft bgs
					0.50 Sandy Silt (ML), reddish yellow 7.5YR 6/8 and light gray 7.5YR 7/1, fine to medium grained, few clay, dry	135.9	
			0.4				
					7.00 Silty Sand (SM), yellow 10YR 7/6 and light gray 10YR 7/1, fine to medium grained, dry to moist	129.4	
			0.1		9.00 Sandy Silt (ML), reddish yellow 7.5YR 6/8 and light gray 7.5YR 7/1, fine to medium grained sand, saturated	127.4	
					10.00 Sand (SW), yellow 10YR 7/6 and light gray 10YR 7/1, fine to medium grained, little silt, saturated	126.4	
			0.0		13.00 Sand (SW), very pale brown 10YR 8/3, fine to coarse grained, few silt, trace gravel, well graded	123.4	
			0.0		24.00 Silty Clay (CL-ML), brown 10YR 5/3 and reddish yellow 7.5YR 6/8, few fine sand	112.4	
					26.00 Sand (SP), pale brown 2.5Y 8/4 and reddish yellow 7.5YR 6/8, fine grained (sugar sand), trace silt	110.4	
					28.00 Sand (SW), pale brown 2.5Y 8/3, fine to medium, trace silt	108.4	
					31.00 Sand (SW), white 7.5YR 8/1, fine to coarse, trace subroundeed to rounded gravel, few silt	105.4	
35					34.50		

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-39

AECOM

TOTAL DEPTH 38 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36					35.00 Sand (SW) red 2.5YR 4/8, fine to coarse, trace subroundeed to rounded gravel, few silt	101.9	
37					Silty Clay (CL-ML), dark reddish gray 2.5YR 4/1 and reddish yellow 7.5YR 6/8, dry, Black Mingo confining clay	101.4	
38							

Bottom of borehole at 38 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-40

AECOM

TOTAL DEPTH 39 FT BGS
PAGE 1 OF 2

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 11/17/2020 **COMPLETED** 11/17/2020
SURVEYING BY/DATE AECOM / 03-31-21
DRILLING CONTRACTOR Elite Techniques
EASTING 744819.62 **NORTHING** 2024531.98
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 136.32 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
1					0.00 Sandy Silt (ML), yellowish red 5YR 4/6, fine to medium grained, dry	136.3	**Backfill** Type: Cement / Bentonite Grout 0-39 ft bgs
2							
3					2.00 Sandy Silt (ML), yellowish red 5YR 4/6, red 10R 4/8, and reddish gray 2.5YR 6/1, mottled, fine to medium grained sand, dry	134.3	
4							
5			0.3				
6							
7							
8					7.00 Silty Sand (SM), reddish yellow 7.5YR 6/8 and light gray 5YR 7/1, fine to medium grained, moist	129.3	
9							
10			3.0				
11					10.00 Silty Sand (SM), light gray 7.5YR 7/1 and white 7.5YR 9.5/1, fine to coarse sand, trace angular gravel, well graded	126.3	
12							
13							
14					13.00 Silty Sand (SM), light gray 7.5YR 7/1 and white 7.5YR 9.5/1, fine to coarse sand, trace angular gravel, well graded, saturated at 13'	123.3	
15			0.2		14.00 Sand (SW), very pale brown 10YR 8/3, fine to coarse, little silt, well graded	122.3	
16							
17							
18							
19							
20			0.3		19.50 Silt (ML), grayish green GLEY1 6/1, few clay, few fine grained sand	116.8	
21							
22							
23							
24							
25			3.4				
26					25.00 Sand (SP), reddish yellow 7.5YR 6/8 and light gray 5YR 7/1, fine grained, sugar sand, little silt	111.3	
27					26.50 Clay (CH), reddish yellow 7.5YR 6/8 and light gray 7.5YR 7/1, fat clay, trace fine to coarse sand and silt	109.8	
28					27.50 Sand (SW), light gray 7.5R 7/1, fine to coarse, few silt, trace subangular to subrounded gravel, well graded, transition to very pale brown 10YR 8/3 @ 29'	108.8	
29							
30			0.0				
31							
32							
33							
34							
35					34.00 Sand (SW), yellow 10YR 7/6, fine to coarse, trace subrounded to rounded	102.3	

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-40

AECOM

TOTAL DEPTH 39 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36					gravel, trace silt		
37							
38					37.50 Clay (CL) gray 2.5YR 6/1 and reddish yellow 7.5YR 6/8, few silt, hard, dense	98.8	
39							

Bottom of borehole at 39 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-41

AECOM

TOTAL DEPTH 39 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 12/07/2020 **COMPLETED** 12/07/2020
SURVEYING BY/DATE AECOM / 03-31-21
DRILLING CONTRACTOR Elite Techniques
EASTING 744970.37 **NORTHING** 2024665.59
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 136.14 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0					0.00 Gravel (GW)	136.1	**Backfill** Type: Cement / Bentonite Grout 0-39 ft bgs
1					0.50 Sandy Clay (CL), gray 10YR 6/1, fine grained	135.6	
2							
3			0.0				
4							
5			0.1		4.00 Clayey Sand (SC), gray 10YR 6/1, fine to coarse, well graded	132.1	
6							
7							
8			0.2		7.00 Silty Clay (CH), brownish yellow 10YR 6/8 and light gray 2.5YR 7/1, stiff, moderate to low plasticity	129.1	
9							
10			0.1				
11							
12							
13			0.3				
14							
15			0.3				
16							
17							
18			0.2				
19							
20			0.4				
21							
22							
23			0.1		23.00 Silty Sand (SM), white 2.5Y 8/1 and gray 2.5Y 6/1, fine grained	113.1	
24							
25			0.0				
26							
27							
28			0.0		27.00 Sand (SP), white 2.5Y 8/1, fine grained, coarsening downard	109.1	
29					28.50 Sand (SP), white 2.5Y 8/1, fine to medium grained	107.6	
30			0.0		29.50 Sand (SW), reddish yellow 7.5YR 7/8, fine to coarse, little subangular to subrounded gravel, few silt, well graded	106.6	
31							
32					31.00 Silty Sand (SM) white 7.5 YR 8/1, fine to coarse, some angular to rounded gravel	105.1	
33			0.0				
34							
35			0.0				

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-41

AECOM

TOTAL DEPTH 39 FT BGS
PAGE 2 OF 2

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36							
37					36.00 Silty Clay (CL), reddish gray 2.5YR 5/1 and reddish yellow 7.5YR 6/8, stiff, dry	100.1	
38							
39			0.0				

Bottom of borehole at 39 feet.

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WELL NUMBER L-42

AECOM

TOTAL DEPTH 40 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 11/24/2020 **COMPLETED** 11/24/2020
SURVEYING BY/DATE AECOM / 03-31-21
DRILLING CONTRACTOR Elite Techniques
EASTING 744002.39 **NORTHING** 2024044.7
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 114.7 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0					0.00 Silt (ML), dark yellowish brown 10YR 4/6, few fine grained sand, dry	114.7	**Backfill** Type: Cement / Bentonite Grout 0-40 ft bgs
5			0.0		4.50 Sand (SP), very pale brown 10YR 8/3 and dark yellowish brown 10YR 4/6, fine grained, few silt	110.2	
6					5.50 Sandy Silt (ML), very pale brown 10YR 8/3 and dark yellowish brown 10YR 4/6, fine grained, dry	109.2	
10			0.0		10.00 Clayey Silt (MH), very pale brown 10YR 8/3 and yellowish red 5YR 4/6, few fine grained sand, moist	104.7	
13					13.00 Clay (CH), very dark gray 5YR 3/1, few silt, plastic, moist	101.7	
15			0.0		14.00 Clay (CH), light gray 7.5YR 7/1 and reddish yellow 7.5YR 6/8, few silt, high plasticity, moist	100.7	
18					18.00 Silty Sand (SM), gray 5YR 5/1, fine grained, poorly graded, saturated	96.7	
20			0.0		20.50 Clay (CH), gray 5YR 5/1, few silt, trace fine grained sand, highly plastic	94.2	
23					22.50 Sand (SP) light gray 5YR 5/1, fine to medium grained, trace silt, flowing sand, coarsening downward	92.2	
25			0.1				
30			0.1				
33					32.00 Sand (SW) light gray 5YR 5/1, fine to coarse grained	82.7	
35			0.0				

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AECOM SMART LOG 8X11 NO WL - WH CFFF RI IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH CFFF RI IMPLEMENTATIONV7.GPJ

WELL NUMBER L-42

AECOM

TOTAL DEPTH 40 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36							
37					36.50 Sand (SW) light gray 5YR 5/1, fine to coarse grained, trace quartz gravel, subangular to subrounded	78.2	
38							
39							
40			0.2		39.00 Sand (SW) light gray 5YR 5/1, fine to coarse grained, few well rounded quartz gravel	75.7	
					39.75 Clay (CH), gray 10YR 5/1, few silt, plastic, Black Creek confining clay	75.0	
					Bottom of borehole at 40 feet.		

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-43 / W-102

AECOM

TOTAL DEPTH 34.5 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 12/09/2020 **COMPLETED** 12/09/2020
SURVEYING BY/DATE AECOM / 03-31-21
DRILLING CONTRACTOR Elite Techniques
EASTING 745090.12 **NORTHING** 2024124.44
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 137.08 ft **CASING ELEVATION** 136.86 ft
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0.00					Crushed Stone (GW)	137.1
1.00					Sandy Silt (ML), Fill, red 2.5YR 4/8, fine to medium sand, few clay	136.1
3.00			0.0		Sand (SP), Fill, very pale brown 10YR 7/3, fine grained, compacted, dry	134.1
4.00					Sandy Clay (CL), Brownish yellow 10YR 6/6, fine grained sand, dry	133.1
5.00			0.0		Sand (SP), brownish yellow 10YR 6/6, fine, dry	132.1
7.50			0.0		Clayey Sand (SP) Light grey 10 YR 7/1 and reddish yellow 7.5 YR 6/6, find to course well graded , slightly moist	129.6
9.50			0.0		Sand (SW), Very pale brown 10YR 8/3, fine to coarse, well graded, dry	127.6
11.00			0.0		Clayey Sand (SC), white 2.5Y 8/1 and yellow 10YR 7/6, fine to medium sand, saturated	126.1
12.00			0.0		Silty Sand (SM), very pale brown 10YR 8/3, fine to coarse, well graded, coarsening downward, trace gravel starting at 14 feet angular to subrounded	125.1
15.50			0.0		Clayey Sand (SC), very pale brown 10YR 8/3, fine grained, trace mica	121.6
19.50			0.0		Sand (SP), very pale brown 10YR 8/3, fine grained, little silt	117.6
21.00			0.0		Clayey Sand (SC), very pale brown 10YR 8/3, fine grained	116.1
24.50			0.0		Silty Sand (SM), very pale brown 10YR 8/3, fine to coarse, well graded, few angular gravel, coarsening downward	112.6
27.50			0.0		Silty Sand (SM), very pale brown 10YR 8/3, medium to coarse, well graded, little angular gravel	109.6
30.50			0.0		Silty Sand (SM), white 2.5Y 8/1, fine to coarse sand, trace subangular to rounded gravel	106.6
32.50			0.0		Silty Sand (SM), light grey 10YR 7/2, fine to coarse, few rounded gravel	104.6
33.50			0.0		Silty Clay (CL), Reddish yellow 7.5YR 6/8 and pinkish grey 7.5YR 6/2, dry, black mingo clay	103.6

WELL DIAGRAM

Well Casing
Diameter: 2 in
0-28.5 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-24.5 ft bgs

Well Seal
Type: Bentonite
24.5-26.5 ft bgs

Filter Pack
Type: #2 Filter Sand
26.5-34.5 ft bgs

Well Screen
28.5 -33.5 ft bgs

Bottom of borehole at 34.5 feet.

AECOM SMART LOG 8X11 NO WL - WH CFFF RI IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH CFFF RI IMPLEMENTATIONV7.GPJ

WELL NUMBER L-44

AECOM

TOTAL DEPTH 33 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 12/07/2020 **COMPLETED** 12/07/2020
SURVEYING BY/DATE AECOM / 04-01-21
DRILLING CONTRACTOR Elite Techniques
EASTING 745447.6 **NORTHING** 2024231.64
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 136.94 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
					0.00 Asphalt	136.9	**Backfill** Type: Cement / Bentonite Grout 0-33 ft bgs
					0.50 Crusher Run (GW)	136.4	
			0.0		1.00 Clayey Sand (SC), reddish yellow 7.5YR 6/8 and light gray 5YR 7/1, medium to coarse grained, few silt	135.9	
			0.0				
					6.00 Clayey Sand (SC), reddish yellow 7.5YR 6/8 and light gray 5YR 7/1 and red 10R 4/8, fine to medium	130.9	
			0.0		8.00 Sandy Clay (CL), reddish brown 5YR 5/4, stiff, low plasticity, fine grained sand	128.9	
			0.0		10.00 Silty Sand (SM), reddish yellow 7.5YR 7/8, fine to coarse, trace gravel	126.9	
			0.0				
			0.0				
					20.50 Clay (CL), reddish yellow 7.5YR 7/6, few fine grained sand	116.4	
			0.0		21.50 Silty Sand (SM), very pale brown 10YR 8/3, fine to coarse, well graded	115.4	
			0.0				
			0.0		26.00 Sandy Silt (ML), pale brown 2.5Y 8/3, fine to coarse grained sand, trace gravel, well graded	110.9	
			0.0		29.50 Sand (SW), very pale brown 10YR 8/3, fine to coarse, coarsening downward, trace silt	107.4	
					31.50 Silty Clay (CL), reddish gray 2.5YR 5/1 and reddish yellow 7.5YR 6/8, stiff, dry	105.4	
33					Bottom of borehole at 33 feet.		

AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-45

AECOM

TOTAL DEPTH 35 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 12/28/2020 **COMPLETED** 12/28/2020
SURVEYING BY/DATE AECOM / 03-31-21
DRILLING CONTRACTOR Elite Techniques
EASTING 746219.29 **NORTHING** 2024195.51
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 137.34 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
0.00					Sand (SP), Fill, yellowish red 5YR 5/6, fine grained, few clay, damp	137.3	
1.00					Silt (ML), yellowish brown 10YR 5/4, soft, few fine sand, damp	136.3	
1.50					Silt (ML), yellowish brown 10YR 5/8, soft, damp	135.8	
2.00					Clay (CL), brownish yellowish 10YR 6/8, firm, moderate plasticity, damp	135.3	
5.00					Silt (ML), light gray 5Y 7/2, soft, damp	132.3	
5.50					Sand (SP), yellow 2.5Y 8/6, fine grained, poorly graded, damp	131.8	
10.00					Sand (SW), yellow 10YR 7/6, fine to medium grained, well graded, saturated	127.3	
14.50					Sand and Gravel (SW), yellow 10YR 7/6, fine grained to gravel, well graded, saturated	122.8	
15.00					Sand (SW), very pale brown 10YR 8/2, fine to coarse grained, well graded, saturated	122.3	
20.00					Sand (SW), pale brown 2.5Y 8/4, medium to coarse grained, well graded, saturated	117.3	
23.00					Sand and Gravel (SW), light yellowish brown 10YR 6/4, medium grained to gravel, well graded, saturated	114.3	
25.00					Sand (SW), very pale brown 10YR 7/3, medium to coarse grained, well graded, saturated	112.3	
30.00					Sand (SW), light gray 10YR 7/1, fine to coarse grained, well graded, saturated	107.3	
32.75					Gravel and Cobbles (GW) light gray 10YR 7/1, saturated	104.6	
33.00					Clay (CL), very dark gray 10YR 3/1, very stiff, moderate plasticity, damp	104.3	
35							

Backfill
Type: Cement / Bentonite Grout
0-35 ft bgs

Bottom of borehole at 35 feet.

AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-46

AECOM

TOTAL DEPTH 35 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 12/28/2020 **COMPLETED** 12/28/2020
SURVEYING BY/DATE AECOM / 03-31-21
DRILLING CONTRACTOR Elite Techniques
EASTING 746256.36 **NORTHING** 2024060.3
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 138.54 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
					0.00 Clayey Sand (SC), strong brown 7.5YR 5/6, fine grained, little clay, moist	138.5	**Backfill** Type: Cement / Bentonite Grout 0-35 ft bgs
					1.00 Silt (ML), yellow 10YR 8/6, soft, damp	137.5	
					2.00 Clay (CL), brownish yellow 10YR 6/8, stiff, moderate plasticity, damp	136.5	
					5.50 Sily Sand (SM), yellow 10YR 7/6 to white 10YR 8/1, fine grained, little silt, dry	133.0	
					10.00 Silty Sand (SM), brownish yellow 10YR 6/6, fine grained, little silt, moist	128.5	
					14.00 Sand (SW), very pale brown 10YR 8/4, fine to medium grained, few coarse grained, well graded, saturated	124.5	
					16.00 Sand (SW), very pale brown 10YR 8/4, medium to coarse grained, well graded, saturated	122.5	
					20.00 Sand (SW), very pale brown 10YR 7/3, medium to coarse grained, well graded, saturated	118.5	
					28.00 Sand (SW), pale brown 2.5Y 8/3, fine to coarse grained, trace clay, well graded, saturated	110.5	
					33.00 Sand (SW), very pale brown10YR 8/3, fine to coarse grained, few gravel, well graded, saturated	105.5	
35					34.50		

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AECOM SMART LOG 8X11 NO WL - WH CFFF RI IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH CFFF RI IMPLEMENTATIONV7.GPJ

WELL NUMBER L-46

AECOM

TOTAL DEPTH 35 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
					Clay (CL), very dark gray 10YR 3/1, very stiff, moderate plasticity, damp	104.0	
					Bottom of borehole at 35 feet.		

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-47

AECOM

TOTAL DEPTH 35 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 12/29/2020 **COMPLETED** 12/29/2020
SURVEYING BY/DATE AECOM / 03-30-21
DRILLING CONTRACTOR Elite Techniques
EASTING 746228.02 **NORTHING** 2023866.71
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 137.5 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
					0.00 Silt (ML), brownish yellow 10YR 6/6, soft, damp	137.5	**Backfill** Type: Cement / Bentonite Grout 0-35 ft bgs
					1.50 Clayey Sand (SC), reddish yellow 7.5YR 7/8, fine grained, little clay, damp	136.0	
					6.50 Silty Sand (SM), yellow 10YR 7/8, fine grained, little silt, damp	131.0	
					9.50 Sand (SW) yellow 10YR 7/6, fine to medium grained, trace clay, well graded, wet	128.0	
					11.50 Sand (SP) very pale brown 10YR 7/4, medium grained, poorly graded, saturated	126.0	
					15.00 Sand (SW), pale yellow 5Y 8/2, fine grained, poorly graded, saturated	122.5	
					16.50 Sand (SP) pale yellow 5Y 8/2, medium grained, poorly graded, saturated	121.0	
					19.00 (SP) light gray 10 YR 7/1, fine to coarse grained, well graded, saturated	118.5	
					20.00 Sand (SW), gray 10YR 6/1, fine to coarse grained, well graded, saturated	117.5	
					24.00 Sand and Gravel (SW), gray 10YR 6/1, medium grained to gravel, well graded, saturated	113.5	
					28.50 Sand (SW), gray 10YR 6/1, medium to coarse grained, well graded, saturated	109.0	
35					30.50 Clay (CH), greenish gray GLEY1 6/1, firm, high plasticity, damp	107.0	

Bottom of borehole at 35 feet.

AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-48

AECOM

TOTAL DEPTH 45 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 03/17/2021 **COMPLETED** 03/17/2021
SURVEYING BY/DATE AECOM / 03-31-21
DRILLING CONTRACTOR Elite Techniques
EASTING 746490.85 **NORTHING** 2024129.87
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 138.91 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
					0.00 Concrete	138.9	**Backfill** Type: Cement / Bentonite Grout 0-45 ft bgs
					0.50 Crushed Stone (GW)	138.4	
			0.0		0.75 Clay (CH), light brownish gray 10YR 6/2, stiff, high plasticity, damp	138.2	
					2.50 Clay (CH), very pale brown 10YR 7/3, stiff, high plasticity, damp	136.4	
			0.0				
			0.0				
					6.00 Silty Clay (CL-ML), very pale brown 10YR 7/3, little silt, stiff, low plasticity	132.9	
			0.0		7.50 Silt (ML), very pale brown 10 YR 7/3, medium stiff, damp	131.4	
					8.50 Silty Sand (SM), brownish yellow 10YR 6/6, fine grained, little silt, damp	130.4	
			0.0				
			0.0		11.00 Silty Sand (SM), brownish yellow 10YR 6/6, fine grained, little silt, damp	127.9	
			0.0		13.00 Sand (SW), pale brown 2.5Y 7/3, fine to medium grained, few silt, well graded, saturated	125.9	
			0.0				
					16.00 Gravel (GW) pale brown 2.5 Y 7/3, saturated	122.9	
					16.25 Sand (SW), pale brown 2.5Y 7/3, fine to medium grained, few silt, well graded, saturated	122.7	
			0.0		17.50 Sand (SW), light gray 10YR 7/2, fine to coarse grained, well graded, saturated	121.4	
			0.0		20.00 Sand (SW), light gray 10YR 7/2, fine to coarse grained, trace gravel, well graded, saturated	118.9	
			0.0		21.50 Sand (SW), reddish gray 5YR 5/2, medium to coarse grained, few gravel, well graded, saturated	117.4	
			0.0				
			0.0		30.00 Sand (SW), light gray 10YR 7/1, medium to coarse grained, few gravel, well graded, saturated	108.9	
			0.0		32.50 Sand and Gravel (SW-GW), light gray 10YR 7/1, medium grained to gravel, well graded, saturated	106.4	
			0.0		34.00 Clay (CH), gray 5Y 6/1, medium stiff, high plasticity, moist	104.9	

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-48

AECOM

TOTAL DEPTH 45 FT BGS
PAGE 2 OF 2

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36							
37			0.0		36.50 Clay (CH), gray 2.5Y 6/1, soft, high plasticity, moist	102.4	
38					38.00 Clay (CH), very dark gray 10YR 3/1, soft, high plasticity, moist	100.9	
39					39.00 Wood	99.9	
40			0.0		39.50 Sand (SW), gray 10YR 5/1, fine to medium grained, well graded, saturated	99.4	
41			0.0		40.50 Sand (SW), light gray 10YR 7/1, medium to coarse grained, well graded, saturated	98.4	
42							
43			0.0				
44							
45			0.2		44.00 Sand and Gravel and Cobbles (SW-GW), light gray 10YR 7/1, medium grained to cobbles, well graded, saturated	94.9	
					44.50 Clay (CL), dark gray 2.5Y 4/1, very stiff, low plasticity, damp to dry	94.4	

Bottom of borehole at 45 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-49

AECOM

TOTAL DEPTH 43 FT BGS
PAGE 1 OF 2

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 02/22/2021 **COMPLETED** 02/22/2021
SURVEYING BY/DATE AECOM / 03-30-21
DRILLING CONTRACTOR Elite Techniques
EASTING 746509.81 **NORTHING** 2023804.53
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 139.57 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
1					0.00 Clay (CH), pale brown 10YR 6/3, medium stiff, high plasticity, wet	139.6	**Backfill** Type: Cement / Bentonite Grout 0-43 ft bgs
2			0.1		1.50 Silt (ML), brown 10YR 4/3, soft, wet	138.1	
3					2.50 Clay (CH), yellowish brown 10YR 5/8, medium stiff, high plasticity, moist	137.1	
4			0.1				
5					4.00 Clay (CH), yellowish brown 10 YR 5/8, medium stiff, high plasticity, damp	135.6	
6			0.2		5.00 Clay (CH), yellowish brown 10YR 5/8 to very pale brown 10YR 7/3, mottled, stiff, high plasticity, damp	134.6	
7							
8			0.2				
9							
10			0.2		9.00 Silty Clay (CL-ML) light yellowish brown 2.5 Y 6/3, little silt, stiff, moderate plasticity, damp	130.6	
11							
12			0.4		11.00 Sandy Silt (ML), light gray 5Y 7/2, little fine sand, soft, moist	128.6	
13							
14			0.3		13.00 Silty Sand (SM), pale brown 2.5Y 7/3, fine to medium grained, little silt, well graded, saturated	126.6	
15							
16			0.2		15.00 Sand (SW), pale brown 2.5Y 7/3, fine to coarse grained, well graded, saturated	124.6	
17							
18			0.1		17.00 Sand (SW), pale brown 2.5 Y 7/3, fine to coarse grained, few silt, well graded, saturated	122.6	
19							
20			0.1				
21			0.1		20.00 Sand (SW), light yellowish brown 10YR 6/4, fine to medium grained, well graded, saturated	119.6	
22							
23			0.0		22.00 Sand (SW), light gray 10YR 7/2, fine to medium grained, well graded, saturated	117.6	
24							
25			0.0				
26							
27			0.2		26.50 Sand (SW), light gray 10YR 7/2, fine to coarse grained, few gravel, well graded, saturated	113.1	
28							
29			0.3				
30			0.7				
31					30.00 Sand (SW), light gray 10YR 7/2, fine to coarse grained, few gravel, well graded, saturated	109.6	
32			0.1				
33			0.1		32.50 Sand and Gravel (SW), strong brown 7.5 YR 5/6, medium grained to gravel, few clay, saturated	107.1	
34					33.50 Clay (CH), gray 5Y 6/1, stiff, high plasticity, moist	106.1	
35			0.0				

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-49

TOTAL DEPTH 43 FT BGS
PAGE 2 OF 2

AECOM

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36							
37			0.0		36.00 Sand (SP), very pale brown 10YR 7/3, medium grained, trace coarse sand, poorly graded, saturated	103.6	
38							
39			0.0				
40							
41			0.0				
42					41.00 Sand (SW), very pale brown 10YR 7/4, medium to coarse grained, few gravel, well graded, saturated	98.6	
43					41.50 Clay (CL), dark gray 10YR 4/1, very stiff, low to moderate plasticity, damp	98.1	

Bottom of borehole at 43 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-50

AECOM

TOTAL DEPTH 50 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 02/19/2021 **COMPLETED** 02/19/2021
SURVEYING BY/DATE AECOM / 03-31-21
DRILLING CONTRACTOR Elite Techniques
EASTING 746603.32 **NORTHING** 2023327.94
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 141.81 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
1			0.9		0.00 Silt (ML), yellowish brown 10YR 7/4, soft, wet	141.8	**Backfill** Type: Cement / Bentonite Grout 0-50 ft bgs
2					0.50 Silty Clay (CL-ML), yellowish brown 10 YR5/6 to red 2.5YR 4/6, mottled, little silt, medium stiff, damp	141.3	
3			0.1				
4					2.50 Clay (CH), yellowish brown 10YR 5/6 to red 2.5YR 4/6, mottled, few silt, stiff, damp	139.3	
5			0.1				
6							
7			0.5				
8					7.00 Silt (ML), yellowish red 5YR 5/6, few clay, medium stiff, damp	134.8	
9			0.2		8.00 Silty Sand (SM), yellowish red 5YR 5/6, fine grained, little silt, few mica, damp	133.8	
10							
11			0.1				
12					11.00 Silty Sand (SM), strong brown 7.5YR 5/6, fine grained, little silt, damp	130.8	
13			0.1		12.00 Sand (SP), yellow 10YR 7/6, fine grained, few silt, few medium grained sand, poorly graded, damp	129.8	
14							
15							
16			0.1				
17			0.1				
18			0.1		16.50 Sand (SW), very pale brown 10YR 8/3, fine to coarse grained, well graded, saturated	125.3	
19							
20							
21			0.1		20.00 Sand (SW), yellow 10YR 7/6, medium to coarse grained, well graded, saturated	121.8	
22							
23					23.00 Sand (SW), light brownish gray 10YR 6/2, medium to coarse grained, few gravel, well graded, saturated	118.8	
24							
25							
26			0.1				
27							
28			0.1				
29					28.50 Sand (SW), light brownish gray 10YR 6/2, medium to coarse grained, few silt, few clay, few cobbles, saturated	113.3	
30			0.3		29.50 Sand (SW), yellow 10YR 7/6, fine to medium grained, well graded, saturated	112.3	
31					30.00 Silty Clay (Cl-ML), light yellowish brown 10YR 6/4, little silt, stiff, high plasticity, moist	111.8	
32			0.1				
33					32.50 Clay (CH), yellowish brown 10YR 5/6, few silt, stiff, high plasticity, damp	109.3	
34			0.1				
35							

(Continued Next Page)

WELL NUMBER L-50

AECOM

TOTAL DEPTH 50 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36			0.1		35.50 Sandy Silt (ML), yellowish brown 10YR 5/6, little fine sand, soft, saturated	106.3	
37			0.2				
38			0.3		37.00 Silty Sand (SM), brownish yellow 10YR 6/8, fine grained, some silt, saturated	104.8	
39							
40							
41			0.1		40.00 Sand (SP), light gray 5Y 7/1, fine grained, few silt, poorly graded, saturated	101.8	
42							
43			0.2				
44							
45			0.1				
46					45.00 Sand (SW), light yelloiwsh brown 10YR 6/4, medium to coarse grained, few gravel, well graded, saturated	96.8	
47							
48							
49							
50					49.50 Clay (CH), gray 10YR 5/1, very stiff, high plasticity, damp	92.3	

Bottom of borehole at 50 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-51

AECOM

TOTAL DEPTH 50 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 02/22/2021 **COMPLETED** 02/22/2021
SURVEYING BY/DATE AECOM / 03-31-21
DRILLING CONTRACTOR Elite Techniques
EASTING 746436.16 **NORTHING** 2023229.58
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 140.71 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
1			0.1		0.00 Clay (CH), yellowish brown 10YR 5/6 to gray 10YR 6/1, mottled, few silt, medium stiff, high plasticity, damp	140.7	**Backfill** Type: Cement / Bentonite Grout 0-50 ft bgs
2			0.1				
3			0.1		2.00 Silty Clay (CL-ML), yellowish brown 10YR 5/6, little silt, medium stiff, damp	138.7	
4							
5							
6			0.1		5.00 Clayey Silt (MH), yellowish brown 10YR 5/6, some clay, medium stiff, damp	135.7	
7							
8			0.2				
9					8.00 Sand (SP), reddish yellow 7.5YR 6/8, fine grained, few silt, poorly graded, damp	132.7	
10			0.1				
11			0.6		10.00 Sand (SP), light gray 10YR 7/2, fine grained, few silt, poorly graded, damp	130.7	
12							
13			0.4				
14							
15							
16			0.1		15.00 Silty (SM), very pale brown 10YR 7/3, fine grained, little silt, wet	125.7	
17							
18			0.1				
19			0.1		18.00 Clay (CH), pale brown 10YR 6/3, soft, high plasticity, moist	122.7	
20					18.50 Sand (SW), very pale brown 10YR 7/3, fine to medium grained, well graded, saturated	122.2	
21					20.00 Sand (SW), light yellowish brown 10YR 6/4, fine to medium grained, well graded, saturated	120.7	
22			0.1				
23							
24					23.50 Sand (SW), pale brown 10YR 6/3, medium to coarse grained, few gravel, trace subrounded cobbles, well graded, saturated	117.2	
25							
26			0.2				
27							
28			0.3				
29							
30			0.4				
31					30.00 Clay (CH), yellowish brown 10YR 5/4, stiff, high plasticity, moist	110.7	
32			0.2				
33							
34			0.2		33.00 Silt (ML), light brownish gray 2.5Y 6/2, soft, saturated	107.7	
					33.50 Silty Clay (CL-ML), light brownish gray 2.5Y 6/2, little silt, stiff, moist	107.2	
35			0.2		34.00	106.7	

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-51

AECOM

TOTAL DEPTH 50 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36					35.00 Clayey Silt (MH), light brownish gray 2.5Y 6/2, little clay, medium stiff, wet Sandy Silt (ML), light yellowish brown, some fine sand, soft, saturated	105.7	
37			0.3		36.50 Silty Sand (SM), light brownish gray 10YR 6/2, fine grained, some silt, saturated	104.2	
38							
39			0.4		38.50 Sand (SP), pale brown 2.5Y 7/3, fine grained, few silt, poorly graded, saturated	102.2	
40			1.9				
41			0.8		40.50 Sand (SW), light gray 10YR 7/2, fine to coarse grained, well graded, saturated	100.2	
42			1.7				
43			1.1		42.00 Sand (SW), light gray 10YR 7/2, medium to coarse grained, few gravel, trace cobbles, well graded, saturated	98.7	
44			0.8				
45			0.7				
46					45.75 Clay (CH), gray 10YR 5/1, very stiff, high plasticity, damp	95.0	
47							
48							
49							
50							

Bottom of borehole at 50 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-52

AECOM

TOTAL DEPTH 50 FT BGS
PAGE 1 OF 2

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 03/12/2021 **COMPLETED** 03/12/2021
SURVEYING BY/DATE AECOM / 03-30-21
DRILLING CONTRACTOR Elite Techniques
EASTING 746592.68 **NORTHING** 2022664.2
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 139.81 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
1					0.00 Silt (ML), yellowish brown 10YR 5/4, few fine sand, soft, damp	139.8	**Backfill** Type: Cement / Bentonite Grout 0-50 ft bgs
2			0.0				
3					1.50 Clay (CH), pale brown 10YR 6/3 to yellowish brown 10YR 5/8, stiff, high plasticity, damp	138.3	
4			0.0				
5					4.00 Silt (ML), pale brown 2.5Y 7/3, soft, damp	135.8	
6			0.0				
7					6.50 Sand (SW), light yellowish brown 10YR 6/4, fine to coarse grained, well graded, damp	133.3	
8			0.0				
9					8.50 Sand (SW), strong brown 7.5YR 5/6, fine to medium grained, few clay, well graded, damp	131.3	
10			0.0				
11			0.1		10.50 Sand (SW), very pale brown 10YR 7/3, fine to coarse grained, few clay, well graded, damp	129.3	
12							
13			0.0				
14							
15			0.0				
16			0.0		15.00 Sand (SW), very pale brown 10YR 7/3, fine to coarse grained, few clay, well graded, moist	124.8	
17							
18			0.0		17.50 Silty Sand (SM), light gray 10YR 7/2, fine grained, some silt, micaceous, wet	122.3	
19							
20			0.0				
21			0.1				
22					21.00 Sand (SP), light gray 10YR 7/1, fine grained, poorly graded, saturated	118.8	
23			0.0		22.50 Sand (SW), light gray 10YR 7/1, fine to coarse grained, well graded, saturated	117.3	
24							
25			0.0				
26			0.0				
27			0.0				
28			0.0				
29							
30							
31			0.0		30.00 Sand (SW), pale brown 10YR 6/3, medium to coarse grained, well graded, saturated	109.8	
32							
33			0.0				
34					33.00 Gravel (GW), saturated	106.8	
					33.50	106.3	
35			0.0		34.00 Clayey Sand (SC), reddish brown 5YR 5/3, fine to medium grained, some clay, saturated	105.8	

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-52

TOTAL DEPTH 50 FT BGS
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AECOM

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36					Clay (CH), gray 10YR 5/1, soft, high plasticity, wet		
					35.50 Clay (CH), greenish gray GLEY1 5/1, medium stiff, high plasticity, moist	104.3	
37			0.0				
38							
39			0.0				
40			0.0		39.00 Silty Sand (SM), gray GLEY1 6/1, fine grained, little silt, saturated	100.8	
41							
42							
43					42.00 Sand (SW), light gray 10YR 7/1, fine to coarse grained, well graded, saturated	97.8	
					42.75	97.1	
44					43.00 Gravel and Cobbles, saturated	96.8	
45					Clay (CH), dark gray 10YR 4/1, stiff, moderate to high plasticity, damp		
46							
47							
48							
49							
50							

Bottom of borehole at 50 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-53

AECOM

TOTAL DEPTH 49.5 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 03/12/2021 **COMPLETED** 03/12/2021
SURVEYING BY/DATE AECOM / 03-30-21
DRILLING CONTRACTOR Elite Techniques
EASTING 746460.3 **NORTHING** 2022490.48
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 139.29 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
1					0.00 Silty Clay (CL-ML), red 2.5YR 5/6 to gray 7.5YR 6/1, mottled, little silt, medium stiff, damp	139.3	**Backfill** Type: Cement / Bentonite Grout 0-49.5 ft bgs
2			0.6				
3			0.0				
4					3.50 Clayey Sand (SC), reddish yellow 7.5YR 6/6, fine to medium grained, little clay, damp	135.8	
5			0.0				
6			0.0				
7							
8			0.0				
9							
10			0.1		9.00 Sand (SW), reddish yellow 7.5YR 7/6, fine to coarse grained, few clay, well graded, moist	130.3	
11			0.0		10.50 Sand,(SW), very pale brown 10YR 7/4, fine to coarse grained, few silt, few clay, well graded, moist	128.8	
12							
13			0.0				
14			0.0				
15							
16			0.0		15.50 Sand (SP), yellow 10YR 7/6 to light gray 10YR 7/2, fine grained, trace silt, poorly graded, wet to saturated	123.8	
17							
18			0.0				
19							
20							
21			0.0		20.00 Sand (SW), light gray 10YR 7/2, fine to coarse grained, well graded, saturated	119.3	
22							
23			0.0				
24			0.0				
25							
26			0.0				
27							
28			0.0				
29							
30			0.0				
31			0.0				
32							
33			0.0		32.00 Sand (SW) yellowish brown 10 YR 5/4, fine to medium grained, few clay, well graded, saturated	107.3	
34							
35			0.0		34.00 Clay (CH), grayish brown 10YR 5/2, soft, high plasticity, wet	105.3	

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-53

AECOM

TOTAL DEPTH 49.5 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36							
37							
38							
39					38.00 Clay (CH), gray 2.5Y 6/1, soft, high plasticity, wet	101.3	
40							
41					40.50 Sand (SP), light brownish gray 10YR 6/2, fine grained, poorly graded, saturated	98.8	
42							
43							
44							
45					44.00 Sand (SW), light brownish gray 10YR 6/6, fine to medium grained, well graded, saturated	95.3	
46			0.0				
47			0.0		46.50 Silty Sand (SM), gray 10YR 5/1, fine grained, some silt, clay lens at 47 ft.	92.8	
48							
49			0.0		48.50 Silty Sand (SM) and Clay (CH), gray 10YR 5/1 (silty sand) to very dark gray 10YR 3/1 (clay), interbedded, fine grained sand, high plasticity clay	90.8	

Bottom of borehole at 49.5 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-54

AECOM

TOTAL DEPTH 28 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 03/16/2021 **COMPLETED** 03/16/2021
SURVEYING BY/DATE AECOM / 03-30-21
DRILLING CONTRACTOR Elite Techniques
EASTING 746162.66 **NORTHING** 2022554.53
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 140.22 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0					0.00 No lithologic samples collected. See boring log for monitoring well W-19B	140.2	**Backfill** Type: Cement / Bentonite Grout 0-28 ft bgs
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							

Bottom of borehole at 28 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-55

AECOM

TOTAL DEPTH 48 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 03/15/2021 **COMPLETED** 03/15/2021
SURVEYING BY/DATE AECOM / 03-30-21
DRILLING CONTRACTOR Elite Techniques
EASTING 746642.09 **NORTHING** 2022392.44
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 139.79 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
1					0.00 Silt (ML), dark yellowish brown 10YR 4/4, soft, moist	139.8	**Backfill** Type: Cement / Bentonite Grout 0-48 ft bgs
2			0.0				
3					1.50 Clay (CH), gray 10YR 6/1 to brownish yellow 10YR 6/8, very stiff, high plasticity, moist	138.3	
4			0.1				
5			0.0		4.50 Silt (ML), very pale brown 10YR 8/2, medium stiff, damp	135.3	
6					5.50 Sand (SW), brownish yellow 10YR 6/6, fine to coarse grained, few clay, well graded, dry	134.3	
7			0.0				
8							
9			0.0				
10			0.0				
11			0.0		10.00 Sand (SW), light yellowish brown 10YR 6/4, fine to coarse grained, few clay, well graded, dry	129.8	
12							
13			0.0				
14					13.00 Silty Sand (SM), light yellowish brown, fine grained, little silt, dry	126.8	
15			0.4		14.00 Sand (SW), very pale brown 10YR 7/4, fine to coarse grained, well graded, dry	125.8	
16			0.8				
17			0.0		16.00 Sand (SW), very pale brown 10 YR 7/4, fine to coarse grained, well graded, saturated	123.8	
18			0.0				
19							
20							
21			0.0		20.00 Sand (SW), light brownish gray 10YR 6/2, medium to coarse grained, well graded, saturated	119.8	
22							
23			0.0				
24			0.0				
25							
26			0.0		25.00 Sand (SW), very pale brown 10YR 7/3, medium to coarse grained, well graded, saturated	114.8	
27							
28			0.0				
29					28.50 Sand (SP), very pale brown 10YR 7/3, fine grained, poorly graded, saturated	111.3	
30			0.0				
31					30.50 Sand (SW), gray 10YR 7/1, medium to coarse grained, well graded, saturated	109.3	
32			0.0				
33					32.00 Sand (SW) brownish yellow 10YR 6/8, medium to coarse grained, trace gravel, well graded, saturated	107.8	
34			0.0		33.00 Sand (SW) brownish yellow 10YR 6/8, medium to coarse grained, few gravel, well graded, saturated	106.8 / 106.3	
35			0.0		33.50 / 34.00	105.8	

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-55

AECOM

TOTAL DEPTH 48 FT BGS
PAGE 2 OF 2

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35					35.00 Sand (SP), yellowish brown 10YR 5/4, medium grained, poorly graded, saturated	104.8	
36			0.0		36.00 Sand (SP), dark gray 10YR 3/1, medium grained, poorly graded, saturated	103.8	
37					36.10 Clay (CH), very dark gray 10YR 3/1, soft, high plasticity, moist	103.7	
38					37.00 Wood	102.8	
39			0.0		37.10 Clay (CH), very dark gray 10YR 3/1, soft, high plasticity, moist	102.7	
40					37.50 Wood	102.3	
41			0.2		37.60 Clay (CH), very dark gray 10YR 3/1, soft, high plasticity, moist	102.2	
42			0.7		38.00 Wood	101.8	
43			0.9		40.50 Clay (CH), very dark gray 10YR 3/1, soft, high plasticity, moist	99.3	
44			1.1		42.00 Clay (CH), gray 10YR 5/1, soft, high plasticity, moist	97.8	
45			0.0		43.00 Sand (SP), very dark gray 10YR 3/1, fine grained, poorly graded, saturated	96.8	
46			0.0		44.00 Sand (SW), dark grayish brown 10YR 4/2, fine to coarse grained, well graded, saturated	95.8	
47			0.0		45.50 Sand and Gravel and Cobbles (SW) dark grayish brown 10YR 4/2, well graded, saturated	94.3	
48			0.0		47.00 Silty Clay (CL-ML), gray 10YR 5/1, very stiff, low plasticity, damp	92.8	
					Silt (ML), gray 2.5Y 5/1, few fine sand, soft, saturated		
					Silty Clay (CL-ML), dark gray 10YR 4/1, little silt, stiff, low plasticity, damp		
					Bottom of borehole at 48 feet.		

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-56

AECOM

TOTAL DEPTH 45.2 FT BGS
PAGE 1 OF 2

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 02/17/2021 **COMPLETED** 02/17/2021
SURVEYING BY/DATE AECOM / 03-30-21
DRILLING CONTRACTOR Elite Techniques
EASTING 746538.31 **NORTHING** 2022245.57
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 140.04 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
0.00					Silty Sand (SM), reddish yellow 7.5YR 6/6, fine grained, moist	140.0	
0.50			0.1		Silty Clay (CL-ML), gray 7.5YR 6/1 and reddish yellow 7.5YR 6/8, few fine sand, dry	139.5	**Backfill** Type: Cement / Bentonite Grout 0-45.2 ft bgs
5.50			0.2		Silty Sand (SM), reddish yellow 7.5YR 7/8 and yellowish red 5YR 5/6, fine to coarse, dry	134.5	
10.50			0.0		Sand (SW), very pale brown 10YR 8/2, fine to medium grained, trace silt	129.5	
11.00			0.0		Sand (SW), very pale brown 10YR 8/2, fine to coarse grained, trace angular gravel	129.0	
13.00			0.0		Sand (SW), very pale brown 10YR 8/2, fine to coarse grained, trace angular gravel, moist	127.0	
19.00			0.0		Sand (SW), very pale brown 10YR 8/2, fine to coarse grained, few silt, few angular gravel	121.0	
21.00			0.0		Sand (SW), reddish yellow 7.5YR 6/6 and very pale brown 10YR 8/3, fine to coarse, coarsening upward, trace silt, trace angular gravel, saturated	119.0	
24.00			0.0		Silty Sand (SM), very pale brown 10YR 8/2, fine to coarse	116.0	
29.50			0.0		Sand (SW), yellow 10YR 7/6 and light gray 10YR 7/2, fine to coarse, few silt	110.5	
35			0.0				

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-56

TOTAL DEPTH 45.2 FT BGS

AECOM

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36							
37							
38					37.00 Silty Clay (CL-ML), very dark gray, few fine sand, few wood chunks	103.0	
39							
40			0.0				
41					40.00 Sand (SW), gray 7.5YR 6/1 to light gray 10YR 7/1, fine to coarse grained, trace silt, few angular to rounded gravel	100.0	
42							
43							
44							
45							
					45.00 Silty Clay (CL), very dark gray 10YR 3/1, stiff	95.0	

Bottom of borehole at 45.2 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-57

AECOM

TOTAL DEPTH 48 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 02/16/2021 **COMPLETED** 02/16/2021
SURVEYING BY/DATE AECOM / 03-30-21
DRILLING CONTRACTOR Elite Techniques
EASTING 746366.08 **NORTHING** 2022089.65
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 139.86 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
1			0.3		0.00 Silty Clay (CL-ML), gray 7.5YR 6/1 and reddish yellow 7.5YR 6/8, few fine grained sand, moist 0-1 feet, dry 1-4 feet	139.9	**Backfill** Type: Cement / Bentonite Grout 0-48 ft bgs
2							
3							
4							
5			0.2		4.00 Silty San (SM), brown 7.5YR 4/3, brownish yellow 10YR 6/8, very pale brown 10YR 7/3, fine to coarse grained, slightly moist	135.9	
6							
7			0.2				
8							
9							
10			0.7		9.50 Sand (SW), light gray 10YR 7/1, fine to medium grained, few silt, slightly moist	130.4	
11							
12			0.6				
13							
14					13.50 Sand (SW), light gray 10YR 7/1, fine to coarse grained, well graded, moist	126.4	
15			0.3				
16							
17			0.5				
18							
19							
20			0.2				
21							
22			0.9				
23							
24							
25			0.2		24.00 Sand (SW), light gray 10YR 7/1, fine to coarse grained, well graded, saturated	115.9	
26							
27					26.00 Sand (SW), light gray 10YR 7/1, fine to coarse grained, trace-few angular gravel, well graded, saturated	113.9	
28			0.2				
29							
30			0.3				
31					30.00 Silty Sand (SM), yellow 10YR 8/6 and very pale brown 10YR 8/3, fine to medium grained	109.9	
32			0.2				
33							
34					33.00 Silty Clay (CL-ML), gray 10YR 6/1, few fined grained sand, trace wood chunks, high plasticity	106.9	
35			0.2				

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AECOM SMART LOG 8X11 NO WL - WH CFFF RI IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH CFFF RI IMPLEMENTATIONV7.GPJ

WELL NUMBER L-57

AECOM

TOTAL DEPTH 48 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36							
37					36.00 Silty Sand (SM), light gray 7.5YR 7/1, fine grained	103.9	
38							
39							
40					39.00 Sand (SW), light gray 7.5YR 7/1, fine to medium grained, few silt	100.9	
41							
42					41.50 Sand (SW), light gray 7.5YR 7/1, fine to coarse, well graded	98.4	
43							
44							
45					44.00 Sand (SW), light gray 7.5YR 7/1, medium to coarse grained, trace subrounded gravel	95.9	
46							
47			0.2		46.50 Clay (CL), very dark gray 7.5YR 3/1, stiff	93.4	
48							

Bottom of borehole at 48 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-58

AECOM

TOTAL DEPTH 45 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 02/15/2021 **COMPLETED** 02/16/2021
SURVEYING BY/DATE AECOM / 03-30-21
DRILLING CONTRACTOR Elite Techniques
EASTING 746125.95 **NORTHING** 2022091.69
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 139.56 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
0.00					Silt (ML), yellowish brown 10YR 5/6 and brown 7.5YR 5/4, few fine grained sand, moist	139.6	
1.00			0.1		Silty Clay (CL-ML), reddish yellow 7.5YR 6/8 and light gray 7.5YR 7/1, moist	138.6	**Backfill** Type: Cement / Bentonite Grout 0-45 ft bgs
6.00			0.2		Sand (SW), yellowish brown 10YR 5/6 and dark brown 7.5YR 3/3, fine to coarse grained, few silt, dry	133.6	
9.50			0.6		Silty Sand (SM), dark brown 7.5YR 3/3 and reddish yellow 10YR 5/6 and yellowish brown 7.5YR 6/8, fine to coarse grained, moist	130.1	
13.50			0.0		Sand (SW), white 7.5YR 8/1, fine to medium grained, few silt, moist	126.1	
18.50			0.1		Sand (SW), reddish yellow 10 YR 6/8, fine to coarse grained, few silt, moist	121.1	
20.00			0.0		Sand (SW), white 7.5YR 8/1, fine to coarse grained, few silt, moist	119.6	
23.00			0.2		Sand (SW), white 7.5YR 8/1, medium to coarse grained, few silt, few angular to subangular gravel, saturated	116.6	
27.00			0.1		Sand (SW), light yellowish brown 10YR 6/4, medium to coarse, trace silt, saturated	112.6	
30.00			0.2		Sand (SW), white 7.5YR 8/1 and reddish yellow, fine to coarse grained, few silt, saturated	109.6	
35			0.1				

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AECOM SMART LOG 8X11 NO WL - WH CFFF RI IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH CFFF RI IMPLEMENTATIONV7.GPJ

WELL NUMBER L-58

TOTAL DEPTH 45 FT BGS

AECOM

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36			0.1		35.00 Silty Clay (CL-ML), brown 7.5YR 5/2, little wood fragments, high plasticity	104.6	
37							
38							
39			0.4		38.50 Sand (SW), white 10YR 8/1, fine to coarse grained, trace silt, trace organic matter, well graded	101.1	
40							
41							
42							
43							
44							
45					44.00 Silty Clay (CL-ML), gray 7.5YR 6/1, slight plasticity	95.6	

Bottom of borehole at 45 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-59

AECOM

TOTAL DEPTH 50.5 FT BGS
PAGE 1 OF 2

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 05/10/2021 **COMPLETED** 05/10/2021
SURVEYING BY/DATE AECOM / 08-20-21
DRILLING CONTRACTOR Elite Techniques
EASTING 746775.58 **NORTHING** 2023431.04
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 139 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0					0.00 Silty Sand (SM), light brown 7.5YR 6/4, fine grained, dry	139.0	**Backfill** Type: Cement / Bentonite Grout 0-50.3 ft bgs
1					0.50 Clayey Silt (MH), reddish yellow 7.5YR 6/8 and red 7.5YR 4/8, trace fine grained sand, stiff, dry	138.5	
2							
3			0.8				
4					3.00 Clayey Silt (MH), light gray 5YR 7/1 and yellowish red 5YR 5/8, few fine grained sand, dry	136.0	
5			3.6				
6					5.00 Silty Sand (SM), very pale brown 10YR 8/3, fine to medium grained, some feldspar, dry	134.0	
7							
8			0.1				
9					8.50 Silty Sand (SM), reddish yellow 7.5YR 5/8 and very pale brown 10YR 8/4, fine to coarse grained	130.5	
10			0.0				
11							
12			0.5				
13					12.00 Sand (SP), very pale brown 10YR 8/3, fine grained, few silt, trace mica, poorly graded, coarsening downward	127.0	
14					13.00 Sand (SW), very pale brown 10YR 8/3, fine to medium grained, few silt, trace mica, well graded, coarsening downward	126.0	
15			0.1		14.00 Sand (SW), very pale brown 10YR 8/3, fine to coarse grained, few silt, trace mica, well graded, coarsening downward	125.0	
16					15.00 Sand (SP), very pale brown 10YR 8/3, coarse grained, few silt, trace mica, trace angular gravel, poorly graded,	124.0	
17					15.25 Sand (SW), very pale brown 10YR 8/3, fine to coarse grained, few silt, trace mica, well graded	123.8	
18			0.0		16.00 Sand (SW), very pale brown 10YR 8/3, fine grained, few subangular to subrounded gravel, few silt, trace mica, well graded	123.0	
19					16.50 Silt (MH), light gray 2.5Y 7/2, little fine grained sand, few clay, highly plastic	122.5	
20			0.0		17.00 Sand (SW), light gray 10YR 7/1, fine to medium grained, few silt, trace mica, coarsening downward	122.0	
21					19.50 Sand (SW), light gray 10YR 7/1, fine to coarse grained, few silt, trace subangular gravel, trace mica	119.5	
22							
23			0.0				
24					24.00 Sand (SW), light gray 7.5YR 7/1, fine to coarse grained, some small angular to subangular gravel, little silt, well graded	115.0	
25			0.0				
26							
27							
28			0.0				
29							
30			0.0		29.00 Sand (SW), very pale brown 10YR 8/4, fine to coarse grained, few angular to subangular small gravel, few silt, coarsening downward	110.0	
31							
32							
33			0.0				
34							
35			0.0		34.00 Sand (SW), white 7.5YR 8/1, fine to coarse grained, little angular to	105.0	

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-59

AECOM

TOTAL DEPTH 50.5 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36					subangular small gravel, few silt		
37			0.0				
38			0.1				
39			0.0				
40			0.0				
41							
42							
43			0.0				
44							
45			0.0		44.00 Sand (SW), reddish yellow 7.5YR 7/8, fine to coarse, little subangular to subrounded gravel, few silt	95.0	
46					45.00 Silty Clay (CL), dark gray 7.5YR 4/1, stiff, low plasticity	94.0	
47							
48							
49							
50					50.00 Clay (CL), dark gray 7.5.YR 4/1, highly plastic	89.0	

Bottom of borehole at 50.5 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-60

AECOM

TOTAL DEPTH 42 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 05/11/2021 **COMPLETED** 05/11/2021
SURVEYING BY/DATE AECOM / 08-20-21
DRILLING CONTRACTOR Elite Techniques
EASTING 746798.11 **NORTHING** 2023697.36
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 138.63 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0					0.00 Silty Sand (SM), light brown 7.5YR 6/4, fine grained, dry	138.6	**Backfill** Type: Cement / Bentonite Grout 0-42 ft bgs
1					0.50 Clayey Silt (MH), reddish yellow 7.5YR 6/8 and red 7.5R 4/8, trace fine sand, dry	138.1	
2							
3			3.4				
4							
5			77.6		4.00 Sandy Silt (ML), reddish yellow 7.5YR 6/8 and very pale brown 10YR 8/2, fine grained sand	134.6	
6							
7							
8			11.2		7.00 Silty Sand (SM), reddish yellow 7.5YR 6/8, fine to coarse	131.6	
9							
10			1.2				
11							
12							
13			0.1		12.00 Sand (SP), white 7.5R 8/1 and reddish yellow 7.5R 8/6, fine grained, few medium grained sand, few silt	126.6	
14					13.50 Sand (SW), white 7.5R 8/1 and reddish yellow 7.5R 8/6, fine to coarse, saturated	125.1	
15			0.5				
16							
17							
18			0.9				
19							
20			0.6		19.50 Sand (SP), very pale brown 10YR 8/2, fine grained, few silt, trace medium sand, poorly graded	119.1	
21							
22							
23					23.00 Sand (SW), light gray 7.5YR 7/1, fine to coarse, little silt, trace angular gravel, well graded, saturated	115.6	
24							
25							
26							
27					26.50 Sandy Clay (CL), very pale brown 10YR 7/3 and reddish yellow 7.5YR 6/6, fine grained sand, saturated	112.1	
28					27.50 Silty Sand (SM), very pale brown 10YR 8/4, fine to medium grained, saturated	111.1	
29							
30					29.50 Sand (SW), white 7.5R 8/1, fine to coarse grained, few silt, well graded, saturated	109.1	
31							
32							
33							
34							
35					34.00 Sand (SP), very pale brown 10YR 8/3 and reddish yellow 7.5YR 6/8, fine	104.6	

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-60

AECOM

TOTAL DEPTH 42 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36					grained, few silt, poorly graded, saturated		
37					36.00 Sand (SW), very pale brown 10YR 8/3, fine to coarse, few silt, well graded, saturated	102.6	
38							
39							
40					39.50 Sand (SW), very pale brown 10YR 8/3, fine to coarse, few silt, trace subangular to rounded gravel, well graded, saturated,	99.1	
41					40.00 Clay (CL), gray 7.5YR 5/1 to very dark gray 7.5YR 3/1, very stiff, dry	98.6	
42							

Bottom of borehole at 42 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-61

AECOM

TOTAL DEPTH 40 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 05/11/2021 **COMPLETED** 05/11/2021
SURVEYING BY/DATE AECOM / 08-20-21
DRILLING CONTRACTOR Elite Techniques
EASTING 746814.15 **NORTHING** 2023999.05
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 135.65 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
1					0.00 Sand (SP) very pale brown 10YR 7/3, fine grained, few silt, slightly moist	135.7	**Backfill** Type: Cement / Bentonite Grout 0-40 ft bgs
2					1.50 Clayey Silt (MH), gray 10YR 6/1 and reddish yellow 7.5YR 6/8, few fine sand, dry	134.2	
3			0.0				
4							
5			0.1		4.00 Sand (SW) grayish brown 2.5Y 5/2 and white 2.5Y 8/1, fine to medium grained, few silt, Feldspathic, dry	131.7	
6					5.00 Silt (ML), gray 2.5Y 6/1, light yellowish brown 2.5Y 6/4, and brownish yellow 10YR 6/8	130.7	
7							
8			0.0				
9					8.00 Sand (SP), light brownish gray 10YR 6/2 and pale brown 2.5Y 8/2, fine grained, little silt, few medium grained sand, moist	127.7	
10							
11			0.0				
12							
13			0.2		12.00 Silty Sand (SW), light gray 10YR 7/1, fine to coarse grained, well graded, saturated	123.7	
14					13.00 Sand (SP), very pale brown 10YR 8/3 and light gray 10YR 7/1, fine grained, few silt, poorly graded, saturated	122.7	
15			0.3				
16							
17							
18			0.2		17.00 Sand (SW), very pale brown 10YR 8/3 and light gray 10YR 7/1, fine to coarse grained, few silt, trace angular gravel, well graded	118.7	
19					18.00 Sand (SW), very pale brown 10YR 8/3 and light gray 10YR 7/1, fine to coarse grained, few silt, well graded	117.7	
20			0.4				
21					20.50 Sand (SP), pale brown 2.5Y 7/3, fine grained, few silt, few mica, poorly graded	115.2	
22					21.50	114.2	
23			0.2		21.75 Sand (SW), reddish yellow 7.5YR 7/8, fine to coarse grained, few silt, few angular gravel	113.9	
24					Sand (SW), light gray 10YR 7/2, fine to coarse grained, few silt, well graded		
25			0.0		24.50 Sand (SW), pale brown 2.5Y 8/2, fine to coarse grained, trace silt, well graded	111.2	
26							
27							
28							
29							
30							
31					30.50 Sand (SW), very pale brown 10YR 8/2, fine to medium grained, little silt, poorly graded, highly liquified	105.2	
32							
33			0.2				
34							
35			0.2		34.00 Sand (SW), very pale brown 10YR 8/2, fine to coarse grained, trace silt, trace	101.7	

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-61

AECOM

TOTAL DEPTH 40 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36					angular gravel, well graded		
37							
38			0.2		37.00 Silty Clay (CL-ML), light greenish gray GLEY1 10GY 7/1, few fine sand	98.7	
39					37.50 Sand (SP), light gray 10YR 7/1, coarse grained, some subangular to rounded gravel, poorly graded	98.2	
40			0.2		39.00 Clay (CL), gray 10YR 6/1 to dark gray 10YR 4/1, very stiff, low plasticity	96.7	

Bottom of borehole at 40 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER L-62

AECOM

TOTAL DEPTH 35 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 05/14/2021 **COMPLETED** 05/14/2021
SURVEYING BY/DATE AECOM / 08-16-21
DRILLING CONTRACTOR Elite Techniques
EASTING 746081.7 **NORTHING** 2024579.77
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 134.33 ft **CASING ELEVATION** N/A
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 2.5
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE N/A

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							
1			0.0		0.00 Clayey Sand (SC), reddish yellow 7.5YR 6/8, fine to medium grained, little clay, well graded, damp	134.3	**Backfill** Type: Cement / Bentonite Grout 0-35 ft bgs
2							
3							
4			0.0				
5					4.50 Clayey Sand (SC), light gray 10YR 7/1, fine grained, little clay, poorly graded, moist	129.8	
6			0.0		5.50 Sand (SP), strong brown 7.5YR 5/8, fine grained, few clay, poorly graded, moist	128.8	
7							
8			0.0		7.50 Sand (SW), light yellowish brown 10YR 6/4, fine to medium grained, few clay, well graded, wet	126.8	
9							
10			0.0		9.50 Sand (SW), gray 10YR 6/1, fine to medium grained, well graded, saturated	124.8	
11							
12			0.0				
13							
14							
15							
16							
17							
18							
19							
20							
21			0.1		20.00 Sand (SW), light gray 10 YR 7/2, fine to coarse grained, subangular, well graded, saturated	114.3	
22							
23			0.0		22.50 Sand (SW), light gray 10 YR 7/2, medium to coarse grained, subangular, trace gravel, well graded, saturated	111.8	
24							
25			0.0		24.50 Sand (SP), light gray 10YR 7/2, medium grained, poorly graded, saturated	109.8	
26					25.50 Sand and Gravel (SW), white 10 YR 8/1, medium grained to gravel, trace cobbles, subangular, well graded, saturated	108.8	
27			0.1				
28							
29			0.0		28.00 Sand (SW), light gray 10 YR 7/1, medium to coarse grained, subangular, well graded, saturated	106.3	
30					29.50 Sand (SW), pale brown 10 YR 6/3, medium to coarse grained, well graded, saturated	104.8	
31			0.0		30.00	104.3	
32					30.50 Clay (CH), yellowish brown 10 YR 5/8, stiff, high plasticity, damp	103.8	
33					Clay (CH), very dark gray 10YR 3/1, very stiff, moderate plasticity, damp		
34			0.0				
35							

Bottom of borehole at 35 feet.

AECOM SMART LOG 8X11 NO WL - WH CFFF RI IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH CFFF RI IMPLEMENTATIONV7.GPJ

WELL NUMBER W-4R

AECOM

TOTAL DEPTH 18 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 07/23/2021 **COMPLETED** 07/23/2021
SURVEYING BY/DATE AECOM / 08-19-21
DRILLING CONTRACTOR SAEDACCO
EASTING 744339.08 **NORTHING** 2023932.04
DRILLING EQUIPMENT Geoprobe 8140 LS Sonic
GROUND ELEVATION 117.27 ft **CASING ELEVATION** 119.82 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG		MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0								**Well Casing** Diameter: 2 in -3-0 ft bgs
1					0.00	Silt (ML), strong brown 7.5YR 4/6, soft, damp	117.3	
2			0.0					
3								
4			0.0		3.50	Clayey Silt (MH), strong brown 7.5YR 4/6, little clay, medium stiff, damp	113.8	
5			1.1					**Well Screen** 4.5 -14.5 ft bgs
6								
7			0.0		6.00	Silt (ML), strong brown 7.5YR 5/6, few fine sand, soft, wet	111.3	
8					7.50	Sandy Silt (ML), strong brown 7.5YR 5/6, little very fine sand, soft, saturated	109.8	
9			0.0					
10			0.0		9.00	Clayey Silt (MH), strong brown 7.5YR 5/6, little clay, medium stiff, wet	108.3	
11								
12			0.0		11.00	Silty Sand (SM), dark yellowish brown 10YR 4/6, fine grained, little silt, saturated	106.3	
13								
14			0.0		13.50	Silty Clay (CL-ML), strong brown 7.5YR 4/6, little silt, stiff, moist	103.8	
15								
16								
17			0.0		16.50	Clay (CH), strong brown 7.5YR 4/6 to gray 7.5YR 6/1, stiff, high plasticity, moist	100.8	
18								

Bottom of borehole at 18 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-69

AECOM

TOTAL DEPTH 18 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/20/2019 **COMPLETED** 06/20/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 745726.92 **NORTHING** 2026064.29
DRILLING EQUIPMENT GP 8140 LS
GROUND ELEVATION 137.67 ft **CASING ELEVATION** 140.64 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG		MATERIAL DESCRIPTION	Elevation (ft msl)
0					0.00	Silt (ML), brown 7.5Y 5/9, stiff, few clay, few fine sand	137.7
5			43.5		4.00	Sand (SP), light yellowish brown 10YR 6/4, fine grained, little silt	133.7
6					5.50	Silty Sand (SM), light yellowish brown 10YR 6/4, fine grained, little silt	132.2
8					7.00	Clayey Sand (SC), light yellowish brown 10 YR 6/4	130.7
10			2.3		9.00	Clayey Sand (SC), yellowish brown 10YR 5/6, fine to medium grained, little clay, wet	128.7
13					12.50	Sand (SW), very pale brown 10YR 7/4, fine to medium grained, few clay, well graded, saturated	125.2
15			2.1				
18							

Bottom of borehole at 18 feet.

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-8 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-3.75 ft bgs

Well Seal
Type: Bentonite
3.75-5.75 ft bgs

Filter Pack
Type: #2 Filter Sand
5.75-18 ft bgs

Well Screen
8 -18 ft bgs

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-70

AECOM

TOTAL DEPTH 55 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/20/2019 **COMPLETED** 06/20/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 745719.22 **NORTHING** 2026062.87
DRILLING EQUIPMENT GP 8140 LS
GROUND ELEVATION 138.02 ft **CASING ELEVATION** 141 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
					0.00 Silt (ML), brown 7.5Y 5/9, stiff, few clay, few fine sand	138.0
			43.5		4.00 Sand (SP), light yellowish brown 10YR 6/4, fine grained, little silt	134.0
					5.50 Silty Sand (SM), light yellowish brown 10YR 6/4, fine grained, little silt	132.5
					7.00 Clayey Sand (SC), light yellowish brown 10YR 6/4,	131.0
			2.3		9.00 Clayey Sand (SC), yellowish brown 10YR 5/6, fine to medium grained, little clay, wet	129.0
			2.1		12.50 Sand (SW), very pale brown 10YR 7/4, fine to medium grained, few clay, well graded, saturated	125.5
			1.2		20.00 Sandy Clay (CH), gray 5YR 6/1, medium stiff, moderately plastic, wet	118.0
			0.7		23.00 Sand (SP), gray 5YR 6/1, fine grained, poorly graded, few clay, saturated	115.0
			1.2		27.00 Sand (SW), strong brown 7.5YR 5/8, fine to coarse grained, few clay, well graded, saturated	111.0
					28.00 Sand (SW), very pale brown 10YR 8/2, fine to coarse grained, few clay, well graded, saturated	110.0
			0.4		31.50 Clay (CL), yellowish brown 10YR 5/8, soft, highly plastic	106.5

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-44 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-39 ft bgs

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-70

AECOM

TOTAL DEPTH 55 FT BGS
PAGE 2 OF 2

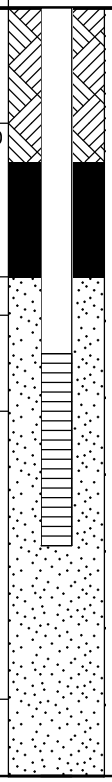
CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
35						
36						
37						
38						
39					38.00 Sand (SP), yellow 10YR 7/8, fine grained, poorly graded, saturated	100.0
40			1.7			
41						
42						
43					42.00 Silt (ML), light gray 10YR 7/1, soft, wet	96.0
44					43.00 Silty Sand (SM), light gray 10YR 7/1, fine grained, some silt, wet	95.0
45			2.1			
46					45.50 Sand (SW), very pale brown 10YR 8/3, medium to coarse grained, few gravel, trace cobbles, well graded, saturated	92.5
47						
48						
49						
50			7.9			
51						
52						
53						
54					53.00 Clay (CL), dark gray 10YR 4/1, very stiff, moderate to highly plastic, moist to dry	85.0
55						

Bottom of borehole at 55 feet.

WELL DIAGRAM



Well Seal
Type: Bentonite
39-42 ft bgs

Filter Pack
Type: #2 Filter Sand
42-55 ft bgs

Well Screen
44 -49 ft bgs

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-71

AECOM

TOTAL DEPTH 103 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/18/2019 **COMPLETED** 09/19/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 745716.65 **NORTHING** 2026052.33
DRILLING EQUIPMENT GP 8140 LS
GROUND ELEVATION 137.96 ft **CASING ELEVATION** 140.72 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY C.Suddeth/M.Glowacz **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0.00			0.0		Silt (ML), strong brown 7.5Y 5/6, stiff, few clay, few fine sand, dry	138.0
4.00			0.0		Sand (SP), light yellowish brown 10YR 6/4, fine grained, poorly graded, moist	134.0
5.50			0.0		Silty Sand (SM), light yellowish brown 10YR 6/4, fine grained, little silt, wet	132.5
7.00			0.0		Clayey Sand (SC), light yellowish brown 10YR 6/4, fine to medium grained, little clay	131.0
9.00			0.0		Clayey Sand (SC), yellowish brown 10YR 5/6, fine to medium grained, little clay, wet	129.0
12.50			0.0		Sand (SW), very pale brown 10YR 7/4, fine-medium grained, few clay, well graded, saturated	125.5
20.00			0.0		Sandy Clay (CH), gray 5Y 6/1, medium stiff, moderately plastic, wet	118.0
23.00			0.0		Sand (SP), gray 5YR 6/1, fine grained, few clay, poorly graded, saturated	115.0
27.00			0.0		Sand (SW), strong brown 7.5YR 5/8, fine to coarse grained, few clay, well graded, saturated	111.0
28.00					Sand (SW), very pale brown 10YR 8/2, fine to coarse grained, few clay, well graded, saturated	110.0
31.50			0.0		Clay (CH), yellowish brown 10YR 5/8, soft, highly plastic, wet	106.5

WELL DIAGRAM

Well Casing
Diameter: 2 in
0-93 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-75 ft bgs

Well Casing
Diameter: 2 in
3-0 ft bgs

(Continued Next Page)

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-71

AECOM

TOTAL DEPTH 103 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36							
37					36.50 Sand (SP), yellow 10YR 7/8, fine grained, poorly graded, saturated	101.5	
38							
39							
40							
41			0.0				
42							
43					42.00 Silt (ML), light gray 10YR 7/1, soft, wet	96.0	
44			0.0		43.00 Silty Sand (SM), light gray 10YR 7/1, fine grained, some silt, wet	95.0	
45							
46					45.50 Sand (SW), medium to coarse grained, few gravel, few cobbles, well graded, saturated	92.5	
47			0.0				
48							
49							
50			0.0		49.00 Sand (SW), very pale brown 10YR 8/3, medium to course grained, few gravel, few cobbles, saturated	89.0	
51							
52							
53			0.0				
54					53.00 Clay (CH), dark gray 10YR 4/1, very stiff, moderate to highly plastic, moist	85.0	
55							
56							
57			0.0				
58							
59							
60					59.00 Clay (CH), blueish gray GLEY2 5/1, slightly silty, stiff	79.0	
61							
62							
63							
64							
65							
66							
67							
68							
69							
70							
71							
72			0.1				
73							
74							
75			0.1				Well Seal

(Continued Next Page)

AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-71

AECOM

TOTAL DEPTH 103 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
75							
76			0.0				Type: Bentonite 75-88 ft bgs
77							
78							
79							
80					79.00 Sand (SW), light blueish gray GLEY2 7/1, medium grained to cobbles, alluvial cobbles are well rounded quartz, loose, soft	59.0	
81			0.0				
82							
83							
84							
85							
86							
87			0.0		86.00 Clay (CH), blueish gray GLEY2 7/1, slightly silty, stiff	52.0	**Filter Pack** Type: #2 Filter Sand 88-103 ft bgs
88							
89							
90			0.0				
91							
92							
93			0.0		92.00 Sand (SW), light blueish gray GLEY2 7/1, fine to coarse grained, highly permeable, saturated	46.0	**Well Screen** 93 -103 ft bgs
94							
95							
96							
97							
98							
99							
100							
101							
102							
103							

Bottom of borehole at 103 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-72

AECOM

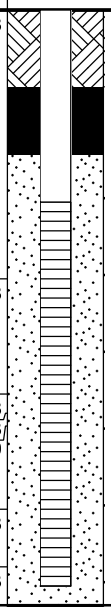
TOTAL DEPTH 15.5 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/30/2019 **COMPLETED** 06/30/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 745450.25 **NORTHING** 2024162.69
DRILLING EQUIPMENT GP 8140 LS
GROUND ELEVATION 136.81 ft **CASING ELEVATION** 136.29 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0					0.00 None: soft-cleared with vacuum truck to 7'	136.8
7					7.00 Sand (SW), reddish yellow 5YR 7/6, fine to medium grained, few silt, very soft	129.8
10			0.2		10.00 Sandy Silt (ML), light gray 5YR 7/2 and reddish yellow 5YR 6/8	126.8
11					10.50 Silty Clay (CL-ML), dark yellowis brown 10YR 4/6, few fine grained sand	126.3
12					10.84 Sandy Silt (ML), light gray 5YR 7/2 and reddish yellow 5YR 6/8	126.0
13						
14					13.00 Silty Sand (SM), light gray 5YR 7/1, and reddish yellow 5YR 6/8, fine to coarse grained	123.8
15			0.4		14.50 Sand (SW), white 10YR 8/1, medium to coarse grained, few silt	122.3

Bottom of borehole at 15.5 feet.

WELL DIAGRAM



Well Casing
Diameter: 2 in
0-5 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-2 ft bgs

Well Seal
Type: Bentonite
2-3.75 ft bgs

Filter Pack
Type: #2 Filter Sand
3.75-15.5 ft bgs

Well Screen
5 -15 ft bgs

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-73

AECOM

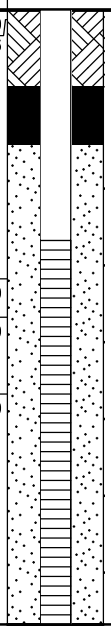
TOTAL DEPTH 16 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/30/2019 **COMPLETED** 06/30/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 745339.31 **NORTHING** 2024166.25
DRILLING EQUIPMENT GP 8140 LS
GROUND ELEVATION 136.85 ft **CASING ELEVATION** 136.45 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
0.00					Asphalt	136.9
0.25					None: soft-cleared with vacuum truck to 8'	136.6
7.00					Clayey Silt (ML), light gray 5YR 7/1 and pale red 7.5YR 7/4, few fine sand, trace mica	129.9
8.00					Sandy Silt (ML), light gray 5YR 7/1 and reddish yellow 5YR 6/8, banded	128.9
			73.6			
10.00					Silty Sand (SM), reddish yellow 5YR 6/8 and yellow 10YR 8/6, fine to coarse grained	126.9
			2.6			

Bottom of borehole at 16 feet.

WELL DIAGRAM



Well Casing
Diameter: 2 in
0-6 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-2 ft bgs

Well Seal
Type: Bentonite
2-3.5 ft bgs

Filter Pack
Type: #2 Filter Sand
3.5-16 ft bgs

Well Screen
6 -16 ft bgs

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-74

AECOM

TOTAL DEPTH 34 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 09/17/2019 **COMPLETED** 09/17/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 745325.13 **NORTHING** 2024067.17
DRILLING EQUIPMENT GP 6620
GROUND ELEVATION 136.64 ft **CASING ELEVATION** 139.93 ft
DRILLING METHOD Geoprobe/HSA
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0					0.00 None: soft-cleared to 5'	136.6
6			0.0		5.00 Sandy Silt (ML), yellow red 5YR 5/8 and white 2.5YR 8/1, moist, fine to medium grained	131.6
10			0.0		9.50 Silty Sand (SM), reddish yellow 7.5YR 7/8 and light gray 7.5YR 7/1, fine to coarse grained, well graded, saturated	127.1
13			0.0		12.00 Sand (SW), very pale brown 10YR 8/3 and white 5R 8/1, medium to coarse grained, little silt, loose, coarsening downward, silt content decreasing with depth, saturated	124.6
20			0.0		21.00 Sand (SW), white 5R 8/1 and light gray 10R 7/1, fine to coarse grained, few small gravel, gravel content increasing with depth, angular to subangular, loose, saturated	115.6
25			0.0		28.00 Sand (SW), white 5R 8/1 and light gray 10R 7/1, fine to coarse grained, some gravel, little silt, saturated	108.6
30			0.0		30.50 Clayey Silt (MH), reddish yellow 5YR 6/8, moist, plastic	106.1
32					32.00 Silty Clay (CL), light gray 5YR 7/1 and yellowish red 5YR 5/8, rigid/brittle, dense, dry	104.6
34					Bottom of borehole at 34 feet.	

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-25.5 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-20 ft bgs

Well Seal
Type: Bentonite
20-23 ft bgs

Filter Pack
Type: #2 Filter Sand
23-34 ft bgs

Well Screen
25.5 -30.5 ft bgs

AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-75

AECOM

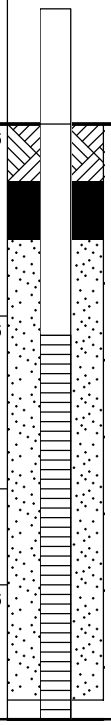
TOTAL DEPTH 15.5 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 09/17/2019 **COMPLETED** 09/17/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 745317.23 **NORTHING** 2024064.76
DRILLING EQUIPMENT GP 6620
GROUND ELEVATION 136.6 ft **CASING ELEVATION** 139.85 ft
DRILLING METHOD Geoprobe/HSA
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG		MATERIAL DESCRIPTION	Elevation (ft msl)
0							
1–4					0.00	None: soft-cleared to 5'	136.6
5–9					5.00	Sandy Silt (ML), yellowish red 5YR 5/8 and white 2.5YR 8/1, fine to medium grained, moist	131.6
10–12					9.50	(SM) reddish yellow 7.5 YR 7/8 and light gray 7.5 YR 7/1, well graded, saturated, fine to coarse grained	127.1
13–15					12.00	Sand (SW), very pale brown 10YR 8/3 and white 5R 8/1, medium to coarse grained, little silt, loose, saturated,	124.6

Bottom of borehole at 15.5 feet.

WELL DIAGRAM



Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-5.5 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-1.5 ft bgs

Well Seal
Type: Bentonite
1.5-3 ft bgs

Filter Pack
Type: #2 Filter Sand
3-15 ft bgs

Well Screen
5.5 -15.5 ft bgs

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-76

AECOM

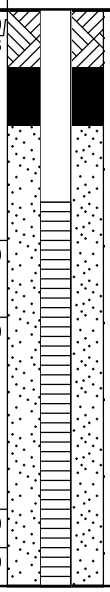
TOTAL DEPTH 15 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/29/2019 **COMPLETED** 06/29/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 745181.19 **NORTHING** 2024223.52
DRILLING EQUIPMENT GP 8140 LS
GROUND ELEVATION 137.04 ft **CASING ELEVATION** 136.85 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
					0.00 Asphalt	137.0
					0.25 None: soft-cleared with vacuum truck to 6'	136.8
					6.00 Silty Sand (SM), white 2.5Y 8/1 and yellow 2.5Y 7/6, coarse grained, trace gravel	131.0
					8.00 Sandy Silt (ML), white 2.5Y 8/1 and yellow 2.5Y 7/6, fine to coarse grained, trace gravel	129.0
			35.5			
					13.00 Silty Sand (SM), white 2.5Y 8/1 and yellow 2.5Y 7/6, coarse grained, trace gravel, poorly graded	124.0
					14.00 Silty Sand (SM), white 2.5Y 8/1, fine grained, few mica, poorly graded	123.0
15			6.3			

Bottom of borehole at 15 feet.

WELL DIAGRAM



Well Casing
Diameter: 2 in
0-5 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-1.5 ft bgs

Well Seal
Type: Bentonite
1.5-3 ft bgs

Filter Pack
Type: #2 Filter Sand
3-15 ft bgs

Well Screen
5 -15 ft bgs

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-77

AECOM

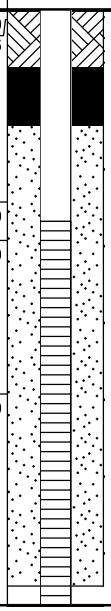
TOTAL DEPTH 15.5 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 09/18/2019 **COMPLETED** 09/18/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 745158.93 **NORTHING** 2024346.11
DRILLING EQUIPMENT GP 6620 DT
GROUND ELEVATION 136.85 ft **CASING ELEVATION** 136.53 ft
DRILLING METHOD Geoprobe/HSA
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
0.00					Asphalt	136.9
0.25					None: soft-cleared with vacuum truck to 5'	136.6
5.00					Sand (SP), light brown 7.5YR 6/3, fine grained, poorly graded	131.9
6.00			1.3		Silty Sand (SM), strong brown 7.5YR 5/8 and light gray 10YR 7/1, fine grained, poorly graded	130.9
10.00					Sand (SW), white 10YR 8/1, medium to coarse grained, little silt, well graded	126.9

Bottom of borehole at 15.5 feet.

WELL DIAGRAM



Well Casing
Diameter: 2 in
0-5.5 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-1.5 ft bgs

Well Seal
Type: Bentonite
1.5-3 ft bgs

Filter Pack
Type: #2 Filter Sand
3-15 ft bgs

Well Screen
5.5 -15.5 ft bgs

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-78

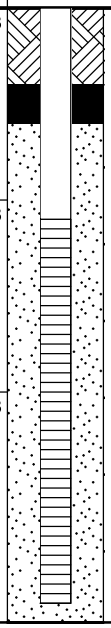
AECOM

TOTAL DEPTH 16 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 09/19/2019 **COMPLETED** 09/19/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 745117.75 **NORTHING** 2024371.03
DRILLING EQUIPMENT GP 6620 DT
GROUND ELEVATION 136.75 ft **CASING ELEVATION** 136.31 ft
DRILLING METHOD DPT/HSA
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG		MATERIAL DESCRIPTION	Elevation (ft msl)
0							
1					0.00	Sand (SP), Fill, pale brown 10YR 6/3, fine grained, few clay, poorly graded, damp	136.8
2							
3							
4							
5							
6					5.00	Sand (SP) light yellowish brown 10 YR 6/4, fine to coarse grained, few clay, well graded, wet at 9 ft.	131.8
7							
8							
9							
10							
11					10.00	Sand (SW), very pale brown 10YR 7/3, fine to coarse grained, trace clay, well graded, saturated	126.8
12							
13							
14							
15							
16							

WELL DIAGRAM



Well Casing
Diameter: 2 in
0-5.5 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-2 ft bgs

Well Seal
Type: Bentonite
2-3 ft bgs

Filter Pack
Type: #2 Filter Sand
3-16 ft bgs

Well Screen
5.5 -15.5 ft bgs

Bottom of borehole at 16 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-79

AECOM

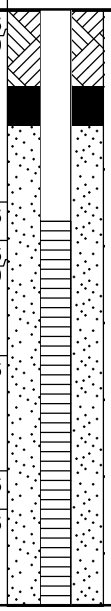
TOTAL DEPTH 15.5 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/29/2019 **COMPLETED** 06/29/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 745200.4 **NORTHING** 2024450.27
DRILLING EQUIPMENT GP 8140 LS
GROUND ELEVATION 136.49 ft **CASING ELEVATION** 136.12 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
					0.00 Concrete	136.5
					0.50 None: soft-cleared with vacuum truck to 5'	136.0
			46.9			
					5.00 Sandy Silt (ML), white 2.5Y 8/1 and reddish yellow 5YR 6/8, fine grained, poorly graded	131.5
					6.00 Silty Sand (SM) white 2.5Y 8/1 and Yellow 2.5Y 7/6, fine to coarse grained	130.5
					6.50 Sandy Silt (ML), white 2.5Y 8/1 and Yellow 2.5Y 7/6, fine grained, poorly graded	130.0
			42.8		9.00 Silty Sand (SM), white 2.5Y 8/1 and Yellow 2.5Y 7/6, medium to coarse grained, trace gravel	127.5
					12.00 Sand (SP), reddish yellow 7.5YR 7/8, coarse grained, little silt	124.5
					13.00 Silty Clay (CL-ML), reddish yellow 7.5YR 7/8 and , light gray 7.5YR 7/1 and dark red 2.5YR 3/6, trace fine sand, stiff, slightly plastic	123.5
			28.1			

Bottom of borehole at 15.5 feet.

WELL DIAGRAM



Well Casing
Diameter: 2 in
0-5.5 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-2 ft bgs

Well Seal
Type: Bentonite
2-3 ft bgs

Filter Pack
Type: #2 Filter Sand
3-15.5 ft bgs

Well Screen
5.5 -15.5 ft bgs

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-80

AECOM

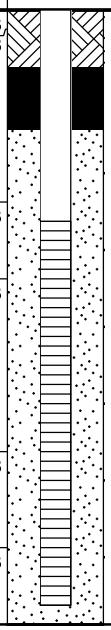
TOTAL DEPTH 16 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/29/2019 **COMPLETED** 06/29/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 745024.39 **NORTHING** 2024414.69
DRILLING EQUIPMENT GP 8140 LS
GROUND ELEVATION 136.34 ft **CASING ELEVATION** 135.87 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
					0.00 Asphalt	136.3
					0.50 None: soft-cleared with vacuum truck to 5'	135.8
			446.9			
					5.00 Silty Clay (CL-ML), reddish yellow 7.5YR 7/8 and light gray 7.5YR 7/1 and red 2.5YR 5/8, trace fine sand, stiff, slightly plastic	131.3
					7.00 Silty Sand (SM), light gray 5YR 7/1 and reddish yellow 5YR 6/8, fine to coarse grained, trace gravel, well graded	129.3
			69.4			
					11.50 Sandy Silt (ML), light gray 5YR 7/1 and reddish yellow 5YR 6/8, fine to coarse grained sand, trace gravel	124.8
			23.1		14.00 Sand (SP), light gray 5YR 7/1 and reddish yellow 7.5YR 7/6, fine to medium grained, little silt	122.3
16						

Bottom of borehole at 16 feet.

WELL DIAGRAM



Well Casing
Diameter: 2 in
0-5.5 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-1.5 ft bgs

Well Seal
Type: Bentonite
1.5-3.1 ft bgs

Filter Pack
Type: #2 Filter Sand
3.1-16 ft bgs

Well Screen
5.5 -15.5 ft bgs

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WELL NUMBER W-81

AECOM

TOTAL DEPTH 16 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/29/2019 **COMPLETED** 06/29/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 744938.6 **NORTHING** 2024469.85
DRILLING EQUIPMENT GP 8140 LS
GROUND ELEVATION 136.81 ft **CASING ELEVATION** 136.43 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
					0.00 Asphalt	136.8
					0.50 None: soft-cleared with vacuum truck to 5'	136.3
5			480.3			
					5.00 Sandy Silt (ML), reddish gray 2.5YR 5/1, fine to medium grained, little angular gravel	131.8
					6.00 Silty Clay (CL-ML), light gray 7.5YR 7/1 and reddish yellow 7.5YR 6/8, mottled, little fine to coarse sand	130.8
					7.00 Clayey Sand (SC), light gray 7.5YR 7/1 and reddish yellow 7.5YR 6/6, fine to coarse grained, little silt	129.8
					8.50 Silty Sand (SM), light gray 7.5YR 7/1 and reddish yellow 7.5YR 6/6, very coarse, some angular gravel	128.3
10			486.6		10.00 Silty Sand (SM), very pale brown 10YR 7/3 and yellow 10YR 7/6, fine to coarse grained, subangular to subrounded, trace gravel	126.8
15			409.6			
16						

Bottom of borehole at 16 feet.

WELL DIAGRAM

Well Casing
Diameter: 2 in
0-5.5 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-1.5 ft bgs

Well Seal
Type: Bentonite
1.5-3.5 ft bgs

Filter Pack
Type: #2 Filter Sand
3.5-16 ft bgs

Well Screen
5.5 -15.5 ft bgs

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WELL NUMBER W-82

AECOM

TOTAL DEPTH 15.5 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/29/2019 **COMPLETED** 06/29/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 744895.93 **NORTHING** 2024594.17
DRILLING EQUIPMENT GP 8140 LS
GROUND ELEVATION 136.57 ft **CASING ELEVATION** 136.23 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
					0.00 None: soft-cleared with vacuum truck to 5'	136.6
					5.00 Silty Sand (SM), GLEY 1 8/N and very pale brown 10YR 7/3, fine to medium grained, hard, dry	131.6
					7.00 Silty Sand (SM), dark brown 10YR 3/3, fine to medium grained, grass, dry, hard	129.6
					7.25	129.3
					8.00 Silty Sand (SM), GLEY 1 8/N and very pale brown 10YR 7/3, fine to medium grained, hard, dry	128.6
					9.50 Sandy Clay (CL), light gray 10YR 7/1 and brownish yellow 10YR 6/6, fine to coarse grained, little angular gravel, dense, dry	127.1
					Silty Sand (SM), gray 10YR 6/1 and brownish yellow 10YR 6/8, fine to coarse grained, coarsening downward	
					12.00 Silty Sand (SM), gray 10YR 6/1 and brownish yellow 10YR 6/8, fine to coarse grained, little angular gravel	124.6
15						

Bottom of borehole at 15.5 feet.

WELL DIAGRAM

Well Casing
Diameter: 2 in
0-5.5 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-1.5 ft bgs

Well Seal
Type: Bentonite
1.5-3.5 ft bgs

Filter Pack
Type: #2 Filter Sand
3.5-15 ft bgs

Well Screen
5.5 -15.5 ft bgs

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WELL NUMBER W-83

AECOM

TOTAL DEPTH 26.5 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/29/2019 **COMPLETED** 06/29/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 744975.06 **NORTHING** 2024667.49
DRILLING EQUIPMENT GP 8140 LS
GROUND ELEVATION 136.22 ft **CASING ELEVATION** 135.81 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0.00					Asphalt	136.2
0.25					None: soft-cleared with vacuum truck to 5'	136.0
			393.7			
5.00					Clayey Sand (SC), gray 10YR 6/1, fine to coarse grained, few silt, well graded	131.2
7.00					Silty Clay (CL), brownish yellow 10YR 6/8 and light gray 2.5YR 7/1, plastic, stiff	129.2
			456.4			
			480.4			
			621.8			
23.00					Silty Sand (SM), white 2.5Y 8/1 and gray 2.5Y 6/1, 1/2 black layer 5Y 2.5/1 at 23 feet, fine grained, poorly graded	113.2
			81.2			

Bottom of borehole at 26.5 feet.

WELL DIAGRAM

Well Casing
Diameter: 2 in
0-16.5 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-8.2 ft bgs

Well Seal
Type: Bentonite
8.2-13.2 ft bgs

Filter Pack
Type: #2 Filter Sand
13.2-26.5 ft bgs

Well Screen
16.5 -26.5 ft bgs

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WELL NUMBER W-84

AECOM

TOTAL DEPTH 22 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/30/2019 **COMPLETED** 06/30/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 745177.25 **NORTHING** 2024721.5
DRILLING EQUIPMENT GP 8140 LS
GROUND ELEVATION 136.66 ft **CASING ELEVATION** 135.99 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0.00					Asphalt	136.7
0.25					None: soft-cleared with vacuum truck to 5'	136.4
			50.4			
5.00					Silty Sand (SM), reddish gray 2.5YR 5/1 and reddish yellow 5YR 6/8, fine to medium grained	131.7
7.00					Clayey Silt (MH), light gray 5YR 7/1 and red 2.5YR 5/8, little fine grained sand, medium stiff	129.7
8.00			71.2		Silty Sand (SM), gray 5YR 6/1 and yellowish red 5YR 5/6, fine to coarse grained, well graded	128.7
14.00			84.1		Silty Sand (SM), yellowish red 5YR 5/6, and light gray 5YR 7/1, coarse grained	122.7
15.00					Clayey Silt (MH), bluish gray GLEY 2 5/1, elastic, trace fine mica, very soft	121.7
18.00			103.9		Silty Clay (CL-ML), light gray 2.5YR 7/1 and brownish yellow 10YR 6/8 and red 7.5R 4/8, plastic, stiff	118.7

Bottom of borehole at 22 feet.

WELL DIAGRAM

Well Casing
Diameter: 2 in
0-11 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-5 ft bgs

Well Seal
Type: Bentonite
5-8.5 ft bgs

Filter Pack
Type: #2 Filter Sand
8.5-22 ft bgs

Well Screen
11 -21 ft bgs

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WELL NUMBER W-85

AECOM

TOTAL DEPTH 50 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/11/2019 **COMPLETED** 06/11/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 745079.71 **NORTHING** 2025107.68
DRILLING EQUIPMENT GP 8140 LS
GROUND ELEVATION 135.74 ft **CASING ELEVATION** 138.69 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0.00			0.3		Silty Clay (CL-ML), reddish yellow 7.5YR 6/8 and brown 7.5YR 5/2, mottled, few sand, dry	135.7
9.00			5.1		Clay (CH), reddish yellow 7.5YR 6/8 and brown 7.5YR 5/2, high plasticity, few silt, hard	126.7
26.00			9.5		Silty Sand (SM), tan and gray, fine to medium grained, interbedded	109.7
28.00					Clayey Sand (SC), brown and gray, fine to medium grained	107.7
29.00			0.3		Silty Sand (SM), medium to coarse grained, subrounded to rounded cobbles	106.7
30.00					Clay (CH), gray 5Y 5/1, high plasticity	105.7
33.00					Silty Sand (SM), gray 5Y 5/1, fine to medium grained	102.7

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-40 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-35 ft bgs

Well Seal

(Continued Next Page)

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WELL NUMBER W-85

AECOM

TOTAL DEPTH 50 FT BGS
PAGE 2 OF 2

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36			0.3				Type: Bentonite 35-37 ft bgs **Filter Pack** Type: #2 Filter Sand 37-50 ft bgs **Well Screen** 40 -45 ft bgs
37							
38							
39							
40							
41							
42							
43					42.00 Sand (SW), medium to coarse grained, few silt, few angular to subangular gravel	93.7	
44			1.0		43.00 Clay (CH), dark gray 5Y 2.5/1, very compact, dry	92.7	
45							
46							
47							
48							
49							
50			0.5				

Bottom of borehole at 50 feet.

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WELL NUMBER W-86

AECOM

TOTAL DEPTH 35 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/11/2019 **COMPLETED** 06/11/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 745082.29 **NORTHING** 2025100.8
DRILLING EQUIPMENT GP 8140 LS
GROUND ELEVATION 135.68 ft **CASING ELEVATION** 138.77 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Elliot Harrington **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0.00					Silty Clay (CL-ML), reddish yellow 7.5YR 6/8 and brown 7.5YR 5/2, mottled, few sand, dry	135.7
			0.2			
9.00					Clay (CH), reddish yellow 7.5YR 6/8 and brown 7.5YR 5/2, high plasticity, few silt, hard	126.7
			0.4			
			0.2			
			0.0			
26.00					Silty Sand (SM), tan and gray, fine to medium grained, interbedded	109.7
28.00					Clayey Sand (SC), brown and gray, fine to medium grained	107.7
29.00					Silty Sand (SM), medium to coarse grained, subrounded to rounded cobbles	106.7
30.00					Clay (CH), gray 5Y 5/1, high plasticity	105.7
33.00					Silty Sand (SM), gray 5Y 5/1, fine to medium grained	102.7

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-25 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-20 ft bgs

Well Seal
Type: Bentonite
20-22 ft bgs

Filter Pack
Type: #2 Filter Sand
22-35 ft bgs

Well Screen
25 -35 ft bgs

Bottom of borehole at 35 feet.

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WELL NUMBER W-87

AECOM

TOTAL DEPTH 34 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/30/2019 **COMPLETED** 06/30/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 745952.76 **NORTHING** 2024385.81
DRILLING EQUIPMENT GP 8140 LS
GROUND ELEVATION 136.66 ft **CASING ELEVATION** 136.39 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0.00					Asphalt	136.7
0.25					None: soft-cleared with vacuum truck to 5'	136.4
7.00					Silty Sand (SM), white 10YR 8/1 and very pale brown 10YR 8/3, fine to coarse sand, little silt	129.7
17.00			0.2		Sand (SW), pale brown 2.5Y 8/3, medium to coarse grained, few silt, trace gravel	119.7
22.00			0.1		Silty Sand (SM), pale brown 2.5Y 8/3 and white 10YR 8/1 and brownish yellow (trace) 10YR 6/10, coarse grained, few gravel, trace cobbles, subrounded to rounded	114.7
24.00			0.1		Sand (SW), pale brown 2.5Y 8/2, medium to coarse grained, few silt	112.7
27.00					Silty Sand (SM), light gray 5YR 7/1, and reddish yellow 5YR 6/6, medium to coarse grained, little gravel, subrounded	109.7
29.00			0.0		Sand (SW), red 2.5YR 4/6, fine to coares grained, few gravel, trace silt, subangular to rounded	107.7
31.25					Sand (SW), red 2.5YR 4/6, medium to coarse grained, few gravel, trace silt, few gravel, trace cobbles, subangular to rounded	105.4
31.50					Silty Clay (CL-ML), reddish gray 5YR 5/2 and reddish yellow 7.5YR 6/6, stiff	105.2

WELL DIAGRAM

Well Casing
Diameter: 2 in
0-28 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-22 ft bgs

Well Seal
Type: Bentonite
22-25 ft bgs

Filter Pack
Type: #2 Filter Sand
25-34 ft bgs

Well Screen
28 -33 ft bgs

Bottom of borehole at 34 feet.

AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-88

AECOM

TOTAL DEPTH 45 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/17/2019 **COMPLETED** 06/17/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 746574.77 **NORTHING** 2022883.96
DRILLING EQUIPMENT GP 8140 LS
GROUND ELEVATION 140.06 ft **CASING ELEVATION** 143.1 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0.00					Silt (ML), yellowish brown 10YR 5/8, medium stiff, low plasticity, moist	140.1
10.00					Sand (SW), yellow 2.5Y 7/8 and pale brown 2.5Y 7/4, fine to medium grained, well graded, moist	130.1
14.00					Sand (SW), pale brown 2.5Y 7/4, fine to medium grained, well graded, moist	126.1
20.00					Silt (ML), gray 2.5Y 6/1, soft, low plasticity, moist	120.1
20.50					Sand (SW), light gray 2.5Y 7/2, fine to medium grained, wet	119.6
25.00					Sand (SW), light gray 10YR 6/1, fine to coarse grained, trace cobbles, well graded, saturated	115.1
27.00					Sand (SW), brownish yellow 10YR 6/6, fine to coarse grained, trace cobbles, trace cobbles, saturated	113.1
30.50					Silty Clay (CL), light yellowish brown 10YR 6/4, little silt, stiff, high plasticity	109.6
33.00					Silty Sand (SM), gray 10YR 6/1, fine grained, little silt, wet	107.1

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-36.5 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-31 ft bgs

Well Seal
Type: Bentonite
31-34 ft bgs

Filter Pack
Type: #2 Filter Sand

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WELL NUMBER W-88

AECOM

TOTAL DEPTH 45 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36							34-45 ft bgs
37					36.50 Sand (SW), light gray 10YR 7/1, fine to coarse grained, few cobbles, trace gravel, well graded	103.6	**Well Screen** 36.5 -41.5 ft bgs
38							
39							
40							
41							
42					41.00 Clay (CL), black 10YR 2/1, very stiff, low plasticity, few silt, dry	99.1	
43							
44							
45							

Bottom of borehole at 45 feet.

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WELL NUMBER W-89

AECOM

TOTAL DEPTH 29 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/13/2019 **COMPLETED** 06/13/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 746583.34 **NORTHING** 2022888.25
DRILLING EQUIPMENT GP 8140 LS
GROUND ELEVATION 140.12 ft **CASING ELEVATION** 142.82 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Elliot Harrington **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0.00					Silt (ML), light brown, few sand, medium stiff	140.1
1.00					Silty Clay (CL-ML), light brown to dark brown, mottled, stiff, mostly clay, little silt, moist	139.1
2.50			0.0		Silt (ML), light brown, medium stiff, mostly silt, trace sand, moist	137.6
8.00					Clayey Sand (SC), yellow 10YR 7/6, mostly sand, little clay, medium dense, moist	132.1
10.00			0.0		Sand (SW), yellowish brown and orangish red, mostly fine to medium grained, trace coarse sand, medium dense, moist	130.1
19.00					Silt (ML), light brown to orange, stiff, mostly silt, few sand, few clay, mosit	121.1
20.00			0.0		Sand (SW), light brown to orange, mostly fine to medium grained, few coarse sand, few clay, few mica, trace silt, loose, wet	120.1
21.00					Sand (SW), gray to light brown, mostly fine to medium grained, few silt, trace mica, very loose, wet	119.1
27.00			0.0		Sand (SW), light brown to gray to pale red, fine to coarse grained, trace fine to medium gravel, trace silt, very loose, wet	113.1

Bottom of borehole at 29 feet.

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-15.5 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-9.5 ft bgs

Well Seal
Type: Bentonite
9.5-13 ft bgs

Filter Pack
Type: #2 Filter Sand
13-29 ft bgs

Well Screen
15.5 -25.5 ft bgs

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-90

AECOM

TOTAL DEPTH 44 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/13/2019 **COMPLETED** 06/13/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 745981.12 **NORTHING** 2022011.55
DRILLING EQUIPMENT GP 8140 LS
GROUND ELEVATION 140.23 ft **CASING ELEVATION** 143.33 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Elliot Harrington **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0.00					Silt (ML), brownish red 2.5YR 4/6, mottled, stiff, trace clay, dry	140.2
3.00					Sandy Silt (ML), brownish red 2.5YR 4/6, mottled, little fine sand, trace coarse sand, medium stiff	137.2
7.00					Silty Sand (SM), brownish red 2.5YR 4/6, some silt, loose, dry	133.2
12.00					Silty Clay (CL), light brown 7.5YR 6/6, very stiff, some silt, dry	128.2
13.00					Silty Sand (SM), light brownish orange 10YR 7/2, mottled, fine grained, some silt, medium dense	127.2
14.00					Silt (ML), light brownish orange 10YR 7/2, medium stiff, few fine sand, dry	126.2
15.00					Sand (SP), light brown 10YR 7/2, fine grained, very loose, moist	125.2
16.00					Sandy Silt (ML), light brown 10YR 7/2, some fine sand, loose, moist	124.2
20.00					Sand (SP), white 2.5Y 8/1, fine grained, very loose, moist	120.2
29.00					Sand (SP), pale brown, fine grained, very loose, moist	111.2
31.00					Clay (CH), pale brown 2.5Y 8/3, high plasticity, trace sand, stiff, moist	109.2
32.00					Sand (SP), dark gray to orange to light brown, banded, fine grained, loose, moist	108.2

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-35 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-30 ft bgs

Well Seal
Type: Bentonite
30-32 ft bgs

Filter Pack
Type: #2 Filter Sand
32-44 ft bgs

(Continued Next Page)

AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-90

AECOM

TOTAL DEPTH 44 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG		MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35								
36					35.00	Organic Silt (OL), black to dark brown, medium stiff, trace fine sand, trace organic matter, moist	105.2	**Well Screen** 35 -40 ft bgs
37								
38								
39					38.00	Silty Sand (SM), pale gray 2.5Y 7/1, fine grained, some silt, trace clay, medium dense	102.2	
40								
41					40.50	Clay (CL), light gray, stiff, few fine sand, few silt, moist	99.7	
42					41.00	Sand (SW), light gray, fine to medium grained, trace coarse sand trace fine gravel, trace silt, loose, wet	99.2	
43					42.00	Silty Clay (CL-ML), gray, stiff, some silt, trace mica, dry	98.2	
44								

Bottom of borehole at 44 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-91

AECOM

TOTAL DEPTH 25 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/13/2019 **COMPLETED** 06/13/2019
SURVEYING BY/DATE AECOM / 10-21-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 745976.36 **NORTHING** 2022016.77
DRILLING EQUIPMENT GP 8140 LS
GROUND ELEVATION 139.57 ft **CASING ELEVATION** 142.81 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Elliot Harrington **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
0.00					Silt (ML), brownish red 2.5YR 4/6, mottled, stiff, trace clay, dry	139.6
3.00					Sandy Silt (ML), brownish red 2.5YR 4/6, mottled, little fine sand, trace coarse sand, medium stiff	136.6
7.00					Silty Sand (SM), brownish red 2.5YR 4/6, some silt, loose, dry	132.6
12.00					Silty Clay (CL), light brown 7.5YR 6/6, very stiff, some silt, dry	127.6
13.00					Silty Sand (SM), light brownish orange 10YR 7/2, mottled, fine grained, some silt, medium dense	126.6
14.00					Silt (ML), light brownish orange 10YR 7/2, medium stiff, few fine sand, dry	125.6
15.00					Sand (SP), light brown 10YR 7/2, fine grained, very loose, moist	124.6
16.00					Sandy Silt (ML), light brown 10YR 7/2, some fine sand, loose, moist	123.6
20.00					Sand (SP), white 2.5Y 8/1, fine grained, very loose, moist	119.6
25					Bottom of borehole at 25 feet.	

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-15 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-11 ft bgs

Well Seal
Type: Bentonite
11-13 ft bgs

Filter Pack
Type: #2 Filter Sand
13-25 ft bgs

Well Screen
15 -25 ft bgs

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-92

AECOM

TOTAL DEPTH 37 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 06/12/2019 **COMPLETED** 06/12/2019
SURVEYING BY/DATE AECOM / 10-02-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 744382.47 **NORTHING** 2023714.92
DRILLING EQUIPMENT GP 8140 LS
GROUND ELEVATION 120.11 ft **CASING ELEVATION** 123.33 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Elliot Harrington **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
0.00					Clayey Silt (MH), brown 7.5YR 4/4, stiff, little clay, trace fine sand, moist	120.1
9.50			0.3		Silty Clay (CL-ML), gray GLEY1 5/10, medium stiff, some silt, trace fine sand, trace mica	110.6
14.00			0.5		Silt (ML), brown 2.5Y 5/2, medium stiff, few clay, trace very fine sand, trace mica, moist	106.1
16.00			0.2		Silty Sand (SM), gray 2.5Y 7/1, fine grained, some silt, trace mica, medium dense, wet	104.1
18.00			0.3		Clay (CH), dark gray 2.5Y 4/1, medium stiff, high plasticity, few silt, trace mica, moist	102.1
27.00			0.2		Sand (SP), light gray 2.5Y 6/1, trace silt, trace mica, loose, moist	93.1
30.00			0.2		Silty Clay (CL-ML), gray 2.5Y 6/1, medium stiff, some silt, trace fine sand, trace mica, moist	90.1
31.00					Sand (SP), light gray 2.5Y 6/1, trace mica, very loose, moist	89.1
33.75			0.3		Sand (SP), light gray 2.5Y 6/1, some subrounded to rounded gravel, trace mica, very loose, moist	86.4
34.00						86.1

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-29 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-24 ft bgs

Well Seal
Type: Bentonite
24-27 ft bgs

Filter Pack
Type: #2 Filter Sand
27-37 ft bgs

Well Screen
29 -34 ft bgs

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-92

AECOM

TOTAL DEPTH 37 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36					Silty Clay (CL), gray 2.5Y 3/1, very stiff, very low plasticity, some silt, dry		
37							

Bottom of borehole at 37 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-93

AECOM

TOTAL DEPTH 40 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 09/18/2019 **COMPLETED** 09/18/2019
SURVEYING BY/DATE AECOM / 10-01-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 745162.26 **NORTHING** 2024346.84
DRILLING EQUIPMENT GP 6620 DT
GROUND ELEVATION 136.87 ft **CASING ELEVATION** 136.49 ft
DRILLING METHOD Geoprobe/HSA
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0.00					Asphalt	136.9
0.25					None: soft-cleared with vacuum truck to 5'	136.6
5.00					Sand (SP), light brown 7.5YR 6/3, fine grained, poorly graded	131.9
6.00					Silty Sand (SM), strong brown 7.5YR 5/8 and light gray 10YR 7/1, fine grained, poorly graded	130.9
			1.3			
10.00					Sand (SW), white 10 YR 8/1, medium to coarse grained, little silt, well graded	126.9
15.50					Silty Sand (SM), white 2.5Y 8/1, medium to coarse grained	121.4
16.00					Clay (CH), white 10YR 8/1 and strong brown 7.5YR 5/6, highly plastic, few silt	120.9
18.00					Clayey Silt (MH), light gray 10 YR 7/1 and strong brown 7.5YR 5/6 and red 7.5R 4/8, few fine sand	118.9
			0.0			
20.00					Silty Sand (SM), gray 5YR 6/1 and yellow 10YR 7/6, fine to coarse grained, well graded	116.9
20.50						116.4
21.00					Clayey Sand (SC), strong brown 7.5YR 5/8 and white 10YR 8/1, fine grained	115.9
					Clay (CL), white 10YR 8/1 and strong brown 7YR 5/8 and red 10YR 5/8, dense, medium plasticity, few silt	
23.00					Sand (SM), reddish yellow 7.5YR 6/8, fine to medium grained, coarsening downward, few coarse grained @ 31-32', fine to medium grained	113.9
			0.2			
26.00					Sand (SM), reddish yellow 7.5YR 6/8, fine to medium grained, few coarse grained	110.9
27.00					Silty Sand (SM), white N/9.5 changing downward to pale orange yellow 10YR 9/2, fine to coarse grained, trace subangular gravel, well graded	109.9
			0.0			
32.00					Silty Sand (SM), reddish yellow 5YR 6/8, medium to coarse grained, few subrounded to rounded gravel and cobbles	104.9
33.00					Silty Sand (SM), reddish yellow 7.5YR 7/6, fine to coarse grained, loose	103.9
			0.0			

WELL DIAGRAM

Well Casing
Diameter: 2 in
0-30.5 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-25 ft bgs

Well Seal
Type: Bentonite
25-27 ft bgs

Filter Pack
Type: #2 Filter Sand
27-35 ft bgs

Well Screen
30.5 -35.5 ft bgs

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AECOM SMART LOG 8X11 NO WL - WH CFFF RI IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH CFFF RI IMPLEMENTATIONV7.GPJ

WELL NUMBER W-93

AECOM

TOTAL DEPTH 40 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36					35.50 Clay (CL), very dark gray 7.5YR 3/1, hard, very dense	101.4	
37							
38							
39							
40			0.0				

Bottom of borehole at 40 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-94

AECOM

TOTAL DEPTH 29.5 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 09/17/2019 **COMPLETED** 09/17/2019
SURVEYING BY/DATE AECOM / 10-03-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 744728.03 **NORTHING** 2021983.56
DRILLING EQUIPMENT GP 8140 LS
GROUND ELEVATION 115.28 ft **CASING ELEVATION** 118.04 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0.00					Silt (ML), brown 10YR 4/3, soft, moist	115.3
10.50					Sand (SP), grayish brown 10YR 5/2, fine grained, few silt, poorly graded, saturated	104.8
12.50					Sand (SP), brown 10YR 4/3, fine grained, few silt, poorly graded, saturated	102.8
16.00					Sand (SW), yellowish brown 10YR 5/6, fine to medium grained, few silt, well graded, saturated	99.3
17.50					Sand (SW), pale brown 2.5Y 7/3, fine to coarse grained, well graded, saturated	97.8
18.00						97.3
19.00					Sand and Cobbles (SW), gray 2.5Y 4/1, medium grained to cobbles, well graded, saturated	96.3
20.00					Sandy Silt (ML), very dark grayish brown, soft, wet	95.3
			16.9		Silty Sand (SM), dark grayish brown 2.5Y 4/2, fine grained, little silt, saturated	
26.50			19.7		Sand (SW), light gray 5Y7/1, fine to medium grained, few silt, well graded, saturated	88.8
29.00					Clay (CH), black 2.5Y 2.5/1, stiff, moderate plasticity, moist	86.3

Bottom of borehole at 29.5 feet.

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-24.5 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-19 ft bgs

Well Seal
Type: Bentonite
19-22 ft bgs

Filter Pack
Type: #2 Filter Sand
22-29.5 ft bgs

Well Screen
24.5 -29.5 ft bgs

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-95

AECOM

TOTAL DEPTH 33.5 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 09/17/2019 **COMPLETED** 09/17/2019
SURVEYING BY/DATE AECOM / 10-03-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 744375.66 **NORTHING** 2022553.46
DRILLING EQUIPMENT GP 8140 LS
GROUND ELEVATION 113.53 ft **CASING ELEVATION** 116.4 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
					0.00 Silt (ML), strong brown 7.5YR 5/6, stiff, soft, few clay, moist	113.5
					5.00 Clayey Silt (MH), yellowish brown 10YR 5/8, soft, damp	108.5
					7.00 Silt (ML), yellowish brown 10YR 5/8, soft, moist	106.5
					9.00 Silt (ML), dark yellowish brown 10YR 4/6, soft, saturated	104.5
					12.50 Sand (SP), 10YR 5/8, medium grained, poorly graded, saturated	101.0
					20.00 Sand (SW), yellowish brown 10YR 5/8, fine to medium grained, well graded, saturated	93.5
					24.00 Sand (SW), light yellowish brown 10YR 6/4, fine to coarse grained, well graded, saturated	89.5
					29.00 Sand (SW), light gray 2.5Y 7/1, fine to coarse grained, well graded, saturated	84.5
33						

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-28.5 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-22 ft bgs

Well Seal
Type: Bentonite
22-25.6 ft bgs

Filter Pack
Type: #2 Filter Sand
25.6-33.5 ft bgs

Well Screen
28.5 -33.5 ft bgs

Bottom of borehole at 33.5 feet.

AECOM SMART LOG 8X11 NO WL - WH CFFF RI IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH CFFF RI IMPLEMENTATIONV7.GPJ

WELL NUMBER W-96

AECOM

TOTAL DEPTH 30.5 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 09/17/2019 **COMPLETED** 09/17/2019
SURVEYING BY/DATE AECOM / 10-02-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 743746.78 **NORTHING** 2024643.81
DRILLING EQUIPMENT GP 8140 LS
GROUND ELEVATION 113.65 ft **CASING ELEVATION** 116.46 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
1					0.00 Silt (ML), dark yellowish brown 10YR 4/4, medium stiff, trace clay, moist	113.7
2						
3						
4					3.00 Silt (ML), dark yellowish brown 10YR 4/6, soft, micaceous, moist	110.7
5						
6						
7						
8						
9					8.00 Sand (SP), dark yellowish brown 10YR 4/6, fine grained, poorly graded, wet	105.7
10					9.00 Sand (SW), red 2.5YR 5/6, fine to medium grained, well graded, saturated	104.7
11						
12						
13						
14						
15						
16						
17					16.50 Sandy Gravel (GP), greenish gray GLEY1 6/1, little coarse grained sand, well graded, saturated	97.2
18					17.00 Clayey Silt (MH), greenish gray GLEY1 6/1, soft, low plasticity, wet	96.7 / 96.2
19					17.50 Silty Clay (CL-ML), greenish gray GLEY1 6/1, soft, high plasticity, moist	95.7
20					18.00 Sand (SW), greenish gray GLEY 1 6/1, medium to coarse grained, few gravel, well graded, saturated	
21			1.1		20.00 Sand (SP), grayish brown 5Y 5/2, fine grained, few silt, poorly graded, saturated	93.7
22					21.50 Silty Clay (CL-ML), greenish gray GLEY1 6/1, high plasticity, moist	92.2
23						
24						
25						
26			1.2		25.00 Sand (SP), greenish gray GLEY1 5/1, fine grained, poorly graded, wet	88.7
27						
28					27.50 Sand (SW), greenish gray GLEY1 5/1, fine to medium grained, well graded, wet	86.2
29			0.9			
30						

Bottom of borehole at 30.5 feet.

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-25 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-20 ft bgs

Well Seal
Type: Bentonite
20-23 ft bgs

Filter Pack
Type: #2 Filter Sand
23-30.5 ft bgs

Well Screen
25 -30 ft bgs

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-97

AECOM

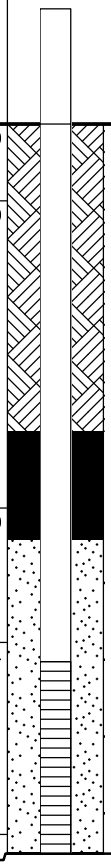
TOTAL DEPTH 19 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 09/17/2019 **COMPLETED** 09/17/2019
SURVEYING BY/DATE AECOM / 10-02-19
DRILLING CONTRACTOR Geologic Exploration
EASTING 744244.05 **NORTHING** 2024547.76
DRILLING EQUIPMENT GP 8140 LS
GROUND ELEVATION 113.92 ft **CASING ELEVATION** 116.93 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
0.00					Silt (ML), dark yellowish brown 10YR 4/4, soft, moist	113.9
2.00					Silty Clay (CL-ML), reddish brown 5YR 4/4, soft, moderate plasticity, moist	111.9
10.00					Sand (SP), very pale brown 10YR 8/4, medium grained, poorly graded, moist to wet	103.9
13.50					Sand (SP), very pale brown 10YR 8/4, medium grained, poorly graded, Saturated	100.4
18.50					Sand (SW), gray 10YR 6/1, medium to coarse grained, well graded, wet	95.4

Bottom of borehole at 19 feet.

WELL DIAGRAM



Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-14 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-8 ft bgs

Well Seal
Type: Bentonite
8-10.8 ft bgs

Filter Pack
Type: #2 Filter Sand
10.8-19 ft bgs

Well Screen
14 -19 ft bgs

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-98

AECOM

TOTAL DEPTH 27 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 01/29/2021 **COMPLETED** 01/29/2021
SURVEYING BY/DATE AECOM / 03-30-21
DRILLING CONTRACTOR SAEDACCO
EASTING 745190.42 **NORTHING** 2022894.54
DRILLING EQUIPMENT Geoprobe 8140 LS Sonic
GROUND ELEVATION 135.52 ft **CASING ELEVATION** 138.65 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
1					0.00 Sand (SW), dark reddish brown 2.5YR 3/3, fine to medium grained, few clay, dry	135.5
2					0.50 Sand (SW), strong brown 7.5YR 5/6, fine to medium, few clay, moist	135.0
3			12.7			
4						
5			0.8			
6						
7			2.2			
8					7.00 Clayey Sand (SC), reddish yellow 7.5YR 6/8 and pinkish gray 7.5YR 7/2, fine to coarse grained, trace to few angular quartz gravel, moist	128.5
9						
10			1.0			
11						
12						
13			1.3			
14					13.00 Sand (SW), reddish yellow 7.5YR 6/8 and pinkish gray 7.5YR 7/2, fine to coarse grained, little clay, moist	122.5
15			2.0			
16						
17			3.3			
18						
19					18.00 Sand (SW), reddish yellow 7.5YR 6/8 and pinkish gray 7.5YR 7/2, trace subrounded to rouned gravel, saturated	117.5
20						
21						
22						
23			4.9			
24					23.00 Sandy Clay (CL), reddish yellow 7.5YR 6/8 and pinkish gray 7.5YR 7/2, fine to medium grained, saturated	112.5
25			3.0		24.00 Clayey Sand (SC), reddish yellow 7.5YR 6/8 and pinkish gray 7.5YR 7/2, fine to medium grained, saturated	111.5
26						
27			2.8		26.00 Sand (SW), pinkish gray 7.5YR 7/2, fine to coarse grained, little silt, saturated	109.5

Bottom of borehole at 27 feet.

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-17 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-13 ft bgs

Well Seal
Type: Bentonite
13-15 ft bgs

Filter Pack
Type: #2 Filter Sand
15-27 ft bgs

Well Screen
17 -27 ft bgs

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-99

AECOM

TOTAL DEPTH 27 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 01/27/2021 **COMPLETED** 01/27/2021
SURVEYING BY/DATE AECOM / 03-30-21
DRILLING CONTRACTOR SAEDACCO
EASTING 745123.51 **NORTHING** 2023640.54
DRILLING EQUIPMENT Geoprobe 8140 LS Sonic
GROUND ELEVATION 129.78 ft **CASING ELEVATION** 133.84 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
0.00					Sandy Silt (ML), red 2.5YR 4/6 and brown 7.5YR 5/3, fine grained, moist	129.8
5.50			0.0		Sandy Clay (CL), reddish yellow 7.5 YR 6/8, red 2.5 YR 4/8 and very pale brown 10 YR 8/4, fine to medium grained, low plasticity, moist	124.3
7.00			0.1		Silty Sand (SM), white 10YR 8/1, fine to coarse grained, some angular to subangular gravel, well graded, saturated	122.8
16.00			0.3		Sand (SW), yellow 10YR 7/8, fine to coarse grained, few silt, trace subrounded gravel, coarsening downard, saturated	113.8
17.00			0.1		Sand (SW), white 10YR 8/1, medium to coarse grained, few silt, trace subrounded gravel, saturated	112.8
20.00			0.1		Sand (SW), reddish yellow 5YR 6/8, medium to coarse grained, few angular to subrounded quartz gravel, trace quartz cobbles, saturated	109.8
21.00			0.0		Clay (CH), reddish yellow 5YR 6/8 and white 10YR 8/1, few silt, highly plastic	108.8
24.50			0.0		Clayey Sand (SC), reddish yellow 5YR 6/8, fine to coarse grained, trace rounded to subrounded quartz gravel and cobbles, well graded	105.3
25.00					Clay (CL), reddish gray 10R 5/1 and reddish yellow 5YR 6/8, few silt, hard, brittle, dry	104.8
27					Bottom of borehole at 27 feet.	

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-16 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-12 ft bgs

Well Seal
Type: Bentonite
12-14 ft bgs

Filter Pack
Type: #2 Filter Sand
14-27 ft bgs

Well Screen
16 -21 ft bgs

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-100

AECOM

TOTAL DEPTH 12 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 01/28/2021 **COMPLETED** 01/28/2021
SURVEYING BY/DATE AECOM / 03-30-21
DRILLING CONTRACTOR SAEDACCO
EASTING 745126.22 **NORTHING** 2023636.36
DRILLING EQUIPMENT Geoprobe 8140 LS Sonic
GROUND ELEVATION 129.47 ft **CASING ELEVATION** 133.47 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG		MATERIAL DESCRIPTION	Elevation (ft msl)
0							
1			0.0		0.00	Sandy Silt (ML), red 2.5YR 4/6 and brown 7.5YR 5/3, fine grained, moist	129.5
2							
3							
4							
5			0.1				
6					5.50	Sandy Clay (CL), reddish yellow 7.5YR 6/8, red 2.5YR 4/8 and very pale brown 10YR 8/4, firm, fine to medium grained sand, low plasticity, moist	124.0
7			0.1				
8					7.00	Silty Sand (SM), white 10YR 8/1, fine to coarse grained, some angular to subangular gravel, well graded, saturated	122.5
9							
10			0.3				
11							
12			0.1				

Bottom of borehole at 12 feet.

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-7 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-3 ft bgs

Well Seal
Type: Bentonite
3-5 ft bgs

Filter Pack
Type: #2 Filter Sand
5-12 ft bgs

Well Screen
7 -12 ft bgs

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-101

AECOM

TOTAL DEPTH 37 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 01/28/2021 **COMPLETED** 01/28/2021
SURVEYING BY/DATE N/A
DRILLING CONTRACTOR SAEDACCO
EASTING 744767.31 **NORTHING** 2023927.34
DRILLING EQUIPMENT Geoprobe 8140 LS Sonic
GROUND ELEVATION N/A **CASING ELEVATION** N/A
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						
1					0.00 Silty Clay (CL-ML), red 2.5YR 4/8 and reddish yellow 7.5YR 6/8, few fine grained sand, low plasticity, moist	
2						
3			0.3		2.00 Sandy Clay (CL), red 2.5YR 4/8, fine grained sand, moist	
4						
5			0.2		4.00 Clayey Sand (SC), red 2.5YR 4/8, fine to medium grained, moist	
6						
7			15.0		6.00 Clayey Sand (SC), reddish yellow 7.5YR 6/8, red 2.5YR 4/8 and white 10R 8/1, fine to coarse, angular qtz, hard, dry 6-8', moist 8'-16'	
8						
9						
10			0.2			
11						
12						
13			0.1			
14						
15			0.3			
16						
17			0.3		16.00 Sand (SW), very pale brown, fine to medium grained, little silt, saturated	
18						
19						
20			1.3			
21						
22						
23			0.5			
24						
25			0.5		24.00 Sand (SW), white 2.5YR 8/1, fine to coarse, few silt, few mica, well graded, saturated	
26						
27			1.3			
28						
29						
30			0.8			
31						
32					31.00 Sand (SW), reddish yellow 5YR 6/8 and very pale brown 10YR 8/3, fine to coarse, few silt, few mica, trace angular gravel, well graded, saturated	
33			0.6		32.00 Silty Clay (CL-ML), very pale brown 10YR 7/4 and reddish yellow, high plasticity	
34						
35			0.4		34.50	

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-101

AECOM

TOTAL DEPTH 37 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
35						
36					Clayey Sand (SC), gray7.5 YR 6/1, fine to coarse, few angular to subrounded gravel	
					35.50 Clay (CL), very dark gray 7.5YR 3/1, hard, no plasticity	
37			0.7			
					37.00	
					39.00 No well installed due to clay being encountered 3.5 feet below the bottom of the screen of adjacent well W-11. Borehole abandoned with bentonite grout.	
					Bottom of borehole at 37 feet.	

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-103

AECOM

TOTAL DEPTH 44 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 01/26/2021 **COMPLETED** 01/27/2021
SURVEYING BY/DATE AECOM / 03-30-21
DRILLING CONTRACTOR SAEDACCO
EASTING 744466.69 **NORTHING** 2024483.13
DRILLING EQUIPMENT Geoprobe 8140 LS Sonic
GROUND ELEVATION 132.56 ft **CASING ELEVATION** 134.87 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
1					0.00 Silty Clay (CL-ML), reddish yellow 7.5YR 6/8 and light gray 7.5YR 7/1, low plasticity, damp	132.6
2						
3			0.2			
4						
5			0.3			
6						
7			0.2		6.50 Silty Clay (CL-ML), reddish yellow 7.5 YR 6/8 and light gray 7.5 YR 7/1, no plasticity, hard, dry	126.1
8						
9						
10			0.2			
11						
12						
13			0.4			
14						
15			0.2			
16						
17					16.00 Clayey Sand (SC), black 7.5YR 2.5/1 and gray 7.5YR 5/1, fine to medium grained, saturated	116.6
18			0.1		16.50 Clayey Sand (SC), yellowish brown, fine to coarse, trace subangular gravel, well graded, saturated	116.1
19						
20			0.1			
21						
22			0.1			
23						
24					23.00 Clay (CL), light gray 10YR 7/2, trace fine to course sand, trace gravel, low plasticity, stiff, moist	109.6
25			0.1		24.00 Clayey Sand (SC), light gray 7.5YR 7/1, fine to coarse, coarsening downward, well graded, saturated	108.6
26						
27			0.1		26.50 Clayey Sand (SC), light gray 7.5YR 7/1, fine to coarse, trace subrounded to rouned gravel, coarsening downward, well graded, saturated	106.1
28						
29						
30			0.3			
31					30.00 Clayey Sand (SC), reddish yellow 7.5YR 6/8, fine to coarse, trace subrounded to rouned gravel, trace quartz cobbles, well graded, saturated	102.6
32					31.00 Sandy Clay (CL), light gray 10YR 7/2 and reddish yellow 7.5YR 6/8, fine to medium sand	101.6
33			0.2		32.00 Sand (SP), light gray 10YR 7/2 and reddish yellow 7.5YR 6/8, fine grained, few silt, poorly graded	100.6
34						
35			0.2			

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-34.5 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-30 ft bgs

Well Seal
Type: Bentonite
30-32 ft bgs

Filter Pack
Type: #2 Filter Sand
32-44 ft bgs

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-103

TOTAL DEPTH 44 FT BGS

AECOM

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36			0.3				**Well Screen** 34.5 -39 ft bgs
37					36.00 Sand (SW), light gray 10YR 7/2 and reddish yellow 7.5YR 6/8, fine to medium grained, few silt, poorly graded	96.6	
38							
39					38.00 Sand (SW), yellowish red 5YR 6/8, fine to medium grained, few silt, poorly graded	94.6	
40					39.00 Clay (CL), white 2.5Y 8/1, transitioning to reddish yellow 5YR 6/6 to gray 5YR 5/2 to very dark gray 5YR 3/1, stiff, low plasticity	93.6	
41							
42							
43							
44							

Bottom of borehole at 44 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-104

AECOM

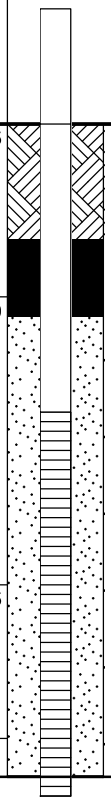
TOTAL DEPTH 17 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 01/25/2021 **COMPLETED** 01/25/2021
SURVEYING BY/DATE AECOM / 03-31-21
DRILLING CONTRACTOR SAEDACCO
EASTING 744154.72 **NORTHING** 2024875.51
DRILLING EQUIPMENT Geoprobe 8140 LS Sonic
GROUND ELEVATION 115.45 ft **CASING ELEVATION** 118.48 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
1			0.0		0.00 Silty Sand (SM), reddish yellow 7.5YR 6/8, fine grained	115.5
2						
3						
4						
5			0.0		4.50 Sandy Clay (CL), gray 10YR 5/1, fine grained sand	111.0
6						
7			0.2			
8						
9						
10			0.3			
11						
12						
13			0.0		12.00 Sand (SW), reddish yellow 7.5YR 6/8, medium to coarse grained, little silt, trace subangular quartz gravel	103.5
14						
15			0.0			
16						
17			0.0		16.00 Sand (SW), white 2.5YR 8/1, medium to coarse grained, little silt, trace subangular quartz gravel	99.5

Bottom of borehole at 17 feet.

WELL DIAGRAM



Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-7.5 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-3 ft bgs

Well Seal
Type: Bentonite
3-5 ft bgs

Filter Pack
Type: #2 Filter Sand
5-17 ft bgs

Well Screen
7.5 -17.5 ft bgs

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-105

AECOM

TOTAL DEPTH 27 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 01/26/2021 **COMPLETED** 01/26/2021
SURVEYING BY/DATE AECOM / 03-31-21
DRILLING CONTRACTOR SAEDACCO
EASTING 743843.47 **NORTHING** 2024138
DRILLING EQUIPMENT Geoprobe 8140 LS Sonic
GROUND ELEVATION 114.8 ft **CASING ELEVATION** 117.57 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
1–6			2.8		0.00 Silt (ML), strong brown 7.5YR 5/6, soft, moist	114.8
7–8			0.1		6.50 Clayey Silt (MH), strong brown 7.5YR 4/6, hard, low plasticity, dry	108.3
9–14					8.00 Silt (ML), strong brown 7.5YR 5/6 and very pale brown 10YR 7/3 and dark yellowish brown 10YR 3/6, soft, high plasticity, moist	106.8
15–17			0.1		14.00 Silty Clay (CL-ML), strong brown 7.5YR 5/6 and very pale brown 10YR 7/3 and dark yellowish brown 10YR 3/6, soft, high plasticity, moist	100.8
18–19					17.00 Sand (SP), greenish gray GLEY1 5/1, fine grained, few silt, micaceous, poorly graded, saturated	97.8
20–21			0.1		19.50 Silty Sand, greenish gray GLEY1 5/1, fine grained, micaceous, saturated	95.3
22–24			0.1		21.50 Sand (SP), greenish gray GLEY1 5/1, fine grained, few silt, micaceous, poorly graded, saturated	93.3
25–27			0.2 0.4		24.00 Clay (CL), very dark gray 5Y 3/1, little silt, few fine grained sand, trace mica, highly plastic, soft	90.8

Bottom of borehole at 27 feet.

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-14 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-10 ft bgs

Well Seal
Type: Bentonite
10-12 ft bgs

Filter Pack
Type: #2 Filter Sand
12-27 ft bgs

Well Screen
14 -24 ft bgs

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-106

AECOM

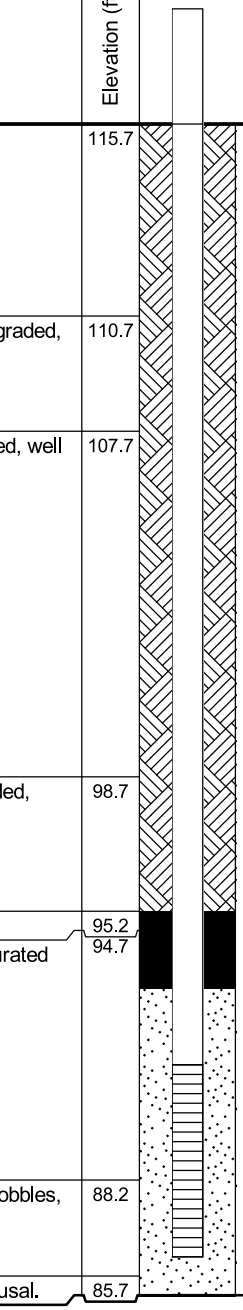
TOTAL DEPTH 30.5 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 02/15/2021 **COMPLETED** 02/15/2021
SURVEYING BY/DATE AECOM / 03-30-21
DRILLING CONTRACTOR Elite Techniques
EASTING 744431.55 **NORTHING** 2023371.32
DRILLING EQUIPMENT Geoprobe 7822 DT
GROUND ELEVATION 115.68 ft **CASING ELEVATION** 118.69 ft
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0.00					Clayey Sand (SC), yelowish red 5YR 4/6, fine to medium grained, well graded, moist	115.7
5.00					Clayey Sand (SC), yelowish red 5YR 4/6, fine to coarse grained, well graded, moist to saturated	110.7
8.00					Clayey Sand (SC), dark grayish brown 2.5Y 4/2, fine to medium grained, well graded, saturated	107.7
17.00					Sand (SW), grayish brown 2.5Y 5/2, fine to medium grained, well graded, saturated	98.7
20.50					Clay (CH), dark gray 5Y 4/1, soft, highly plastic, saturated	95.2
21.00					Sand (SW), dark gray 5Y 4/1, fine to coarse grained, well graded, saturated	94.7
27.50					Sand (SW), dark gray 5Y 4/1, fine to coarse grained, few gravel and cobbles, well graded, saturated	88.2
30.00					Clay (CL), very dark gray 10YR 3/1, stiff, low plasticity, dry. Probe refusal.	85.7

Bottom of borehole at 30.5 feet.

WELL DIAGRAM



Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-24.5 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-20.5 ft bgs

Well Seal
Type: Bentonite
20.5-22.5 ft bgs

Filter Pack
Type: #2 Filter Sand
22.5-30.5 ft bgs

Well Screen
24.5 -29.5 ft bgs

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-107

AECOM

TOTAL DEPTH 42 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 01/25/2021 **COMPLETED** 01/25/2021
SURVEYING BY/DATE AECOM / 04-01-21
DRILLING CONTRACTOR SAEDACCO
EASTING 744034.11 **NORTHING** 2023252.18
DRILLING EQUIPMENT Geoprobe 8150 LS Sonic
GROUND ELEVATION 112.27 ft **CASING ELEVATION** 115.23 ft
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
1					0.00 Silty Clay (CL-ML), brown 7.5YR 4/4, little silt, soft	112.3
2						
3			0.0		2.50 Silty Clay (CL-ML), brown 7.5YR 4/4, some silt, soft	109.8
4						
5						
6			0.1		5.00 Silt (ML), dark yellowish brown 10YR 4/4, few clay, soft, wet	107.3
7						
8			0.1		7.00 Silt (ML), yellowish brown 10YR 5/4, few clay, few fine sand, soft, saturated	105.3
9						
10			0.1			
11						
12			0.1		11.00 Silty Sand (SM), yellowish brown 10YR 5/4, fine grained, little silt, poorly graded, saturated	101.3
13					12.50 Sand (SP), light gray 10YR 7/1, fine grained, poorly graded, saturated	99.8
14			0.1			
15					14.00 Sand (SP), light gray 10YR 7/1, medium grained, poorly graded, saturated	98.3
16			0.1		15.00 Silty Sand (SM), dark gray 10YR 4/1, fine grained, little silt, few dark organic material, saturated	97.3
17						
18					17.00 Sand (SW), gray 10YR 5/1, fine to medium grained, well graded, saturated	95.3
19			0.1			
20					19.50 Sand (SW), gray 10YR 5/1, medium to coarse grained, few gravel, well graded, saturated	92.8
21			0.2			
22					21.50 Sand (SW), light yellowish brown 10YR 6/4, medium to coarse grained, few gravel, well graded, saturated	90.8
23			0.3			
24						
25						
26						
27						
28			0.2		27.00 Sand (SP), gray 10YR 6/1, medium grained, poorly graded, saturated	85.3
29						
30						
31			0.3			
32					31.50 Sand (SW), gray 10YR 6/1, medium to coarse grained, few gravel, well graded, saturated	80.8
33			0.2			
34			0.2			
35					34.00 Clay (CH), gray 10YR 5/1, very stiff, high plasticity, moist	78.3

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-29 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-24 ft bgs

Well Seal
Type: Bentonite
24-26 ft bgs

Filter Pack
Type: #2 Filter Sand
26-36 ft bgs

Well Screen
29 -34 ft bgs

(Continued Next Page)

AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-107

AECOM

TOTAL DEPTH 42 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36							**Well Seal** Type: Bentonite 36-42 ft bgs
37							
38							
39					38.00 Clay (CL), very dark gray 10YR 3/1, very stiff, moderate plasticity, damp	74.3	
40							
41							
42							

Bottom of borehole at 42 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-108

AECOM

TOTAL DEPTH 35 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 01/28/2021 **COMPLETED** 01/28/2021
SURVEYING BY/DATE AECOM / 04-01-21
DRILLING CONTRACTOR SAEDACCO
EASTING 743611.35 **NORTHING** 2023295.23
DRILLING EQUIPMENT Geoprobe 8150 LS Sonic
GROUND ELEVATION 111.93 ft **CASING ELEVATION** 115.41 ft
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0.00			0.0		Silty Clay (CL-ML), dark brown 10YR 4/4, little silt, soft, damp	111.9
2.00			0.0		Clayey Silt (ML), dark yellowish brown 10YR 4/4, soft, little clay, moist	109.9
5.00			0.0		Silt (ML), dark yellowish brown 10YR 4/4, few clay, soft, moist	106.9
8.00			0.1		Silt (ML), yellowish brown 10YR 5/4, soft, saturated	103.9
12.00			0.0		Silty Sand (SM), brownish yellow 10YR 6/6, fine grained, little silt, saturated	99.9
13.50			0.0		Sand (SP), very pale brown 10YR 7/3, fine grained, few silt, poorly graded, saturated	98.4
15.00			0.0		Sand (SW), very pale brown 10YR 7/3, fine to coarse grained, well graded, saturated	96.9
17.00			0.0		Sand (SW), gray 10YR 5/1, medium to coarse grained, well graded, saturated	94.9
20.00			0.0		Silty Clay (CL-ML), dark gray 10YR 4/1, very soft, little silt, high plasticity, well	91.9
21.50			0.0		Sandy Silt (ML) dark gray 10YR 4/1, some fine sand, soft, saturated	90.4
23.25			0.0		Silty Clay (CL-ML), very dark gray 10YR 3/1, some silt, soft, wet	88.7
23.50			0.0		Sand (SW), gray 10YR 5/1, fine to medium grained, few silt, well graded, saturated	88.4
27.00			0.0		Sand (SW), gray 10YR 6/1, medium to coarse grained, well graded, saturated	84.9
31.00			0.0		Sand (SW), gray 10YR 6/1, medium to coarse grained, few gravel, few rounded cobbles, well graded, saturated	80.9
32.00			0.0		Clay (CH), gray 7.5YR 5/1, stiff, high plasticity, moist	79.9

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-27 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-24 ft bgs

Well Seal
Type: Bentonite
24-26 ft bgs

Filter Pack
Type: #2 Filter Sand
26-35 ft bgs

Well Screen
27 -32 ft bgs

Bottom of borehole at 35 feet.

AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-109

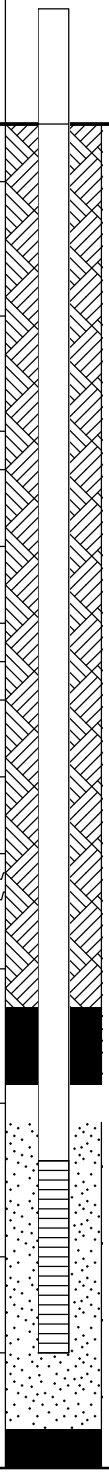
AECOM

TOTAL DEPTH 37 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 01/28/2021 **COMPLETED** 01/28/2021
SURVEYING BY/DATE AECOM / 04-01-21
DRILLING CONTRACTOR SAEDACCO
EASTING 743731.82 **NORTHING** 2022981.06
DRILLING EQUIPMENT Geoprobe 8150 LS Sonic
GROUND ELEVATION 112.81 ft **CASING ELEVATION** 115.68 ft
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0.00					Silty Clay (CL-ML), dark brown 7.5YR 3/2, little silt, soft, damp	112.8
1.50			0.0		Clayey Silt (MH), dark yellowish brown 10YR 4/6, little clay, soft, moist	111.3
5.00			0.0		Clayey Silt (MH), yellowish brown 10YR 5/4, little clay, soft, moist	107.8
8.00			0.0		Sandy Silt (ML), dark yellowish brown 10YR 4/4, soft, moist	104.8
9.00			0.0		Silt (ML), yellowish brown 10YR 5/6, soft, saturated	103.8
11.00			0.0		Silty Sand (SM), yellowish brown 10YR 5/4, fine grained, some silt, saturated	101.8
13.00			0.0		Silty Sand (SM), light yellowish brown 10YR 6/4, fine grained, little silt, saturated	99.8
14.00			0.6		Sand (SP), light yellowish brown 10YR 6/4 to gray 10YR 5/1, fine grained, few silt, poorly graded, saturated	98.8
15.00					Wood, grayish olive 10Y-5GY 5/2, soft, wet	97.8
17.00			0.1		Sand (SW), light yellowish brown 10YR 6/4, fine to medium grained, few silt, well graded, saturated	95.8
19.00			0.1		Sand (SW), gray 10YR 5/1, fine to coarse grained, well graded, saturated	93.8
19.50					Wood	93.3
20.00			0.0		Sand (SW), gray 10YR 5/1, fine to medium grained, well graded, saturated	92.8
22.00			0.1		Sand (SW), gray 10 YR 5/1, fine to coarse grained, well graded, saturated	90.8
25.50			0.1		Sand (SW), light gray 2.5Y 7/1, fine to medium grained, well graded, saturated	87.3
29.50			0.1		Sand (SW), gray 2.5Y 6/1, fine to coarse grained, few gravel, well graded, saturated	83.3
32.00					Clay (CH), very dark gray 10YR 3/1, very stiff, high plasticity, damp	80.8

WELL DIAGRAM



Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-27 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-25 ft bgs

Well Seal
Type: Bentonite
23-25 ft bgs

Filter Pack
Type: #2 Filter Sand
26-34 ft bgs

Well Screen
27 -32 ft bgs

Well Seal
Type: Bentonite

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-109

AECOM

TOTAL DEPTH 37 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36							34-37 ft bgs
37							

Bottom of borehole at 37 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-110

AECOM

TOTAL DEPTH 37 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 01/27/2021 **COMPLETED** 01/27/2021
SURVEYING BY/DATE AECOM / 04-01-21
DRILLING CONTRACTOR SAEDACCO
EASTING 744051.95 **NORTHING** 2022508.26
DRILLING EQUIPMENT Geoprobe 8150 LS Sonic
GROUND ELEVATION 113.21 ft **CASING ELEVATION** 116.42 ft
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
1					0.00 Silt (ML), yellowish brown 10YR 5/4, soft, saturated	113.2
2						
3						
4						
5						
6			0.0		5.50 Sandy Silt (ML), brown 10YR 5/4, little fine sand, saturated	107.7
7						
8			0.1			
9						
10			0.2			
11						
12			0.3		11.00 Silty Sand (SM), dark yellowish brown 10YR 4/4, fine grained, some silt, saturated	102.2
13						
14			0.3			
15					14.50 Sand (SP), light yellowish brown 10YR 6/4, fine grained, poorly graded, saturated	98.7
16			0.3			
17			0.6		16.00 Sand (SW), very pale brown 10YR 7/3, fine to medium grained, well graded, saturated	97.2
18			0.2		17.00 Sand (SP), yellowish brown 10YR 5/4, fine grained, poorly graded, saturated	96.2
19			0.3			
20			0.2			
21					20.00 Sand (SW), light yellowish brown 2.5Y 6/3, fine to medium grained, trace mica, well graded, saturated	93.2
22			0.2			
23						
24			0.2			
25						
26			0.4		25.00 Sand (SW), light olive brown 2.5Y 5/3, fine to coarse grained, well graded, subangular, saturated	88.2
27						
28			0.4		27.00 Sand (SW), pale brown 10YR 6/3, medium to coarse grained, few gravel, well graded, saturated	86.2
29						
30			0.8		29.00 Sand (SW), gray 10YR 6/1, fine to medium grained, trace cobbles, well graded	84.2
31					30.00 Sand and Gravel and Cobbles (GW), gray 10YR 6/1, medium grained to cobbles, well graded, saturated	83.2
32			1.8			
33			0.0		32.00 Sand (SW), pale brown 10YR 6/3, medium to coarse grained, trace cobbles, well graded, saturated	81.2
34			0.1		33.00 Sand (SW), gray 10YR 5/1, fine to medium grained, trace rounded cobbles, well graded, saturated	80.2
35					34.00	79.2

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-29 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-24.5 ft bgs

Well Seal
Type: Bentonite
24.5-27 ft bgs

Filter Pack
Type: #2 Filter Sand
27-37 ft bgs

Well Screen
29 -34 ft bgs

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-110

AECOM

TOTAL DEPTH 37 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36					Clayey Silt (MH), gray 10YR 5/1, few clay, occassional gray clay leases, soft		
37							

Bottom of borehole at 37 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-111

AECOM

TOTAL DEPTH 82 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 01/26/2021 **COMPLETED** 01/26/2021
SURVEYING BY/DATE AECOM / 04-01-21
DRILLING CONTRACTOR SAEDACCO
EASTING 744378.27 **NORTHING** 2022564.93
DRILLING EQUIPMENT Geoprobe 8150 LS Sonic
GROUND ELEVATION 113.68 ft **CASING ELEVATION** 116.92 ft
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 6
LOGGED BY Scott Ross **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
1					0.00 Silt (ML), strong brown 7.5YR 5/6, mostly silt, few clay, trace fine mica	113.7
2						
3						
4						
5			0.0			
6						
7			0.0			
8					7.00 Silt (ML), strong brown 7.5YR 5/6, mostly silt, few clay, trace fine mica, wet	106.7
9			0.0			
10			0.6		9.00 Silt with Sand (ML/SM), strong brown 7.5YR 5/6, some silt, little fine sand, loose, wet	104.7
11						
12			0.0			
13					12.00 Silty Sand (SP/SM), yellowish red 5YR 5/8, mostly fine sand, some silt, trace mica, trace fine white feldspar, loose, wet	101.7
14			0.0			
15						
16			0.0			
17					16.00 Sand (SP), yellowish red 5YR 5/3, trace fine feldspar	97.7
18						
19						
20			0.8			
21			0.0		20.00 Sand (SP), very pale brown 10YR 7/3, mostly quartz medium sand, few silt, trace feldspathic sand, loose, wet	93.7
22						
23			0.0			
24					23.00 Sand (SP), light gray 5Y 7/1, trace medium to fine gravel, loose, wet	90.7
25						
26						
27			0.0			
28						
29			0.0		28.00 Silty Sand (SM), light gray 5Y 7/1, mostly fine to very fine, some silt, trace mica, intermittent cemented layers (1-2 cm thick), dense, moist	85.7
30						
31						
32			1.6			
33						
34						
35			0.6			

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-76 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-71.5 ft bgs

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-111

AECOM

TOTAL DEPTH 82 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36			3.7				
37							
38							
39							
40			0.1		39.00 Silt with Sand (ML), light gray 5Y 7/1, mostly silt, some fine to very fine sand, stiff, moist	74.7	
41							
42			0.0				
43							
44							
45							
46			0.0		45.00 Sand (SP), light gray 5Y 7/1, mostly medium sand, few silt, loose, wet	68.7	
47							
48					47.00 Silty Sand (SM), light gray 5Y 7/1, mostly medium sand, little silt, trace fine mica, medium dense, moist	66.7	
49							
50			0.0				
51							
52			0.0		51.00 Silty Sand (SM), light gray 5Y 7/1, mostly medium sand, little silt trace fine mica, with intermittent thin (2-3 cm) light gray silty clay (ML/CL) layers, medium dense, moist	62.7	
53							
54							
55			0.0		54.00 Silty Sand (SM), gray 5Y 6/1, mostly medium sand, little silt, trace fine mica, with intermittent thin (2-3 cm) light gray silty clay (ML/CL) layers, medium dense, moist	59.7	
56							
57			0.2				
58							
59			0.0		58.50 Silty Clay (ML/CL), gray 5Y 6/1, wet, medium stiff, mostly silt, few clay	55.2	
60					59.00 Silty Sand (SM), gray 5Y 6/1, mostly medium to fine sand, some silt, trace mica, medium dense, wet	54.7	
61			0.2				
62							
63							
64			0.6				
65							
66					65.00 Silty Sand (SM), gray 5Y 6/1, mostly medium to fine sand, some silt, trace mica, thin 2-3 cm layer of dark gray to black organic material at 65', medium dense, wet	48.7	
67			0.0				
68					67.00 Sand (SP), gray 5Y 6/1, mostly medium sand, few silt, trace very fine mica, loose, wet	46.7	
69							
70			0.2				
71			0.2				
72					71.00 Sand (SP), gray 5Y 6/1, mostly fine to very fine sand, few silt, trace very fine mica, loose, wet	42.7	**Well Seal** Type: Bentonite 71.5-74 ft bgs
73			0.2				
74			1.4		73.00 Sand (SP), light gray GLEY1 7/1, mostly fine sand, little silt, loose, wet	40.7	**Filter Pack** Type: #2 Filter Sand
75							

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-111

AECOM

TOTAL DEPTH 82 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
75							
76			0.2				74-82 ft bgs
77							**Well Screen**
78			0.2		77.00 Sand (SP), light gray GLEY1 8/1, mostly medium sand, few coarse sand, loose, wet	36.7	76 -81 ft bgs
79							
80							
81			0.0				
82					81.00 Silty Clay (ML/CL) gray GLEY1 6/1, some silt, some clay, very stiff, dry	32.7	

Bottom of borehole at 82 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-112

AECOM

TOTAL DEPTH 37 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 01/27/2021 **COMPLETED** 01/27/2021
SURVEYING BY/DATE AECOM / 04-01-21
DRILLING CONTRACTOR SAEDACCO
EASTING 744101.62 **NORTHING** 2022027.51
DRILLING EQUIPMENT Geoprobe 8150 LS Sonic
GROUND ELEVATION 112.93 ft **CASING ELEVATION** 116.07 ft
DRILLING METHOD Geoprobe
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
1					0.00 Silt (ML), dark yellowish brown 10YR 4/4, few clay, soft, moist	112.9
2					1.50 Clayey Silt (MH), yellowish brown 10YR 5/4, little clay, soft, moist	111.4
3						
4						
5						
6						
7			0.0			
8						
9			0.0		8.50 Silt (ML), yellowish brown 10YR 5/4, soft, few clay, moist	104.4
10						
11			0.0		10.00 Silty Sand (SM) light olive brown 2.5Y 5/3, fine grained, little silt, wet	102.9
12			0.0			
13			0.1			
14					13.00 Sand (SP), gray 2.5Y 5/1, fine grained, few silt, poorly graded, saturated	99.9
15			0.1			
16					15.00 Sand (SP), gray 2.5Y 5/1, fine grained, poorly graded, saturated	97.9
17			0.1			
18			0.1		17.00 Sand (SP), gray 10YR 6/1, fine grained, poorly graded, saturated	95.9
19						
20			0.2			
21					20.00 Sand (SW), gray 10YR 6/1, fine to medium grained, well graded, saturated	92.9
22			0.2			
23					22.00 Sand and Gravel (SW-GW), gray 10YR 7/1, medium grained to gravel, trace cobbles, well graded, saturated	90.9
24			0.2			
25						
26			0.2		25.00 Sand (SW), gray 10YR 7/1, fine to coarse grained, trace cobbles, well graded, saturated	87.9
27						
28			0.3			
29						
30			0.2		29.00 Sand (SW), light gray 10YR 7/1, fine to medium gravel, well graded, saturated	83.9
31						
32			0.2			
33			0.1		31.50 Sand and Gravel (SW-GW), light gray 10YR 7/1, medium grained to gravel, well graded, saturated	81.4
					32.50	80.4
34					Sand and Gravel and Cobbles (SW-GW), light gray 10YR 7/1, medium grained to cobbles, well graded, saturated	
					33.50	79.4
35					Clay (CH), black 10YR 2/1, very stiff, moderate plasticity, damp	

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-29 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-27 ft bgs

Well Seal
Type: Bentonite
24-27 ft bgs

Filter Pack
Type: #2 Filter Sand
27-37 ft bgs

Well Screen
29 -34 ft bgs

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-112

AECOM

TOTAL DEPTH 37 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36							
37							

Bottom of borehole at 37 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-113

AECOM

TOTAL DEPTH 39 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 07/28/2021 **COMPLETED** 07/28/2021
SURVEYING BY/DATE AECOM / 08-20-21
DRILLING CONTRACTOR SAEDACCO
EASTING 746811.2 **NORTHING** 2024004.27
DRILLING EQUIPMENT Geoprobe 8140 LS Sonic
GROUND ELEVATION 135.65 ft **CASING ELEVATION** 138.55 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
1			0.0		0.00 Sandy Silt (ML), light brownish gray 10YR 6/2 and brownish yellow 10YR 6/8, fine grained sand, moderate plasticity, moist	135.7
2					1.50 Silty Clay (CL-ML), gray 10YR 6/1 and brownish yellow 10YR 6/8, few fine grained sand, stiff, moderate plasticity, dry	134.2
3			0.6			
4					3.00 Silty Sand (SM), gray 10YR 6/1 and brownish yellow 10YR 6/8, fine to medium grained, dry	132.7
5			0.0		4.50 Silty Sand (SM), gray 10YR 6/1 and brownish yellow 10YR 6/8, fine to coarse grained, dry	131.2
6						
7			0.0		6.00 Sandy Clay (CH), white 10YR 8/1 and gray 10YR 6/1, fine to medium grained, moderate plasticity, moderately stiff, moist	129.7
					6.50	129.2
8					7.50 Clayey Sand (SC), gray 10YR 6/1, fine to medium grained, moist	128.2
9					Sand (SW), gray 10YR 6/1 and very pale brown 10YR 7/3, fine to coarse grained, coarsening downward, saturated at 10'	
10			0.0			
11						
12					11.50 Sand (SW), gray 10YR 6/1 and very pale brown 10YR 7/3, fine to coarse grained, trace subangular to subrounded gravel, coarsening downward, saturated	124.2
13			0.0		12.50	123.2
14					13.50 Sand (SW), gray 10YR 6/1 and very pale brown 10YR 7/3, fine to coarse grained, few subangular to subrounded gravel, coarsening downward, saturated	122.2
15			0.0			
16					15.50 Sand (SW), gray 10YR 6/1 and very pale brown 10YR 7/3, fine to coarse grained, little subangular to subrounded gravel, coarsening downward, saturated	120.2
17			0.0		16.50	119.2
18					17.50 Sand (SW), gray 10YR 6/1 and very pale brown 10YR 7/3, fine to coarse grained, some subangular to subrounded gravel, coarsening downward, saturated	118.2
19					18.50	117.2
20			0.0		Clayey Silt (MH), dark gray 10YR 4/1 and black 10YR 2/1, trace wood pieces, soft, high plasticity	
21					Silty Sand (SM), gray 5Y 6/1, fine grained	
22			0.0		Sand (SW), light gray 10YR 7/2, fine to coarse grained, coarsening downward, trace to few subangular to subrounded gravel, little to few silt	
23						
24					23.00 Gravel, (GW), white 10 YR 8/1, little fine to coarse sand, little silt, subangular to subrounded	112.7
25			0.0			
26						
27						
28			0.0			
29						
30			0.0			
31						
32			0.0			
33						
34					33.50 Sand (SW), white 5Y 8/1, fine to medium grained, little silt	102.2
35			0.0			

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-31 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-27 ft bgs

Well Seal
Type: Bentonite
27-29 ft bgs

Filter Pack
Type: #2 Filter Sand
29-39 ft bgs

Well Screen
31 -36 ft bgs

(Continued Next Page)

AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-113

AECOM

TOTAL DEPTH 39 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36					35.50 Sand (SW), pale brown 2.5Y 7/3, fine to coarse, few silt, well graded	100.2	
37					36.00 Clay (CH), dark gray 10YR 4/1, stiff, low plasticity	99.7	
38							
39							

Bottom of borehole at 39 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-114

AECOM

TOTAL DEPTH 20 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 07/29/2021 **COMPLETED** 07/29/2021
SURVEYING BY/DATE AECOM / 08-20-21
DRILLING CONTRACTOR SAEDACCO
EASTING 746806.04 **NORTHING** 2024001.48
DRILLING EQUIPMENT Geoprobe 8140 LS Sonic
GROUND ELEVATION 135.54 ft **CASING ELEVATION** 138.75 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
					0.00 Sandy Silt (ML), light brownish gray 10YR 6/2 and brownish yellow 10YR 6/8, moderate plasticity, fine grained sand, moist	135.5
					1.50 Silty Clay (CL-ML), gray 10YR 6/1 and brownish yellow 10YR 6/8, stiff, moderate plasticity, few fine grained sand, dry	134.0
					3.00 Silty Sand (SM), gray 10YR 6/1 and brownish yellow 10YR 6/8, fine to medium grained, dry	132.5
					4.50 Silty Sand (SM), gray 10YR 6/1 and brownish yellow 10YR 6/8, fine to coarse grained, dry	131.0
					6.00 Sandy Clay (CH), white 10YR 8/1 and gray 10YR 6/1, fine to medium grained, moderate plasticity and stiffness, moist	129.5
					6.50	129.0
					7.50 Clayey Sand (SC), gray 10YR 6/1, fine to medium grained, moist	128.0
					Sand (SW), gray 10YR 6/1 and very pale brown 10YR 7/3, fine to coarse grained, coarsening downward, saturated at 10'	
					11.50 Sand (SW), gray 10YR 6/1 and very pale brown 10YR 7/3, fine to coarse grained, trace subangular to subrounded gravel, coarsening downward, saturated	124.0
					12.50	123.0
					13.50 Sand (SW), gray 10YR 6/1 and very pale brown 10YR 7/3, fine to coarse grained, few subangular to subrounded gravel, coarsening downward, saturated	122.0
					15.50 Sand (SW), gray 10YR 6/1 and very pale brown 10YR 7/3, fine to coarse grained, little subangular to subrounded gravel, coarsening downward, saturated	120.0
					16.50	119.0
					17.50 Sand (SW), gray 10YR 6/1 and very pale brown 10YR 7/3, fine to coarse grained, some subangular to subrounded gravel, coarsening downward, saturated	118.0
					18.50	117.0
					Clayey Silt (MH), dark gray 10YR 4/1 and black 10YR 2/1, trace wood pieces, soft, high plasticity	
					Silty Sand (SM), gray 5Y 6/1, fine grained	
					Sand (SW), light gray 10YR 7/2, fine to coarse grained, coarsening downward, trace to few subangular to subrounded gravel, few silt	
					Bottom of borehole at 20 feet.	

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-10 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-6 ft bgs

Well Seal
Type: Bentonite
6-8 ft bgs

Filter Pack
Type: #2 Filter Sand
8-20 ft bgs

Well Screen
10 -20 ft bgs

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-115

AECOM

TOTAL DEPTH 50 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 07/27/2021 **COMPLETED** 07/27/2021
SURVEYING BY/DATE AECOM / 08-20-21
DRILLING CONTRACTOR SAEDACCO
EASTING 746784.3 **NORTHING** 2023435.8
DRILLING EQUIPMENT Geoprobe 8140 LS Sonic
GROUND ELEVATION 139.06 ft **CASING ELEVATION** 141.71 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
					0.00 Silty Sand (SM), light brown 7.5YR 6/4, fine grained, dry	139.1
					0.50 Clayey Silt (MH), reddish yellow 7.5YR 6/8 and red 7.5YR 4/8, trace fine grained sand, stiff, dry	138.6
					3.00 Clayey Silt (MH), light gray 5YR 7/1 and yellowish red 5YR 5/8, few fine grained sand, dry	136.1
					5.00 Silty Sand (SM), very pale brown 10YR 8/3, fine to medium grained, some feldspar, dry	134.1
					8.50 Silty Sand (SM), reddish yellow 7.5YR 5/8 and very pale brown 10YR 8/4, fine to coarse grained	130.6
					12.00 Sand (SP), very pale brown 10YR 8/3, fine grained, few silt, trace mica, poorly graded, coarsening downward	127.1
					13.00 Sand (SW), very pale brown 10YR 8/3, fine to medium grained, few silt, trace mica, well graded, coarsening downward	126.1
					14.00 Sand (SW), very pale brown 10YR 8/3, fine to coarse grained, few silt, trace mica, well graded, coarsening downward	125.1
					15.00 Sand (SP), very pale brown 10YR 8/3, coarse grained, few silt, trace mica, trace angular gravel, poorly graded,	124.1
					15.25 Sand (SW), very pale brown 10YR 8/3, fine to coarse grained, few silt, trace mica, well graded	123.8
					16.00 Sand (SW), very pale brown 10YR 8/3, fine grained, few subangular to subrounded gravel, few silt, trace mica, well graded	123.1
					16.50 Silt (MH), light gray 2.5Y 7/2, little fine grained sand, few clay, highly plastic	122.6
					17.00 Sand (SW), light gray 10YR 7/1, fine to medium grained, few silt, trace mica, coarsening downward	122.1
					19.50 Sand (SW), light gray 10YR 7/1, fine to coarse grained, few silt, trace subangular gravel, trace mica	119.6
			0.1		24.00 Sand (SW), light gray 7.5YR 7/1, fine to coarse grained, some small angular to subangular gravel, little silt, well graded	115.1
			0.3			
			0.7			
			0.2		29.00 Sand (SW), very pale brown 10YR 8/4, fine to coarse grained, few angular to subangular small gravel, few silt, coarsening downward	110.1
			0.2			
			1.4		34.00 Sand (SW), white 7.5YR 8/1, fine to coarse grained, little angular to	105.1

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-40.5 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-36 ft bgs

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-115

AECOM

TOTAL DEPTH 50 FT BGS
PAGE 2 OF 2

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36			0.8		subangular small gravel, few silt		
37							
38							
39			0.2				
40							
41							
42			0.2				
43							
44							
45			0.1		44.00 Sand (SW), reddish yellow 7.5YR 7/8, fine to coarse, little subangular to subrounded gravel, few silt	95.1	
46					45.00 Silty Clay (CL), dark gray 7.5YR 4/1, stiff, low plasticity	94.1	
47							
48							
49							
50							

Bottom of borehole at 50 feet.

Well Seal
Type: Bentonite
36-38 ft bgs

Filter Pack
Type: #2 Filter Sand
38-50 ft bgs

Well Screen
40.5 -45.5 ft bgs

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-116

AECOM

TOTAL DEPTH 20 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 07/26/2021 **COMPLETED** 07/26/2021
SURVEYING BY/DATE AECOM / 08-20-21
DRILLING CONTRACTOR SAEDACCO
EASTING 746778.95 **NORTHING** 2023433.25
DRILLING EQUIPMENT Geoprobe 8140 LS Sonic
GROUND ELEVATION 138.99 ft **CASING ELEVATION** 141.91 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
0.00					Silty Sand (SM), light brown 7.5YR 6/4, fine grained, dry	139.0
0.50					Clayey Silt (MH) reddish yellow 7.5YR 6/8 and red 7.5YR 4/8, trace fine grained sand, stiff, dry	138.5
			3.2			
3.00					Clayey Silt (MH), light gray 5YR 7/1 and yellowish red 5YR 5/8, few fine sand, dry	136.0
			1.6			
5.00					Silty Sand (SM), very pale brown 10YR 8/3 and reddish yellow 5YR 6/8, fine to medium grained, some feldspar, dry	134.0
			0.0			
8.50					Silty Sand (SM) reddish yellow 7.5YR 5/8 and very pale brown 10YR 8/4, fine to coarse grained	130.5
			1.1			
12.00			0.0		Sand (SP), very pale brown 10YR 8/3, fine grained, few silt, trace mica, poorly graded, coarsening downward	127.0
13.00					Sand (SW), very pale brown 10YR 8/3, fine to medium grained, few silt, trace mica, well graded	126.0
14.00			0.0		Sand (SW), very pale brown 10YR 8/3, fine to coarse grained, few silt, trace mica, well graded	125.0
15.00					Sand (SP), very pale brown 10YR 8/3, very coarse grained, trace angular gravel, poorly graded	124.0
15.25					Sand (SW), very pale brown 10YR 8/3, fine to coarse grained, few silt, trace mica, well graded	123.7
16.00					Sand (SW), very pale brown 10YR 8/3, fine to coarse grained, few subangular to subrounded gravel, well graded	123.0
16.50			0.0		Silt (MH), light gray 2.5Y 7/2, little fine grained sand, few clay, highly plastic	122.5
17.00					Sand (SW), light gray 10YR 7/1, fine to medium grained, few silt, trace mica	122.0
19.50			0.0		Sand (SW), light gray 10YR 7/1, fine to coarse grained, few silt, trace mica, trace subangular gravel	119.5
20					Bottom of borehole at 20 feet.	

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-10 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-6 ft bgs

Well Seal
Type: Bentonite
6-8 ft bgs

Filter Pack
Type: #2 Filter Sand
8-20 ft bgs

Well Screen
10 -20 ft bgs

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-117

AECOM

TOTAL DEPTH 47 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 07/27/2021 **COMPLETED** 07/28/2021
SURVEYING BY/DATE AECOM / 08-20-21
DRILLING CONTRACTOR SAEDACCO
EASTING 746432.66 **NORTHING** 2023237.7
DRILLING EQUIPMENT Geoprobe 8140 LS Sonic
GROUND ELEVATION 140.82 ft **CASING ELEVATION** 143.76 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
1					0.00 Clay (CH), yellowish brown 10YR 5/6 to gray 10YR 6/1 and red 10R 4/8, mottled, few silt, medium stiff, moderate plasticity	140.8
2						
3			0.2			
4						
5			0.6		4.00 Silty Clay (CL-ML), light gray 10YR 7/2 and reddish yellow 7.5YR 6/8, medium stiff, few fine sand	136.8
6						
7			2.6			
8						
9						
10			0.5			
11						
12			2.5		12.00 Sand (SP), white 10YR 8/1, fine grained, few silt, trace mica, poorly graded	128.8
13						
14						
15			0.4			
16					15.50 Sand (SW), white 7.5YR 8/1, fine to coarse grained, few subangular to subrounded gravel, coarsening downward	125.3
17			0.2			
18						
19						
20			0.2		20.00 Sand (SW), white 7.5YR 8/1, fine to coarse grained, some gravel	120.8
21					21.00 Sand (SW), white 7.5YR 8/1, fine to coarse grained, few subangular to subrounded gravel, coarsening downward	119.8
22						
23						
24						
25					25.00 Silty Sand (SM), light gray 2.5Y 7/1, fine to medium grained, trace mica	115.8
26					26.00 Sand (SW), pale brown 10YR 6/3, fine to coarse grained, few silt, few angular gravel, well graded	114.8
27					27.00 Sand (SP), very pale brown 10YR 7/4, fine grained, some silt, poorly graded	113.8
28						
29						
30						
31						
32						
33						
34						
35					34.50	

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-39 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-35 ft bgs

Well Seal

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AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-117

AECOM

TOTAL DEPTH 47 FT BGS
PAGE 2 OF 2

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36					Silty Clay (CL-ML), reddish yellow 7.5YR 6/8 and light gray 7.5YR 7/1, medium stiff, high plasticity	106.3	Type: Bentonite 35-37 ft bgs
37					37.00		
38					Sand (SW), white 10YR 8/1, fine to coarse grained, few silt, few subangular to subrounded gravel, well graded	103.8	**Filter Pack** Type: #2 Filter Sand 37-47 ft bgs
39							
40					39.50 Sand (SW), pale brown 2.5Y 8/2, fine to coarse grained, few silt, few subangular to subrounded gravel, well graded	101.3	
41							**Well Screen** 39 -44 ft bgs
42							
43							
44					43.50 Silty Sand (SM), reddish yellow 7.5YR 6/8, fine to coarse grained, little angular gravel, well graded	97.3	
45					44.00	96.8	
46					Silty Clay (CL-ML), light gray 5YR 5/1 and reddish yellow 5YR 6/8, stiff, low plasticity		
47							

Bottom of borehole at 47 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-118

AECOM

TOTAL DEPTH 29 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 07/28/2021 **COMPLETED** 07/28/2021
SURVEYING BY/DATE AECOM / 08-20-21
DRILLING CONTRACTOR SAEDACCO
EASTING 746437.24 **NORTHING** 2023241.08
DRILLING EQUIPMENT Geoprobe 8140 LS Sonic
GROUND ELEVATION 140.78 ft **CASING ELEVATION** 143.74 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
0.00					Clay (CH), yellowish brown 10YR 5/6 and gray 10YR 6/1 and red 10R 4/8, mottled, few silt, medium stiff, moderate plasticity	140.8
4.00					Silty Clay (CL-ML), light gray 10YR 7/2 and reddish yellow 7.5YR 6/8, few fine sand, medium stiff	136.8
12.00					Sand (SP), white 10YR 8/1, fine grained, few silt, trace mica, poorly graded	128.8
16.00					Sand (SW), white 7.5YR 8/1, fine to coarse grained, few subangular to subrounded gravel, coarsening downward	124.8
20.00					Sand (SW), white 7.5YR 8/1, fine to coarse grained, some subangular to subrounded gravel	120.8
21.00					Sand (SW), white 7.5YR 8/1, fine to coarse grained, few subangular to subrounded gravel	119.8
25.00					Silty Sand (SM), light gray 2.5Y 7/1, fine to medium grained, trace mica	115.8
26.00					Sand (SW), pale brown 10YR 6/3, fine to coarse grained, few silt, few angular gravel, well graded	114.8
27.00					Sand (SW), very pale brown 10YR 7/4, fine grained, some silt, poorly graded	113.8
29					Bottom of borehole at 29 feet.	

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-19.5 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-15 ft bgs

Well Seal
Type: Bentonite
15-17 ft bgs

Filter Pack
Type: #2 Filter Sand
17-29 ft bgs

Well Screen
19.5 -29.5 ft bgs

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-119

AECOM

TOTAL DEPTH 34 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 07/23/2021 **COMPLETED** 07/26/2021
SURVEYING BY/DATE AECOM / 08-20-21
DRILLING CONTRACTOR SAEDACCO
EASTING 746515.76 **NORTHING** 2023805.69
DRILLING EQUIPMENT Geoprobe 8140 LS Sonic
GROUND ELEVATION 139.48 ft **CASING ELEVATION** 142.24 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0.00			0.0		Clay (CH), pale brown 10YR 6/3, medium stiff, high plasticity, wet	139.5
1.50			0.0		Silt (ML), brown 10 YR 4/3, soft, wet	138.0
2.50			0.0		Clay (CH), yellowish brown 10YR 5/8, medium stiff, high plasticity, moist	137.0
6.00			0.0		Silt (ML), light gray 10YR 7/2, medium stiff, damp	133.5
9.00			0.0		Silt (ML), very pale brown 10YR 8/2, medium stiff, damp	130.5
10.50			0.0		Silty Sand (SM), light gray 10YR 7/2, fine grained, little silt, saturated	129.0
11.50			0.0		Silty Sand (SM), light gray 10YR 7/2, fine to medium grained, trace gravel, saturated	128.0
17.00			0.0		Sand (SW), very pale brown 10YR 8/2, fine to coarse grained, trace silt, well graded, saturated	122.5
19.00			0.0		Sand (SW), very pale brown 10YR 8/2, fine to coarse grained, few angular gravel, trace silt, well graded, saturated	120.5
20.00			0.0		Sand (SW), very pale brown 10YR 8/2, fine to coarse grained, trace silt, well graded, saturated	119.5
23.00			0.0		Sand (SW), white 10YR 8/1, fine to coarse grained, little silt, trace mica, well graded, saturated	116.5
24.50			0.2		Sand (SW), gray 5YR 6/1, fine to coarse grained, few silt, well graded, saturated	115.0
25.50			0.3		Sand (SW), light gray 5YR 7/1, fine to coarse grained, few silt, trace angular gravel, well graded, saturated	114.0
29.50			0.2		Sand (SW), yellowish red 5YR 5/8, fine to coarse grained, little silt, trace angular gravel, well graded, saturated	110.0
30.00					Silty Clay (CH-MH), light brownish gray 2.5Y 6/2, stiff, highly plastic	109.5

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-25 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-21 ft bgs

Well Seal
Type: Bentonite
21-23 ft bgs

Filter Pack
Type: #2 Filter Sand
23-34 ft bgs

Well Screen
25 -30 ft bgs

Bottom of borehole at 34 feet.

AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-120

AECOM

TOTAL DEPTH 37 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 07/29/2021 **COMPLETED** 07/29/2021
SURVEYING BY/DATE AECOM / 08-20-21
DRILLING CONTRACTOR SAEDACCO
EASTING 745967.14 **NORTHING** 2024014.35
DRILLING EQUIPMENT Geoprobe 8140 LS Sonic
GROUND ELEVATION 139.26 ft **CASING ELEVATION** 142.34 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
					0.00 Sandy Silt (ML), red 2.5YR 4/8, fine to medium grained sand, moist	139.3
			0.4			
					3.00 Silty Sand (SM), red 2.5YR 5/8, fine to medium grained, moist	136.3
			0.5			
					7.00 Sand (SW), reddish yellow 7.5YR 6/8 and pale brown 2.5Y 8/3, fine to medium grained, little silt, moist	132.3
					9.00 Sand (SW), reddish yellow 7.5YR 6/8 and pale brown 2.5Y 8/3, fine to coarse grained, few silt, well graded, saturated	130.3
					11.00 Sand (SW), very pale brown 10YR 8/4, fine to coarse grained, trace angular gravel	128.3
					14.00 Sand (SW), white 2.5Y 8/1, fine to coarse grained, few silt, trace subangular gravel	125.3
			4.7		16.00 Silty Sand (SM), reddish yellow 7.5YR 6/8 and very pale brown 10YR 8/2, fine to medium grained	123.3
			0.1			
					20.00 Sand (SW), white 2.5Y 8/1, fine to coarse grained, few angular to subrounded gravel, well graded	119.3
			0.2			
			0.5		24.00 Sand (SP), light gray 10YR 7/1, fine grianed, few silt, poorly graded	115.3
					25.00 Sand (SW), light gray 10YR 7/1 to very pale brown 10YR 7/3, fine to coarse grained, few silt, trace angular gravel, well graded	114.3
			3.1			
					27.50 Sandy Silt (ML), very pale brown 10YR 7/3, fine to coarse grained sand, soft	111.8
			1.9		28.00 Sand (SW), very pale brown 10YR 8/2, fine to coarse grained, few angular to subrounded gravel	111.3
			0.2			
					30.00 Gravel (GW), yellow 10YR 8/6, little fine to coarse sand, few subrounded to rounded cobbles	109.3
					30.50	108.8
					30.75 Clayey Silt (MH), pale yellow 5Y 8/4, few fine grained sand	108.5
					Sand (SW), white 5Y 8/1, fine to coarse grained, few silt, trace subrounded to rounded cobbles	
			2.5			
					33.75 Sand (SW), reddish yellow 5YR 6/8, fine to coarse grained, few silt, trace subrounded to rounded cobbles	105.5
					34.00	105.3

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-29 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-25 ft bgs

Well Seal
Type: Bentonite
25-27 ft bgs

Filter Pack
Type: #2 Filter Sand
27-37 ft bgs

Well Screen
29 -34 ft bgs

(Continued Next Page)

AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-120

AECOM

TOTAL DEPTH 37 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36					Silty Clay (CL-ML), grayish brown 10YR 5/2, moderate stiffness, highly plastic		
37							

Bottom of borehole at 37 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-121

AECOM

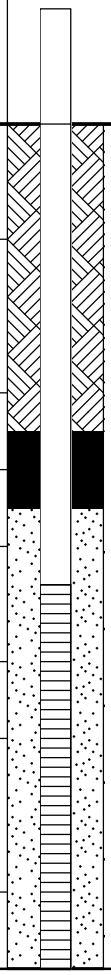
TOTAL DEPTH 22 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 07/29/2021 **COMPLETED** 07/29/2021
SURVEYING BY/DATE AECOM / 08-20-21
DRILLING CONTRACTOR SAEDACCO
EASTING 745966.73 **NORTHING** 2024008.09
DRILLING EQUIPMENT Geoprobe 8140 LS Sonic
GROUND ELEVATION 139.12 ft **CASING ELEVATION** 142.24 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG		MATERIAL DESCRIPTION	Elevation (ft msl)
0							
1					0.00	Silt (ML), red 2.5YR 4/8, fine to medium grained, moist	139.1
2							
3							
4					3.00	Silty Sand (SM), red 2.5YR 5/8, fine to medium grained, moist	136.1
5							
6							
7							
8					7.00	Sand (SW), reddish yellow 7.5YR 6/8 and pale brown 2.5Y 8/3, fine to medium grained, little silt, moist	132.1
9							
10					9.00	Sand (SW), reddish yellow 7.5YR 6/8 and pale brown 2.5Y 8/3, fine to coarse grained, few silt, well graded, saturated	130.1
11							
12					11.00	Sand (SW), very pale brown 10YR 8/4, fine to coarse grained, trace angular gravel	128.1
13							
14							
15					14.00	Sand (SW), white 2.5Y 8/1, fine to coarse grained, few silt, trace subrounded gravel	125.1
16							
17					16.00	Silty Sand (SM), reddish yellow 7.5YR 6/8 and very pale brown 10YR 8/2, fine to medium grained	123.1
18							
19							
20							
21					20.00	Sand (SW), white 2.5Y 8/1, fine to coarse grained, few angular to subrounded gravel	119.1
22							

Bottom of borehole at 22 feet.

WELL DIAGRAM



Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-12 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-8 ft bgs

Well Seal
Type: Bentonite
8-10 ft bgs

Filter Pack
Type: #2 Filter Sand
10-22 ft bgs

Well Screen
12 -22 ft bgs

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-122

AECOM

TOTAL DEPTH 30.5 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 07/20/2021 **COMPLETED** 07/20/2021
SURVEYING BY/DATE AECOM / 08-16-21
DRILLING CONTRACTOR SAEDACCO
EASTING 746087.76 **NORTHING** 2024559.81
DRILLING EQUIPMENT Geoprobe 8140 LS Sonic
GROUND ELEVATION 134.29 ft **CASING ELEVATION** 136.84 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
0.00					Silty Sand (SM), pale brown 2.5Y 8/2 and reddish yellow 5YR 6/6, fine to medium grained, slightly moist	134.3
6.00			0.2		Silty Sand (SM), very pale brown 10 YR 7/3 and yellow 10 YR 7/8, fine grained, moist	128.3
7.00			0.4		Sand (SP), strong brown 7.5YR 5/8, fine grained, few clay, poorly graded, moist	127.3
8.00					Sand (SW), light yellowish brown 10YR 6/4, fine to medium grained, few clay, well graded, wet	126.3
9.00			0.0		Sand (SW), gray 10YR 6/1, fine to medium grained, well graded, saturated	125.3
10.00					Silty Sand (SM), very pale brown 10 YR 7/3 and yellow 10 YR 7/8, fine to medium grained, saturated	124.3
12.00			0.0		Sand (SW), light grayish brown 10YR 6/2 and pinkish gray 7.5YR 7/2, fine to coarse grained, few silt, trace angular gravel	122.3
19.50			0.0		Sand (SW), white 2.5Y 8/1, fine to coarse grained, little subangular to subrounded gravel, trace subangular to subrounded cobbles, coarsening downward, saturated	114.8
22.00			0.0		Sand (SW), white 2.5Y 8/1, fine to coarse grained, little subangular to subrounded gravel, some rounded cobbles, saturated	112.3
29.50			0.0		Sand (SW), reddish yellow 7.5YR 6/8, fine to coarse grained, little subangular to subrounded gravel, some rounded cobbles, saturated	104.8
30.00			0.6		Silty Clay (CL-ML), reddish yellow 7.5YR 6/8, hard, low plasticity	104.3
30.25			0.5		Silty Clay (CL-ML), dark gray 7.5YR 4/1, hard, low plasticity	104.0
					Bottom of borehole at 30.5 feet.	

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-25 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-21 ft bgs

Well Seal
Type: Bentonite
21-23 ft bgs

Filter Pack
Type: #2 Filter Sand
23-30 ft bgs

Well Screen
25 -30 ft bgs

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-123

AECOM

TOTAL DEPTH 35.5 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 07/19/2021 **COMPLETED** 07/20/2021
SURVEYING BY/DATE AECOM / 08-16-21
DRILLING CONTRACTOR SAEDACCO
EASTING 744647.8 **NORTHING** 2024283.69
DRILLING EQUIPMENT Geoprobe 8140 LS Sonic
GROUND ELEVATION 136.3 ft **CASING ELEVATION** 136.05 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Jeremy Grant **CHECKED BY** Chuck Suddeth
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0.00					Gravel (GW)	136.3
1.00			0.2		Sandy Silt (ML), reddish yellow 7.5YR 6/8 and light gray 7.5YR 7/1, fine to medium grained sand, few clay, dry	135.3
7.00			1.0		Sandy Silt (ML), yellow 10YR 7/6 and light gray 7.5YR 7/1, fine to medium grained sand, dry to moist	129.3
9.00					Sandy Silt (ML), reddish yellow 7.5YR 6/8 and light gray 7.5YR 7/1, fine to medium grained, saturated	127.3
10.00					Sand (SW), yellow 10YR 7/6 and light gray 10YR 7/1, fine to medium grained, little silt, saturated	126.3
13.00			0.2		Sand (SW), very pale brown 10YR 8/3, fine to coarse grained, few silt, well graded	123.3
16.00			0.4		Sand (SW), very pale brown 10YR 8/3, fine to coarse grained, little subangular to subrounded gravel, few silt, well graded	120.3
17.00					Sand (SW), very pale brown 10YR 8/3, fine to coarse grained, few silt, well graded	119.3
22.50					Silty Clay (CL-ML), brown 10YR 5/3, few fine sand	113.8
25.00					Sand (SP), pale brown 2.5Y 8/4 and reddish yellow 7.5YR 6/8, fine grained, trace silt	111.3
28.00					Sand (SW), pale brown 2.5Y 8/3, fine to medium grained, trace silt	108.3
31.00					Sand (SW), white 7.5YR 8/1, fine to coarse grained, little subrounded to rounded gravel, trace rounded to subrounded cobbles, few silt	105.3
34.50						

WELL DIAGRAM

Well Casing
Diameter: 2 in
0-29 ft bgs

Well Screen
29 -34 ft bgs

(Continued Next Page)

AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-123

AECOM

TOTAL DEPTH 35.5 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35					35.00 Sand (SW), red 2.5YR 4/8, fine to coarse grained, little subrounded to rounded gravel, trace rounded to subrounded cobbles, few silt	101.8	
					Silty Clay (CL-ML), dark reddish gray 2.5YR 4/1 and reddish yellow 7.5YR 6/8, dry	101.3	
					Bottom of borehole at 35.5 feet.		

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-124

AECOM

TOTAL DEPTH 34 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 07/22/2021 **COMPLETED** 07/22/2021
SURVEYING BY/DATE AECOM / 08-19-21
DRILLING CONTRACTOR SAEDACCO
EASTING 744153.42 **NORTHING** 2024882.9
DRILLING EQUIPMENT Geoprobe 8140 LS Sonic
GROUND ELEVATION 115.26 ft **CASING ELEVATION** 117.73 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0.00			0.0		Silty Sand (SM), dark yellowish brown 10YR 4/6, fine grained, some silt, wet	115.3
3.00			12.7		Sandy Silt (ML), very dark gray 5Y 3/1, little fine sand, moist	112.3
6.00			0.4		Silt (ML), yellowish brown 10YR 5/4 to greenish gray GLEY1 5/1, few fine sand, soft, wet to saturated	109.3
10.00			0.0		Silt (ML), dark yellowish brown 10YR 4/4, few fine sand, soft, saturated	105.3
13.00			0.0		Sand (SW), reddish brown 5YR 4/4, fine to coarse grained, trace gravel, well graded, saturated	102.3
14.00					Sand (SW), light gray 10YR 7/1, medium to coarse grained, few gravel, well graded, saturated	101.3
17.00			0.0		Sand (SW), light gray 10YR 7/2, fine to coarse grained, few gravel, well graded, saturated	98.3
20.00			0.2		Sand and Gravel (SW-GW), grayish brown 10YR 5/2, medium grained to gravel, subangular sand and subrounded gravel, well graded, saturated	95.3
22.50			0.0		Silty Sand (SM), dark grayish brown 10YR 4/2, fine to medium grained, little silt, saturated	92.8
26.50			0.0		Sand (SP), gray 10YR 5/1, medium grained, poorly graded, saturated	88.8
29.00			0.0		Sand (SW), light gray 10YR 7/1, fine to coarse grained, well graded, saturated	86.3
31.00					Clay (CL), yellowish brown 10YR 5/6, very stiff, low plasticity, damp	84.3
31.75			0.0		Clay (CH), very dark gray 10YR 3/1, very stiff, moderate plasticity, damp	83.5

Bottom of borehole at 34 feet.

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-26 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-22 ft bgs

Well Seal
Type: Bentonite
22-24 ft bgs

Filter Pack
Type: #2 Filter Sand
24-34 ft bgs

Well Screen
26 -31 ft bgs

AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-125

AECOM

TOTAL DEPTH 45 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 07/21/2021 **COMPLETED** 07/21/2021
SURVEYING BY/DATE AECOM / 08-19-21
DRILLING CONTRACTOR SAEDACCO
EASTING 743837.31 **NORTHING** 2024142.28
DRILLING EQUIPMENT Geoprobe 8140 LS Sonic
GROUND ELEVATION 114.65 ft **CASING ELEVATION** 117.84 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
1					0.00 Silt (ML), strong brown 7.5YR 5/6, soft, moist	114.7
2			0.4			
3						
4					3.00 Silt (ML), strong brown 7.5YR 5/6, soft, trace clay, moist	111.7
5						
6			0.4			
7						
8					7.00 Silt (ML), dark yellowish brown 10YR 4/4, few clay, medium stiff, damp	107.7
9			0.0			
10						
11			0.0		10.00 Clay (CH), dark yellowish brown 10YR 4/4, few silt, medium stiff, high plasticity, moist	104.7
12						
13			0.0		12.50 Silty Sand (SM), brown 10YR 5/3, fine grained, little silt, poorly graded, moist	102.2
14						
15					15.00 Sand (SP), gray 5Y 6/1, fine grained, few silt, poorly graded, moist	99.7
16						
17						
18						
19			0.0			
20					19.00 Silt (ML), dark gray 2.5Y 4/1, micaceous, soft, moist	95.7
21			0.0			
22						
23			0.0		22.50 Silty Clay (CL), dark gray 10YR 4/1, little silt, soft, high plasticity, wet	92.2
24						
25			0.0			
26						
27			0.0			
28					27.00 Sand (SP), gray 5Y 5/1, fine grained, few silt, poorly graded, saturated	87.7
29			0.0			
30						
31			0.0			
32						
33			0.0			
34					33.00 Clay (CH), dark gray 10YR 4/1, few silt, soft, high plasticity, wet	81.7
35			0.0		34.50	

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-40 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-36 ft bgs

(Continued Next Page)

AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-125

AECOM

TOTAL DEPTH 45 FT BGS
PAGE 2 OF 2

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36					35.00 Sand (SP), gray 2.5Y 5/1, fine grained, poorly graded, saturated	80.2	
37					Sand (SW), light gray 10YR 7/1, fine to coarse grained, subangular to subrounded, well graded, saturated	79.7	
38							
39							
40							
41					40.00 Sand (SW), light gray 10 YR 7/1, fine to coarse grained, sub angular to subrounded, trace rounded cobbles, well graded, saturated	74.7	
42					41.00 Sand and Gravel (SW-GW), light gray 10YR 7/1, medium grained to gravel, trace cobbles, well graded, saturated	73.7	
43					42.00 Gravel and Cobbles (GW), light gray 10YR 7/1, gravel to cobble size, few coarse sand, well graded, saturated	72.7	
44					43.00 Sand and Gravel (SW), light gray 10YR 7/1, medium grained to gravel, well graded, saturated	71.7	
45					44.50 Clay (CH), very dark gray 10YR 3/1, very stiff, high plasticity, damp	70.2	

Bottom of borehole at 45 feet.

Well Seal
Type: Bentonite
36-38 ft bgs

Filter Pack
Type: #2 Filter Sand
38-45 ft bgs

Well Screen
40 -45 ft bgs

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-126

AECOM

TOTAL DEPTH 46 FT BGS

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 07/22/2021 **COMPLETED** 07/22/2021
SURVEYING BY/DATE AECOM / 08-19-21
DRILLING CONTRACTOR SAEDACCO
EASTING 743747.34 **NORTHING** 2024650.41
DRILLING EQUIPMENT Geoprobe 8140 LS Sonic
GROUND ELEVATION 113.53 ft **CASING ELEVATION** 115.89 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)
0						
1					0.00 Silt (ML), dark yellowish brown 10YR 4/4, trace clay, medium stiff, moist	113.5
2			0.0			
3						
4			0.0			
5						
6			0.0			
7					6.00 Sand (SP), dark yellowish brown 10YR 4/6, fine grained, poorly graded, wet	107.5
8						
9			0.0		8.00 Sand (SW), pink 7.5YR 7/3, fine to medium grained, well graded, saturated	105.5
10						
11						
12			0.0			
13						
14						
15			0.0		14.00 Sand (SW), reddish brown 5YR 5/3, fine to medium grained, well graded, saturated	99.5
16						
17						
18			0.0			
19						
20			0.0			
21					20.00 Clayey Silt (MH), greenish gray GLEY1 6/1, soft, low plasticity, wet	93.5
22			0.0			
23			0.0		22.00 Sand (SP), greenish gray GLEY1 5/1, fine grained, poorly graded, saturated	91.5
24						
25			0.0			
26						
27					26.00 Sand (SP), pale brown 10YR 6/3, fine grained, trace silt, poorly graded, saturated	87.5
28			0.0			
29					28.50 Sand (SP), greenish gray GLEY1 5/1, fine grained, poorly graded, saturated	85.0
30						
31			0.0			
32					31.00 Sand (SW), greenish gray GLEY1 5/1, fine to medium grained, well graded, saturated	82.5
33						
34			0.0		33.50 Sand (SW), light gray 2.5Y 7/1, medium to coarse grained, well graded, saturated	80.0
35						

WELL DIAGRAM

Well Casing
Diameter: 2 in
-3-0 ft bgs

Well Casing
Diameter: 2 in
0-37.5 ft bgs

Backfill
Type: Cement / Bentonite Grout
0-35 ft bgs

Well Seal

(Continued Next Page)

AECOM SMART LOG 8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER W-126

AECOM

TOTAL DEPTH 46 FT BGS

CLIENT Westinghouse **PROJECT NAME** CFFF RI

PROJECT NUMBER 60595649 **SITE NAME** Westinghouse

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
35							
36			0.0				Type: Bentonite 35-37 ft bgs
37							
38			0.0		37.00 Clay (CH), dark gray 10YR 4/1, stiff, high plasticity, moist	76.5	**Filter Pack** Type: #2 Filter Sand 37-46 ft bgs
39					38.50 Sand and Gravel (SW-GW), gray 5Y 5/1, medium grained to gravel, well graded, saturated	75.0	
40			0.0				
41							**Well Screen** 37.5 -42.5 ft bgs
42					41.00 Sand and Gravel (SW), light gray 5Y 7/1, medium grained to gravel, well graded, saturated	72.5	
43			0.0				
44					43.50 Clay (CH), very dark gray 10YR 3/1, very stiff, low plasticity, damp	70.0	
45			0.0				
46							

Bottom of borehole at 46 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:48 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

WELL NUMBER PZ-1

AECOM

TOTAL DEPTH 17 FT BGS
PAGE 1 OF 1

CLIENT Westinghouse
PROJECT NAME CFFF RI
PROJECT NUMBER 60595649
SITE NAME Westinghouse
DATE STARTED 07/21/2021 **COMPLETED** 07/22/2021
SURVEYING BY/DATE AECOM / 08-19-21
DRILLING CONTRACTOR SAEDACCO
EASTING 743745.67 **NORTHING** 2024637.13
DRILLING EQUIPMENT Geoprobe 8150 LS Sonic
GROUND ELEVATION 113.54 ft **CASING ELEVATION** 116.27 ft
DRILLING METHOD Sonic
HOLE DIAMETER (INCHES) 6
LOGGED BY Chuck Suddeth **CHECKED BY** Jeremy Grant
CASING/SCREEN TYPE Sch. 40 PVC

DEPTH (ft)	SAMPLE	RECOVERY %	PID (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation (ft msl)	WELL DIAGRAM
0							**Well Casing** Diameter: 2 in -3-0 ft bgs
1					0.00 Silt (ML) dark yellowish brown 10YR 4/4, trace clay, medium stiff, moist	113.5	
2			0.0				
3							
4							
5			0.0				
6							**Well Casing** Diameter: 2 in 0-7 ft bgs
7					6.00 Sand (SP), dark yellowish brown 10YR 4/6, fine grained, poorly graded, wet	107.5	
8			0.0				**Well Screen** 7 -17 ft bgs
9							
10							
11			0.0		10.00 Sand (SW), pink 7.5YR 7/3, fine to medium grained, well graded, saturated	103.5	
12							
13							
14			0.0				
15							
16					15.00 Sand (SW), reddish brown 5YR 5/3, fine to medium grained, well graded, saturated	98.5	
17			0.0				

Bottom of borehole at 17 feet.

AECOM SMART LOG_8X11 NO WL - WH_CFFF_RI_IMPLEMENTATIONV3.GPJ - 5/26/22 11:47 - C:\GINT\WESTINGHOUSE\WH_CFFF_RI_IMPLEMENTATIONV7.GPJ

Appendix G
Beacon Soil Gas Survey Reports

Beacon Environmental
2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
1.410.838.8780

CERTIFICATE OF ANALYSIS

Beacon Proposal No.: 201103R03

Beacon Project No.: 0005503

Project Description:
Project Site: Westinghouse CFFF
Hopkins, SC

Client PO No.: 130171

Prepared for:
Jeremy Grant
AECOM
101 Research Drive
Columbia, SC 29203

Ryan W. Schneider
Senior Project Manager

December 17, 2020

All data meet requirements as specified in the Beacon Environmental Services, Inc. Quality Assurance Project Plan and the results relate only to the samples reported. The work performed was in accordance with ISO/IEC 17025:2017 requirements, except samples were analyzed within a 24-hour tune window. This report shall not be reproduced, except in full, without written approval of the laboratory. Release of the data contained in this data package has been authorized by the Laboratory Director or his signee, as verified by the following signatures:

Steven C. Thornley
Laboratory Director

Peter B. Kelly
Interim Quality Manager

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
1.410.838.8780

Map Report

AECOM	**Project Site:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Project Location:** Hopkins, SC	**Beacon Project No.:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/17/2020

Summary of Compound Detections- Mass

Lab Sample ID: 0005503-05 — **SG-3** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Tetrachloroethene	127-18-4	**91**		10	C20120909.D

Lab Sample ID: 0005503-06 — **SG-4** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Tetrachloroethene	127-18-4	**39**		10	C20120910.D

Lab Sample ID: 0005503-09 — **SG-7** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Tetrachloroethene	127-18-4	**25**		10	C20120913.D

Lab Sample ID: 0005503-10 — **SG-8** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Trichloroethene	79-01-6	**10**		10	C20120914.D
Tetrachloroethene	127-18-4	**126**		10	C20120914.D

Lab Sample ID: 0005503-13 — **SG-11** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Trichloroethene	79-01-6	**22**		10	C20120917.D
Tetrachloroethene	127-18-4	**1,680**		10	C20120917.D

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Map Report

AECOM	**Project Site:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Project Location:** Hopkins, SC	**Beacon Project No.:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/17/2020

Summary of Compound Detections- Mass

Lab Sample ID: 0005503-14 — **SG-12** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Tetrachloroethene	127-18-4	**49**		10	C20120918.D

Lab Sample ID: 0005503-15 — **SG-13** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Tetrachloroethene	127-18-4	**46**		10	C20120919.D

Lab Sample ID: 0005503-17 — **SG-15** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Trichloroethene	79-01-6	**50**		10	C20120921.D
Tetrachloroethene	127-18-4	**506**		10	C20120921.D

Lab Sample ID: 0005503-18 — **SG-15-Dup** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
cis-1,2-Dichloroethene	156-59-2	**11**		10	C20120922.D
Trichloroethene	79-01-6	**42**		10	C20120922.D
Tetrachloroethene	127-18-4	**327**		10	C20120922.D

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Map Report

AECOM	**Project Site:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Project Location:** Hopkins, SC	**Beacon Project No.:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/17/2020

Summary of Compound Detections- Mass

Lab Sample ID: 0005503-19 — **SG-16** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
cis-1,2-Dichloroethene	156-59-2	**17**		10	C20120923.D
Trichloroethene	79-01-6	**53**		10	C20120923.D
Tetrachloroethene	127-18-4	**1,040**		10	C20120923.D

Lab Sample ID: 0005503-22 — **SG-19** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Tetrachloroethene	127-18-4	**80**		10	C20120926.D

Lab Sample ID: 0005503-23 — **SG-20** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
cis-1,2-Dichloroethene	156-59-2	**17**		10	C20120927.D
Trichloroethene	79-01-6	**207**		10	C20120927.D
Tetrachloroethene	127-18-4	**1,300**		10	C20120927.D

Lab Sample ID: 0005503-24 — **SG-21** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Tetrachloroethene	127-18-4	**12**		10	C20120928.D

Lab Sample ID: 0005503-27 — **SG-24** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Tetrachloroethene	127-18-4	**26**		10	C20120931.D

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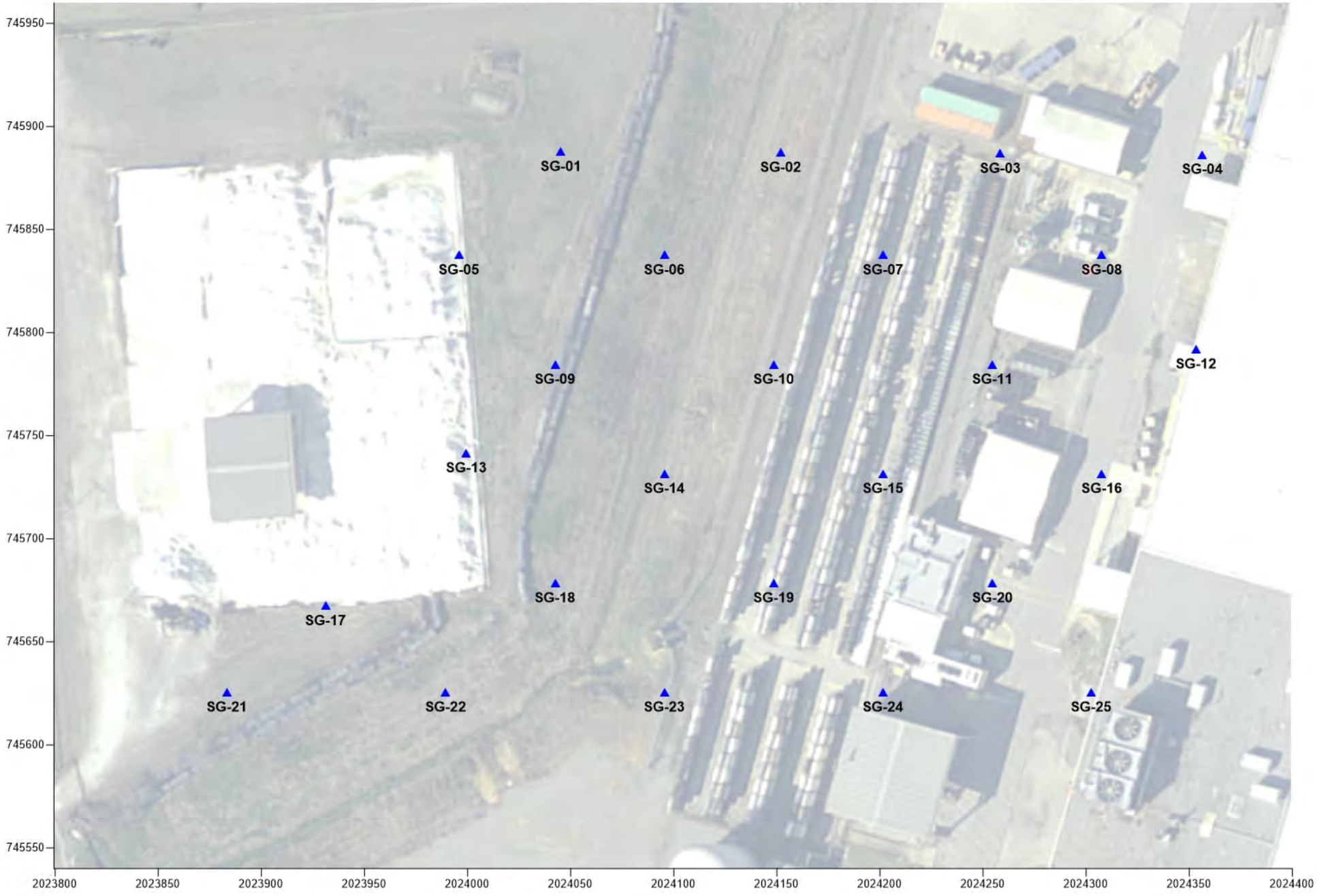
Map Report

AECOM	**Project Site:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Project Location:** Hopkins, SC	**Beacon Project No.:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/17/2020

Map Data Summary Table

Sample locations are shown on **Figure 1**. The following table lists frequency of detections from the current survey based on the number of field samples analyzed, the reporting limit, and the maximum value for each mapped compound. The table also includes the transformation and interpolation method for the compound distribution maps provided.

Figure No.	Compound	Frequency	LOQ (ng)	Max Value (ng)	Transformation Method	Interpolation Method
2	cis-1,2-Dichloroethene	2	10	17	Log	Kriging
3	Trichloroethene	5	10	207	Log	Kriging
4	Tetrachloroethene	13	10	1,680	Log	Kriging



LEGEND

▲ PASSIVE SOIL-GAS SAMPLE LOCATION

Scale in Feet

0 50 100

System: State Plane
Zone: South Carolina
Datum: NAD 1983
Coordinate Units: Feet

Figure 1
Passive Soil-Gas Survey
Sample Locations

Westinghouse CFFF
Hopkins, SC

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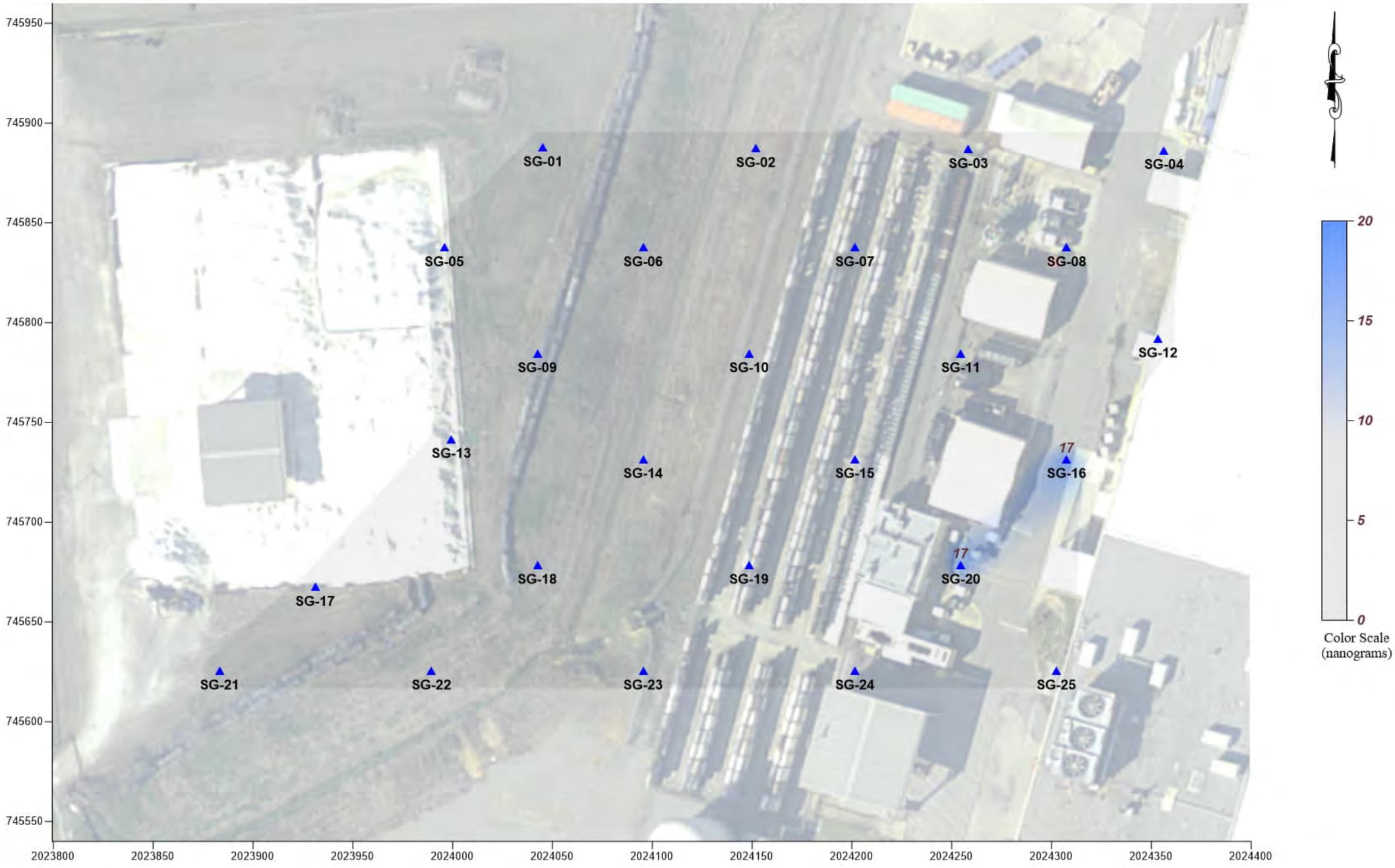
Beacon Project No. 5503, December 2020



LEGEND

1,000 NANOGRAMS/SAMPLER

▲ PASSIVE SOIL-GAS SAMPLE LOCATION

Scale in Feet

0 50 100

System: State Plane
Zone: South Carolina
Datum: NAD 1983
Coordinate Units: Feet

Figure 2
Passive Soil-Gas Survey
cis-1,2-Dichloroethene

Westinghouse CFFF
Hopkins, SC

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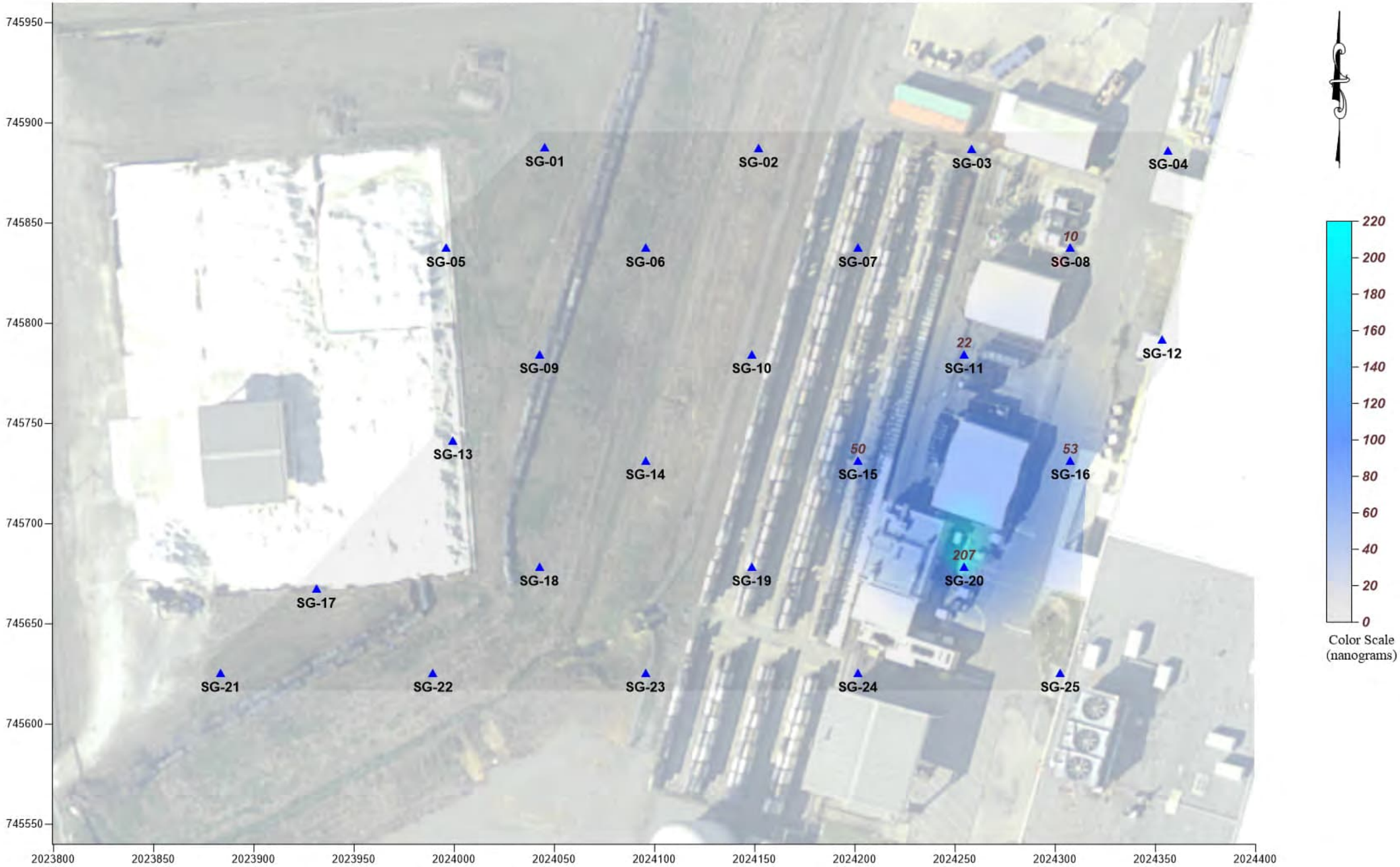
www.Beacon-USA.com 1-410-838-8780
Beacon Project No. 5503, December 2020



LEGEND

1,000 NANOGRAMS/SAMPLER

▲ PASSIVE SOIL-GAS SAMPLE LOCATION

Scale in Feet

0 50 100

System: State Plane
Zone: South Carolina
Datum: NAD 1983
Coordinate Units: Feet

Figure 3
Passive Soil-Gas Survey
Trichloroethene

Westinghouse CFFF
Hopkins, SC

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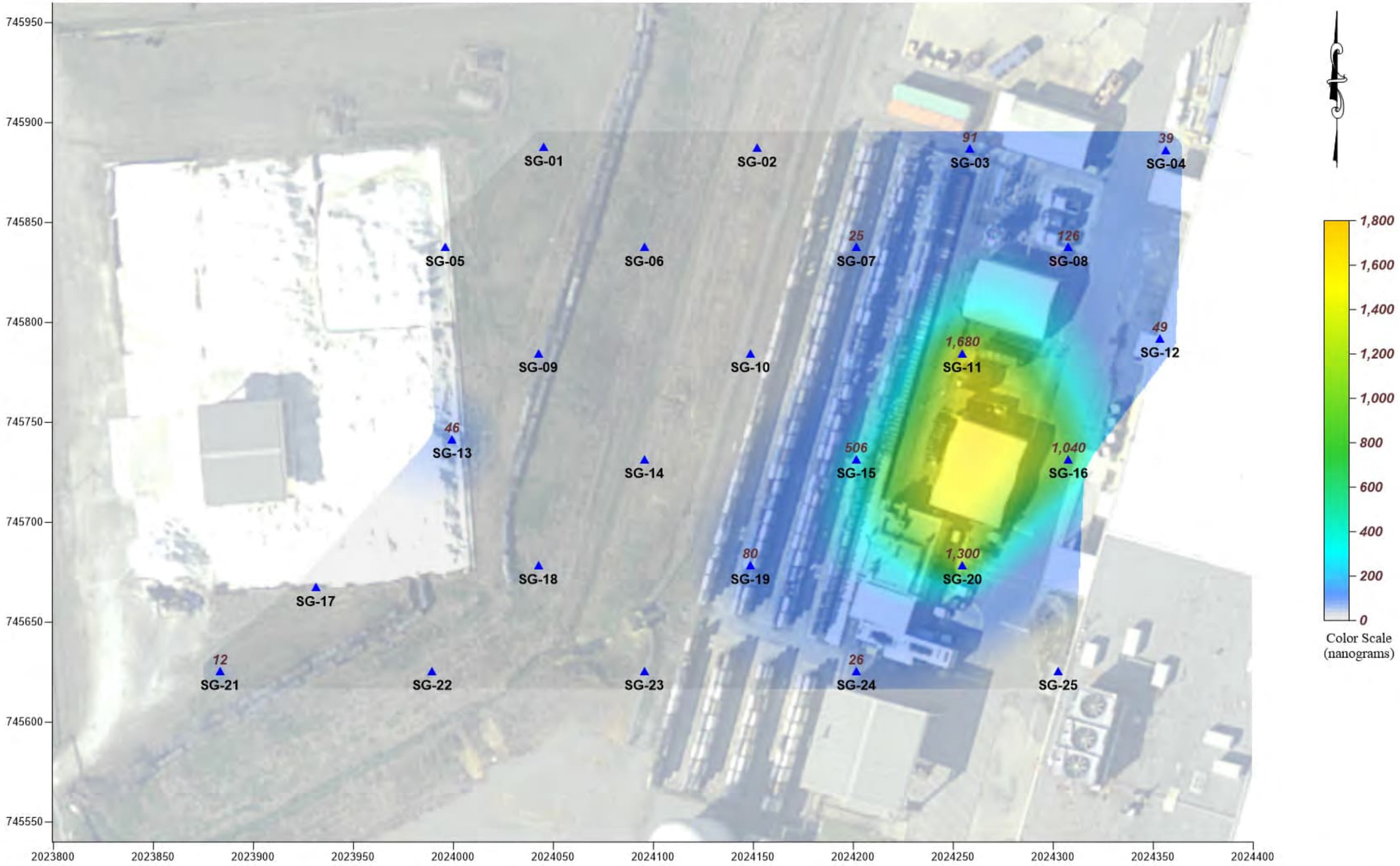
Beacon Project No. 5503, December 2020



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Beacon Project No. 5503, December 2020

LEGEND

1,000 NANOGRAMS/SAMPLER

▲ PASSIVE SOIL-GAS SAMPLE LOCATION

Scale in Feet

0 50 100

System:	State Plane
Zone:	South Carolina
Datum:	NAD 1983
Coordinate Units:	Feet

Figure 4
Passive Soil-Gas Survey
Tetrachloroethene

Westinghouse CFFF
Hopkins, SC

Beacon Environmental
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Forest Hill, MD 21050 USA
1.410.838.8780

CERTIFICATE OF ANALYSIS

Beacon Proposal No.: 201103R03

Laboratory Work Order: 0005503

Project Description:
Westinghouse CFFF
Hopkins, SC

Client PO No.: 130171

Prepared for:
Jeremy Grant
AECOM
101 Research Drive
Columbia, SC 29203

Ryan W. Schneider
Senior Project Manager

December 15, 2020

All data meet requirements as specified in the Beacon Environmental Quality Assurance Project Plan and the results relate only to the samples reported. The work performed was in accordance with ISO/IEC 17025:2017, except samples were analyzed within a 24-hour tune window. This report shall not be reproduced, except in full, without written approval of the laboratory. Release of the data contained in this data package has been authorized by the Laboratory Director or his signee, as verified by the following signatures:

Steven C. Thornley
Laboratory Director

Peter B. Kelly
Interim Quality Manager

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Sample Summary

Lab Sample ID	Client Sample ID	Received	Analysis	Matrix
0005503-01	Trip-1	12/08/2020	EPA 8260C	Air
Sampler Type:	Beacon Passive Sampler			
0005503-02	SG-1	12/08/2020	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005503-03	SG-2	12/08/2020	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005503-04	SG-2-Dup	12/08/2020	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005503-05	SG-3	12/08/2020	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005503-06	SG-4	12/08/2020	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005503-07	SG-5	12/08/2020	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005503-08	SG-6	12/08/2020	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005503-09	SG-7	12/08/2020	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005503-10	SG-8	12/08/2020	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005503-11	SG-9	12/08/2020	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005503-12	SG-10	12/08/2020	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005503-13	SG-11	12/08/2020	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005503-14	SG-12	12/08/2020	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005503-15	SG-13	12/08/2020	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005503-16	SG-14	12/08/2020	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005503-17	SG-15	12/08/2020	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005503-18	SG-15-Dup	12/08/2020	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005503-19	SG-16	12/08/2020	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005503-20	SG-17	12/08/2020	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID	Client Sample ID	Received	Analysis	Matrix
0005503-21	SG-18	12/08/2020	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005503-22	SG-19	12/08/2020	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005503-23	SG-20	12/08/2020	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005503-24	SG-21	12/08/2020	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005503-25	SG-22	12/08/2020	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005503-26	SG-23	12/08/2020	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005503-27	SG-24	12/08/2020	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005503-28	SG-25	12/08/2020	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			

Project Completeness

Samples Received: **28**
Samples Analyzed: **28**

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AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Case Narrative

U.S. EPA Method 8260C

All samples were analyzed using thermal desorption-gas chromatography/mass spectrometry (TD-GC/MS) instrumentation following U.S. EPA Method 8260C, with laboratory results provided in nanograms (ng). Laboratory QA/QC procedures included internal standards, surrogates, and blanks based on EPA Method 8260C. Analyses and reporting were in accordance with BEACON's Quality Assurance Project Plan.

Passive Soil-Gas Survey Notes

If sample locations are covered with or near the edge of an impervious surface (*e.g.*, asphalt or concrete), the concentrations of compounds in soil gas are higher than if the surfacing was not present. Therefore, the sample location conditions should be considered when comparing results between locations.

Survey findings are exclusive to this project and when the spatial relationships are compared with results of other BEACON Surveys it is necessary to incorporate information from both investigations (*e.g.*, depth to sources, soil types, porosity, soil moisture, presence of impervious surfacing, sample collection times).

Reporting Limits

The RLs represent a baseline above which results meet laboratory-determined limits of precision and accuracy. Field sample measurements above the upper calibration standard are estimated; however, these values are reported without qualifiers because all reported measurements are relative to each other and are appropriate to meet the survey objectives of locating source areas and vapor intrusion pathways and defining the lateral extent of the contamination.

Project Details

The work performed was in accordance with ISO/IEC 17025:2017, except samples were analyzed within a 24-hour tune window.

End of Case Narrative

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
1.410.838.8780

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Analytical Results

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
1.410.838.8780

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Summary of Compound Detections - Mass

Lab Sample ID: 0005503-05 | **SG-3** | Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Tetrachloroethene	127-18-4	**91**		6.065	10	12/09/2020 17:56	C20120909.D

Lab Sample ID: 0005503-06 | **SG-4** | Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Tetrachloroethene	127-18-4	**39**		6.065	10	12/09/2020 18:21	C20120910.D

Lab Sample ID: 0005503-09 | **SG-7** | Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Tetrachloroethene	127-18-4	**25**		6.065	10	12/09/2020 19:36	C20120913.D

Lab Sample ID: 0005503-10 | **SG-8** | Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Trichloroethene	79-01-6	**10**		4.452	10	12/09/2020 20:01	C20120914.D
Tetrachloroethene	127-18-4	**126**		6.062	10	12/09/2020 20:01	C20120914.D

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AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID: 0005503-13 — **SG-11** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Trichloroethene	79-01-6	**22**		4.455	10	12/09/2020 21:16	C20120917.D
Tetrachloroethene	127-18-4	**1,680**		6.065	10	12/09/2020 21:16	C20120917.D

Lab Sample ID: 0005503-14 — **SG-12** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Tetrachloroethene	127-18-4	**49**		6.062	10	12/09/2020 21:41	C20120918.D

Lab Sample ID: 0005503-15 — **SG-13** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Tetrachloroethene	127-18-4	**46**		6.062	10	12/09/2020 22:06	C20120919.D

Lab Sample ID: 0005503-17 — **SG-15** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Trichloroethene	79-01-6	**50**		4.455	10	12/09/2020 22:56	C20120921.D
Tetrachloroethene	127-18-4	**506**		6.065	10	12/09/2020 22:56	C20120921.D

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AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID: 0005503-18 | **SG-15-Dup** | Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
cis-1,2-Dichloroethene	156-59-2	**11**		3.330	10	12/09/2020 23:21	C20120922.D
Trichloroethene	79-01-6	**42**		4.452	10	12/09/2020 23:21	C20120922.D
Tetrachloroethene	127-18-4	**327**		6.065	10	12/09/2020 23:21	C20120922.D

Lab Sample ID: 0005503-19 | **SG-16** | Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
cis-1,2-Dichloroethene	156-59-2	**17**		3.324	10	12/09/2020 23:46	C20120923.D
Trichloroethene	79-01-6	**53**		4.452	10	12/09/2020 23:46	C20120923.D
Tetrachloroethene	127-18-4	**1,040**		6.065	10	12/09/2020 23:46	C20120923.D

Lab Sample ID: 0005503-22 | **SG-19** | Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Tetrachloroethene	127-18-4	**80**		6.065	10	12/10/2020 01:02	C20120926.D

Lab Sample ID: 0005503-23 | **SG-20** | Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
cis-1,2-Dichloroethene	156-59-2	**17**		3.327	10	12/10/2020 01:27	C20120927.D
Trichloroethene	79-01-6	**207**		4.452	10	12/10/2020 01:27	C20120927.D
Tetrachloroethene	127-18-4	**1,300**		6.065	10	12/10/2020 01:27	C20120927.D

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID: 0005503-24 **SG-21** Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Tetrachloroethene	127-18-4	**12**		6.065	10	12/10/2020 01:52	C20120928.D

Lab Sample ID: 0005503-27 **SG-24** Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Tetrachloroethene	127-18-4	**26**		6.062	10	12/10/2020 03:07	C20120931.D

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Data Summary Table- Mass

Compound	Frequency	LOQ (ng)	Max Value (ng)
cis-1,2-Dichloroethene	2	10	17
Trichloroethene	5	10	207
Tetrachloroethene	13	10	1,680

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AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Detailed Analytical Results

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID: 0005503-01

Trip-1

Air

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	12/09/2020 16:15	C20120905.D
1,1-Dichloroethene	75-35-4	<10		10	12/09/2020 16:15	C20120905.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	12/09/2020 16:15	C20120905.D
trans-1,2-Dichloroethene	156-60-5	<10		10	12/09/2020 16:15	C20120905.D
1,1-Dichloroethane	75-34-3	<10		10	12/09/2020 16:15	C20120905.D
cis-1,2-Dichloroethene	156-59-2	<10		10	12/09/2020 16:15	C20120905.D
Chloroform	67-66-3	<10		10	12/09/2020 16:15	C20120905.D
1,2-Dichloroethane	107-06-2	<10		10	12/09/2020 16:15	C20120905.D
1,1,1-Trichloroethane	71-55-6	<10		10	12/09/2020 16:15	C20120905.D
Carbon Tetrachloride	56-23-5	<10		10	12/09/2020 16:15	C20120905.D
Trichloroethene	79-01-6	<10		10	12/09/2020 16:15	C20120905.D
1,1,2-Trichloroethane	79-00-5	<10		10	12/09/2020 16:15	C20120905.D
Tetrachloroethene	127-18-4	<10		10	12/09/2020 16:15	C20120905.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	12/09/2020 16:15	C20120905.D
Chlorobenzene	108-90-7	<10		10	12/09/2020 16:15	C20120905.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	12/09/2020 16:15	C20120905.D
1,2,3-Trichloropropane	96-18-4	<10		10	12/09/2020 16:15	C20120905.D
1,3-Dichlorobenzene	541-73-1	<10		10	12/09/2020 16:15	C20120905.D
1,4-Dichlorobenzene	106-46-7	<10		10	12/09/2020 16:15	C20120905.D
1,2-Dichlorobenzene	95-50-1	<10		10	12/09/2020 16:15	C20120905.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	12/09/2020 16:15	C20120905.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	12/09/2020 16:15	C20120905.D

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID: 0005503-02

SG-1

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	12/09/2020 16:41	C20120906.D
1,1-Dichloroethene	75-35-4	<10		10	12/09/2020 16:41	C20120906.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	12/09/2020 16:41	C20120906.D
trans-1,2-Dichloroethene	156-60-5	<10		10	12/09/2020 16:41	C20120906.D
1,1-Dichloroethane	75-34-3	<10		10	12/09/2020 16:41	C20120906.D
cis-1,2-Dichloroethene	156-59-2	<10		10	12/09/2020 16:41	C20120906.D
Chloroform	67-66-3	<10		10	12/09/2020 16:41	C20120906.D
1,2-Dichloroethane	107-06-2	<10		10	12/09/2020 16:41	C20120906.D
1,1,1-Trichloroethane	71-55-6	<10		10	12/09/2020 16:41	C20120906.D
Carbon Tetrachloride	56-23-5	<10		10	12/09/2020 16:41	C20120906.D
Trichloroethene	79-01-6	<10		10	12/09/2020 16:41	C20120906.D
1,1,2-Trichloroethane	79-00-5	<10		10	12/09/2020 16:41	C20120906.D
Tetrachloroethene	127-18-4	<10		10	12/09/2020 16:41	C20120906.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	12/09/2020 16:41	C20120906.D
Chlorobenzene	108-90-7	<10		10	12/09/2020 16:41	C20120906.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	12/09/2020 16:41	C20120906.D
1,2,3-Trichloropropane	96-18-4	<10		10	12/09/2020 16:41	C20120906.D
1,3-Dichlorobenzene	541-73-1	<10		10	12/09/2020 16:41	C20120906.D
1,4-Dichlorobenzene	106-46-7	<10		10	12/09/2020 16:41	C20120906.D
1,2-Dichlorobenzene	95-50-1	<10		10	12/09/2020 16:41	C20120906.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	12/09/2020 16:41	C20120906.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	12/09/2020 16:41	C20120906.D

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID: 0005503-03

SG-2

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	12/09/2020 17:06	C20120907.D
1,1-Dichloroethene	75-35-4	<10		10	12/09/2020 17:06	C20120907.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	12/09/2020 17:06	C20120907.D
trans-1,2-Dichloroethene	156-60-5	<10		10	12/09/2020 17:06	C20120907.D
1,1-Dichloroethane	75-34-3	<10		10	12/09/2020 17:06	C20120907.D
cis-1,2-Dichloroethene	156-59-2	<10		10	12/09/2020 17:06	C20120907.D
Chloroform	67-66-3	<10		10	12/09/2020 17:06	C20120907.D
1,2-Dichloroethane	107-06-2	<10		10	12/09/2020 17:06	C20120907.D
1,1,1-Trichloroethane	71-55-6	<10		10	12/09/2020 17:06	C20120907.D
Carbon Tetrachloride	56-23-5	<10		10	12/09/2020 17:06	C20120907.D
Trichloroethene	79-01-6	<10		10	12/09/2020 17:06	C20120907.D
1,1,2-Trichloroethane	79-00-5	<10		10	12/09/2020 17:06	C20120907.D
Tetrachloroethene	127-18-4	<10		10	12/09/2020 17:06	C20120907.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	12/09/2020 17:06	C20120907.D
Chlorobenzene	108-90-7	<10		10	12/09/2020 17:06	C20120907.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	12/09/2020 17:06	C20120907.D
1,2,3-Trichloropropane	96-18-4	<10		10	12/09/2020 17:06	C20120907.D
1,3-Dichlorobenzene	541-73-1	<10		10	12/09/2020 17:06	C20120907.D
1,4-Dichlorobenzene	106-46-7	<10		10	12/09/2020 17:06	C20120907.D
1,2-Dichlorobenzene	95-50-1	<10		10	12/09/2020 17:06	C20120907.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	12/09/2020 17:06	C20120907.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	12/09/2020 17:06	C20120907.D

BEACON ENVIRONMENTAL

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID: 0005503-04

SG-2-Dup

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	12/09/2020 17:31	C20120908.D
1,1-Dichloroethene	75-35-4	<10		10	12/09/2020 17:31	C20120908.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	12/09/2020 17:31	C20120908.D
trans-1,2-Dichloroethene	156-60-5	<10		10	12/09/2020 17:31	C20120908.D
1,1-Dichloroethane	75-34-3	<10		10	12/09/2020 17:31	C20120908.D
cis-1,2-Dichloroethene	156-59-2	<10		10	12/09/2020 17:31	C20120908.D
Chloroform	67-66-3	<10		10	12/09/2020 17:31	C20120908.D
1,2-Dichloroethane	107-06-2	<10		10	12/09/2020 17:31	C20120908.D
1,1,1-Trichloroethane	71-55-6	<10		10	12/09/2020 17:31	C20120908.D
Carbon Tetrachloride	56-23-5	<10		10	12/09/2020 17:31	C20120908.D
Trichloroethene	79-01-6	<10		10	12/09/2020 17:31	C20120908.D
1,1,2-Trichloroethane	79-00-5	<10		10	12/09/2020 17:31	C20120908.D
Tetrachloroethene	127-18-4	<10		10	12/09/2020 17:31	C20120908.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	12/09/2020 17:31	C20120908.D
Chlorobenzene	108-90-7	<10		10	12/09/2020 17:31	C20120908.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	12/09/2020 17:31	C20120908.D
1,2,3-Trichloropropane	96-18-4	<10		10	12/09/2020 17:31	C20120908.D
1,3-Dichlorobenzene	541-73-1	<10		10	12/09/2020 17:31	C20120908.D
1,4-Dichlorobenzene	106-46-7	<10		10	12/09/2020 17:31	C20120908.D
1,2-Dichlorobenzene	95-50-1	<10		10	12/09/2020 17:31	C20120908.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	12/09/2020 17:31	C20120908.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	12/09/2020 17:31	C20120908.D

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID: 0005503-05

SG-3

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	12/09/2020 17:56	C20120909.D
1,1-Dichloroethene	75-35-4	<10		10	12/09/2020 17:56	C20120909.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	12/09/2020 17:56	C20120909.D
trans-1,2-Dichloroethene	156-60-5	<10		10	12/09/2020 17:56	C20120909.D
1,1-Dichloroethane	75-34-3	<10		10	12/09/2020 17:56	C20120909.D
cis-1,2-Dichloroethene	156-59-2	<10		10	12/09/2020 17:56	C20120909.D
Chloroform	67-66-3	<10		10	12/09/2020 17:56	C20120909.D
1,2-Dichloroethane	107-06-2	<10		10	12/09/2020 17:56	C20120909.D
1,1,1-Trichloroethane	71-55-6	<10		10	12/09/2020 17:56	C20120909.D
Carbon Tetrachloride	56-23-5	<10		10	12/09/2020 17:56	C20120909.D
Trichloroethene	79-01-6	<10		10	12/09/2020 17:56	C20120909.D
1,1,2-Trichloroethane	79-00-5	<10		10	12/09/2020 17:56	C20120909.D
Tetrachloroethene	127-18-4	**91**		10	12/09/2020 17:56	C20120909.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	12/09/2020 17:56	C20120909.D
Chlorobenzene	108-90-7	<10		10	12/09/2020 17:56	C20120909.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	12/09/2020 17:56	C20120909.D
1,2,3-Trichloropropane	96-18-4	<10		10	12/09/2020 17:56	C20120909.D
1,3-Dichlorobenzene	541-73-1	<10		10	12/09/2020 17:56	C20120909.D
1,4-Dichlorobenzene	106-46-7	<10		10	12/09/2020 17:56	C20120909.D
1,2-Dichlorobenzene	95-50-1	<10		10	12/09/2020 17:56	C20120909.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	12/09/2020 17:56	C20120909.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	12/09/2020 17:56	C20120909.D

BEACON ENVIRONMENTAL

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID: 0005503-06

SG-4

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	12/09/2020 18:21	C20120910.D
1,1-Dichloroethene	75-35-4	<10		10	12/09/2020 18:21	C20120910.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	12/09/2020 18:21	C20120910.D
trans-1,2-Dichloroethene	156-60-5	<10		10	12/09/2020 18:21	C20120910.D
1,1-Dichloroethane	75-34-3	<10		10	12/09/2020 18:21	C20120910.D
cis-1,2-Dichloroethene	156-59-2	<10		10	12/09/2020 18:21	C20120910.D
Chloroform	67-66-3	<10		10	12/09/2020 18:21	C20120910.D
1,2-Dichloroethane	107-06-2	<10		10	12/09/2020 18:21	C20120910.D
1,1,1-Trichloroethane	71-55-6	<10		10	12/09/2020 18:21	C20120910.D
Carbon Tetrachloride	56-23-5	<10		10	12/09/2020 18:21	C20120910.D
Trichloroethene	79-01-6	<10		10	12/09/2020 18:21	C20120910.D
1,1,2-Trichloroethane	79-00-5	<10		10	12/09/2020 18:21	C20120910.D
Tetrachloroethene	127-18-4	**39**		10	12/09/2020 18:21	C20120910.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	12/09/2020 18:21	C20120910.D
Chlorobenzene	108-90-7	<10		10	12/09/2020 18:21	C20120910.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	12/09/2020 18:21	C20120910.D
1,2,3-Trichloropropane	96-18-4	<10		10	12/09/2020 18:21	C20120910.D
1,3-Dichlorobenzene	541-73-1	<10		10	12/09/2020 18:21	C20120910.D
1,4-Dichlorobenzene	106-46-7	<10		10	12/09/2020 18:21	C20120910.D
1,2-Dichlorobenzene	95-50-1	<10		10	12/09/2020 18:21	C20120910.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	12/09/2020 18:21	C20120910.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	12/09/2020 18:21	C20120910.D

BEACON ENVIRONMENTAL

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID: 0005503-07

SG-5

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	12/09/2020 18:46	C20120911.D
1,1-Dichloroethene	75-35-4	<10		10	12/09/2020 18:46	C20120911.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	12/09/2020 18:46	C20120911.D
trans-1,2-Dichloroethene	156-60-5	<10		10	12/09/2020 18:46	C20120911.D
1,1-Dichloroethane	75-34-3	<10		10	12/09/2020 18:46	C20120911.D
cis-1,2-Dichloroethene	156-59-2	<10		10	12/09/2020 18:46	C20120911.D
Chloroform	67-66-3	<10		10	12/09/2020 18:46	C20120911.D
1,2-Dichloroethane	107-06-2	<10		10	12/09/2020 18:46	C20120911.D
1,1,1-Trichloroethane	71-55-6	<10		10	12/09/2020 18:46	C20120911.D
Carbon Tetrachloride	56-23-5	<10		10	12/09/2020 18:46	C20120911.D
Trichloroethene	79-01-6	<10		10	12/09/2020 18:46	C20120911.D
1,1,2-Trichloroethane	79-00-5	<10		10	12/09/2020 18:46	C20120911.D
Tetrachloroethene	127-18-4	<10		10	12/09/2020 18:46	C20120911.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	12/09/2020 18:46	C20120911.D
Chlorobenzene	108-90-7	<10		10	12/09/2020 18:46	C20120911.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	12/09/2020 18:46	C20120911.D
1,2,3-Trichloropropane	96-18-4	<10		10	12/09/2020 18:46	C20120911.D
1,3-Dichlorobenzene	541-73-1	<10		10	12/09/2020 18:46	C20120911.D
1,4-Dichlorobenzene	106-46-7	<10		10	12/09/2020 18:46	C20120911.D
1,2-Dichlorobenzene	95-50-1	<10		10	12/09/2020 18:46	C20120911.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	12/09/2020 18:46	C20120911.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	12/09/2020 18:46	C20120911.D

BEACON ENVIRONMENTAL

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID: 0005503-08

SG-6

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	12/09/2020 19:11	C20120912.D
1,1-Dichloroethene	75-35-4	<10		10	12/09/2020 19:11	C20120912.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	12/09/2020 19:11	C20120912.D
trans-1,2-Dichloroethene	156-60-5	<10		10	12/09/2020 19:11	C20120912.D
1,1-Dichloroethane	75-34-3	<10		10	12/09/2020 19:11	C20120912.D
cis-1,2-Dichloroethene	156-59-2	<10		10	12/09/2020 19:11	C20120912.D
Chloroform	67-66-3	<10		10	12/09/2020 19:11	C20120912.D
1,2-Dichloroethane	107-06-2	<10		10	12/09/2020 19:11	C20120912.D
1,1,1-Trichloroethane	71-55-6	<10		10	12/09/2020 19:11	C20120912.D
Carbon Tetrachloride	56-23-5	<10		10	12/09/2020 19:11	C20120912.D
Trichloroethene	79-01-6	<10		10	12/09/2020 19:11	C20120912.D
1,1,2-Trichloroethane	79-00-5	<10		10	12/09/2020 19:11	C20120912.D
Tetrachloroethene	127-18-4	<10		10	12/09/2020 19:11	C20120912.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	12/09/2020 19:11	C20120912.D
Chlorobenzene	108-90-7	<10		10	12/09/2020 19:11	C20120912.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	12/09/2020 19:11	C20120912.D
1,2,3-Trichloropropane	96-18-4	<10		10	12/09/2020 19:11	C20120912.D
1,3-Dichlorobenzene	541-73-1	<10		10	12/09/2020 19:11	C20120912.D
1,4-Dichlorobenzene	106-46-7	<10		10	12/09/2020 19:11	C20120912.D
1,2-Dichlorobenzene	95-50-1	<10		10	12/09/2020 19:11	C20120912.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	12/09/2020 19:11	C20120912.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	12/09/2020 19:11	C20120912.D

BEACON ENVIRONMENTAL

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID: 0005503-09

SG-7

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	12/09/2020 19:36	C20120913.D
1,1-Dichloroethene	75-35-4	<10		10	12/09/2020 19:36	C20120913.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	12/09/2020 19:36	C20120913.D
trans-1,2-Dichloroethene	156-60-5	<10		10	12/09/2020 19:36	C20120913.D
1,1-Dichloroethane	75-34-3	<10		10	12/09/2020 19:36	C20120913.D
cis-1,2-Dichloroethene	156-59-2	<10		10	12/09/2020 19:36	C20120913.D
Chloroform	67-66-3	<10		10	12/09/2020 19:36	C20120913.D
1,2-Dichloroethane	107-06-2	<10		10	12/09/2020 19:36	C20120913.D
1,1,1-Trichloroethane	71-55-6	<10		10	12/09/2020 19:36	C20120913.D
Carbon Tetrachloride	56-23-5	<10		10	12/09/2020 19:36	C20120913.D
Trichloroethene	79-01-6	<10		10	12/09/2020 19:36	C20120913.D
1,1,2-Trichloroethane	79-00-5	<10		10	12/09/2020 19:36	C20120913.D
Tetrachloroethene	127-18-4	**25**		10	12/09/2020 19:36	C20120913.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	12/09/2020 19:36	C20120913.D
Chlorobenzene	108-90-7	<10		10	12/09/2020 19:36	C20120913.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	12/09/2020 19:36	C20120913.D
1,2,3-Trichloropropane	96-18-4	<10		10	12/09/2020 19:36	C20120913.D
1,3-Dichlorobenzene	541-73-1	<10		10	12/09/2020 19:36	C20120913.D
1,4-Dichlorobenzene	106-46-7	<10		10	12/09/2020 19:36	C20120913.D
1,2-Dichlorobenzene	95-50-1	<10		10	12/09/2020 19:36	C20120913.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	12/09/2020 19:36	C20120913.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	12/09/2020 19:36	C20120913.D

BEACON ENVIRONMENTAL

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID: 0005503-10

SG-8

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	12/09/2020 20:01	C20120914.D
1,1-Dichloroethene	75-35-4	<10		10	12/09/2020 20:01	C20120914.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	12/09/2020 20:01	C20120914.D
trans-1,2-Dichloroethene	156-60-5	<10		10	12/09/2020 20:01	C20120914.D
1,1-Dichloroethane	75-34-3	<10		10	12/09/2020 20:01	C20120914.D
cis-1,2-Dichloroethene	156-59-2	<10		10	12/09/2020 20:01	C20120914.D
Chloroform	67-66-3	<10		10	12/09/2020 20:01	C20120914.D
1,2-Dichloroethane	107-06-2	<10		10	12/09/2020 20:01	C20120914.D
1,1,1-Trichloroethane	71-55-6	<10		10	12/09/2020 20:01	C20120914.D
Carbon Tetrachloride	56-23-5	<10		10	12/09/2020 20:01	C20120914.D
Trichloroethene	79-01-6	**10**		10	12/09/2020 20:01	C20120914.D
1,1,2-Trichloroethane	79-00-5	<10		10	12/09/2020 20:01	C20120914.D
Tetrachloroethene	127-18-4	**126**		10	12/09/2020 20:01	C20120914.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	12/09/2020 20:01	C20120914.D
Chlorobenzene	108-90-7	<10		10	12/09/2020 20:01	C20120914.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	12/09/2020 20:01	C20120914.D
1,2,3-Trichloropropane	96-18-4	<10		10	12/09/2020 20:01	C20120914.D
1,3-Dichlorobenzene	541-73-1	<10		10	12/09/2020 20:01	C20120914.D
1,4-Dichlorobenzene	106-46-7	<10		10	12/09/2020 20:01	C20120914.D
1,2-Dichlorobenzene	95-50-1	<10		10	12/09/2020 20:01	C20120914.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	12/09/2020 20:01	C20120914.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	12/09/2020 20:01	C20120914.D

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AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID: 0005503-11

SG-9

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	12/09/2020 20:26	C20120915.D
1,1-Dichloroethene	75-35-4	<10		10	12/09/2020 20:26	C20120915.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	12/09/2020 20:26	C20120915.D
trans-1,2-Dichloroethene	156-60-5	<10		10	12/09/2020 20:26	C20120915.D
1,1-Dichloroethane	75-34-3	<10		10	12/09/2020 20:26	C20120915.D
cis-1,2-Dichloroethene	156-59-2	<10		10	12/09/2020 20:26	C20120915.D
Chloroform	67-66-3	<10		10	12/09/2020 20:26	C20120915.D
1,2-Dichloroethane	107-06-2	<10		10	12/09/2020 20:26	C20120915.D
1,1,1-Trichloroethane	71-55-6	<10		10	12/09/2020 20:26	C20120915.D
Carbon Tetrachloride	56-23-5	<10		10	12/09/2020 20:26	C20120915.D
Trichloroethene	79-01-6	<10		10	12/09/2020 20:26	C20120915.D
1,1,2-Trichloroethane	79-00-5	<10		10	12/09/2020 20:26	C20120915.D
Tetrachloroethene	127-18-4	<10		10	12/09/2020 20:26	C20120915.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	12/09/2020 20:26	C20120915.D
Chlorobenzene	108-90-7	<10		10	12/09/2020 20:26	C20120915.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	12/09/2020 20:26	C20120915.D
1,2,3-Trichloropropane	96-18-4	<10		10	12/09/2020 20:26	C20120915.D
1,3-Dichlorobenzene	541-73-1	<10		10	12/09/2020 20:26	C20120915.D
1,4-Dichlorobenzene	106-46-7	<10		10	12/09/2020 20:26	C20120915.D
1,2-Dichlorobenzene	95-50-1	<10		10	12/09/2020 20:26	C20120915.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	12/09/2020 20:26	C20120915.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	12/09/2020 20:26	C20120915.D

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID: 0005503-12

SG-10

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	12/09/2020 20:51	C20120916.D
1,1-Dichloroethene	75-35-4	<10		10	12/09/2020 20:51	C20120916.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	12/09/2020 20:51	C20120916.D
trans-1,2-Dichloroethene	156-60-5	<10		10	12/09/2020 20:51	C20120916.D
1,1-Dichloroethane	75-34-3	<10		10	12/09/2020 20:51	C20120916.D
cis-1,2-Dichloroethene	156-59-2	<10		10	12/09/2020 20:51	C20120916.D
Chloroform	67-66-3	<10		10	12/09/2020 20:51	C20120916.D
1,2-Dichloroethane	107-06-2	<10		10	12/09/2020 20:51	C20120916.D
1,1,1-Trichloroethane	71-55-6	<10		10	12/09/2020 20:51	C20120916.D
Carbon Tetrachloride	56-23-5	<10		10	12/09/2020 20:51	C20120916.D
Trichloroethene	79-01-6	<10		10	12/09/2020 20:51	C20120916.D
1,1,2-Trichloroethane	79-00-5	<10		10	12/09/2020 20:51	C20120916.D
Tetrachloroethene	127-18-4	<10		10	12/09/2020 20:51	C20120916.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	12/09/2020 20:51	C20120916.D
Chlorobenzene	108-90-7	<10		10	12/09/2020 20:51	C20120916.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	12/09/2020 20:51	C20120916.D
1,2,3-Trichloropropane	96-18-4	<10		10	12/09/2020 20:51	C20120916.D
1,3-Dichlorobenzene	541-73-1	<10		10	12/09/2020 20:51	C20120916.D
1,4-Dichlorobenzene	106-46-7	<10		10	12/09/2020 20:51	C20120916.D
1,2-Dichlorobenzene	95-50-1	<10		10	12/09/2020 20:51	C20120916.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	12/09/2020 20:51	C20120916.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	12/09/2020 20:51	C20120916.D

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID: 0005503-13

SG-11

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	12/09/2020 21:16	C20120917.D
1,1-Dichloroethene	75-35-4	<10		10	12/09/2020 21:16	C20120917.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	12/09/2020 21:16	C20120917.D
trans-1,2-Dichloroethene	156-60-5	<10		10	12/09/2020 21:16	C20120917.D
1,1-Dichloroethane	75-34-3	<10		10	12/09/2020 21:16	C20120917.D
cis-1,2-Dichloroethene	156-59-2	<10		10	12/09/2020 21:16	C20120917.D
Chloroform	67-66-3	<10		10	12/09/2020 21:16	C20120917.D
1,2-Dichloroethane	107-06-2	<10		10	12/09/2020 21:16	C20120917.D
1,1,1-Trichloroethane	71-55-6	<10		10	12/09/2020 21:16	C20120917.D
Carbon Tetrachloride	56-23-5	<10		10	12/09/2020 21:16	C20120917.D
Trichloroethene	79-01-6	**22**		10	12/09/2020 21:16	C20120917.D
1,1,2-Trichloroethane	79-00-5	<10		10	12/09/2020 21:16	C20120917.D
Tetrachloroethene	127-18-4	**1,680**		10	12/09/2020 21:16	C20120917.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	12/09/2020 21:16	C20120917.D
Chlorobenzene	108-90-7	<10		10	12/09/2020 21:16	C20120917.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	12/09/2020 21:16	C20120917.D
1,2,3-Trichloropropane	96-18-4	<10		10	12/09/2020 21:16	C20120917.D
1,3-Dichlorobenzene	541-73-1	<10		10	12/09/2020 21:16	C20120917.D
1,4-Dichlorobenzene	106-46-7	<10		10	12/09/2020 21:16	C20120917.D
1,2-Dichlorobenzene	95-50-1	<10		10	12/09/2020 21:16	C20120917.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	12/09/2020 21:16	C20120917.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	12/09/2020 21:16	C20120917.D

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID: 0005503-14

SG-12

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	12/09/2020 21:41	C20120918.D
1,1-Dichloroethene	75-35-4	<10		10	12/09/2020 21:41	C20120918.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	12/09/2020 21:41	C20120918.D
trans-1,2-Dichloroethene	156-60-5	<10		10	12/09/2020 21:41	C20120918.D
1,1-Dichloroethane	75-34-3	<10		10	12/09/2020 21:41	C20120918.D
cis-1,2-Dichloroethene	156-59-2	<10		10	12/09/2020 21:41	C20120918.D
Chloroform	67-66-3	<10		10	12/09/2020 21:41	C20120918.D
1,2-Dichloroethane	107-06-2	<10		10	12/09/2020 21:41	C20120918.D
1,1,1-Trichloroethane	71-55-6	<10		10	12/09/2020 21:41	C20120918.D
Carbon Tetrachloride	56-23-5	<10		10	12/09/2020 21:41	C20120918.D
Trichloroethene	79-01-6	<10		10	12/09/2020 21:41	C20120918.D
1,1,2-Trichloroethane	79-00-5	<10		10	12/09/2020 21:41	C20120918.D
Tetrachloroethene	127-18-4	**49**		10	12/09/2020 21:41	C20120918.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	12/09/2020 21:41	C20120918.D
Chlorobenzene	108-90-7	<10		10	12/09/2020 21:41	C20120918.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	12/09/2020 21:41	C20120918.D
1,2,3-Trichloropropane	96-18-4	<10		10	12/09/2020 21:41	C20120918.D
1,3-Dichlorobenzene	541-73-1	<10		10	12/09/2020 21:41	C20120918.D
1,4-Dichlorobenzene	106-46-7	<10		10	12/09/2020 21:41	C20120918.D
1,2-Dichlorobenzene	95-50-1	<10		10	12/09/2020 21:41	C20120918.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	12/09/2020 21:41	C20120918.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	12/09/2020 21:41	C20120918.D

BEACON ENVIRONMENTAL

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID: 0005503-15

SG-13

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	12/09/2020 22:06	C20120919.D
1,1-Dichloroethene	75-35-4	<10		10	12/09/2020 22:06	C20120919.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	12/09/2020 22:06	C20120919.D
trans-1,2-Dichloroethene	156-60-5	<10		10	12/09/2020 22:06	C20120919.D
1,1-Dichloroethane	75-34-3	<10		10	12/09/2020 22:06	C20120919.D
cis-1,2-Dichloroethene	156-59-2	<10		10	12/09/2020 22:06	C20120919.D
Chloroform	67-66-3	<10		10	12/09/2020 22:06	C20120919.D
1,2-Dichloroethane	107-06-2	<10		10	12/09/2020 22:06	C20120919.D
1,1,1-Trichloroethane	71-55-6	<10		10	12/09/2020 22:06	C20120919.D
Carbon Tetrachloride	56-23-5	<10		10	12/09/2020 22:06	C20120919.D
Trichloroethene	79-01-6	<10		10	12/09/2020 22:06	C20120919.D
1,1,2-Trichloroethane	79-00-5	<10		10	12/09/2020 22:06	C20120919.D
Tetrachloroethene	127-18-4	**46**		10	12/09/2020 22:06	C20120919.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	12/09/2020 22:06	C20120919.D
Chlorobenzene	108-90-7	<10		10	12/09/2020 22:06	C20120919.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	12/09/2020 22:06	C20120919.D
1,2,3-Trichloropropane	96-18-4	<10		10	12/09/2020 22:06	C20120919.D
1,3-Dichlorobenzene	541-73-1	<10		10	12/09/2020 22:06	C20120919.D
1,4-Dichlorobenzene	106-46-7	<10		10	12/09/2020 22:06	C20120919.D
1,2-Dichlorobenzene	95-50-1	<10		10	12/09/2020 22:06	C20120919.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	12/09/2020 22:06	C20120919.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	12/09/2020 22:06	C20120919.D

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID: 0005503-16

SG-14

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	12/09/2020 22:31	C20120920.D
1,1-Dichloroethene	75-35-4	<10		10	12/09/2020 22:31	C20120920.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	12/09/2020 22:31	C20120920.D
trans-1,2-Dichloroethene	156-60-5	<10		10	12/09/2020 22:31	C20120920.D
1,1-Dichloroethane	75-34-3	<10		10	12/09/2020 22:31	C20120920.D
cis-1,2-Dichloroethene	156-59-2	<10		10	12/09/2020 22:31	C20120920.D
Chloroform	67-66-3	<10		10	12/09/2020 22:31	C20120920.D
1,2-Dichloroethane	107-06-2	<10		10	12/09/2020 22:31	C20120920.D
1,1,1-Trichloroethane	71-55-6	<10		10	12/09/2020 22:31	C20120920.D
Carbon Tetrachloride	56-23-5	<10		10	12/09/2020 22:31	C20120920.D
Trichloroethene	79-01-6	<10		10	12/09/2020 22:31	C20120920.D
1,1,2-Trichloroethane	79-00-5	<10		10	12/09/2020 22:31	C20120920.D
Tetrachloroethene	127-18-4	<10		10	12/09/2020 22:31	C20120920.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	12/09/2020 22:31	C20120920.D
Chlorobenzene	108-90-7	<10		10	12/09/2020 22:31	C20120920.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	12/09/2020 22:31	C20120920.D
1,2,3-Trichloropropane	96-18-4	<10		10	12/09/2020 22:31	C20120920.D
1,3-Dichlorobenzene	541-73-1	<10		10	12/09/2020 22:31	C20120920.D
1,4-Dichlorobenzene	106-46-7	<10		10	12/09/2020 22:31	C20120920.D
1,2-Dichlorobenzene	95-50-1	<10		10	12/09/2020 22:31	C20120920.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	12/09/2020 22:31	C20120920.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	12/09/2020 22:31	C20120920.D

BEACON ENVIRONMENTAL

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID: 0005503-17

SG-15

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	12/09/2020 22:56	C20120921.D
1,1-Dichloroethene	75-35-4	<10		10	12/09/2020 22:56	C20120921.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	12/09/2020 22:56	C20120921.D
trans-1,2-Dichloroethene	156-60-5	<10		10	12/09/2020 22:56	C20120921.D
1,1-Dichloroethane	75-34-3	<10		10	12/09/2020 22:56	C20120921.D
cis-1,2-Dichloroethene	156-59-2	<10		10	12/09/2020 22:56	C20120921.D
Chloroform	67-66-3	<10		10	12/09/2020 22:56	C20120921.D
1,2-Dichloroethane	107-06-2	<10		10	12/09/2020 22:56	C20120921.D
1,1,1-Trichloroethane	71-55-6	<10		10	12/09/2020 22:56	C20120921.D
Carbon Tetrachloride	56-23-5	<10		10	12/09/2020 22:56	C20120921.D
Trichloroethene	79-01-6	**50**		10	12/09/2020 22:56	C20120921.D
1,1,2-Trichloroethane	79-00-5	<10		10	12/09/2020 22:56	C20120921.D
Tetrachloroethene	127-18-4	**506**		10	12/09/2020 22:56	C20120921.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	12/09/2020 22:56	C20120921.D
Chlorobenzene	108-90-7	<10		10	12/09/2020 22:56	C20120921.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	12/09/2020 22:56	C20120921.D
1,2,3-Trichloropropane	96-18-4	<10		10	12/09/2020 22:56	C20120921.D
1,3-Dichlorobenzene	541-73-1	<10		10	12/09/2020 22:56	C20120921.D
1,4-Dichlorobenzene	106-46-7	<10		10	12/09/2020 22:56	C20120921.D
1,2-Dichlorobenzene	95-50-1	<10		10	12/09/2020 22:56	C20120921.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	12/09/2020 22:56	C20120921.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	12/09/2020 22:56	C20120921.D

BEACON ENVIRONMENTAL

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID: 0005503-18

SG-15-Dup

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	12/09/2020 23:21	C20120922.D
1,1-Dichloroethene	75-35-4	<10		10	12/09/2020 23:21	C20120922.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	12/09/2020 23:21	C20120922.D
trans-1,2-Dichloroethene	156-60-5	<10		10	12/09/2020 23:21	C20120922.D
1,1-Dichloroethane	75-34-3	<10		10	12/09/2020 23:21	C20120922.D
cis-1,2-Dichloroethene	156-59-2	**11**		10	12/09/2020 23:21	C20120922.D
Chloroform	67-66-3	<10		10	12/09/2020 23:21	C20120922.D
1,2-Dichloroethane	107-06-2	<10		10	12/09/2020 23:21	C20120922.D
1,1,1-Trichloroethane	71-55-6	<10		10	12/09/2020 23:21	C20120922.D
Carbon Tetrachloride	56-23-5	<10		10	12/09/2020 23:21	C20120922.D
Trichloroethene	79-01-6	**42**		10	12/09/2020 23:21	C20120922.D
1,1,2-Trichloroethane	79-00-5	<10		10	12/09/2020 23:21	C20120922.D
Tetrachloroethene	127-18-4	**327**		10	12/09/2020 23:21	C20120922.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	12/09/2020 23:21	C20120922.D
Chlorobenzene	108-90-7	<10		10	12/09/2020 23:21	C20120922.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	12/09/2020 23:21	C20120922.D
1,2,3-Trichloropropane	96-18-4	<10		10	12/09/2020 23:21	C20120922.D
1,3-Dichlorobenzene	541-73-1	<10		10	12/09/2020 23:21	C20120922.D
1,4-Dichlorobenzene	106-46-7	<10		10	12/09/2020 23:21	C20120922.D
1,2-Dichlorobenzene	95-50-1	<10		10	12/09/2020 23:21	C20120922.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	12/09/2020 23:21	C20120922.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	12/09/2020 23:21	C20120922.D

BEACON ENVIRONMENTAL

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID: 0005503-19

SG-16

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	12/09/2020 23:46	C20120923.D
1,1-Dichloroethene	75-35-4	<10		10	12/09/2020 23:46	C20120923.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	12/09/2020 23:46	C20120923.D
trans-1,2-Dichloroethene	156-60-5	<10		10	12/09/2020 23:46	C20120923.D
1,1-Dichloroethane	75-34-3	<10		10	12/09/2020 23:46	C20120923.D
cis-1,2-Dichloroethene	156-59-2	**17**		10	12/09/2020 23:46	C20120923.D
Chloroform	67-66-3	<10		10	12/09/2020 23:46	C20120923.D
1,2-Dichloroethane	107-06-2	<10		10	12/09/2020 23:46	C20120923.D
1,1,1-Trichloroethane	71-55-6	<10		10	12/09/2020 23:46	C20120923.D
Carbon Tetrachloride	56-23-5	<10		10	12/09/2020 23:46	C20120923.D
Trichloroethene	79-01-6	**53**		10	12/09/2020 23:46	C20120923.D
1,1,2-Trichloroethane	79-00-5	<10		10	12/09/2020 23:46	C20120923.D
Tetrachloroethene	127-18-4	**1,040**		10	12/09/2020 23:46	C20120923.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	12/09/2020 23:46	C20120923.D
Chlorobenzene	108-90-7	<10		10	12/09/2020 23:46	C20120923.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	12/09/2020 23:46	C20120923.D
1,2,3-Trichloropropane	96-18-4	<10		10	12/09/2020 23:46	C20120923.D
1,3-Dichlorobenzene	541-73-1	<10		10	12/09/2020 23:46	C20120923.D
1,4-Dichlorobenzene	106-46-7	<10		10	12/09/2020 23:46	C20120923.D
1,2-Dichlorobenzene	95-50-1	<10		10	12/09/2020 23:46	C20120923.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	12/09/2020 23:46	C20120923.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	12/09/2020 23:46	C20120923.D

BEACON ENVIRONMENTAL

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Forest Hill, MD 21050 USA
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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID: 0005503-20

SG-17

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	12/10/2020 00:11	C20120924.D
1,1-Dichloroethene	75-35-4	<10		10	12/10/2020 00:11	C20120924.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	12/10/2020 00:11	C20120924.D
trans-1,2-Dichloroethene	156-60-5	<10		10	12/10/2020 00:11	C20120924.D
1,1-Dichloroethane	75-34-3	<10		10	12/10/2020 00:11	C20120924.D
cis-1,2-Dichloroethene	156-59-2	<10		10	12/10/2020 00:11	C20120924.D
Chloroform	67-66-3	<10		10	12/10/2020 00:11	C20120924.D
1,2-Dichloroethane	107-06-2	<10		10	12/10/2020 00:11	C20120924.D
1,1,1-Trichloroethane	71-55-6	<10		10	12/10/2020 00:11	C20120924.D
Carbon Tetrachloride	56-23-5	<10		10	12/10/2020 00:11	C20120924.D
Trichloroethene	79-01-6	<10		10	12/10/2020 00:11	C20120924.D
1,1,2-Trichloroethane	79-00-5	<10		10	12/10/2020 00:11	C20120924.D
Tetrachloroethene	127-18-4	<10		10	12/10/2020 00:11	C20120924.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	12/10/2020 00:11	C20120924.D
Chlorobenzene	108-90-7	<10		10	12/10/2020 00:11	C20120924.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	12/10/2020 00:11	C20120924.D
1,2,3-Trichloropropane	96-18-4	<10		10	12/10/2020 00:11	C20120924.D
1,3-Dichlorobenzene	541-73-1	<10		10	12/10/2020 00:11	C20120924.D
1,4-Dichlorobenzene	106-46-7	<10		10	12/10/2020 00:11	C20120924.D
1,2-Dichlorobenzene	95-50-1	<10		10	12/10/2020 00:11	C20120924.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	12/10/2020 00:11	C20120924.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	12/10/2020 00:11	C20120924.D

BEACON ENVIRONMENTAL

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID: 0005503-21

SG-18

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	12/10/2020 00:37	C20120925.D
1,1-Dichloroethene	75-35-4	<10		10	12/10/2020 00:37	C20120925.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	12/10/2020 00:37	C20120925.D
trans-1,2-Dichloroethene	156-60-5	<10		10	12/10/2020 00:37	C20120925.D
1,1-Dichloroethane	75-34-3	<10		10	12/10/2020 00:37	C20120925.D
cis-1,2-Dichloroethene	156-59-2	<10		10	12/10/2020 00:37	C20120925.D
Chloroform	67-66-3	<10		10	12/10/2020 00:37	C20120925.D
1,2-Dichloroethane	107-06-2	<10		10	12/10/2020 00:37	C20120925.D
1,1,1-Trichloroethane	71-55-6	<10		10	12/10/2020 00:37	C20120925.D
Carbon Tetrachloride	56-23-5	<10		10	12/10/2020 00:37	C20120925.D
Trichloroethene	79-01-6	<10		10	12/10/2020 00:37	C20120925.D
1,1,2-Trichloroethane	79-00-5	<10		10	12/10/2020 00:37	C20120925.D
Tetrachloroethene	127-18-4	<10		10	12/10/2020 00:37	C20120925.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	12/10/2020 00:37	C20120925.D
Chlorobenzene	108-90-7	<10		10	12/10/2020 00:37	C20120925.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	12/10/2020 00:37	C20120925.D
1,2,3-Trichloropropane	96-18-4	<10		10	12/10/2020 00:37	C20120925.D
1,3-Dichlorobenzene	541-73-1	<10		10	12/10/2020 00:37	C20120925.D
1,4-Dichlorobenzene	106-46-7	<10		10	12/10/2020 00:37	C20120925.D
1,2-Dichlorobenzene	95-50-1	<10		10	12/10/2020 00:37	C20120925.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	12/10/2020 00:37	C20120925.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	12/10/2020 00:37	C20120925.D

BEACON ENVIRONMENTAL

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID: 0005503-22

SG-19

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	12/10/2020 01:02	C20120926.D
1,1-Dichloroethene	75-35-4	<10		10	12/10/2020 01:02	C20120926.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	12/10/2020 01:02	C20120926.D
trans-1,2-Dichloroethene	156-60-5	<10		10	12/10/2020 01:02	C20120926.D
1,1-Dichloroethane	75-34-3	<10		10	12/10/2020 01:02	C20120926.D
cis-1,2-Dichloroethene	156-59-2	<10		10	12/10/2020 01:02	C20120926.D
Chloroform	67-66-3	<10		10	12/10/2020 01:02	C20120926.D
1,2-Dichloroethane	107-06-2	<10		10	12/10/2020 01:02	C20120926.D
1,1,1-Trichloroethane	71-55-6	<10		10	12/10/2020 01:02	C20120926.D
Carbon Tetrachloride	56-23-5	<10		10	12/10/2020 01:02	C20120926.D
Trichloroethene	79-01-6	<10		10	12/10/2020 01:02	C20120926.D
1,1,2-Trichloroethane	79-00-5	<10		10	12/10/2020 01:02	C20120926.D
Tetrachloroethene	127-18-4	**80**		10	12/10/2020 01:02	C20120926.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	12/10/2020 01:02	C20120926.D
Chlorobenzene	108-90-7	<10		10	12/10/2020 01:02	C20120926.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	12/10/2020 01:02	C20120926.D
1,2,3-Trichloropropane	96-18-4	<10		10	12/10/2020 01:02	C20120926.D
1,3-Dichlorobenzene	541-73-1	<10		10	12/10/2020 01:02	C20120926.D
1,4-Dichlorobenzene	106-46-7	<10		10	12/10/2020 01:02	C20120926.D
1,2-Dichlorobenzene	95-50-1	<10		10	12/10/2020 01:02	C20120926.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	12/10/2020 01:02	C20120926.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	12/10/2020 01:02	C20120926.D

BEACON ENVIRONMENTAL

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
1.410.838.8780

CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID: 0005503-23

SG-20

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	12/10/2020 01:27	C20120927.D
1,1-Dichloroethene	75-35-4	<10		10	12/10/2020 01:27	C20120927.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	12/10/2020 01:27	C20120927.D
trans-1,2-Dichloroethene	156-60-5	<10		10	12/10/2020 01:27	C20120927.D
1,1-Dichloroethane	75-34-3	<10		10	12/10/2020 01:27	C20120927.D
cis-1,2-Dichloroethene	156-59-2	**17**		10	12/10/2020 01:27	C20120927.D
Chloroform	67-66-3	<10		10	12/10/2020 01:27	C20120927.D
1,2-Dichloroethane	107-06-2	<10		10	12/10/2020 01:27	C20120927.D
1,1,1-Trichloroethane	71-55-6	<10		10	12/10/2020 01:27	C20120927.D
Carbon Tetrachloride	56-23-5	<10		10	12/10/2020 01:27	C20120927.D
Trichloroethene	79-01-6	**207**		10	12/10/2020 01:27	C20120927.D
1,1,2-Trichloroethane	79-00-5	<10		10	12/10/2020 01:27	C20120927.D
Tetrachloroethene	127-18-4	**1,300**		10	12/10/2020 01:27	C20120927.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	12/10/2020 01:27	C20120927.D
Chlorobenzene	108-90-7	<10		10	12/10/2020 01:27	C20120927.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	12/10/2020 01:27	C20120927.D
1,2,3-Trichloropropane	96-18-4	<10		10	12/10/2020 01:27	C20120927.D
1,3-Dichlorobenzene	541-73-1	<10		10	12/10/2020 01:27	C20120927.D
1,4-Dichlorobenzene	106-46-7	<10		10	12/10/2020 01:27	C20120927.D
1,2-Dichlorobenzene	95-50-1	<10		10	12/10/2020 01:27	C20120927.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	12/10/2020 01:27	C20120927.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	12/10/2020 01:27	C20120927.D

BEACON ENVIRONMENTAL

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID: 0005503-24

SG-21

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	12/10/2020 01:52	C20120928.D
1,1-Dichloroethene	75-35-4	<10		10	12/10/2020 01:52	C20120928.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	12/10/2020 01:52	C20120928.D
trans-1,2-Dichloroethene	156-60-5	<10		10	12/10/2020 01:52	C20120928.D
1,1-Dichloroethane	75-34-3	<10		10	12/10/2020 01:52	C20120928.D
cis-1,2-Dichloroethene	156-59-2	<10		10	12/10/2020 01:52	C20120928.D
Chloroform	67-66-3	<10		10	12/10/2020 01:52	C20120928.D
1,2-Dichloroethane	107-06-2	<10		10	12/10/2020 01:52	C20120928.D
1,1,1-Trichloroethane	71-55-6	<10		10	12/10/2020 01:52	C20120928.D
Carbon Tetrachloride	56-23-5	<10		10	12/10/2020 01:52	C20120928.D
Trichloroethene	79-01-6	<10		10	12/10/2020 01:52	C20120928.D
1,1,2-Trichloroethane	79-00-5	<10		10	12/10/2020 01:52	C20120928.D
Tetrachloroethene	127-18-4	**12**		10	12/10/2020 01:52	C20120928.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	12/10/2020 01:52	C20120928.D
Chlorobenzene	108-90-7	<10		10	12/10/2020 01:52	C20120928.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	12/10/2020 01:52	C20120928.D
1,2,3-Trichloropropane	96-18-4	<10		10	12/10/2020 01:52	C20120928.D
1,3-Dichlorobenzene	541-73-1	<10		10	12/10/2020 01:52	C20120928.D
1,4-Dichlorobenzene	106-46-7	<10		10	12/10/2020 01:52	C20120928.D
1,2-Dichlorobenzene	95-50-1	<10		10	12/10/2020 01:52	C20120928.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	12/10/2020 01:52	C20120928.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	12/10/2020 01:52	C20120928.D

BEACON ENVIRONMENTAL

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
1.410.838.8780

CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID: 0005503-25

SG-22

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	12/10/2020 02:17	C20120929.D
1,1-Dichloroethene	75-35-4	<10		10	12/10/2020 02:17	C20120929.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	12/10/2020 02:17	C20120929.D
trans-1,2-Dichloroethene	156-60-5	<10		10	12/10/2020 02:17	C20120929.D
1,1-Dichloroethane	75-34-3	<10		10	12/10/2020 02:17	C20120929.D
cis-1,2-Dichloroethene	156-59-2	<10		10	12/10/2020 02:17	C20120929.D
Chloroform	67-66-3	<10		10	12/10/2020 02:17	C20120929.D
1,2-Dichloroethane	107-06-2	<10		10	12/10/2020 02:17	C20120929.D
1,1,1-Trichloroethane	71-55-6	<10		10	12/10/2020 02:17	C20120929.D
Carbon Tetrachloride	56-23-5	<10		10	12/10/2020 02:17	C20120929.D
Trichloroethene	79-01-6	<10		10	12/10/2020 02:17	C20120929.D
1,1,2-Trichloroethane	79-00-5	<10		10	12/10/2020 02:17	C20120929.D
Tetrachloroethene	127-18-4	<10		10	12/10/2020 02:17	C20120929.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	12/10/2020 02:17	C20120929.D
Chlorobenzene	108-90-7	<10		10	12/10/2020 02:17	C20120929.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	12/10/2020 02:17	C20120929.D
1,2,3-Trichloropropane	96-18-4	<10		10	12/10/2020 02:17	C20120929.D
1,3-Dichlorobenzene	541-73-1	<10		10	12/10/2020 02:17	C20120929.D
1,4-Dichlorobenzene	106-46-7	<10		10	12/10/2020 02:17	C20120929.D
1,2-Dichlorobenzene	95-50-1	<10		10	12/10/2020 02:17	C20120929.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	12/10/2020 02:17	C20120929.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	12/10/2020 02:17	C20120929.D

BEACON ENVIRONMENTAL

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID: 0005503-26

SG-23

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	12/10/2020 02:42	C20120930.D
1,1-Dichloroethene	75-35-4	<10		10	12/10/2020 02:42	C20120930.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	12/10/2020 02:42	C20120930.D
trans-1,2-Dichloroethene	156-60-5	<10		10	12/10/2020 02:42	C20120930.D
1,1-Dichloroethane	75-34-3	<10		10	12/10/2020 02:42	C20120930.D
cis-1,2-Dichloroethene	156-59-2	<10		10	12/10/2020 02:42	C20120930.D
Chloroform	67-66-3	<10		10	12/10/2020 02:42	C20120930.D
1,2-Dichloroethane	107-06-2	<10		10	12/10/2020 02:42	C20120930.D
1,1,1-Trichloroethane	71-55-6	<10		10	12/10/2020 02:42	C20120930.D
Carbon Tetrachloride	56-23-5	<10		10	12/10/2020 02:42	C20120930.D
Trichloroethene	79-01-6	<10		10	12/10/2020 02:42	C20120930.D
1,1,2-Trichloroethane	79-00-5	<10		10	12/10/2020 02:42	C20120930.D
Tetrachloroethene	127-18-4	<10		10	12/10/2020 02:42	C20120930.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	12/10/2020 02:42	C20120930.D
Chlorobenzene	108-90-7	<10		10	12/10/2020 02:42	C20120930.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	12/10/2020 02:42	C20120930.D
1,2,3-Trichloropropane	96-18-4	<10		10	12/10/2020 02:42	C20120930.D
1,3-Dichlorobenzene	541-73-1	<10		10	12/10/2020 02:42	C20120930.D
1,4-Dichlorobenzene	106-46-7	<10		10	12/10/2020 02:42	C20120930.D
1,2-Dichlorobenzene	95-50-1	<10		10	12/10/2020 02:42	C20120930.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	12/10/2020 02:42	C20120930.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	12/10/2020 02:42	C20120930.D

BEACON ENVIRONMENTAL

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
1.410.838.8780

CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID: 0005503-27

SG-24

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	12/10/2020 03:07	C20120931.D
1,1-Dichloroethene	75-35-4	<10		10	12/10/2020 03:07	C20120931.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	12/10/2020 03:07	C20120931.D
trans-1,2-Dichloroethene	156-60-5	<10		10	12/10/2020 03:07	C20120931.D
1,1-Dichloroethane	75-34-3	<10		10	12/10/2020 03:07	C20120931.D
cis-1,2-Dichloroethene	156-59-2	<10		10	12/10/2020 03:07	C20120931.D
Chloroform	67-66-3	<10		10	12/10/2020 03:07	C20120931.D
1,2-Dichloroethane	107-06-2	<10		10	12/10/2020 03:07	C20120931.D
1,1,1-Trichloroethane	71-55-6	<10		10	12/10/2020 03:07	C20120931.D
Carbon Tetrachloride	56-23-5	<10		10	12/10/2020 03:07	C20120931.D
Trichloroethene	79-01-6	<10		10	12/10/2020 03:07	C20120931.D
1,1,2-Trichloroethane	79-00-5	<10		10	12/10/2020 03:07	C20120931.D
Tetrachloroethene	127-18-4	**26**		10	12/10/2020 03:07	C20120931.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	12/10/2020 03:07	C20120931.D
Chlorobenzene	108-90-7	<10		10	12/10/2020 03:07	C20120931.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	12/10/2020 03:07	C20120931.D
1,2,3-Trichloropropane	96-18-4	<10		10	12/10/2020 03:07	C20120931.D
1,3-Dichlorobenzene	541-73-1	<10		10	12/10/2020 03:07	C20120931.D
1,4-Dichlorobenzene	106-46-7	<10		10	12/10/2020 03:07	C20120931.D
1,2-Dichlorobenzene	95-50-1	<10		10	12/10/2020 03:07	C20120931.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	12/10/2020 03:07	C20120931.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	12/10/2020 03:07	C20120931.D

BEACON ENVIRONMENTAL

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Lab Sample ID: 0005503-28

SG-25

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	12/10/2020 03:32	C20120932.D
1,1-Dichloroethene	75-35-4	<10		10	12/10/2020 03:32	C20120932.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	12/10/2020 03:32	C20120932.D
trans-1,2-Dichloroethene	156-60-5	<10		10	12/10/2020 03:32	C20120932.D
1,1-Dichloroethane	75-34-3	<10		10	12/10/2020 03:32	C20120932.D
cis-1,2-Dichloroethene	156-59-2	<10		10	12/10/2020 03:32	C20120932.D
Chloroform	67-66-3	<10		10	12/10/2020 03:32	C20120932.D
1,2-Dichloroethane	107-06-2	<10		10	12/10/2020 03:32	C20120932.D
1,1,1-Trichloroethane	71-55-6	<10		10	12/10/2020 03:32	C20120932.D
Carbon Tetrachloride	56-23-5	<10		10	12/10/2020 03:32	C20120932.D
Trichloroethene	79-01-6	<10		10	12/10/2020 03:32	C20120932.D
1,1,2-Trichloroethane	79-00-5	<10		10	12/10/2020 03:32	C20120932.D
Tetrachloroethene	127-18-4	<10		10	12/10/2020 03:32	C20120932.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	12/10/2020 03:32	C20120932.D
Chlorobenzene	108-90-7	<10		10	12/10/2020 03:32	C20120932.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	12/10/2020 03:32	C20120932.D
1,2,3-Trichloropropane	96-18-4	<10		10	12/10/2020 03:32	C20120932.D
1,3-Dichlorobenzene	541-73-1	<10		10	12/10/2020 03:32	C20120932.D
1,4-Dichlorobenzene	106-46-7	<10		10	12/10/2020 03:32	C20120932.D
1,2-Dichlorobenzene	95-50-1	<10		10	12/10/2020 03:32	C20120932.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	12/10/2020 03:32	C20120932.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	12/10/2020 03:32	C20120932.D

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AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

QC Information/Summary

BEACON ENVIRONMENTAL

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
1.410.838.8780

CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Soil-Gas Sample Analysis by EPA Method 8260C - Quality Control Summary

20L0021-BLK1 (Lab Blank) File ID: C20120903.D Analyzed: 12/9/20 15:26

Sampler: Beacon Passive Sampler Analyte	CAS#	Result (ng)	LOQ (ng)	Q
Vinyl Chloride	75-01-4	<10	10	
1,1-Dichloroethene	75-35-4	<10	10	
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10	10	
trans-1,2-Dichloroethene	156-60-5	<10	10	
1,1-Dichloroethane	75-34-3	<10	10	
cis-1,2-Dichloroethene	156-59-2	<10	10	
Chloroform	67-66-3	<10	10	
1,2-Dichloroethane	107-06-2	<10	10	
1,1,1-Trichloroethane	71-55-6	<10	10	
Carbon Tetrachloride	56-23-5	<10	10	
Trichloroethene	79-01-6	<10	10	
1,1,2-Trichloroethane	79-00-5	<10	10	
Tetrachloroethene	127-18-4	<10	10	
1,1,1,2-Tetrachloroethane	630-20-6	<10	10	
Chlorobenzene	108-90-7	<10	10	
1,1,2,2-Tetrachloroethane	79-34-5	<10	10	
1,2,3-Trichloropropane	96-18-4	<10	10	
1,3-Dichlorobenzene	541-73-1	<10	10	
1,4-Dichlorobenzene	106-46-7	<10	10	
1,2-Dichlorobenzene	95-50-1	<10	10	
1,2,4-Trichlorobenzene	120-82-1	<10	10	
1,2,3-Trichlorobenzene	87-61-6	<10	10	

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AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Sample Duplicate RPD Summary

Soil-Gas Sample Analysis by EPA Method 8260C

Duplicate Sample: SG-2-Dup (0005503-04) ***Sample: SG-2 (0005503-03)*** ***Average RPD:*** 0.0%

Analyte	CAS#	Duplicate Result (ng)	LOQ (ng)	Sample Result (ng)	LOQ (ng)	RPD (%)
Vinyl Chloride	75-01-4	<10	10	<10	10	0.0
1,1-Dichloroethene	75-35-4	<10	10	<10	10	0.0
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10	10	<10	10	0.0
trans-1,2-Dichloroethene	156-60-5	<10	10	<10	10	0.0
1,1-Dichloroethane	75-34-3	<10	10	<10	10	0.0
cis-1,2-Dichloroethene	156-59-2	<10	10	<10	10	0.0
Chloroform	67-66-3	<10	10	<10	10	0.0
1,2-Dichloroethane	107-06-2	<10	10	<10	10	0.0
1,1,1-Trichloroethane	71-55-6	<10	10	<10	10	0.0
Carbon Tetrachloride	56-23-5	<10	10	<10	10	0.0
Trichloroethene	79-01-6	<10	10	<10	10	0.0
1,1,2-Trichloroethane	79-00-5	<10	10	<10	10	0.0
Tetrachloroethene	127-18-4	<10	10	<10	10	0.0
1,1,1,2-Tetrachloroethane	630-20-6	<10	10	<10	10	0.0
Chlorobenzene	108-90-7	<10	10	<10	10	0.0
1,1,2,2-Tetrachloroethane	79-34-5	<10	10	<10	10	0.0
1,2,3-Trichloropropane	96-18-4	<10	10	<10	10	0.0
1,3-Dichlorobenzene	541-73-1	<10	10	<10	10	0.0
1,4-Dichlorobenzene	106-46-7	<10	10	<10	10	0.0
1,2-Dichlorobenzene	95-50-1	<10	10	<10	10	0.0
1,2,4-Trichlorobenzene	120-82-1	<10	10	<10	10	0.0
1,2,3-Trichlorobenzene	87-61-6	<10	10	<10	10	0.0

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AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Sample Duplicate RPD Summary

Soil-Gas Sample Analysis by EPA Method 8260C

Duplicate Sample: SG-15-Dup (0005503-18) ***Sample: SG-15 (0005503-17)*** ***Average RPD:*** 3.2%

Analyte	CAS#	Duplicate Result (ng)	LOQ (ng)	Sample Result (ng)	LOQ (ng)	RPD (%)
Vinyl Chloride	75-01-4	<10	10	<10	10	0.0
1,1-Dichloroethene	75-35-4	<10	10	<10	10	0.0
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10	10	<10	10	0.0
trans-1,2-Dichloroethene	156-60-5	<10	10	<10	10	0.0
1,1-Dichloroethane	75-34-3	<10	10	<10	10	0.0
cis-1,2-Dichloroethene	156-59-2	11.0	10	<10	10	9.5
Chloroform	67-66-3	<10	10	<10	10	0.0
1,2-Dichloroethane	107-06-2	<10	10	<10	10	0.0
1,1,1-Trichloroethane	71-55-6	<10	10	<10	10	0.0
Carbon Tetrachloride	56-23-5	<10	10	<10	10	0.0
Trichloroethene	79-01-6	42.0	10	50.0	10	17.4
1,1,2-Trichloroethane	79-00-5	<10	10	<10	10	0.0
Tetrachloroethene	127-18-4	327	10	506	10	43.0
1,1,1,2-Tetrachloroethane	630-20-6	<10	10	<10	10	0.0
Chlorobenzene	108-90-7	<10	10	<10	10	0.0
1,1,2,2-Tetrachloroethane	79-34-5	<10	10	<10	10	0.0
1,2,3-Trichloropropane	96-18-4	<10	10	<10	10	0.0
1,3-Dichlorobenzene	541-73-1	<10	10	<10	10	0.0
1,4-Dichlorobenzene	106-46-7	<10	10	<10	10	0.0
1,2-Dichlorobenzene	95-50-1	<10	10	<10	10	0.0
1,2,4-Trichlorobenzene	120-82-1	<10	10	<10	10	0.0
1,2,3-Trichlorobenzene	87-61-6	<10	10	<10	10	0.0

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AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Additional QC Information

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AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Laboratory Certification List

Certification ID	Certification No.	Description	Expires	Project Required
Alaska CS-LAP	19-002	Alaska Department of Environmental Conservation	01/31/2023	
DoD-ELAP	L20-532	United States Department of Defense Environmental Laboratory Accreditation	12/31/2022	
ISO/IEC 17025:2017	L20-532	General Requirements for the competence of Testing and Calibration Laboratories	12/31/2022	
NY-NELAC	12097	New York Department of Health	04/01/2021	
Utah-NELAC	MD01091	Utah Department of Health	12/31/2021	

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AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Qualifiers/Notes and Definitions

General Definitions:

DF	Dilution Factor
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
NA	Not Applicable
Q	Qualifier
RPD	Relative Percent Difference
RT	Retention Times in Minutes
RRT	Evaluation of Relative Retention Times in RRT Units
3σ	Uncertainty
∉	Compound not on scope of accreditation
+	values are outside method/contract required QC limits
∅	Compound not on scope of accreditation and analyzed with a one-point calibration

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AECOM	**Site Name:** Westinghouse CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005503
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 12/15/2020

Sample Management Records

BEACON ENVIRONMENTAL
2203A Commerce Rd, Suite 1
Forest Hill, MD 21050, USA
1-410-838-8780
800-878-5510 Toll Free

PASSIVE SOIL GAS SAMPLES | CHAIN-OF-CUSTODY

Project Information		Client Information	
Site Name: WESTINGHOUSE CFFF	Company Name: AECOM / WESTINGHOUSE	Project Manager: JEREMY GRANT	
	Office Location: COLUMBIA, SC	Client PO:	
Site Location: HOPKINS, SC	Submitted by: JAMES LEMHART	Turn around time (check one):	
	Email: JEREMY.GRANT@AECOM.COM	☒ Normal ☐ Rush (specify) ____ days	

Field Sample ID	Start Date	Start Time	Stop Date	Stop Time	Sampling Hole Depth (cm)	Surface Type (Soil, Asphalt, Concrete, Gravel)	Optional Information (Location Description, Sample Condition, PID / FID Readings, etc)
SG 13	112320	0852	120720	0950	91.44	SOIL	
SG 18	↓	0903	↓	0915	↓	SOIL	
SG 9		0913		0944		SOIL	
SG 5		0929		0954		SOIL	
SG 1		0939		0941		SOIL	
SG 6		0956		0936		SOIL	
SG 2		1207		0931		SOIL	
SG 14		1214		0920		SOIL	
SG 22		1234		0911		SOIL	
SG 21		1240		0858		SOIL	
SG 17		1248		0907		SOIL	
SG 4		1540		1049		CONCRETE	
SG 3		1547		1055		CONCRETE	
SG 8		1558		1057		CONCRETE	
SG 16	↓	1615	↓	1111	↓	CONCRETE	

Special Instructions:

Relinquished by (signature): J Lemhart	Date / Time: 12-7-20 /	Received by (signature): allison Fetter	Date / Time: 12/08/2020 1630
Relinquished by (signature):	Date / Time:	Received by (signature):	Date / Time:
For Lab Use Only	Beacon Job No: 5503	Beacon Proposal: 201103R03	Analytical Method: 8260C
Courier Name: FedEx	Shipment Condition: Good	Custody Seal Intact: ☒ Yes ☐ No ☐ n/a	Custody Seal No: 3490707

Pg ____ of ____

BEACON ENVIRONMENTAL
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Forest Hill, MD 21050, USA
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800-878-5510 Toll Free

PASSIVE SOIL GAS SAMPLES — CHAIN-OF-CUSTODY

Project Information		Client Information	
Site Name: WESTINGHOUSE CFFF		Company Name: AECOM / WESTINGHOUSE	Project Manager: JEREMY GRANT
		Office Location: COLUMBIA, SC	Client PO:
Site Location: HOPKINS, SC		Submitted by: JAMES LEAPHART	Turn around time (check one):
		Email: JEREMY.GRANT@AECOM.COM	☒ Normal ☐ Rush (specify) ____ days

Field Sample ID	Start Date	Start Time	Stop Date	Stop Time	Sampling Hole Depth (cm)	Surface Type (Soil, Asphalt, Concrete, Gravel)	Optional Information (Location Description, Sample Condition, PID / FID Readings, etc)
SG 12	112420	0755	120720	1104	91.44	SOIL	
SG 11		0809	120720	1108		CONCRETE	
SG 20		0828	120720	1115		ASPHALT	
SG 24		0847	120720	1125		CONCRETE	
SG 25		0859	120720	1119		SOIL	
SG 19		0920	120720	1201		CONCRETE	
SG 7		0927	120720	1158		CONCRETE	
SG 15		0939	120720	1152		CONCRETE	
SG 23		1150	120720	1228		SOIL	
SG 10	↓	1200	120720	1232		SOIL	
SG-2-DUP	112320	1207	120720	0931	↓	SOIL	
SG-15-DUP	112420	0939	120720	1152		CONCRETE	
TRIP-1							

Special Instructions:

For Lab Use Only	Beacon Job No: 5503	Beacon Proposal: 201103R03	Analytical Method: 8260C

Pg ____ of ____

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CERTIFICATE OF ANALYSIS

Beacon Proposal No.: 201103R03

Beacon Project No.: 0005603

Project Description:
Project Site: Westinghouse-CFFF
Hopkins, SC

Client PO No.: 130171

Prepared for:
Jeremy Grant
AECOM
101 Research Drive
Columbia, SC 29203

Ryan W. Schneider
Senior Project Manager

February 12, 2021

All data meet requirements as specified in the Beacon Environmental Services, Inc. Quality Assurance Project Plan and the results relate only to the samples reported. The work performed was in accordance with ISO/IEC 17025:2017 requirements, except samples were analyzed within a 24-hour tune window. This report shall not be reproduced, except in full, without written approval of the laboratory. Release of the data contained in this data package has been authorized by the Laboratory Director or his signee, as verified by the following signatures:

Steven C. Thornley
Laboratory Director

Peter B. Kelly
Interim Quality Manager

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Map Report

AECOM	**Project Site:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Project Location:** Hopkins, SC	**Beacon Project No.:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/12/2021

Summary of Compound Detections- Mass

Lab Sample ID: 0005603-02 — **SG-26** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Tetrachloroethene	127-18-4	**74**		10	S21020306.D

Lab Sample ID: 0005603-03 — **SG-27** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Vinyl Chloride	75-01-4	**19**		10	S21020307.D
cis-1,2-Dichloroethene	156-59-2	**38**		10	S21020307.D
Trichloroethene	79-01-6	**56**		10	S21020307.D
Tetrachloroethene	127-18-4	**388**		10	S21020307.D

Lab Sample ID: 0005603-04 — **SG-27 Dup** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Vinyl Chloride	75-01-4	**11**		10	S21020308.D
cis-1,2-Dichloroethene	156-59-2	**35**		10	S21020308.D
Trichloroethene	79-01-6	**67**		10	S21020308.D
Tetrachloroethene	127-18-4	**224**		10	S21020308.D

Lab Sample ID: 0005603-05 — **SG-28** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Trichloroethene	79-01-6	**15**		10	S21020309.D
Tetrachloroethene	127-18-4	**89**		10	S21020309.D

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Map Report

AECOM	**Project Site:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Project Location:** Hopkins, SC	**Beacon Project No.:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/12/2021

Summary of Compound Detections- Mass

Lab Sample ID: 0005603-06 — **SG-29** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Trichloroethene	79-01-6	**241**		10	S21020310.D
Tetrachloroethene	127-18-4	**3,420**		10	S21020310.D

Lab Sample ID: 0005603-07 — **SG-30** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Trichloroethene	79-01-6	**17**		10	S21020311.D
Tetrachloroethene	127-18-4	**148**		10	S21020311.D

Lab Sample ID: 0005603-08 — **SG-31** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Tetrachloroethene	127-18-4	**55**		10	S21020312.D

Lab Sample ID: 0005603-09 — **SG-32** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
cis-1,2-Dichloroethene	156-59-2	**17**		10	S21020313.D
Trichloroethene	79-01-6	**298**		10	S21020313.D
Tetrachloroethene	127-18-4	**2,900**		10	S21020313.D

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Map Report

AECOM	**Project Site:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Project Location:** Hopkins, SC	**Beacon Project No.:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/12/2021

Summary of Compound Detections- Mass

Lab Sample ID: 0005603-10 — **SG-33** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
1,1-Dichloroethene	75-35-4	**11**		10	S21020314.D
trans-1,2-Dichloroethene	156-60-5	**38**		10	S21020314.D
cis-1,2-Dichloroethene	156-59-2	**129**		10	S21020314.D
Trichloroethene	79-01-6	**1,710**		10	S21020314.D
Tetrachloroethene	127-18-4	**7,110**		10	S21020314.D

Lab Sample ID: 0005603-11 — **SG-34** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Tetrachloroethene	127-18-4	**12**		10	S21020315.D

Lab Sample ID: 0005603-12 — **SG-35** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Tetrachloroethene	127-18-4	**224**		10	S21020316.D

Lab Sample ID: 0005603-13 — **SG-36** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Trichloroethene	79-01-6	**27**		10	S21020317.D
Tetrachloroethene	127-18-4	**1,080**		10	S21020317.D

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Map Report

AECOM	**Project Site:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Project Location:** Hopkins, SC	**Beacon Project No.:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/12/2021

Summary of Compound Detections- Mass

Lab Sample ID: 0005603-14 — **SG-37** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
cis-1,2-Dichloroethene	156-59-2	**90**		10	S21020318.D
Trichloroethene	79-01-6	**604**		10	S21020318.D
Tetrachloroethene	127-18-4	**6,680**		10	S21020318.D

Lab Sample ID: 0005603-15 — **SG-38** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Vinyl Chloride	75-01-4	**59**		10	S21020319.D
1,1-Dichloroethene	75-35-4	**45**		10	S21020319.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	**11**		10	S21020319.D
trans-1,2-Dichloroethene	156-60-5	**6,720**		10	S21020319.D
1,1-Dichloroethane	75-34-3	**22**		10	S21020319.D
cis-1,2-Dichloroethene	156-59-2	**5,840**		10	S21020319.D
Chloroform	67-66-3	**18**		10	S21020319.D
Trichloroethene	79-01-6	**10,100**		10	S21020319.D
Tetrachloroethene	127-18-4	**8,780**		10	S21020319.D

Lab Sample ID: 0005603-16 — **SG-39** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Tetrachloroethene	127-18-4	**24**		10	S21020320.D

Lab Sample ID: 0005603-17 — **SG-40** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Tetrachloroethene	127-18-4	**221**		10	S21020321.D

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Map Report

AECOM	**Project Site:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Project Location:** Hopkins, SC	**Beacon Project No.:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/12/2021

Summary of Compound Detections- Mass

Lab Sample ID: 0005603-18 — **SG-41** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Trichloroethene	79-01-6	**48**		10	S21020322.D
Tetrachloroethene	127-18-4	**1,220**		10	S21020322.D

Lab Sample ID: 0005603-19 — **SG-42** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Trichloroethene	79-01-6	**20**		10	S21020323.D
Tetrachloroethene	127-18-4	**102**		10	S21020323.D

Lab Sample ID: 0005603-20 — **SG-43** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Trichloroethene	79-01-6	**33**		10	S21020324.D
Tetrachloroethene	127-18-4	**1,080**		10	S21020324.D

Lab Sample ID: 0005603-21 — **SG-44** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Trichloroethene	79-01-6	**66**		10	S21020325.D
Tetrachloroethene	127-18-4	**757**		10	S21020325.D

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Map Report

AECOM	**Project Site:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Project Location:** Hopkins, SC	**Beacon Project No.:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/12/2021

Summary of Compound Detections- Mass

Lab Sample ID: 0005603-22 — **SG-45** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	**12**		10	S21020326.D
trans-1,2-Dichloroethene	156-60-5	**136**		10	S21020326.D
cis-1,2-Dichloroethene	156-59-2	**85**		10	S21020326.D
Chloroform	67-66-3	**17**		10	S21020326.D
Trichloroethene	79-01-6	**2,440**		10	S21020326.D
Tetrachloroethene	127-18-4	**8,590**		10	S21020326.D

Lab Sample ID: 0005603-23 — **SG-46** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Tetrachloroethene	127-18-4	**121**		10	S21020327.D

Lab Sample ID: 0005603-25 — **SG-48** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Vinyl Chloride	75-01-4	**10**		10	S21020329.D
1,1-Dichloroethene	75-35-4	**59**		10	S21020329.D
trans-1,2-Dichloroethene	156-60-5	**245**		10	S21020329.D
cis-1,2-Dichloroethene	156-59-2	**2,820**		10	S21020329.D
Trichloroethene	79-01-6	**4,860**		10	S21020329.D
Tetrachloroethene	127-18-4	**5,210**		10	S21020329.D

Lab Sample ID: 0005603-26 — **SG-49** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Trichloroethene	79-01-6	**12**		10	S21020330.D
Tetrachloroethene	127-18-4	**57**		10	S21020330.D

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Map Report

AECOM	**Project Site:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Project Location:** Hopkins, SC	**Beacon Project No.:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/12/2021

Summary of Compound Detections- Mass

Lab Sample ID: 0005603-27 — **SG-49 Dup** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Tetrachloroethene	127-18-4	**47**		10	S21020331.D

Lab Sample ID: 0005603-28 — **SG-50** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Trichloroethene	79-01-6	**11**		10	S21020332.D
Tetrachloroethene	127-18-4	**118**		10	S21020332.D

Lab Sample ID: 0005603-29 — **SG-51** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Tetrachloroethene	127-18-4	**24**		10	S21020333.D

Lab Sample ID: 0005603-30 — **SG-52** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Chloroform	67-66-3	**22**		10	S21020334.D
Trichloroethene	79-01-6	**18**		10	S21020334.D
Tetrachloroethene	127-18-4	**584**		10	S21020334.D

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Map Report

AECOM	**Project Site:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Project Location:** Hopkins, SC	**Beacon Project No.:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/12/2021

Summary of Compound Detections- Mass

Lab Sample ID: 0005603-31

SG-53
Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	File ID
Vinyl Chloride	75-01-4	**32**		10	S21020335.D
1,1-Dichloroethene	75-35-4	**68**		10	S21020335.D
trans-1,2-Dichloroethene	156-60-5	**353**		10	S21020335.D
cis-1,2-Dichloroethene	156-59-2	**4,510**		10	S21020335.D
Trichloroethene	79-01-6	**4,240**		10	S21020335.D
Tetrachloroethene	127-18-4	**2,860**		10	S21020335.D

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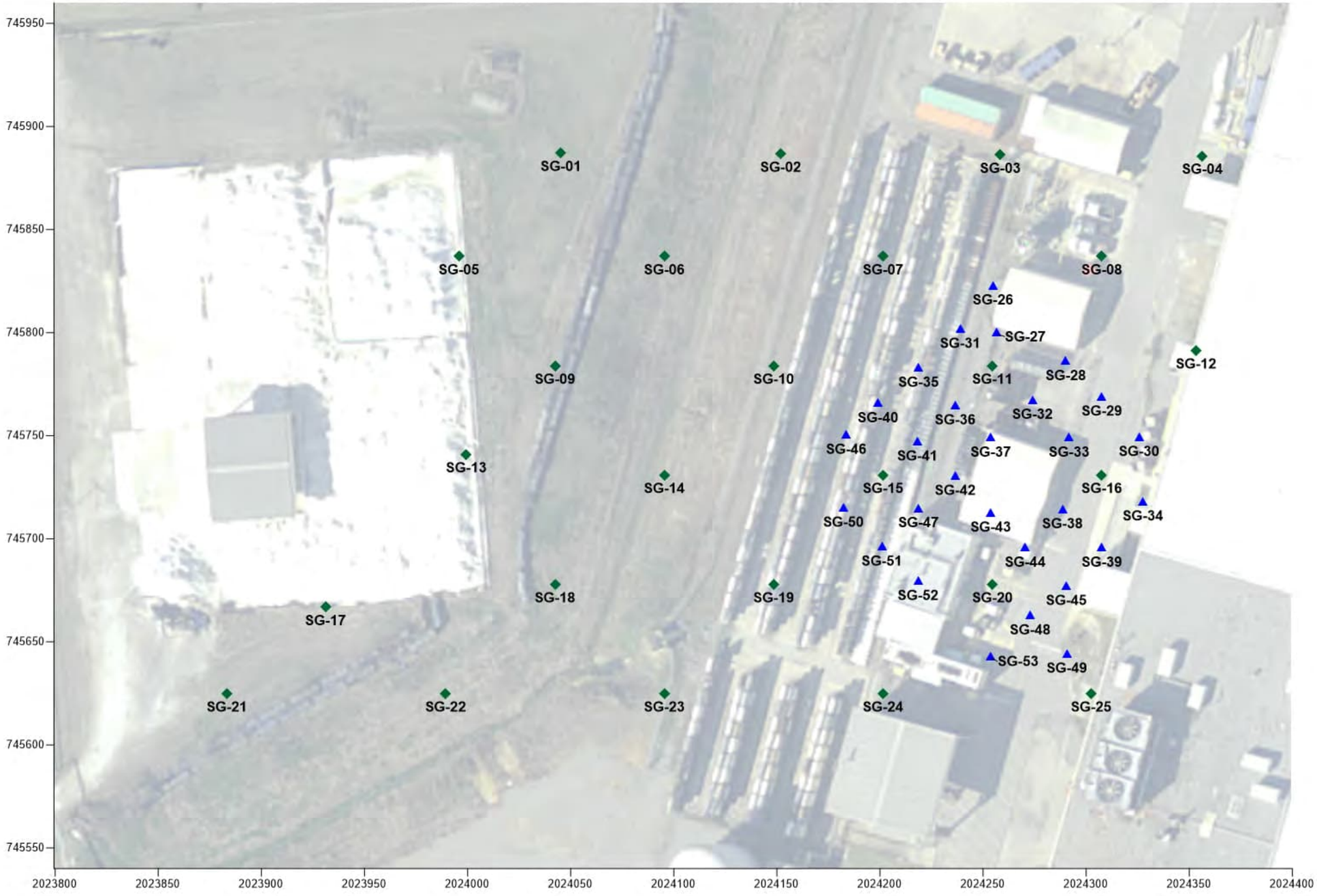
Map Report

AECOM	**Project Site:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Project Location:** Hopkins, SC	**Beacon Project No.:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/12/2021

Map Data Summary Table

Sample locations are shown on **Figure 1**. The following table lists number of detections on field samples from the current survey, the reporting limit, and the maximum value for each mapped compound. The table also includes the transformation and interpolation method for the compound distribution maps provided.

Figure No.	Compound	Number of Detections	LOQ (ng)	Max Value (ng)	Transformation Method	Interpolation Method
2	cis-1,2-Dichloroethene	8	10	5,840	Log	Kriging
3	Trichloroethene	19	10	10,100	Log	Kriging
4	Tetrachloroethene	27	10	8,780	Log	Kriging



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LEGEND

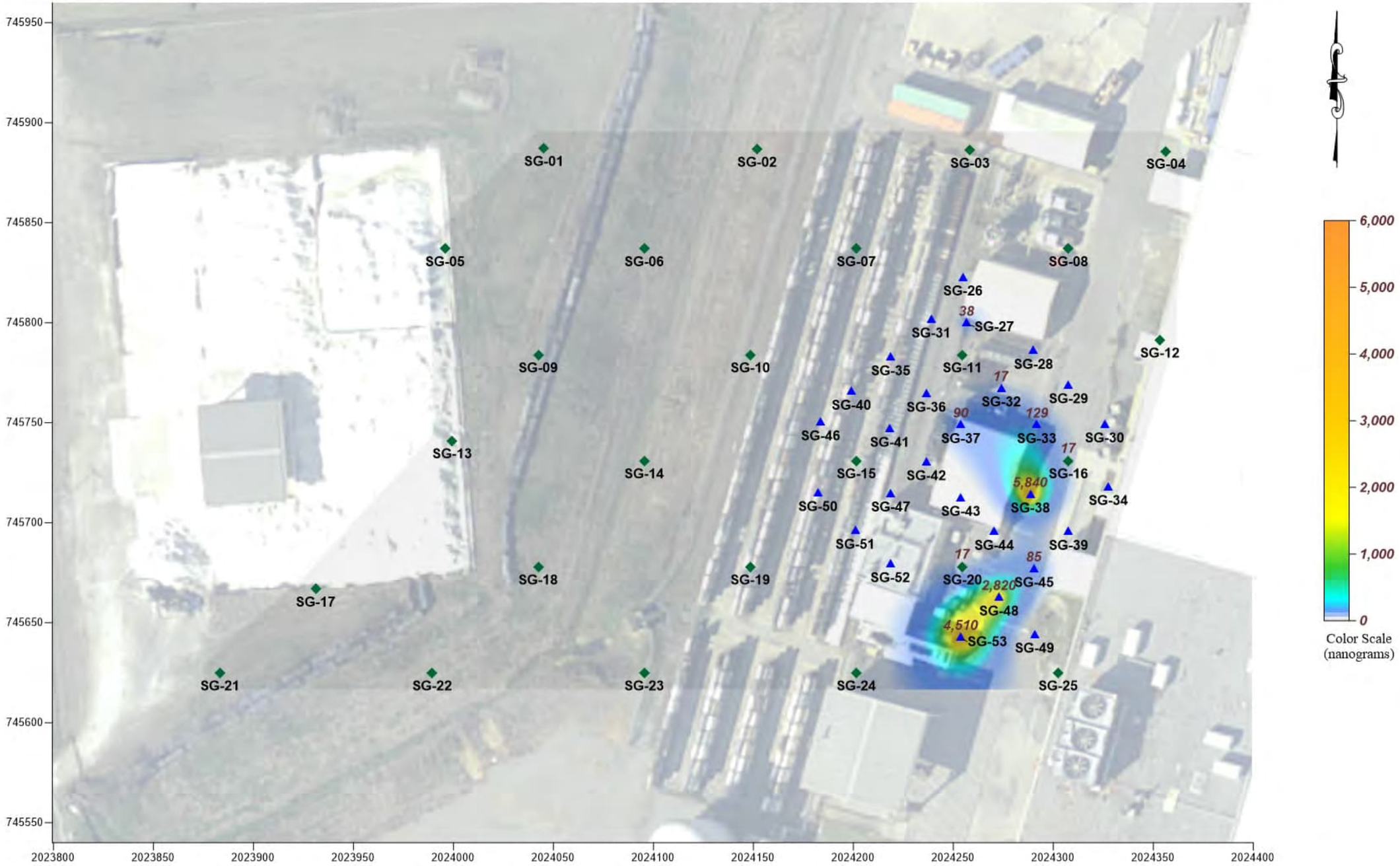
- ▲ PASSIVE SOIL-GAS SAMPLE LOCATION (December 2020)
- ◆ PASSIVE SOIL-GAS SAMPLE LOCATION (February 2021)

Scale in Feet
0 50 100

System: State Plane
Zone: South Carolina
Datum: NAD 1983
Coordinate Units: Feet

Figure 1
Passive Soil-Gas Survey
Sample Locations

Westinghouse CFFF
Hopkins, SC



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LEGEND

1,000 NANOGRAMS/SAMPLER

▲ PASSIVE SOIL-GAS SAMPLE LOCATION (December 2020)

◆ PASSIVE SOIL-GAS SAMPLE LOCATION (February 2021)

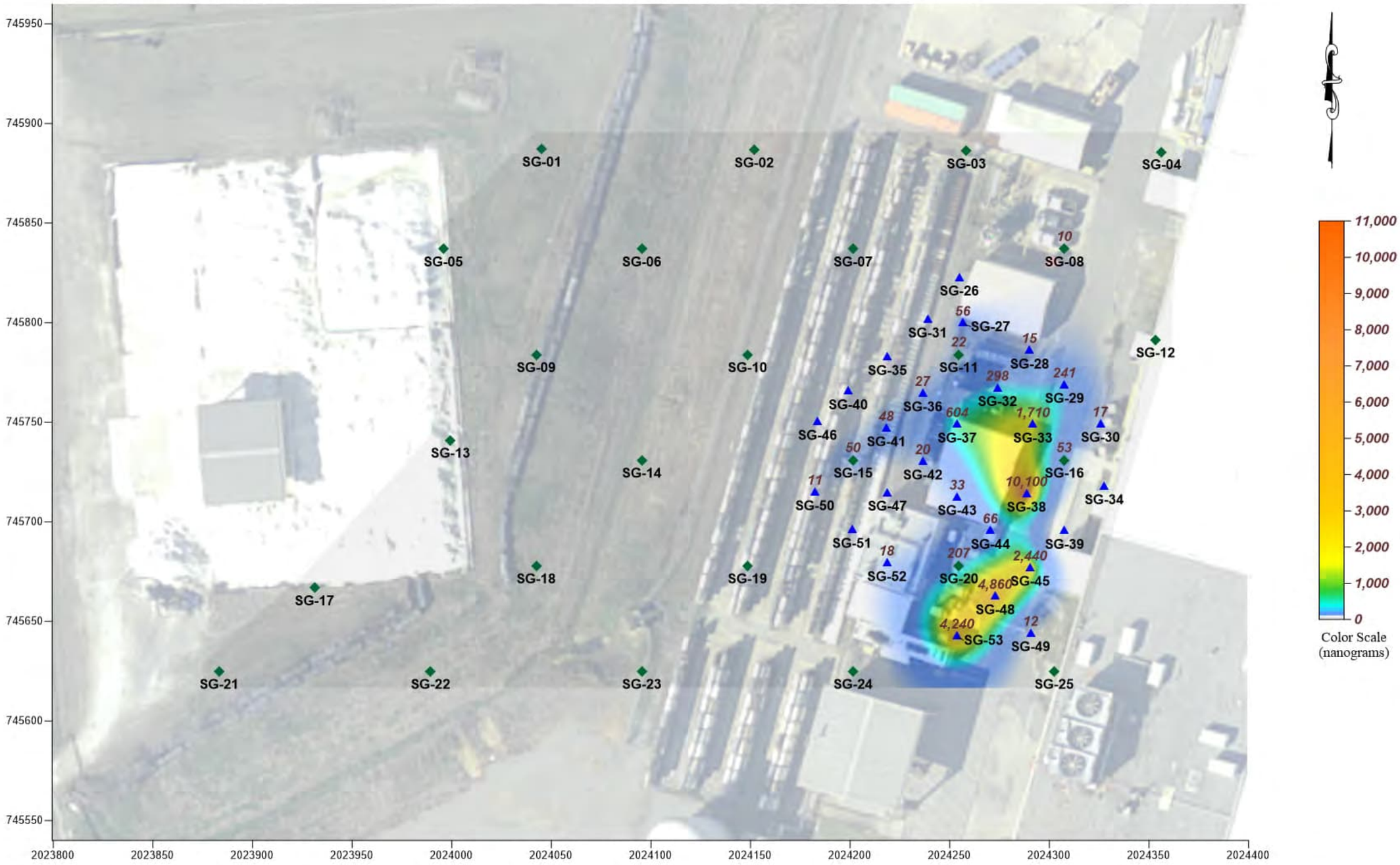
Scale in Feet

0 50 100

System:	State Plane
Zone:	South Carolina
Datum:	NAD 1983
Coordinate Units:	Feet

Figure 2
Passive Soil-Gas Survey
cis-1,2-Dichloroethene

Westinghouse CFFF
Hopkins, SC



LEGEND

1,000 NANOGRAMS/SAMPLER

▲ PASSIVE SOIL-GAS SAMPLE LOCATION (December 2020)

◆ PASSIVE SOIL-GAS SAMPLE LOCATION (February 2021)

Scale in Feet

0 50 100

System: State Plane
Zone: South Carolina
Datum: NAD 1983
Coordinate Units: Feet

Figure 3
Passive Soil-Gas Survey
Trichloroethene

Westinghouse CFFF
Hopkins, SC

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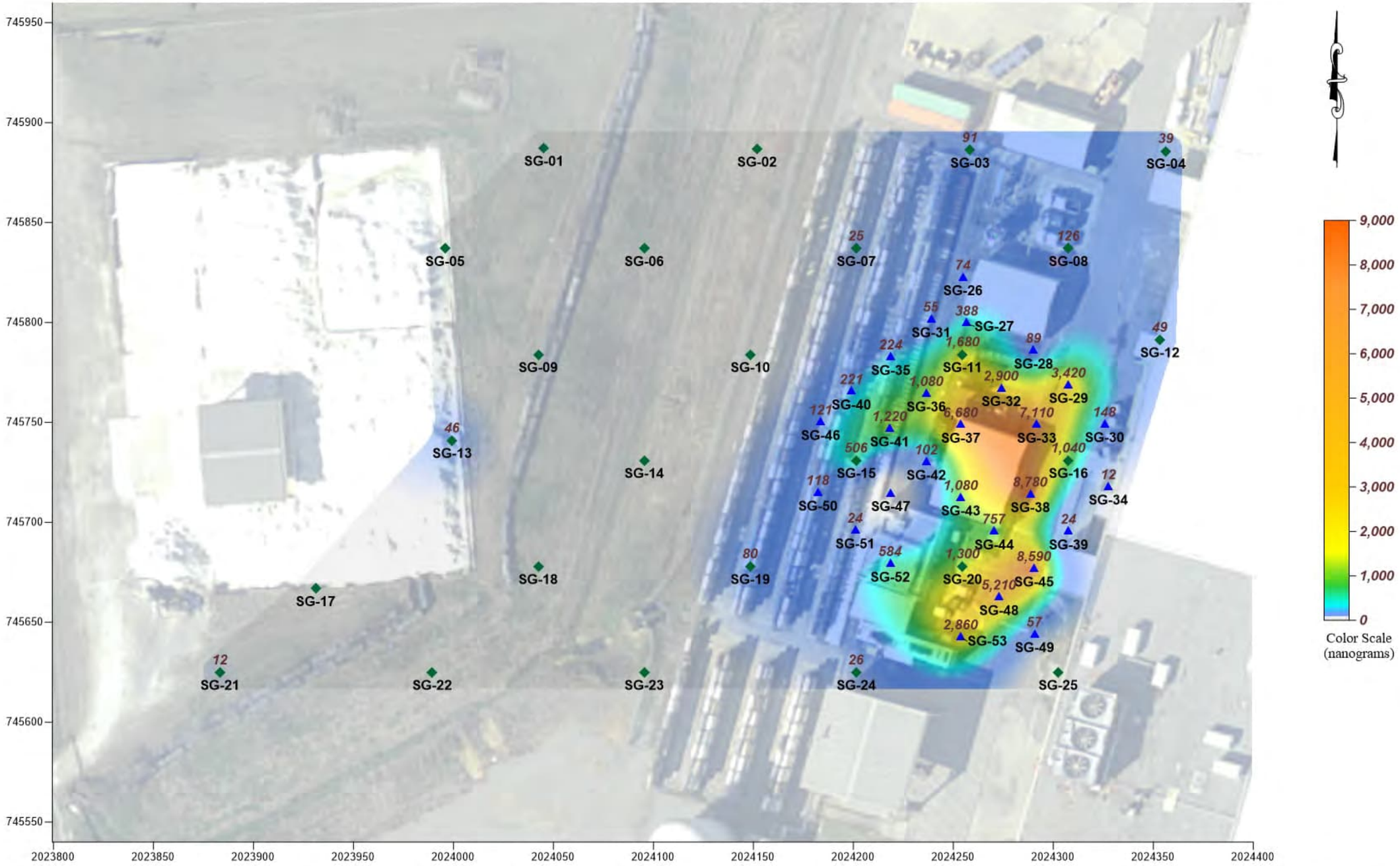

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Beacon Project No. 5603, February 2021

LEGEND

1,000 NANOGRAMS/SAMPLER

▲ PASSIVE SOIL-GAS SAMPLE LOCATION (December 2020)

◆ PASSIVE SOIL-GAS SAMPLE LOCATION (February 2021)

Scale in Feet

0 50 100

System:	State Plane
Zone:	South Carolina
Datum:	NAD 1983
Coordinate Units:	Feet

Figure 4
Passive Soil-Gas Survey
Tetrachloroethene

Westinghouse CFFF
Hopkins, SC

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CERTIFICATE OF ANALYSIS

Beacon Proposal No.: 201103R03

Laboratory Work Order: 0005603

Project Description:
Westinghouse-CFFF
Hopkins, SC

Client PO No.: 130171

Prepared for:
Jeremy Grant
AECOM
101 Research Drive
Columbia, SC 29203

Ryan W. Schneider
Senior Project Manager

February 10, 2021

All data meet requirements as specified in the Beacon Environmental Quality Assurance Project Plan and the results relate only to the samples reported. The work performed was in accordance with ISO/IEC 17025:2017, except samples were analyzed within a 24-hour tune window. This report shall not be reproduced, except in full, without written approval of the laboratory. Release of the data contained in this data package has been authorized by the Laboratory Director or his signee, as verified by the following signatures:

Steven C. Thornley
Laboratory Director

Peter B. Kelly
Interim Quality Manager

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Sample Summary

Lab Sample ID	Client Sample ID	Received	Analysis	Matrix
0005603-01	Trip Blank	02/02/2021	EPA 8260C	Air
Sampler Type:	Beacon Passive Sampler			
0005603-02	SG-26	02/02/2021	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005603-03	SG-27	02/02/2021	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005603-04	SG-27 Dup	02/02/2021	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005603-05	SG-28	02/02/2021	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005603-06	SG-29	02/02/2021	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005603-07	SG-30	02/02/2021	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005603-08	SG-31	02/02/2021	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005603-09	SG-32	02/02/2021	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005603-10	SG-33	02/02/2021	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005603-11	SG-34	02/02/2021	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005603-12	SG-35	02/02/2021	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005603-13	SG-36	02/02/2021	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005603-14	SG-37	02/02/2021	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005603-15	SG-38	02/02/2021	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005603-16	SG-39	02/02/2021	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005603-17	SG-40	02/02/2021	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005603-18	SG-41	02/02/2021	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005603-19	SG-42	02/02/2021	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005603-20	SG-43	02/02/2021	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID	Client Sample ID	Received	Analysis	Matrix
0005603-21	SG-44	02/02/2021	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005603-22	SG-45	02/02/2021	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005603-23	SG-46	02/02/2021	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005603-24	SG-47	02/02/2021	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005603-25	SG-48	02/02/2021	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005603-26	SG-49	02/02/2021	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005603-27	SG-49 Dup	02/02/2021	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005603-28	SG-50	02/02/2021	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005603-29	SG-51	02/02/2021	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005603-30	SG-52	02/02/2021	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			
0005603-31	SG-53	02/02/2021	EPA 8260C	Soil Gas
Sampler Type:	Beacon Passive Sampler			

Project Completeness

Samples Received: 31
Samples Analyzed: 31

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AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Case Narrative

U.S. EPA Method 8260C

All samples were analyzed using thermal desorption-gas chromatography/mass spectrometry (TD-GC/MS) instrumentation following U.S. EPA Method 8260C, with laboratory results provided in nanograms (ng). Laboratory QA/QC procedures included internal standards, surrogates, and blanks based on EPA Method 8260C. Analyses and reporting were in accordance with BEACON's Quality Assurance Project Plan.

Passive Soil-Gas Survey Notes

If sample locations are covered with or near the edge of an impervious surface (*e.g.*, asphalt or concrete), the concentrations of compounds in soil gas are higher than if the surfacing was not present. Therefore, the sample location conditions should be considered when comparing results between locations.

Survey findings are exclusive to this project and when the spatial relationships are compared with results of other BEACON Surveys it is necessary to incorporate information from both investigations (*e.g.*, depth to sources, soil types, porosity, soil moisture, presence of impervious surfacing, sample collection times).

Reporting Limits

The RLs represent a baseline above which results meet laboratory-determined limits of precision and accuracy. Field sample measurements above the upper calibration standard are estimated; however, these values are reported without qualifiers because all reported measurements are relative to each other and are appropriate to meet the survey objectives of locating source areas and vapor intrusion pathways and defining the lateral extent of the contamination.

Project Details

Samples were received in proper condition and laboratory control parameters were met unless otherwise noted below. The work performed was in accordance with ISO/IEC 17025:2017, except samples were analyzed within a 24-hour tune window.

End of Case Narrative

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AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Analytical Results

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AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Summary of Compound Detections - Mass

Lab Sample ID: 0005603-02 — **SG-26** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Tetrachloroethene	127-18-4	**74**		6.113	10	02/03/2021 14:34	S21020306.D

Lab Sample ID: 0005603-03 — **SG-27** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	**19**		1.603	10	02/03/2021 14:57	S21020307.D
cis-1,2-Dichloroethene	156-59-2	**38**		3.230	10	02/03/2021 14:57	S21020307.D
Trichloroethene	79-01-6	**56**		4.370	10	02/03/2021 14:57	S21020307.D
Tetrachloroethene	127-18-4	**388**		6.113	10	02/03/2021 14:57	S21020307.D

Lab Sample ID: 0005603-04 — **SG-27 Dup** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	**11**		1.603	10	02/03/2021 15:21	S21020308.D
cis-1,2-Dichloroethene	156-59-2	**35**		3.226	10	02/03/2021 15:21	S21020308.D
Trichloroethene	79-01-6	**67**		4.373	10	02/03/2021 15:21	S21020308.D
Tetrachloroethene	127-18-4	**224**		6.113	10	02/03/2021 15:21	S21020308.D

Lab Sample ID: 0005603-05 — **SG-28** — Soil Gas — Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Trichloroethene	79-01-6	**15**		4.370	10	02/03/2021 15:44	S21020309.D
Tetrachloroethene	127-18-4	**89**		6.113	10	02/03/2021 15:44	S21020309.D

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AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-06 | **SG-29** | Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Trichloroethene	79-01-6	**241**		4.373	10	02/03/2021 16:07	S21020310.D
Tetrachloroethene	127-18-4	**3,420**		6.116	10	02/03/2021 16:07	S21020310.D

Lab Sample ID: 0005603-07 | **SG-30** | Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Trichloroethene	79-01-6	**17**		4.370	10	02/03/2021 16:31	S21020311.D
Tetrachloroethene	127-18-4	**148**		6.113	10	02/03/2021 16:31	S21020311.D

Lab Sample ID: 0005603-08 | **SG-31** | Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Tetrachloroethene	127-18-4	**55**		6.113	10	02/03/2021 16:54	S21020312.D

Lab Sample ID: 0005603-09 | **SG-32** | Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
cis-1,2-Dichloroethene	156-59-2	**17**		3.227	10	02/03/2021 17:17	S21020313.D
Trichloroethene	79-01-6	**298**		4.374	10	02/03/2021 17:17	S21020313.D
Tetrachloroethene	127-18-4	**2,900**		6.116	10	02/03/2021 17:17	S21020313.D

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AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-10 | **SG-33** | Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
1,1-Dichloroethene	75-35-4	**11**		2.190	10	02/03/2021 17:41	S21020314.D
trans-1,2-Dichloroethene	156-60-5	**38**		2.603	10	02/03/2021 17:41	S21020314.D
cis-1,2-Dichloroethene	156-59-2	**129**		3.230	10	02/03/2021 17:41	S21020314.D
Trichloroethene	79-01-6	**1,710**		4.374	10	02/03/2021 17:41	S21020314.D
Tetrachloroethene	127-18-4	**7,110**		6.119	10	02/03/2021 17:41	S21020314.D

Lab Sample ID: 0005603-11 | **SG-34** | Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Tetrachloroethene	127-18-4	**12**		6.110	10	02/03/2021 18:05	S21020315.D

Lab Sample ID: 0005603-12 | **SG-35** | Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Tetrachloroethene	127-18-4	**224**		6.113	10	02/03/2021 18:28	S21020316.D

Lab Sample ID: 0005603-13 | **SG-36** | Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Trichloroethene	79-01-6	**27**		4.373	10	02/03/2021 18:52	S21020317.D
Tetrachloroethene	127-18-4	**1,080**		6.113	10	02/03/2021 18:52	S21020317.D

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AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-14 **SG-37** Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
cis-1,2-Dichloroethene	156-59-2	**90**		3.227	10	02/03/2021 19:15	S21020318.D
Trichloroethene	79-01-6	**604**		4.374	10	02/03/2021 19:15	S21020318.D
Tetrachloroethene	127-18-4	**6,680**		6.119	10	02/03/2021 19:15	S21020318.D

Lab Sample ID: 0005603-15 **SG-38** Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	**59**		1.603	10	02/03/2021 19:39	S21020319.D
1,1-Dichloroethene	75-35-4	**45**		2.190	10	02/03/2021 19:39	S21020319.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	**11**		2.196	10	02/03/2021 19:39	S21020319.D
trans-1,2-Dichloroethene	156-60-5	**6,720**		2.602	10	02/03/2021 19:39	S21020319.D
1,1-Dichloroethane	75-34-3	**22**		2.867	10	02/03/2021 19:39	S21020319.D
cis-1,2-Dichloroethene	156-59-2	**5,840**		3.230	10	02/03/2021 19:39	S21020319.D
Chloroform	67-66-3	**18**		3.463	10	02/03/2021 19:39	S21020319.D
Trichloroethene	79-01-6	**10,100**		4.377	10	02/03/2021 19:39	S21020319.D
Tetrachloroethene	127-18-4	**8,780**		6.116	10	02/03/2021 19:39	S21020319.D

Lab Sample ID: 0005603-16 **SG-39** Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Tetrachloroethene	127-18-4	**24**		6.113	10	02/03/2021 20:02	S21020320.D

Lab Sample ID: 0005603-17 **SG-40** Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Tetrachloroethene	127-18-4	**221**		6.113	10	02/03/2021 20:25	S21020321.D

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AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-18 | **SG-41** | Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Trichloroethene	79-01-6	**48**		4.373	10	02/03/2021 20:49	S21020322.D
Tetrachloroethene	127-18-4	**1,220**		6.113	10	02/03/2021 20:49	S21020322.D

Lab Sample ID: 0005603-19 | **SG-42** | Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Trichloroethene	79-01-6	**20**		4.374	10	02/03/2021 21:12	S21020323.D
Tetrachloroethene	127-18-4	**102**		6.110	10	02/03/2021 21:12	S21020323.D

Lab Sample ID: 0005603-20 | **SG-43** | Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Trichloroethene	79-01-6	**33**		4.373	10	02/03/2021 21:35	S21020324.D
Tetrachloroethene	127-18-4	**1,080**		6.116	10	02/03/2021 21:35	S21020324.D

Lab Sample ID: 0005603-21 | **SG-44** | Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Trichloroethene	79-01-6	**66**		4.373	10	02/03/2021 22:00	S21020325.D
Tetrachloroethene	127-18-4	**757**		6.113	10	02/03/2021 22:00	S21020325.D

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AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-22 **SG-45** Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	**12**		2.193	10	02/03/2021 22:23	S21020326.D
trans-1,2-Dichloroethene	156-60-5	**136**		2.602	10	02/03/2021 22:23	S21020326.D
cis-1,2-Dichloroethene	156-59-2	**85**		3.230	10	02/03/2021 22:23	S21020326.D
Chloroform	67-66-3	**17**		3.460	10	02/03/2021 22:23	S21020326.D
Trichloroethene	79-01-6	**2,440**		4.373	10	02/03/2021 22:23	S21020326.D
Tetrachloroethene	127-18-4	**8,590**		6.116	10	02/03/2021 22:23	S21020326.D

Lab Sample ID: 0005603-23 **SG-46** Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Tetrachloroethene	127-18-4	**121**		6.113	10	02/03/2021 22:46	S21020327.D

Lab Sample ID: 0005603-25 **SG-48** Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	**10**		1.604	10	02/03/2021 23:33	S21020329.D
1,1-Dichloroethene	75-35-4	**59**		2.190	10	02/03/2021 23:33	S21020329.D
trans-1,2-Dichloroethene	156-60-5	**245**		2.603	10	02/03/2021 23:33	S21020329.D
cis-1,2-Dichloroethene	156-59-2	**2,820**		3.230	10	02/03/2021 23:33	S21020329.D
Trichloroethene	79-01-6	**4,860**		4.374	10	02/03/2021 23:33	S21020329.D
Tetrachloroethene	127-18-4	**5,210**		6.116	10	02/03/2021 23:33	S21020329.D

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AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-26 | **SG-49** | Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Trichloroethene	79-01-6	**12**		4.370	10	02/03/2021 23:57	S21020330.D
Tetrachloroethene	127-18-4	**57**		6.113	10	02/03/2021 23:57	S21020330.D

Lab Sample ID: 0005603-27 | **SG-49 Dup** | Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Tetrachloroethene	127-18-4	**47**		6.110	10	02/04/2021 00:20	S21020331.D

Lab Sample ID: 0005603-28 | **SG-50** | Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Trichloroethene	79-01-6	**11**		4.374	10	02/04/2021 00:43	S21020332.D
Tetrachloroethene	127-18-4	**118**		6.113	10	02/04/2021 00:43	S21020332.D

Lab Sample ID: 0005603-29 | **SG-51** | Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Tetrachloroethene	127-18-4	**24**		6.113	10	02/04/2021 01:07	S21020333.D

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-30 **SG-52** Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Chloroform	67-66-3	**22**		3.463	10	02/04/2021 01:30	S21020334.D
Trichloroethene	79-01-6	**18**		4.377	10	02/04/2021 01:30	S21020334.D
Tetrachloroethene	127-18-4	**584**		6.113	10	02/04/2021 01:30	S21020334.D

Lab Sample ID: 0005603-31 **SG-53** Method: EPA 8260C

Soil Gas

Analyte	CAS#	Result (ng)	Q	RT	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	**32**		1.600	10	02/04/2021 01:54	S21020335.D
1,1-Dichloroethene	75-35-4	**68**		2.190	10	02/04/2021 01:54	S21020335.D
trans-1,2-Dichloroethene	156-60-5	**353**		2.603	10	02/04/2021 01:54	S21020335.D
cis-1,2-Dichloroethene	156-59-2	**4,510**		3.230	10	02/04/2021 01:54	S21020335.D
Trichloroethene	79-01-6	**4,240**		4.374	10	02/04/2021 01:54	S21020335.D
Tetrachloroethene	127-18-4	**2,860**		6.116	10	02/04/2021 01:54	S21020335.D

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AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Data Summary Table- Mass

Compound	Frequency	LOQ (ng)	Max Value (ng)
Vinyl Chloride	4	10	59
1,1-Dichloroethene	4	10	68
1,1,2-Trichlorotrifluoroethane (Fr.113)	2	10	12
trans-1,2-Dichloroethene	5	10	6,720
1,1-Dichloroethane	1	10	22
cis-1,2-Dichloroethene	8	10	5,840
Chloroform	3	10	22
Trichloroethene	19	10	10,100
Tetrachloroethene	27	10	8,780

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AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Detailed Analytical Results

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-01

Trip Blank

Air

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	02/03/2021 14:11	S21020305.D
1,1-Dichloroethene	75-35-4	<10		10	02/03/2021 14:11	S21020305.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	02/03/2021 14:11	S21020305.D
trans-1,2-Dichloroethene	156-60-5	<10		10	02/03/2021 14:11	S21020305.D
1,1-Dichloroethane	75-34-3	<10		10	02/03/2021 14:11	S21020305.D
cis-1,2-Dichloroethene	156-59-2	<10		10	02/03/2021 14:11	S21020305.D
Chloroform	67-66-3	<10		10	02/03/2021 14:11	S21020305.D
1,2-Dichloroethane	107-06-2	<10		10	02/03/2021 14:11	S21020305.D
1,1,1-Trichloroethane	71-55-6	<10		10	02/03/2021 14:11	S21020305.D
Carbon Tetrachloride	56-23-5	<10		10	02/03/2021 14:11	S21020305.D
Trichloroethene	79-01-6	<10		10	02/03/2021 14:11	S21020305.D
1,1,2-Trichloroethane	79-00-5	<10		10	02/03/2021 14:11	S21020305.D
Tetrachloroethene	127-18-4	<10		10	02/03/2021 14:11	S21020305.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	02/03/2021 14:11	S21020305.D
Chlorobenzene	108-90-7	<10		10	02/03/2021 14:11	S21020305.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	02/03/2021 14:11	S21020305.D
1,2,3-Trichloropropane	96-18-4	<10		10	02/03/2021 14:11	S21020305.D
1,3-Dichlorobenzene	541-73-1	<10		10	02/03/2021 14:11	S21020305.D
1,4-Dichlorobenzene	106-46-7	<10		10	02/03/2021 14:11	S21020305.D
1,2-Dichlorobenzene	95-50-1	<10		10	02/03/2021 14:11	S21020305.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	02/03/2021 14:11	S21020305.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	02/03/2021 14:11	S21020305.D

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-02

SG-26

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	02/03/2021 14:34	S21020306.D
1,1-Dichloroethene	75-35-4	<10		10	02/03/2021 14:34	S21020306.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	02/03/2021 14:34	S21020306.D
trans-1,2-Dichloroethene	156-60-5	<10		10	02/03/2021 14:34	S21020306.D
1,1-Dichloroethane	75-34-3	<10		10	02/03/2021 14:34	S21020306.D
cis-1,2-Dichloroethene	156-59-2	<10		10	02/03/2021 14:34	S21020306.D
Chloroform	67-66-3	<10		10	02/03/2021 14:34	S21020306.D
1,2-Dichloroethane	107-06-2	<10		10	02/03/2021 14:34	S21020306.D
1,1,1-Trichloroethane	71-55-6	<10		10	02/03/2021 14:34	S21020306.D
Carbon Tetrachloride	56-23-5	<10		10	02/03/2021 14:34	S21020306.D
Trichloroethene	79-01-6	<10		10	02/03/2021 14:34	S21020306.D
1,1,2-Trichloroethane	79-00-5	<10		10	02/03/2021 14:34	S21020306.D
Tetrachloroethene	127-18-4	**74**		10	02/03/2021 14:34	S21020306.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	02/03/2021 14:34	S21020306.D
Chlorobenzene	108-90-7	<10		10	02/03/2021 14:34	S21020306.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	02/03/2021 14:34	S21020306.D
1,2,3-Trichloropropane	96-18-4	<10		10	02/03/2021 14:34	S21020306.D
1,3-Dichlorobenzene	541-73-1	<10		10	02/03/2021 14:34	S21020306.D
1,4-Dichlorobenzene	106-46-7	<10		10	02/03/2021 14:34	S21020306.D
1,2-Dichlorobenzene	95-50-1	<10		10	02/03/2021 14:34	S21020306.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	02/03/2021 14:34	S21020306.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	02/03/2021 14:34	S21020306.D

BEACON ENVIRONMENTAL

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-03

SG-27

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	**19**		10	02/03/2021 14:57	S21020307.D
1,1-Dichloroethene	75-35-4	<10		10	02/03/2021 14:57	S21020307.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	02/03/2021 14:57	S21020307.D
trans-1,2-Dichloroethene	156-60-5	<10		10	02/03/2021 14:57	S21020307.D
1,1-Dichloroethane	75-34-3	<10		10	02/03/2021 14:57	S21020307.D
cis-1,2-Dichloroethene	156-59-2	**38**		10	02/03/2021 14:57	S21020307.D
Chloroform	67-66-3	<10		10	02/03/2021 14:57	S21020307.D
1,2-Dichloroethane	107-06-2	<10		10	02/03/2021 14:57	S21020307.D
1,1,1-Trichloroethane	71-55-6	<10		10	02/03/2021 14:57	S21020307.D
Carbon Tetrachloride	56-23-5	<10		10	02/03/2021 14:57	S21020307.D
Trichloroethene	79-01-6	**56**		10	02/03/2021 14:57	S21020307.D
1,1,2-Trichloroethane	79-00-5	<10		10	02/03/2021 14:57	S21020307.D
Tetrachloroethene	127-18-4	**388**		10	02/03/2021 14:57	S21020307.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	02/03/2021 14:57	S21020307.D
Chlorobenzene	108-90-7	<10		10	02/03/2021 14:57	S21020307.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	02/03/2021 14:57	S21020307.D
1,2,3-Trichloropropane	96-18-4	<10		10	02/03/2021 14:57	S21020307.D
1,3-Dichlorobenzene	541-73-1	<10		10	02/03/2021 14:57	S21020307.D
1,4-Dichlorobenzene	106-46-7	<10		10	02/03/2021 14:57	S21020307.D
1,2-Dichlorobenzene	95-50-1	<10		10	02/03/2021 14:57	S21020307.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	02/03/2021 14:57	S21020307.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	02/03/2021 14:57	S21020307.D

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-04

SG-27 Dup

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	**11**		10	02/03/2021 15:21	S21020308.D
1,1-Dichloroethene	75-35-4	<10		10	02/03/2021 15:21	S21020308.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	02/03/2021 15:21	S21020308.D
trans-1,2-Dichloroethene	156-60-5	<10		10	02/03/2021 15:21	S21020308.D
1,1-Dichloroethane	75-34-3	<10		10	02/03/2021 15:21	S21020308.D
cis-1,2-Dichloroethene	156-59-2	**35**		10	02/03/2021 15:21	S21020308.D
Chloroform	67-66-3	<10		10	02/03/2021 15:21	S21020308.D
1,2-Dichloroethane	107-06-2	<10		10	02/03/2021 15:21	S21020308.D
1,1,1-Trichloroethane	71-55-6	<10		10	02/03/2021 15:21	S21020308.D
Carbon Tetrachloride	56-23-5	<10		10	02/03/2021 15:21	S21020308.D
Trichloroethene	79-01-6	**67**		10	02/03/2021 15:21	S21020308.D
1,1,2-Trichloroethane	79-00-5	<10		10	02/03/2021 15:21	S21020308.D
Tetrachloroethene	127-18-4	**224**		10	02/03/2021 15:21	S21020308.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	02/03/2021 15:21	S21020308.D
Chlorobenzene	108-90-7	<10		10	02/03/2021 15:21	S21020308.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	02/03/2021 15:21	S21020308.D
1,2,3-Trichloropropane	96-18-4	<10		10	02/03/2021 15:21	S21020308.D
1,3-Dichlorobenzene	541-73-1	<10		10	02/03/2021 15:21	S21020308.D
1,4-Dichlorobenzene	106-46-7	<10		10	02/03/2021 15:21	S21020308.D
1,2-Dichlorobenzene	95-50-1	<10		10	02/03/2021 15:21	S21020308.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	02/03/2021 15:21	S21020308.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	02/03/2021 15:21	S21020308.D

BEACON ENVIRONMENTAL

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-05

SG-28

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	02/03/2021 15:44	S21020309.D
1,1-Dichloroethene	75-35-4	<10		10	02/03/2021 15:44	S21020309.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	02/03/2021 15:44	S21020309.D
trans-1,2-Dichloroethene	156-60-5	<10		10	02/03/2021 15:44	S21020309.D
1,1-Dichloroethane	75-34-3	<10		10	02/03/2021 15:44	S21020309.D
cis-1,2-Dichloroethene	156-59-2	<10		10	02/03/2021 15:44	S21020309.D
Chloroform	67-66-3	<10		10	02/03/2021 15:44	S21020309.D
1,2-Dichloroethane	107-06-2	<10		10	02/03/2021 15:44	S21020309.D
1,1,1-Trichloroethane	71-55-6	<10		10	02/03/2021 15:44	S21020309.D
Carbon Tetrachloride	56-23-5	<10		10	02/03/2021 15:44	S21020309.D
Trichloroethene	79-01-6	**15**		10	02/03/2021 15:44	S21020309.D
1,1,2-Trichloroethane	79-00-5	<10		10	02/03/2021 15:44	S21020309.D
Tetrachloroethene	127-18-4	**89**		10	02/03/2021 15:44	S21020309.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	02/03/2021 15:44	S21020309.D
Chlorobenzene	108-90-7	<10		10	02/03/2021 15:44	S21020309.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	02/03/2021 15:44	S21020309.D
1,2,3-Trichloropropane	96-18-4	<10		10	02/03/2021 15:44	S21020309.D
1,3-Dichlorobenzene	541-73-1	<10		10	02/03/2021 15:44	S21020309.D
1,4-Dichlorobenzene	106-46-7	<10		10	02/03/2021 15:44	S21020309.D
1,2-Dichlorobenzene	95-50-1	<10		10	02/03/2021 15:44	S21020309.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	02/03/2021 15:44	S21020309.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	02/03/2021 15:44	S21020309.D

BEACON ENVIRONMENTAL

2203A Commerce Road, Suite 1
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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-06

SG-29

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	02/03/2021 16:07	S21020310.D
1,1-Dichloroethene	75-35-4	<10		10	02/03/2021 16:07	S21020310.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	02/03/2021 16:07	S21020310.D
trans-1,2-Dichloroethene	156-60-5	<10		10	02/03/2021 16:07	S21020310.D
1,1-Dichloroethane	75-34-3	<10		10	02/03/2021 16:07	S21020310.D
cis-1,2-Dichloroethene	156-59-2	<10		10	02/03/2021 16:07	S21020310.D
Chloroform	67-66-3	<10		10	02/03/2021 16:07	S21020310.D
1,2-Dichloroethane	107-06-2	<10		10	02/03/2021 16:07	S21020310.D
1,1,1-Trichloroethane	71-55-6	<10		10	02/03/2021 16:07	S21020310.D
Carbon Tetrachloride	56-23-5	<10		10	02/03/2021 16:07	S21020310.D
Trichloroethene	79-01-6	**241**		10	02/03/2021 16:07	S21020310.D
1,1,2-Trichloroethane	79-00-5	<10		10	02/03/2021 16:07	S21020310.D
Tetrachloroethene	127-18-4	**3,420**		10	02/03/2021 16:07	S21020310.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	02/03/2021 16:07	S21020310.D
Chlorobenzene	108-90-7	<10		10	02/03/2021 16:07	S21020310.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	02/03/2021 16:07	S21020310.D
1,2,3-Trichloropropane	96-18-4	<10		10	02/03/2021 16:07	S21020310.D
1,3-Dichlorobenzene	541-73-1	<10		10	02/03/2021 16:07	S21020310.D
1,4-Dichlorobenzene	106-46-7	<10		10	02/03/2021 16:07	S21020310.D
1,2-Dichlorobenzene	95-50-1	<10		10	02/03/2021 16:07	S21020310.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	02/03/2021 16:07	S21020310.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	02/03/2021 16:07	S21020310.D

BEACON ENVIRONMENTAL

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-07

SG-30

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	02/03/2021 16:31	S21020311.D
1,1-Dichloroethene	75-35-4	<10		10	02/03/2021 16:31	S21020311.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	02/03/2021 16:31	S21020311.D
trans-1,2-Dichloroethene	156-60-5	<10		10	02/03/2021 16:31	S21020311.D
1,1-Dichloroethane	75-34-3	<10		10	02/03/2021 16:31	S21020311.D
cis-1,2-Dichloroethene	156-59-2	<10		10	02/03/2021 16:31	S21020311.D
Chloroform	67-66-3	<10		10	02/03/2021 16:31	S21020311.D
1,2-Dichloroethane	107-06-2	<10		10	02/03/2021 16:31	S21020311.D
1,1,1-Trichloroethane	71-55-6	<10		10	02/03/2021 16:31	S21020311.D
Carbon Tetrachloride	56-23-5	<10		10	02/03/2021 16:31	S21020311.D
Trichloroethene	79-01-6	**17**		10	02/03/2021 16:31	S21020311.D
1,1,2-Trichloroethane	79-00-5	<10		10	02/03/2021 16:31	S21020311.D
Tetrachloroethene	127-18-4	**148**		10	02/03/2021 16:31	S21020311.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	02/03/2021 16:31	S21020311.D
Chlorobenzene	108-90-7	<10		10	02/03/2021 16:31	S21020311.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	02/03/2021 16:31	S21020311.D
1,2,3-Trichloropropane	96-18-4	<10		10	02/03/2021 16:31	S21020311.D
1,3-Dichlorobenzene	541-73-1	<10		10	02/03/2021 16:31	S21020311.D
1,4-Dichlorobenzene	106-46-7	<10		10	02/03/2021 16:31	S21020311.D
1,2-Dichlorobenzene	95-50-1	<10		10	02/03/2021 16:31	S21020311.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	02/03/2021 16:31	S21020311.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	02/03/2021 16:31	S21020311.D

BEACON ENVIRONMENTAL

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-08

SG-31

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	02/03/2021 16:54	S21020312.D
1,1-Dichloroethene	75-35-4	<10		10	02/03/2021 16:54	S21020312.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	02/03/2021 16:54	S21020312.D
trans-1,2-Dichloroethene	156-60-5	<10		10	02/03/2021 16:54	S21020312.D
1,1-Dichloroethane	75-34-3	<10		10	02/03/2021 16:54	S21020312.D
cis-1,2-Dichloroethene	156-59-2	<10		10	02/03/2021 16:54	S21020312.D
Chloroform	67-66-3	<10		10	02/03/2021 16:54	S21020312.D
1,2-Dichloroethane	107-06-2	<10		10	02/03/2021 16:54	S21020312.D
1,1,1-Trichloroethane	71-55-6	<10		10	02/03/2021 16:54	S21020312.D
Carbon Tetrachloride	56-23-5	<10		10	02/03/2021 16:54	S21020312.D
Trichloroethene	79-01-6	<10		10	02/03/2021 16:54	S21020312.D
1,1,2-Trichloroethane	79-00-5	<10		10	02/03/2021 16:54	S21020312.D
Tetrachloroethene	127-18-4	**55**		10	02/03/2021 16:54	S21020312.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	02/03/2021 16:54	S21020312.D
Chlorobenzene	108-90-7	<10		10	02/03/2021 16:54	S21020312.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	02/03/2021 16:54	S21020312.D
1,2,3-Trichloropropane	96-18-4	<10		10	02/03/2021 16:54	S21020312.D
1,3-Dichlorobenzene	541-73-1	<10		10	02/03/2021 16:54	S21020312.D
1,4-Dichlorobenzene	106-46-7	<10		10	02/03/2021 16:54	S21020312.D
1,2-Dichlorobenzene	95-50-1	<10		10	02/03/2021 16:54	S21020312.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	02/03/2021 16:54	S21020312.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	02/03/2021 16:54	S21020312.D

BEACON ENVIRONMENTAL

2203A Commerce Road, Suite 1
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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-09

SG-32

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	02/03/2021 17:17	S21020313.D
1,1-Dichloroethene	75-35-4	<10		10	02/03/2021 17:17	S21020313.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	02/03/2021 17:17	S21020313.D
trans-1,2-Dichloroethene	156-60-5	<10		10	02/03/2021 17:17	S21020313.D
1,1-Dichloroethane	75-34-3	<10		10	02/03/2021 17:17	S21020313.D
cis-1,2-Dichloroethene	156-59-2	**17**		10	02/03/2021 17:17	S21020313.D
Chloroform	67-66-3	<10		10	02/03/2021 17:17	S21020313.D
1,2-Dichloroethane	107-06-2	<10		10	02/03/2021 17:17	S21020313.D
1,1,1-Trichloroethane	71-55-6	<10		10	02/03/2021 17:17	S21020313.D
Carbon Tetrachloride	56-23-5	<10		10	02/03/2021 17:17	S21020313.D
Trichloroethene	79-01-6	**298**		10	02/03/2021 17:17	S21020313.D
1,1,2-Trichloroethane	79-00-5	<10		10	02/03/2021 17:17	S21020313.D
Tetrachloroethene	127-18-4	**2,900**		10	02/03/2021 17:17	S21020313.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	02/03/2021 17:17	S21020313.D
Chlorobenzene	108-90-7	<10		10	02/03/2021 17:17	S21020313.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	02/03/2021 17:17	S21020313.D
1,2,3-Trichloropropane	96-18-4	<10		10	02/03/2021 17:17	S21020313.D
1,3-Dichlorobenzene	541-73-1	<10		10	02/03/2021 17:17	S21020313.D
1,4-Dichlorobenzene	106-46-7	<10		10	02/03/2021 17:17	S21020313.D
1,2-Dichlorobenzene	95-50-1	<10		10	02/03/2021 17:17	S21020313.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	02/03/2021 17:17	S21020313.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	02/03/2021 17:17	S21020313.D

BEACON ENVIRONMENTAL

2203A Commerce Road, Suite 1
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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-10

SG-33

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	02/03/2021 17:41	S21020314.D
1,1-Dichloroethene	75-35-4	**11**		10	02/03/2021 17:41	S21020314.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	02/03/2021 17:41	S21020314.D
trans-1,2-Dichloroethene	156-60-5	**38**		10	02/03/2021 17:41	S21020314.D
1,1-Dichloroethane	75-34-3	<10		10	02/03/2021 17:41	S21020314.D
cis-1,2-Dichloroethene	156-59-2	**129**		10	02/03/2021 17:41	S21020314.D
Chloroform	67-66-3	<10		10	02/03/2021 17:41	S21020314.D
1,2-Dichloroethane	107-06-2	<10		10	02/03/2021 17:41	S21020314.D
1,1,1-Trichloroethane	71-55-6	<10		10	02/03/2021 17:41	S21020314.D
Carbon Tetrachloride	56-23-5	<10		10	02/03/2021 17:41	S21020314.D
Trichloroethene	79-01-6	**1,710**		10	02/03/2021 17:41	S21020314.D
1,1,2-Trichloroethane	79-00-5	<10		10	02/03/2021 17:41	S21020314.D
Tetrachloroethene	127-18-4	**7,110**		10	02/03/2021 17:41	S21020314.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	02/03/2021 17:41	S21020314.D
Chlorobenzene	108-90-7	<10		10	02/03/2021 17:41	S21020314.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	02/03/2021 17:41	S21020314.D
1,2,3-Trichloropropane	96-18-4	<10		10	02/03/2021 17:41	S21020314.D
1,3-Dichlorobenzene	541-73-1	<10		10	02/03/2021 17:41	S21020314.D
1,4-Dichlorobenzene	106-46-7	<10		10	02/03/2021 17:41	S21020314.D
1,2-Dichlorobenzene	95-50-1	<10		10	02/03/2021 17:41	S21020314.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	02/03/2021 17:41	S21020314.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	02/03/2021 17:41	S21020314.D

BEACON ENVIRONMENTAL

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-11

SG-34

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	02/03/2021 18:05	S21020315.D
1,1-Dichloroethene	75-35-4	<10		10	02/03/2021 18:05	S21020315.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	02/03/2021 18:05	S21020315.D
trans-1,2-Dichloroethene	156-60-5	<10		10	02/03/2021 18:05	S21020315.D
1,1-Dichloroethane	75-34-3	<10		10	02/03/2021 18:05	S21020315.D
cis-1,2-Dichloroethene	156-59-2	<10		10	02/03/2021 18:05	S21020315.D
Chloroform	67-66-3	<10		10	02/03/2021 18:05	S21020315.D
1,2-Dichloroethane	107-06-2	<10		10	02/03/2021 18:05	S21020315.D
1,1,1-Trichloroethane	71-55-6	<10		10	02/03/2021 18:05	S21020315.D
Carbon Tetrachloride	56-23-5	<10		10	02/03/2021 18:05	S21020315.D
Trichloroethene	79-01-6	<10		10	02/03/2021 18:05	S21020315.D
1,1,2-Trichloroethane	79-00-5	<10		10	02/03/2021 18:05	S21020315.D
Tetrachloroethene	127-18-4	**12**		10	02/03/2021 18:05	S21020315.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	02/03/2021 18:05	S21020315.D
Chlorobenzene	108-90-7	<10		10	02/03/2021 18:05	S21020315.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	02/03/2021 18:05	S21020315.D
1,2,3-Trichloropropane	96-18-4	<10		10	02/03/2021 18:05	S21020315.D
1,3-Dichlorobenzene	541-73-1	<10		10	02/03/2021 18:05	S21020315.D
1,4-Dichlorobenzene	106-46-7	<10		10	02/03/2021 18:05	S21020315.D
1,2-Dichlorobenzene	95-50-1	<10		10	02/03/2021 18:05	S21020315.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	02/03/2021 18:05	S21020315.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	02/03/2021 18:05	S21020315.D

BEACON ENVIRONMENTAL

2203A Commerce Road, Suite 1
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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-12

SG-35

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	02/03/2021 18:28	S21020316.D
1,1-Dichloroethene	75-35-4	<10		10	02/03/2021 18:28	S21020316.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	02/03/2021 18:28	S21020316.D
trans-1,2-Dichloroethene	156-60-5	<10		10	02/03/2021 18:28	S21020316.D
1,1-Dichloroethane	75-34-3	<10		10	02/03/2021 18:28	S21020316.D
cis-1,2-Dichloroethene	156-59-2	<10		10	02/03/2021 18:28	S21020316.D
Chloroform	67-66-3	<10		10	02/03/2021 18:28	S21020316.D
1,2-Dichloroethane	107-06-2	<10		10	02/03/2021 18:28	S21020316.D
1,1,1-Trichloroethane	71-55-6	<10		10	02/03/2021 18:28	S21020316.D
Carbon Tetrachloride	56-23-5	<10		10	02/03/2021 18:28	S21020316.D
Trichloroethene	79-01-6	<10		10	02/03/2021 18:28	S21020316.D
1,1,2-Trichloroethane	79-00-5	<10		10	02/03/2021 18:28	S21020316.D
Tetrachloroethene	127-18-4	**224**		10	02/03/2021 18:28	S21020316.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	02/03/2021 18:28	S21020316.D
Chlorobenzene	108-90-7	<10		10	02/03/2021 18:28	S21020316.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	02/03/2021 18:28	S21020316.D
1,2,3-Trichloropropane	96-18-4	<10		10	02/03/2021 18:28	S21020316.D
1,3-Dichlorobenzene	541-73-1	<10		10	02/03/2021 18:28	S21020316.D
1,4-Dichlorobenzene	106-46-7	<10		10	02/03/2021 18:28	S21020316.D
1,2-Dichlorobenzene	95-50-1	<10		10	02/03/2021 18:28	S21020316.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	02/03/2021 18:28	S21020316.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	02/03/2021 18:28	S21020316.D

BEACON ENVIRONMENTAL

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
1.410.838.8780

CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-13

SG-36

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	02/03/2021 18:52	S21020317.D
1,1-Dichloroethene	75-35-4	<10		10	02/03/2021 18:52	S21020317.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	02/03/2021 18:52	S21020317.D
trans-1,2-Dichloroethene	156-60-5	<10		10	02/03/2021 18:52	S21020317.D
1,1-Dichloroethane	75-34-3	<10		10	02/03/2021 18:52	S21020317.D
cis-1,2-Dichloroethene	156-59-2	<10		10	02/03/2021 18:52	S21020317.D
Chloroform	67-66-3	<10		10	02/03/2021 18:52	S21020317.D
1,2-Dichloroethane	107-06-2	<10		10	02/03/2021 18:52	S21020317.D
1,1,1-Trichloroethane	71-55-6	<10		10	02/03/2021 18:52	S21020317.D
Carbon Tetrachloride	56-23-5	<10		10	02/03/2021 18:52	S21020317.D
Trichloroethene	79-01-6	**27**		10	02/03/2021 18:52	S21020317.D
1,1,2-Trichloroethane	79-00-5	<10		10	02/03/2021 18:52	S21020317.D
Tetrachloroethene	127-18-4	**1,080**		10	02/03/2021 18:52	S21020317.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	02/03/2021 18:52	S21020317.D
Chlorobenzene	108-90-7	<10		10	02/03/2021 18:52	S21020317.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	02/03/2021 18:52	S21020317.D
1,2,3-Trichloropropane	96-18-4	<10		10	02/03/2021 18:52	S21020317.D
1,3-Dichlorobenzene	541-73-1	<10		10	02/03/2021 18:52	S21020317.D
1,4-Dichlorobenzene	106-46-7	<10		10	02/03/2021 18:52	S21020317.D
1,2-Dichlorobenzene	95-50-1	<10		10	02/03/2021 18:52	S21020317.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	02/03/2021 18:52	S21020317.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	02/03/2021 18:52	S21020317.D

BEACON ENVIRONMENTAL

2203A Commerce Road, Suite 1
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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-14

SG-37

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	02/03/2021 19:15	S21020318.D
1,1-Dichloroethene	75-35-4	<10		10	02/03/2021 19:15	S21020318.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	02/03/2021 19:15	S21020318.D
trans-1,2-Dichloroethene	156-60-5	<10		10	02/03/2021 19:15	S21020318.D
1,1-Dichloroethane	75-34-3	<10		10	02/03/2021 19:15	S21020318.D
cis-1,2-Dichloroethene	156-59-2	**90**		10	02/03/2021 19:15	S21020318.D
Chloroform	67-66-3	<10		10	02/03/2021 19:15	S21020318.D
1,2-Dichloroethane	107-06-2	<10		10	02/03/2021 19:15	S21020318.D
1,1,1-Trichloroethane	71-55-6	<10		10	02/03/2021 19:15	S21020318.D
Carbon Tetrachloride	56-23-5	<10		10	02/03/2021 19:15	S21020318.D
Trichloroethene	79-01-6	**604**		10	02/03/2021 19:15	S21020318.D
1,1,2-Trichloroethane	79-00-5	<10		10	02/03/2021 19:15	S21020318.D
Tetrachloroethene	127-18-4	**6,680**		10	02/03/2021 19:15	S21020318.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	02/03/2021 19:15	S21020318.D
Chlorobenzene	108-90-7	<10		10	02/03/2021 19:15	S21020318.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	02/03/2021 19:15	S21020318.D
1,2,3-Trichloropropane	96-18-4	<10		10	02/03/2021 19:15	S21020318.D
1,3-Dichlorobenzene	541-73-1	<10		10	02/03/2021 19:15	S21020318.D
1,4-Dichlorobenzene	106-46-7	<10		10	02/03/2021 19:15	S21020318.D
1,2-Dichlorobenzene	95-50-1	<10		10	02/03/2021 19:15	S21020318.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	02/03/2021 19:15	S21020318.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	02/03/2021 19:15	S21020318.D

BEACON ENVIRONMENTAL

2203A Commerce Road, Suite 1
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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-15

SG-38

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	**59**		10	02/03/2021 19:39	S21020319.D
1,1-Dichloroethene	75-35-4	**45**		10	02/03/2021 19:39	S21020319.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	**11**		10	02/03/2021 19:39	S21020319.D
trans-1,2-Dichloroethene	156-60-5	**6,720**		10	02/03/2021 19:39	S21020319.D
1,1-Dichloroethane	75-34-3	**22**		10	02/03/2021 19:39	S21020319.D
cis-1,2-Dichloroethene	156-59-2	**5,840**		10	02/03/2021 19:39	S21020319.D
Chloroform	67-66-3	**18**		10	02/03/2021 19:39	S21020319.D
1,2-Dichloroethane	107-06-2	<10		10	02/03/2021 19:39	S21020319.D
1,1,1-Trichloroethane	71-55-6	<10		10	02/03/2021 19:39	S21020319.D
Carbon Tetrachloride	56-23-5	<10		10	02/03/2021 19:39	S21020319.D
Trichloroethene	79-01-6	**10,100**		10	02/03/2021 19:39	S21020319.D
1,1,2-Trichloroethane	79-00-5	<10		10	02/03/2021 19:39	S21020319.D
Tetrachloroethene	127-18-4	**8,780**		10	02/03/2021 19:39	S21020319.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	02/03/2021 19:39	S21020319.D
Chlorobenzene	108-90-7	<10		10	02/03/2021 19:39	S21020319.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	02/03/2021 19:39	S21020319.D
1,2,3-Trichloropropane	96-18-4	<10		10	02/03/2021 19:39	S21020319.D
1,3-Dichlorobenzene	541-73-1	<10		10	02/03/2021 19:39	S21020319.D
1,4-Dichlorobenzene	106-46-7	<10		10	02/03/2021 19:39	S21020319.D
1,2-Dichlorobenzene	95-50-1	<10		10	02/03/2021 19:39	S21020319.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	02/03/2021 19:39	S21020319.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	02/03/2021 19:39	S21020319.D

BEACON ENVIRONMENTAL

2203A Commerce Road, Suite 1
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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-16

SG-39

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	02/03/2021 20:02	S21020320.D
1,1-Dichloroethene	75-35-4	<10		10	02/03/2021 20:02	S21020320.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	02/03/2021 20:02	S21020320.D
trans-1,2-Dichloroethene	156-60-5	<10		10	02/03/2021 20:02	S21020320.D
1,1-Dichloroethane	75-34-3	<10		10	02/03/2021 20:02	S21020320.D
cis-1,2-Dichloroethene	156-59-2	<10		10	02/03/2021 20:02	S21020320.D
Chloroform	67-66-3	<10		10	02/03/2021 20:02	S21020320.D
1,2-Dichloroethane	107-06-2	<10		10	02/03/2021 20:02	S21020320.D
1,1,1-Trichloroethane	71-55-6	<10		10	02/03/2021 20:02	S21020320.D
Carbon Tetrachloride	56-23-5	<10		10	02/03/2021 20:02	S21020320.D
Trichloroethene	79-01-6	<10		10	02/03/2021 20:02	S21020320.D
1,1,2-Trichloroethane	79-00-5	<10		10	02/03/2021 20:02	S21020320.D
Tetrachloroethene	127-18-4	**24**		10	02/03/2021 20:02	S21020320.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	02/03/2021 20:02	S21020320.D
Chlorobenzene	108-90-7	<10		10	02/03/2021 20:02	S21020320.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	02/03/2021 20:02	S21020320.D
1,2,3-Trichloropropane	96-18-4	<10		10	02/03/2021 20:02	S21020320.D
1,3-Dichlorobenzene	541-73-1	<10		10	02/03/2021 20:02	S21020320.D
1,4-Dichlorobenzene	106-46-7	<10		10	02/03/2021 20:02	S21020320.D
1,2-Dichlorobenzene	95-50-1	<10		10	02/03/2021 20:02	S21020320.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	02/03/2021 20:02	S21020320.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	02/03/2021 20:02	S21020320.D

BEACON ENVIRONMENTAL

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-17

SG-40

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	02/03/2021 20:25	S21020321.D
1,1-Dichloroethene	75-35-4	<10		10	02/03/2021 20:25	S21020321.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	02/03/2021 20:25	S21020321.D
trans-1,2-Dichloroethene	156-60-5	<10		10	02/03/2021 20:25	S21020321.D
1,1-Dichloroethane	75-34-3	<10		10	02/03/2021 20:25	S21020321.D
cis-1,2-Dichloroethene	156-59-2	<10		10	02/03/2021 20:25	S21020321.D
Chloroform	67-66-3	<10		10	02/03/2021 20:25	S21020321.D
1,2-Dichloroethane	107-06-2	<10		10	02/03/2021 20:25	S21020321.D
1,1,1-Trichloroethane	71-55-6	<10		10	02/03/2021 20:25	S21020321.D
Carbon Tetrachloride	56-23-5	<10		10	02/03/2021 20:25	S21020321.D
Trichloroethene	79-01-6	<10		10	02/03/2021 20:25	S21020321.D
1,1,2-Trichloroethane	79-00-5	<10		10	02/03/2021 20:25	S21020321.D
Tetrachloroethene	127-18-4	**221**		10	02/03/2021 20:25	S21020321.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	02/03/2021 20:25	S21020321.D
Chlorobenzene	108-90-7	<10		10	02/03/2021 20:25	S21020321.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	02/03/2021 20:25	S21020321.D
1,2,3-Trichloropropane	96-18-4	<10		10	02/03/2021 20:25	S21020321.D
1,3-Dichlorobenzene	541-73-1	<10		10	02/03/2021 20:25	S21020321.D
1,4-Dichlorobenzene	106-46-7	<10		10	02/03/2021 20:25	S21020321.D
1,2-Dichlorobenzene	95-50-1	<10		10	02/03/2021 20:25	S21020321.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	02/03/2021 20:25	S21020321.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	02/03/2021 20:25	S21020321.D

BEACON ENVIRONMENTAL

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-18

SG-41

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	02/03/2021 20:49	S21020322.D
1,1-Dichloroethene	75-35-4	<10		10	02/03/2021 20:49	S21020322.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	02/03/2021 20:49	S21020322.D
trans-1,2-Dichloroethene	156-60-5	<10		10	02/03/2021 20:49	S21020322.D
1,1-Dichloroethane	75-34-3	<10		10	02/03/2021 20:49	S21020322.D
cis-1,2-Dichloroethene	156-59-2	<10		10	02/03/2021 20:49	S21020322.D
Chloroform	67-66-3	<10		10	02/03/2021 20:49	S21020322.D
1,2-Dichloroethane	107-06-2	<10		10	02/03/2021 20:49	S21020322.D
1,1,1-Trichloroethane	71-55-6	<10		10	02/03/2021 20:49	S21020322.D
Carbon Tetrachloride	56-23-5	<10		10	02/03/2021 20:49	S21020322.D
Trichloroethene	79-01-6	**48**		10	02/03/2021 20:49	S21020322.D
1,1,2-Trichloroethane	79-00-5	<10		10	02/03/2021 20:49	S21020322.D
Tetrachloroethene	127-18-4	**1,220**		10	02/03/2021 20:49	S21020322.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	02/03/2021 20:49	S21020322.D
Chlorobenzene	108-90-7	<10		10	02/03/2021 20:49	S21020322.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	02/03/2021 20:49	S21020322.D
1,2,3-Trichloropropane	96-18-4	<10		10	02/03/2021 20:49	S21020322.D
1,3-Dichlorobenzene	541-73-1	<10		10	02/03/2021 20:49	S21020322.D
1,4-Dichlorobenzene	106-46-7	<10		10	02/03/2021 20:49	S21020322.D
1,2-Dichlorobenzene	95-50-1	<10		10	02/03/2021 20:49	S21020322.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	02/03/2021 20:49	S21020322.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	02/03/2021 20:49	S21020322.D

BEACON ENVIRONMENTAL

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-19

SG-42

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	02/03/2021 21:12	S21020323.D
1,1-Dichloroethene	75-35-4	<10		10	02/03/2021 21:12	S21020323.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	02/03/2021 21:12	S21020323.D
trans-1,2-Dichloroethene	156-60-5	<10		10	02/03/2021 21:12	S21020323.D
1,1-Dichloroethane	75-34-3	<10		10	02/03/2021 21:12	S21020323.D
cis-1,2-Dichloroethene	156-59-2	<10		10	02/03/2021 21:12	S21020323.D
Chloroform	67-66-3	<10		10	02/03/2021 21:12	S21020323.D
1,2-Dichloroethane	107-06-2	<10		10	02/03/2021 21:12	S21020323.D
1,1,1-Trichloroethane	71-55-6	<10		10	02/03/2021 21:12	S21020323.D
Carbon Tetrachloride	56-23-5	<10		10	02/03/2021 21:12	S21020323.D
Trichloroethene	79-01-6	**20**		10	02/03/2021 21:12	S21020323.D
1,1,2-Trichloroethane	79-00-5	<10		10	02/03/2021 21:12	S21020323.D
Tetrachloroethene	127-18-4	**102**		10	02/03/2021 21:12	S21020323.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	02/03/2021 21:12	S21020323.D
Chlorobenzene	108-90-7	<10		10	02/03/2021 21:12	S21020323.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	02/03/2021 21:12	S21020323.D
1,2,3-Trichloropropane	96-18-4	<10		10	02/03/2021 21:12	S21020323.D
1,3-Dichlorobenzene	541-73-1	<10		10	02/03/2021 21:12	S21020323.D
1,4-Dichlorobenzene	106-46-7	<10		10	02/03/2021 21:12	S21020323.D
1,2-Dichlorobenzene	95-50-1	<10		10	02/03/2021 21:12	S21020323.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	02/03/2021 21:12	S21020323.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	02/03/2021 21:12	S21020323.D

BEACON ENVIRONMENTAL

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-20

SG-43

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	02/03/2021 21:35	S21020324.D
1,1-Dichloroethene	75-35-4	<10		10	02/03/2021 21:35	S21020324.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	02/03/2021 21:35	S21020324.D
trans-1,2-Dichloroethene	156-60-5	<10		10	02/03/2021 21:35	S21020324.D
1,1-Dichloroethane	75-34-3	<10		10	02/03/2021 21:35	S21020324.D
cis-1,2-Dichloroethene	156-59-2	<10		10	02/03/2021 21:35	S21020324.D
Chloroform	67-66-3	<10		10	02/03/2021 21:35	S21020324.D
1,2-Dichloroethane	107-06-2	<10		10	02/03/2021 21:35	S21020324.D
1,1,1-Trichloroethane	71-55-6	<10		10	02/03/2021 21:35	S21020324.D
Carbon Tetrachloride	56-23-5	<10		10	02/03/2021 21:35	S21020324.D
Trichloroethene	79-01-6	**33**		10	02/03/2021 21:35	S21020324.D
1,1,2-Trichloroethane	79-00-5	<10		10	02/03/2021 21:35	S21020324.D
Tetrachloroethene	127-18-4	**1,080**		10	02/03/2021 21:35	S21020324.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	02/03/2021 21:35	S21020324.D
Chlorobenzene	108-90-7	<10		10	02/03/2021 21:35	S21020324.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	02/03/2021 21:35	S21020324.D
1,2,3-Trichloropropane	96-18-4	<10		10	02/03/2021 21:35	S21020324.D
1,3-Dichlorobenzene	541-73-1	<10		10	02/03/2021 21:35	S21020324.D
1,4-Dichlorobenzene	106-46-7	<10		10	02/03/2021 21:35	S21020324.D
1,2-Dichlorobenzene	95-50-1	<10		10	02/03/2021 21:35	S21020324.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	02/03/2021 21:35	S21020324.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	02/03/2021 21:35	S21020324.D

BEACON ENVIRONMENTAL

2203A Commerce Road, Suite 1
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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-21

SG-44

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	02/03/2021 22:00	S21020325.D
1,1-Dichloroethene	75-35-4	<10		10	02/03/2021 22:00	S21020325.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	02/03/2021 22:00	S21020325.D
trans-1,2-Dichloroethene	156-60-5	<10		10	02/03/2021 22:00	S21020325.D
1,1-Dichloroethane	75-34-3	<10		10	02/03/2021 22:00	S21020325.D
cis-1,2-Dichloroethene	156-59-2	<10		10	02/03/2021 22:00	S21020325.D
Chloroform	67-66-3	<10		10	02/03/2021 22:00	S21020325.D
1,2-Dichloroethane	107-06-2	<10		10	02/03/2021 22:00	S21020325.D
1,1,1-Trichloroethane	71-55-6	<10		10	02/03/2021 22:00	S21020325.D
Carbon Tetrachloride	56-23-5	<10		10	02/03/2021 22:00	S21020325.D
Trichloroethene	79-01-6	**66**		10	02/03/2021 22:00	S21020325.D
1,1,2-Trichloroethane	79-00-5	<10		10	02/03/2021 22:00	S21020325.D
Tetrachloroethene	127-18-4	**757**		10	02/03/2021 22:00	S21020325.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	02/03/2021 22:00	S21020325.D
Chlorobenzene	108-90-7	<10		10	02/03/2021 22:00	S21020325.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	02/03/2021 22:00	S21020325.D
1,2,3-Trichloropropane	96-18-4	<10		10	02/03/2021 22:00	S21020325.D
1,3-Dichlorobenzene	541-73-1	<10		10	02/03/2021 22:00	S21020325.D
1,4-Dichlorobenzene	106-46-7	<10		10	02/03/2021 22:00	S21020325.D
1,2-Dichlorobenzene	95-50-1	<10		10	02/03/2021 22:00	S21020325.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	02/03/2021 22:00	S21020325.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	02/03/2021 22:00	S21020325.D

BEACON ENVIRONMENTAL

2203A Commerce Road, Suite 1
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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-22

SG-45

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	02/03/2021 22:23	S21020326.D
1,1-Dichloroethene	75-35-4	<10		10	02/03/2021 22:23	S21020326.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	**12**		10	02/03/2021 22:23	S21020326.D
trans-1,2-Dichloroethene	156-60-5	**136**		10	02/03/2021 22:23	S21020326.D
1,1-Dichloroethane	75-34-3	<10		10	02/03/2021 22:23	S21020326.D
cis-1,2-Dichloroethene	156-59-2	**85**		10	02/03/2021 22:23	S21020326.D
Chloroform	67-66-3	**17**		10	02/03/2021 22:23	S21020326.D
1,2-Dichloroethane	107-06-2	<10		10	02/03/2021 22:23	S21020326.D
1,1,1-Trichloroethane	71-55-6	<10		10	02/03/2021 22:23	S21020326.D
Carbon Tetrachloride	56-23-5	<10		10	02/03/2021 22:23	S21020326.D
Trichloroethene	79-01-6	**2,440**		10	02/03/2021 22:23	S21020326.D
1,1,2-Trichloroethane	79-00-5	<10		10	02/03/2021 22:23	S21020326.D
Tetrachloroethene	127-18-4	**8,590**		10	02/03/2021 22:23	S21020326.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	02/03/2021 22:23	S21020326.D
Chlorobenzene	108-90-7	<10		10	02/03/2021 22:23	S21020326.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	02/03/2021 22:23	S21020326.D
1,2,3-Trichloropropane	96-18-4	<10		10	02/03/2021 22:23	S21020326.D
1,3-Dichlorobenzene	541-73-1	<10		10	02/03/2021 22:23	S21020326.D
1,4-Dichlorobenzene	106-46-7	<10		10	02/03/2021 22:23	S21020326.D
1,2-Dichlorobenzene	95-50-1	<10		10	02/03/2021 22:23	S21020326.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	02/03/2021 22:23	S21020326.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	02/03/2021 22:23	S21020326.D

BEACON ENVIRONMENTAL

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-23

SG-46

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	02/03/2021 22:46	S21020327.D
1,1-Dichloroethene	75-35-4	<10		10	02/03/2021 22:46	S21020327.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	02/03/2021 22:46	S21020327.D
trans-1,2-Dichloroethene	156-60-5	<10		10	02/03/2021 22:46	S21020327.D
1,1-Dichloroethane	75-34-3	<10		10	02/03/2021 22:46	S21020327.D
cis-1,2-Dichloroethene	156-59-2	<10		10	02/03/2021 22:46	S21020327.D
Chloroform	67-66-3	<10		10	02/03/2021 22:46	S21020327.D
1,2-Dichloroethane	107-06-2	<10		10	02/03/2021 22:46	S21020327.D
1,1,1-Trichloroethane	71-55-6	<10		10	02/03/2021 22:46	S21020327.D
Carbon Tetrachloride	56-23-5	<10		10	02/03/2021 22:46	S21020327.D
Trichloroethene	79-01-6	<10		10	02/03/2021 22:46	S21020327.D
1,1,2-Trichloroethane	79-00-5	<10		10	02/03/2021 22:46	S21020327.D
Tetrachloroethene	127-18-4	**121**		10	02/03/2021 22:46	S21020327.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	02/03/2021 22:46	S21020327.D
Chlorobenzene	108-90-7	<10		10	02/03/2021 22:46	S21020327.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	02/03/2021 22:46	S21020327.D
1,2,3-Trichloropropane	96-18-4	<10		10	02/03/2021 22:46	S21020327.D
1,3-Dichlorobenzene	541-73-1	<10		10	02/03/2021 22:46	S21020327.D
1,4-Dichlorobenzene	106-46-7	<10		10	02/03/2021 22:46	S21020327.D
1,2-Dichlorobenzene	95-50-1	<10		10	02/03/2021 22:46	S21020327.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	02/03/2021 22:46	S21020327.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	02/03/2021 22:46	S21020327.D

BEACON ENVIRONMENTAL

2203A Commerce Road, Suite 1
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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-24

SG-47

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	02/03/2021 23:10	S21020328.D
1,1-Dichloroethene	75-35-4	<10		10	02/03/2021 23:10	S21020328.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	02/03/2021 23:10	S21020328.D
trans-1,2-Dichloroethene	156-60-5	<10		10	02/03/2021 23:10	S21020328.D
1,1-Dichloroethane	75-34-3	<10		10	02/03/2021 23:10	S21020328.D
cis-1,2-Dichloroethene	156-59-2	<10		10	02/03/2021 23:10	S21020328.D
Chloroform	67-66-3	<10		10	02/03/2021 23:10	S21020328.D
1,2-Dichloroethane	107-06-2	<10		10	02/03/2021 23:10	S21020328.D
1,1,1-Trichloroethane	71-55-6	<10		10	02/03/2021 23:10	S21020328.D
Carbon Tetrachloride	56-23-5	<10		10	02/03/2021 23:10	S21020328.D
Trichloroethene	79-01-6	<10		10	02/03/2021 23:10	S21020328.D
1,1,2-Trichloroethane	79-00-5	<10		10	02/03/2021 23:10	S21020328.D
Tetrachloroethene	127-18-4	<10		10	02/03/2021 23:10	S21020328.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	02/03/2021 23:10	S21020328.D
Chlorobenzene	108-90-7	<10		10	02/03/2021 23:10	S21020328.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	02/03/2021 23:10	S21020328.D
1,2,3-Trichloropropane	96-18-4	<10		10	02/03/2021 23:10	S21020328.D
1,3-Dichlorobenzene	541-73-1	<10		10	02/03/2021 23:10	S21020328.D
1,4-Dichlorobenzene	106-46-7	<10		10	02/03/2021 23:10	S21020328.D
1,2-Dichlorobenzene	95-50-1	<10		10	02/03/2021 23:10	S21020328.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	02/03/2021 23:10	S21020328.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	02/03/2021 23:10	S21020328.D

BEACON ENVIRONMENTAL

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-25

SG-48

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	**10**		10	02/03/2021 23:33	S21020329.D
1,1-Dichloroethene	75-35-4	**59**		10	02/03/2021 23:33	S21020329.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	02/03/2021 23:33	S21020329.D
trans-1,2-Dichloroethene	156-60-5	**245**		10	02/03/2021 23:33	S21020329.D
1,1-Dichloroethane	75-34-3	<10		10	02/03/2021 23:33	S21020329.D
cis-1,2-Dichloroethene	156-59-2	**2,820**		10	02/03/2021 23:33	S21020329.D
Chloroform	67-66-3	<10		10	02/03/2021 23:33	S21020329.D
1,2-Dichloroethane	107-06-2	<10		10	02/03/2021 23:33	S21020329.D
1,1,1-Trichloroethane	71-55-6	<10		10	02/03/2021 23:33	S21020329.D
Carbon Tetrachloride	56-23-5	<10		10	02/03/2021 23:33	S21020329.D
Trichloroethene	79-01-6	**4,860**		10	02/03/2021 23:33	S21020329.D
1,1,2-Trichloroethane	79-00-5	<10		10	02/03/2021 23:33	S21020329.D
Tetrachloroethene	127-18-4	**5,210**		10	02/03/2021 23:33	S21020329.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	02/03/2021 23:33	S21020329.D
Chlorobenzene	108-90-7	<10		10	02/03/2021 23:33	S21020329.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	02/03/2021 23:33	S21020329.D
1,2,3-Trichloropropane	96-18-4	<10		10	02/03/2021 23:33	S21020329.D
1,3-Dichlorobenzene	541-73-1	<10		10	02/03/2021 23:33	S21020329.D
1,4-Dichlorobenzene	106-46-7	<10		10	02/03/2021 23:33	S21020329.D
1,2-Dichlorobenzene	95-50-1	<10		10	02/03/2021 23:33	S21020329.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	02/03/2021 23:33	S21020329.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	02/03/2021 23:33	S21020329.D

BEACON ENVIRONMENTAL

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-26

SG-49

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	02/03/2021 23:57	S21020330.D
1,1-Dichloroethene	75-35-4	<10		10	02/03/2021 23:57	S21020330.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	02/03/2021 23:57	S21020330.D
trans-1,2-Dichloroethene	156-60-5	<10		10	02/03/2021 23:57	S21020330.D
1,1-Dichloroethane	75-34-3	<10		10	02/03/2021 23:57	S21020330.D
cis-1,2-Dichloroethene	156-59-2	<10		10	02/03/2021 23:57	S21020330.D
Chloroform	67-66-3	<10		10	02/03/2021 23:57	S21020330.D
1,2-Dichloroethane	107-06-2	<10		10	02/03/2021 23:57	S21020330.D
1,1,1-Trichloroethane	71-55-6	<10		10	02/03/2021 23:57	S21020330.D
Carbon Tetrachloride	56-23-5	<10		10	02/03/2021 23:57	S21020330.D
Trichloroethene	79-01-6	**12**		10	02/03/2021 23:57	S21020330.D
1,1,2-Trichloroethane	79-00-5	<10		10	02/03/2021 23:57	S21020330.D
Tetrachloroethene	127-18-4	**57**		10	02/03/2021 23:57	S21020330.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	02/03/2021 23:57	S21020330.D
Chlorobenzene	108-90-7	<10		10	02/03/2021 23:57	S21020330.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	02/03/2021 23:57	S21020330.D
1,2,3-Trichloropropane	96-18-4	<10		10	02/03/2021 23:57	S21020330.D
1,3-Dichlorobenzene	541-73-1	<10		10	02/03/2021 23:57	S21020330.D
1,4-Dichlorobenzene	106-46-7	<10		10	02/03/2021 23:57	S21020330.D
1,2-Dichlorobenzene	95-50-1	<10		10	02/03/2021 23:57	S21020330.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	02/03/2021 23:57	S21020330.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	02/03/2021 23:57	S21020330.D

BEACON ENVIRONMENTAL

2203A Commerce Road, Suite 1
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1.410.838.8780

CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-27

SG-49 Dup

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	02/04/2021 00:20	S21020331.D
1,1-Dichloroethene	75-35-4	<10		10	02/04/2021 00:20	S21020331.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	02/04/2021 00:20	S21020331.D
trans-1,2-Dichloroethene	156-60-5	<10		10	02/04/2021 00:20	S21020331.D
1,1-Dichloroethane	75-34-3	<10		10	02/04/2021 00:20	S21020331.D
cis-1,2-Dichloroethene	156-59-2	<10		10	02/04/2021 00:20	S21020331.D
Chloroform	67-66-3	<10		10	02/04/2021 00:20	S21020331.D
1,2-Dichloroethane	107-06-2	<10		10	02/04/2021 00:20	S21020331.D
1,1,1-Trichloroethane	71-55-6	<10		10	02/04/2021 00:20	S21020331.D
Carbon Tetrachloride	56-23-5	<10		10	02/04/2021 00:20	S21020331.D
Trichloroethene	79-01-6	<10		10	02/04/2021 00:20	S21020331.D
1,1,2-Trichloroethane	79-00-5	<10		10	02/04/2021 00:20	S21020331.D
Tetrachloroethene	127-18-4	**47**		10	02/04/2021 00:20	S21020331.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	02/04/2021 00:20	S21020331.D
Chlorobenzene	108-90-7	<10		10	02/04/2021 00:20	S21020331.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	02/04/2021 00:20	S21020331.D
1,2,3-Trichloropropane	96-18-4	<10		10	02/04/2021 00:20	S21020331.D
1,3-Dichlorobenzene	541-73-1	<10		10	02/04/2021 00:20	S21020331.D
1,4-Dichlorobenzene	106-46-7	<10		10	02/04/2021 00:20	S21020331.D
1,2-Dichlorobenzene	95-50-1	<10		10	02/04/2021 00:20	S21020331.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	02/04/2021 00:20	S21020331.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	02/04/2021 00:20	S21020331.D

BEACON ENVIRONMENTAL

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
1.410.838.8780

CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-28

SG-50

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	02/04/2021 00:43	S21020332.D
1,1-Dichloroethene	75-35-4	<10		10	02/04/2021 00:43	S21020332.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	02/04/2021 00:43	S21020332.D
trans-1,2-Dichloroethene	156-60-5	<10		10	02/04/2021 00:43	S21020332.D
1,1-Dichloroethane	75-34-3	<10		10	02/04/2021 00:43	S21020332.D
cis-1,2-Dichloroethene	156-59-2	<10		10	02/04/2021 00:43	S21020332.D
Chloroform	67-66-3	<10		10	02/04/2021 00:43	S21020332.D
1,2-Dichloroethane	107-06-2	<10		10	02/04/2021 00:43	S21020332.D
1,1,1-Trichloroethane	71-55-6	<10		10	02/04/2021 00:43	S21020332.D
Carbon Tetrachloride	56-23-5	<10		10	02/04/2021 00:43	S21020332.D
Trichloroethene	79-01-6	**11**		10	02/04/2021 00:43	S21020332.D
1,1,2-Trichloroethane	79-00-5	<10		10	02/04/2021 00:43	S21020332.D
Tetrachloroethene	127-18-4	**118**		10	02/04/2021 00:43	S21020332.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	02/04/2021 00:43	S21020332.D
Chlorobenzene	108-90-7	<10		10	02/04/2021 00:43	S21020332.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	02/04/2021 00:43	S21020332.D
1,2,3-Trichloropropane	96-18-4	<10		10	02/04/2021 00:43	S21020332.D
1,3-Dichlorobenzene	541-73-1	<10		10	02/04/2021 00:43	S21020332.D
1,4-Dichlorobenzene	106-46-7	<10		10	02/04/2021 00:43	S21020332.D
1,2-Dichlorobenzene	95-50-1	<10		10	02/04/2021 00:43	S21020332.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	02/04/2021 00:43	S21020332.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	02/04/2021 00:43	S21020332.D

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-29

SG-51

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	02/04/2021 01:07	S21020333.D
1,1-Dichloroethene	75-35-4	<10		10	02/04/2021 01:07	S21020333.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	02/04/2021 01:07	S21020333.D
trans-1,2-Dichloroethene	156-60-5	<10		10	02/04/2021 01:07	S21020333.D
1,1-Dichloroethane	75-34-3	<10		10	02/04/2021 01:07	S21020333.D
cis-1,2-Dichloroethene	156-59-2	<10		10	02/04/2021 01:07	S21020333.D
Chloroform	67-66-3	<10		10	02/04/2021 01:07	S21020333.D
1,2-Dichloroethane	107-06-2	<10		10	02/04/2021 01:07	S21020333.D
1,1,1-Trichloroethane	71-55-6	<10		10	02/04/2021 01:07	S21020333.D
Carbon Tetrachloride	56-23-5	<10		10	02/04/2021 01:07	S21020333.D
Trichloroethene	79-01-6	<10		10	02/04/2021 01:07	S21020333.D
1,1,2-Trichloroethane	79-00-5	<10		10	02/04/2021 01:07	S21020333.D
Tetrachloroethene	127-18-4	**24**		10	02/04/2021 01:07	S21020333.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	02/04/2021 01:07	S21020333.D
Chlorobenzene	108-90-7	<10		10	02/04/2021 01:07	S21020333.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	02/04/2021 01:07	S21020333.D
1,2,3-Trichloropropane	96-18-4	<10		10	02/04/2021 01:07	S21020333.D
1,3-Dichlorobenzene	541-73-1	<10		10	02/04/2021 01:07	S21020333.D
1,4-Dichlorobenzene	106-46-7	<10		10	02/04/2021 01:07	S21020333.D
1,2-Dichlorobenzene	95-50-1	<10		10	02/04/2021 01:07	S21020333.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	02/04/2021 01:07	S21020333.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	02/04/2021 01:07	S21020333.D

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-30

SG-52

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	<10		10	02/04/2021 01:30	S21020334.D
1,1-Dichloroethene	75-35-4	<10		10	02/04/2021 01:30	S21020334.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	02/04/2021 01:30	S21020334.D
trans-1,2-Dichloroethene	156-60-5	<10		10	02/04/2021 01:30	S21020334.D
1,1-Dichloroethane	75-34-3	<10		10	02/04/2021 01:30	S21020334.D
cis-1,2-Dichloroethene	156-59-2	<10		10	02/04/2021 01:30	S21020334.D
Chloroform	67-66-3	**22**		10	02/04/2021 01:30	S21020334.D
1,2-Dichloroethane	107-06-2	<10		10	02/04/2021 01:30	S21020334.D
1,1,1-Trichloroethane	71-55-6	<10		10	02/04/2021 01:30	S21020334.D
Carbon Tetrachloride	56-23-5	<10		10	02/04/2021 01:30	S21020334.D
Trichloroethene	79-01-6	**18**		10	02/04/2021 01:30	S21020334.D
1,1,2-Trichloroethane	79-00-5	<10		10	02/04/2021 01:30	S21020334.D
Tetrachloroethene	127-18-4	**584**		10	02/04/2021 01:30	S21020334.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	02/04/2021 01:30	S21020334.D
Chlorobenzene	108-90-7	<10		10	02/04/2021 01:30	S21020334.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	02/04/2021 01:30	S21020334.D
1,2,3-Trichloropropane	96-18-4	<10		10	02/04/2021 01:30	S21020334.D
1,3-Dichlorobenzene	541-73-1	<10		10	02/04/2021 01:30	S21020334.D
1,4-Dichlorobenzene	106-46-7	<10		10	02/04/2021 01:30	S21020334.D
1,2-Dichlorobenzene	95-50-1	<10		10	02/04/2021 01:30	S21020334.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	02/04/2021 01:30	S21020334.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	02/04/2021 01:30	S21020334.D

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Lab Sample ID: 0005603-31

SG-53

Soil Gas

Method: EPA 8260C

Analyte	CAS#	Result (ng)	Q	LOQ (ng)	Analyzed	File ID
Vinyl Chloride	75-01-4	**32**		10	02/04/2021 01:54	S21020335.D
1,1-Dichloroethene	75-35-4	**68**		10	02/04/2021 01:54	S21020335.D
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10		10	02/04/2021 01:54	S21020335.D
trans-1,2-Dichloroethene	156-60-5	**353**		10	02/04/2021 01:54	S21020335.D
1,1-Dichloroethane	75-34-3	<10		10	02/04/2021 01:54	S21020335.D
cis-1,2-Dichloroethene	156-59-2	**4,510**		10	02/04/2021 01:54	S21020335.D
Chloroform	67-66-3	<10		10	02/04/2021 01:54	S21020335.D
1,2-Dichloroethane	107-06-2	<10		10	02/04/2021 01:54	S21020335.D
1,1,1-Trichloroethane	71-55-6	<10		10	02/04/2021 01:54	S21020335.D
Carbon Tetrachloride	56-23-5	<10		10	02/04/2021 01:54	S21020335.D
Trichloroethene	79-01-6	**4,240**		10	02/04/2021 01:54	S21020335.D
1,1,2-Trichloroethane	79-00-5	<10		10	02/04/2021 01:54	S21020335.D
Tetrachloroethene	127-18-4	**2,860**		10	02/04/2021 01:54	S21020335.D
1,1,1,2-Tetrachloroethane	630-20-6	<10		10	02/04/2021 01:54	S21020335.D
Chlorobenzene	108-90-7	<10		10	02/04/2021 01:54	S21020335.D
1,1,2,2-Tetrachloroethane	79-34-5	<10		10	02/04/2021 01:54	S21020335.D
1,2,3-Trichloropropane	96-18-4	<10		10	02/04/2021 01:54	S21020335.D
1,3-Dichlorobenzene	541-73-1	<10		10	02/04/2021 01:54	S21020335.D
1,4-Dichlorobenzene	106-46-7	<10		10	02/04/2021 01:54	S21020335.D
1,2-Dichlorobenzene	95-50-1	<10		10	02/04/2021 01:54	S21020335.D
1,2,4-Trichlorobenzene	120-82-1	<10		10	02/04/2021 01:54	S21020335.D
1,2,3-Trichlorobenzene	87-61-6	<10		10	02/04/2021 01:54	S21020335.D

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AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

QC Information/Summary

BEACON ENVIRONMENTAL

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CERTIFICATE OF ANALYSIS

AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Soil-Gas Sample Analysis by EPA Method 8260C - Quality Control Summary

21B0006-BLK1 (Lab Blank) File ID: S21020303.D Analyzed: 2/3/21 13:23

Sampler: Beacon Passive Sampler Analyte	CAS#	Result (ng)	LOQ (ng)	Q
Vinyl Chloride	75-01-4	<10	10	
1,1-Dichloroethene	75-35-4	<10	10	
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10	10	
trans-1,2-Dichloroethene	156-60-5	<10	10	
1,1-Dichloroethane	75-34-3	<10	10	
cis-1,2-Dichloroethene	156-59-2	<10	10	
Chloroform	67-66-3	<10	10	
1,2-Dichloroethane	107-06-2	<10	10	
1,1,1-Trichloroethane	71-55-6	<10	10	
Carbon Tetrachloride	56-23-5	<10	10	
Trichloroethene	79-01-6	<10	10	
1,1,2-Trichloroethane	79-00-5	<10	10	
Tetrachloroethene	127-18-4	<10	10	
1,1,1,2-Tetrachloroethane	630-20-6	<10	10	
Chlorobenzene	108-90-7	<10	10	
1,1,2,2-Tetrachloroethane	79-34-5	<10	10	
1,2,3-Trichloropropane	96-18-4	<10	10	
1,3-Dichlorobenzene	541-73-1	<10	10	
1,4-Dichlorobenzene	106-46-7	<10	10	
1,2-Dichlorobenzene	95-50-1	<10	10	
1,2,4-Trichlorobenzene	120-82-1	<10	10	
1,2,3-Trichlorobenzene	87-61-6	<10	10	

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AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Sample Duplicate RPD Summary

Soil-Gas Sample Analysis by EPA Method 8260C

Duplicate Sample: SG-27 Dup (0005603-04) ***Sample: SG-27 (0005603-03)*** ***Average RPD:*** 6.0%

Analyte	CAS#	Duplicate Result (ng)	LOQ (ng)	Sample Result (ng)	LOQ (ng)	RPD (%)
Vinyl Chloride	75-01-4	11.0	10	19.0	10	53.3
1,1-Dichloroethene	75-35-4	<10	10	<10	10	0.0
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10	10	<10	10	0.0
trans-1,2-Dichloroethene	156-60-5	<10	10	<10	10	0.0
1,1-Dichloroethane	75-34-3	<10	10	<10	10	0.0
cis-1,2-Dichloroethene	156-59-2	35.0	10	38.0	10	8.2
Chloroform	67-66-3	<10	10	<10	10	0.0
1,2-Dichloroethane	107-06-2	<10	10	<10	10	0.0
1,1,1-Trichloroethane	71-55-6	<10	10	<10	10	0.0
Carbon Tetrachloride	56-23-5	<10	10	<10	10	0.0
Trichloroethene	79-01-6	67.0	10	56.0	10	17.9
1,1,2-Trichloroethane	79-00-5	<10	10	<10	10	0.0
Tetrachloroethene	127-18-4	224	10	388	10	53.6
1,1,1,2-Tetrachloroethane	630-20-6	<10	10	<10	10	0.0
Chlorobenzene	108-90-7	<10	10	<10	10	0.0
1,1,2,2-Tetrachloroethane	79-34-5	<10	10	<10	10	0.0
1,2,3-Trichloropropane	96-18-4	<10	10	<10	10	0.0
1,3-Dichlorobenzene	541-73-1	<10	10	<10	10	0.0
1,4-Dichlorobenzene	106-46-7	<10	10	<10	10	0.0
1,2-Dichlorobenzene	95-50-1	<10	10	<10	10	0.0
1,2,4-Trichlorobenzene	120-82-1	<10	10	<10	10	0.0
1,2,3-Trichlorobenzene	87-61-6	<10	10	<10	10	0.0

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AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Sample Duplicate RPD Summary

Soil-Gas Sample Analysis by EPA Method 8260C

Duplicate Sample: SG-49 Dup (0005603-27) ***Sample: SG-49 (0005603-26)*** ***Average RPD:*** 1.7%

Analyte	CAS#	Duplicate Result (ng)	LOQ (ng)	Sample Result (ng)	LOQ (ng)	RPD (%)
Vinyl Chloride	75-01-4	<10	10	<10	10	0.0
1,1-Dichloroethene	75-35-4	<10	10	<10	10	0.0
1,1,2-Trichlorotrifluoroethane (Fr.113)	76-13-1	<10	10	<10	10	0.0
trans-1,2-Dichloroethene	156-60-5	<10	10	<10	10	0.0
1,1-Dichloroethane	75-34-3	<10	10	<10	10	0.0
cis-1,2-Dichloroethene	156-59-2	<10	10	<10	10	0.0
Chloroform	67-66-3	<10	10	<10	10	0.0
1,2-Dichloroethane	107-06-2	<10	10	<10	10	0.0
1,1,1-Trichloroethane	71-55-6	<10	10	<10	10	0.0
Carbon Tetrachloride	56-23-5	<10	10	<10	10	0.0
Trichloroethene	79-01-6	<10	10	12.0	10	18.2
1,1,2-Trichloroethane	79-00-5	<10	10	<10	10	0.0
Tetrachloroethene	127-18-4	47.0	10	57.0	10	19.2
1,1,1,2-Tetrachloroethane	630-20-6	<10	10	<10	10	0.0
Chlorobenzene	108-90-7	<10	10	<10	10	0.0
1,1,2,2-Tetrachloroethane	79-34-5	<10	10	<10	10	0.0
1,2,3-Trichloropropane	96-18-4	<10	10	<10	10	0.0
1,3-Dichlorobenzene	541-73-1	<10	10	<10	10	0.0
1,4-Dichlorobenzene	106-46-7	<10	10	<10	10	0.0
1,2-Dichlorobenzene	95-50-1	<10	10	<10	10	0.0
1,2,4-Trichlorobenzene	120-82-1	<10	10	<10	10	0.0
1,2,3-Trichlorobenzene	87-61-6	<10	10	<10	10	0.0

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AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Additional QC Information

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AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Laboratory Certification List

Certification ID	Certification No.	Description	Expires	Project Required
Alaska CS-LAP	19-002	Alaska Department of Environmental Conservation	01/31/2023	
DoD-ELAP	L20-532	United States Department of Defense Environmental Laboratory Accreditation	12/31/2022	
ISO/IEC 17025:2017	L20-532	General Requirements for the competence of Testing and Calibration Laboratories	12/31/2022	
NY-NELAC	12097	New York Department of Health	04/01/2021	
Utah-NELAC	MD01091	Utah Department of Health	12/31/2021	

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AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Qualifiers/Notes and Definitions

General Definitions:

DF	Dilution Factor
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
NA	Not Applicable
Q	Qualifier
RPD	Relative Percent Difference
RT	Retention Times in Minutes
RRT	Evaluation of Relative Retention Times in RRT Units (qualified if outside $\pm$0.06 control limits)
3σ	Uncertainty
∉	Compound not on scope of accreditation
+	values are outside method/contract required QC limits
∅	Compound not on scope of accreditation and analyzed with a one-point calibration

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AECOM	**Site Name:** Westinghouse-CFFF	**Beacon Proposal:** 201103R03
101 Research Drive	**Site Location:** Hopkins, SC	**Lab Work Order:** 0005603
Columbia, SC 29203	**Project Manager:** Jeremy Grant	**Reported:** 02/10/2021

Sample Management Records

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2203A Commerce Rd, Suite 1
Forest Hill, MD 21050, USA
1-410-838-8780
800-878-5510 Toll Free

PASSIVE SOIL GAS SAMPLES | CHAIN-OF-CUSTODY

Project Information		Client Information	
Site Name: WESTINGHOUSE - CFFF	Company Name: AECOM / WESTINGHOUSE	Project Manager: JEREMY GRANT 803-740-1604	
	Office Location: COLUMBIA SC	Client PO:	
Site Location: HOPKINS, SC	Submitted by: JAMES LEAPHART	Turn around time (check one): ☒ Normal ☐ Rush (specify) ____ days	
	Email: JEREMY.GRANT@AECOM.COM		

Field Sample ID	Start Date	Start Time	Stop Date	Stop Time	Sampling Hole Depth (cm)	Surface Type (Soil, Asphalt, Concrete, Gravel)	Optional Information (Location Description, Sample Condition, PID / FID Readings, etc)
SG-28	1-18-21	0925	2-1-21	0944	91.44	CONCRETE	SEAL # 3389115
SG-27		0934		0947		CONCRETE	
SG-27 DUP		0934		0947		CONCRETE	
SG-42		0958		0926		GRAVEL	
SG-47		1005		0930		GRAVEL	
SG-31		1010		0924		GRAVEL	
SG-26		1014		0950		SOIL	
SG-32		1020		0956		CONCRETE	
SG-33		1035		1003		CONCRETE	
SG-37		1041		0959		CONCRETE	
SG-29		1052		1006		CONCRETE	
SG-30		1341		0917		SOIL	
SG-34		1345		0939		SOIL	
SG-38		1400		1015		ASPHALT	
SG-44		1405		1042		ASPHALT	

Special Instructions:

Relinquished by (signature): J Leaphart	Date / Time: 2-1-21 / 1445	Received by (signature): Allison Felter	Date / Time: 02/02/2021 1400
Relinquished by (signature):	Date / Time:	Received by (signature):	Date / Time:
For Lab Use Only	Beacon Job No: 5603	Beacon Proposal: 201103R03	Analytical Method: 8260C
Courier Name: FedEx	Shipment Condition: Good	Custody Seal Intact: ☒ Yes ☐ No ☐ n/a	Custody Seal No: 3389115

BEACON ENVIRONMENTAL
2203A Commerce Rd, Suite 1
Forest Hill, MD 21050, USA
1-410-838-8780
800-878-5510 Toll Free

PASSIVE SOIL GAS SAMPLES | CHAIN-OF-CUSTODY

Project Information		Client Information	
Site Name: WESTINGHOUSE, CFFF	Company Name: AECOM	Project Manager: JEREMY GRANT	
	Office Location: COLUMBIA SC	Client PO:	
Site Location: HOPKINS, SC	Submitted by: JAMES LEADBETTER	Turn around time (check one):	
	Email: JEREMY.GRANT@AECOM.COM	[X] Normal [ ] Rush (specify) ____ days	

Field Sample ID	Start Date	Start Time	Stop Date	Stop Time	Sampling Hole Depth (cm)	Surface Type (Soil, Asphalt, Concrete, Gravel)	Optional Information (Location Description, Sample Condition, PID / FID Readings, etc)
SG-43	1-18-21	1409	2-1-21	1057	91.44	ASPHALT	
SG-48	↓	1414	↓	1109	↓	ASPHALT	
SG-52		1421		1048		CONCRETE	
SG-53		1428		1052		ASPHALT	
SG-45		1436		1020		ASPHALT	
SG-39		1445		1011		CONCRETE	
SG-49		1452		1102		ASPHALT	
SG-49 DUP		1452		1102		ASPHALT	
SG-50	1-19-21	0942		1128		CONCRETE	
SG-40	↓	0950		1140		CONCRETE	
SG-35		0957		1137		CONCRETE	
SG-36		1023		1146		CONCRETE	
SG-46		1205		1134		CONCRETE	
SG-41		1213		1149		CONCRETE	
SG-51	↓	1219	↓	1154	↓	CONCRETE	
TRIP BLANK							

Special Instructions:

For Lab Use Only	Beacon Job No: 5403	Beacon Proposal: 201103R03	Analytical Method: 8260C

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Appendix H
Groundwater Sample Collection Records

AECOM

Well ID: L-1 (10-15)

Low Flow Ground Water Sample Collection Record

Client: WCFFF Date: 8/14/19 Time: Start 1348 am/pm
Project No: 60595649 Finish 1500 am/pm
Site Location: WCFFF
Weather Conds: Sunny, hot Collector(s): C. Suddeth

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 15 c. Length of Water Column _____ (a-b)

Casing Diameter/Material 2.0 in steel

b. Water Table Depth 7 d. Calculated System Volume (see back) _____

2. WELL PURGE DATA

a. Purge Method: Submersible Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
start 1348	0	34.7	6.85	246	5.32	145.2	25.24			
1434	0	25.5	6.93	192	6.22	149.4	294.7			
1440		21.4	5.31	94	3.42	192.0	392.1			
1445		20.3	5.18	80	2.85	198.0	99.92			
1450		19.8	5.25	73	2.60	194.9	53.21			
1455		19.4	5.26	69	2.54	199.1	47.7			

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☐	☐	☑
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Submersible Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
L-1 (10-15)	40 ml	3	HCL	CVOCs	1500

Comments _____

Signature Charles K Suddeth Date 8/14/19

AECOM

Well ID: L-1(28-33)

Low Flow Ground Water Sample Collection Record

Client: WCFFF Date: 8/14/19 Time: Start 1542 am/pm
Project No: 60595649 Finish 1612 am/pm
Site Location: WCFFF
Weather Conds: Sunny, hot Collector(s): C. Suddeth

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length _____ c. Length of Water Column _____ (a-b)

Casing Diameter/Material: 2.0 in. steel

b. Water Table Depth _____ d. Calculated System Volume (see back) _____

2. WELL PURGE DATA

a. Purge Method: Submersible Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1542	0	28.5	5.86	253	0.04	-56.4	>1000			
1545		27.6	5.80	251	0.05	-68.9	165.8			
1550		25.9	5.85	258	0.04	-85.5	272.7			
1555		24.1	5.97	255	0.08	-87.0	754.6			
1600		23.0	5.97	253	0.08	-86.1	903.5			
1605		23.0	6.09	249	1.05	-61.6	710.9			
1610		22.5	6.09	248	0.63	-54.5	746.5			

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☐	☐	☑
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Submersible Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
L-1(28-33)	40 ml	3	HCL	CVOCs	1612

Comments _____

Signature Charles K Suddeth Date 8/14/19

AECOM

Well ID: L-1 (48-53)

Low Flow Ground Water Sample Collection Record

Client: WCFFF Date: 8/14/19 Time: Start 1710 am/pm
Project No: 60595649 Finish 1802 am/pm
Site Location: WCFFF
Weather Conds: sunny, hot Collector(s): C. Suddeth

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length _____ c. Length of Water Column _____ (a-b)

Casing Diameter/Material 2 in steel

b. Water Table Depth _____ d. Calculated System Volume (see back) _____

2. WELL PURGE DATA

a. Purge Method: Submersible Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1710	0	31.0	6.38	230	3.43	-14.7	985.3			
1715		27.7	5.96	227	3.81	24.8	407.6			
1720		27.2	6.16	226	3.45	15.5	236.0			
1725		26.1	6.08	164	2.41	33.2	677.8			
1730		26.9	6.13	125	1.79	42.5	445.4			
1735		25.8	5.66	72	43	99.3	516.5			
1740		25.1	5.43	59	22	118.7	736.1			

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☐	☐	☑
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Submersible Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
L-1 (48-53)	40ml	3	HCL	CVOCs	1802

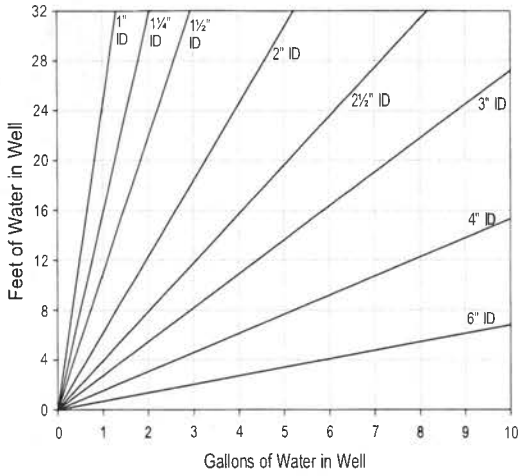
Comments

Signature Charles K Suddeth Date 8/14/19

L-1 (48-53)

Purge Volume Calculation

AECOM



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1745		23.0	5.43	107	12.17	88.3	724.4			
1750		23.1	5.83	134	2.08	57.5	725.4			
1755		22.5	5.78	112	1.65	71.0	775.0			
1800		22.10	5.68	95	1.31	85.5	562.3			

AECOM

Well ID: L-1 (63-68)

Low Flow Ground Water Sample Collection Record

Client: WCFFF Date: 8/15/19 Time: Start 0923 am/pm
Project No: 60595649 Finish 1000 am/pm
Site Location: WCFFF
Weather Conds: Cloudy, warm Collector(s): C. Sudderth

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 68' c. Length of Water Column _____ (a-b)

Casing Diameter/Material 2" Steel Temporary Screen/Casing

b. Water Table Depth _____ d. Calculated System Volume (see back) _____

2. WELL PURGE DATA

a. Purge Method: Submersible Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0923	0	26.2	6.81	116	1.94	18.7	>1000	5gal/6.42min		
0925		26.6	6.12	170	2.84	75.2	27.65			
0930		25.7	6.34	194	4.23	36.8	1,052			
0935		24.9	6.40	198	4.73	18.5	1,065			
0940		24.8	6.53	206	4.52	-1.8	686.9			
0945		24.7	6.57	206	3.51	-10.5				
0948	Pumped Dry									

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☐	☐	☑
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Submersible Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
L-1 (63-68)	40ml	3	HCL	CVOC	1000

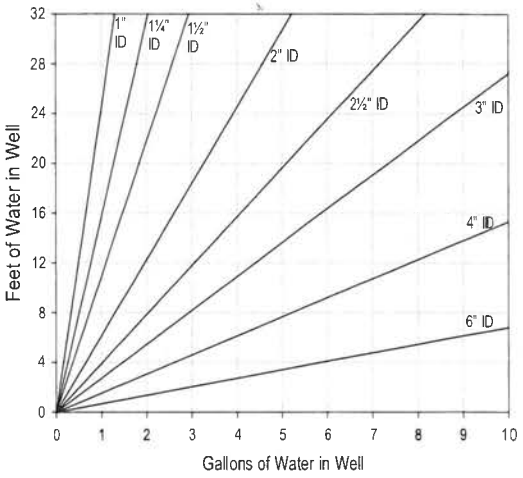
Comments _____

Signature Charles K Sudderth Date 8/15/19

L-1 (63-68)

Purge Volume Calculation

AECOM



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
Start	Pump	at	0953							
0955		24.5	6.64	143	2.43	7.07	393			
0956	Pumped	Dry								
1000	Collect	Sample								

AECOM

Well ID: L-1 (78-83)

Low Flow Ground Water Sample Collection Record

Client: WCFFF Date: 8/15/19 Time: Start 1130 am/pm
Project No: 60595649 Finish 1205 am/pm
Site Location: WCFFF
Weather Conds: Cloudy, warm Collector(s): C. Suddeth

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length _____ c. Length of Water Column _____ (a-b)

Casing Diameter/Material: 2.0 in. Steel

b. Water Table Depth _____ d. Calculated System Volume (see back) _____

2. WELL PURGE DATA

a. Purge Method: Submersible Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1130	0	27.5	6.93	229	4.07	58.2	548.9			
1135		30.0	6.76	227	0.73	-24.4	1,100			
1140		29.8	6.73	230	1.77	-17.3	565.8			
1145		29.2	6.67	230	2.02	-11.3	401.3			
1150		28.8	6.65	231	2.19	-10.9	457.0			
1155		28.5	6.67	232	2.28	-10.9	517.7			
1200		28.2	6.68	233	2.49	-9.1	505.4			

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☐	☐	☑
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Submersible Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
L-1(78-83)	40 ml	3	HCL	CVOC	1205

Comments _____

Signature Charles K Suddeth Date 8/15/19

Well/Piezo ID: L-8 (8-13')

AECOM

Ground Water Sample Collection Record

Client: WCFFF
Project No: 60595649
Site Location: Hopkins, SC
Weather Conds: Partly Cloudy
Collector(s): Jeremy Grant
Date: 8/20/19
Time: Start 4:02 am/pm
Finish 4:37 am/pm

WATER LEVEL DATA: (measured from Top of Casing)

Well ☐ Piezometer ☒

a. Total Well Length 13'
b. Water Table Depth _____
c. Casing Material SS
d. Casing Diameter 2"
e. Length of Water Column _____ (a-b)
f. Calculated Well Volume (see back) _____

WELL PURGING DATA

a. Purge Method Submersible pump

b. Acceptance Criteria defined (from workplan)
- Minimum Required Purge Volume (@ _____ well volumes) _____
- Maximum Allowable Turbidity — NTUs
- Stabilization of parameters 3 %

c. Field Testing Equipment Used:

	Make	Model	Serial Number
	YSI	Professional Plus	17L103732
	HF Sci.	MicroTPW 20000	20150345

d. Field Testing Equipment Calibration Documentation Found in Field Notebook # _____ Page #_____

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	Other
4:02	Initial	32.9	6.37	0.340	109.6	0.08	Lt br.		
4:07	1	33.4	6.03	0.352	53.02	0.04	Lt. br.		
4:12	2	33.4	6.04	0.252	13.90	0.12	Lt br		
4:17	3	33.2	6.07	0.249	853.7	0.19	Lt br		
4:22	4	32.8	6.08	0.246	1100 (?)	0.59	Lt br		
4:27	5	32.3	6.71	0.243	1100 (?)	0.91	Lt br		
4:32	6	31.8	6.67	0.242	1100 (?)	1.03	Lt br		
4:37	7	31.5	6.64	0.241	976.9	1.04	Lt. br		

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☐	☐	☑
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: _____

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
L-8 (8-13')	VOA	3	HCl	CVOC	4:40
L-8 (8-13')	Plastic	1	—	NO_3, Fl	4:40

Comments _____

Signature _____ Date 8/20/19

Well/Piezo ID: L-8 17-22'

AECOM

Ground Water Sample Collection Record

Client: WCFFF
Project No: 60595649
Site Location: Hopkins, SC
Weather Conds: Clear, Warm
Collector(s): Jeremy Grant
Date: 8/21/19
Time: Start 0823 am/pm
Finish 0940 am/pm

WATER LEVEL DATA: (measured from Top of Casing)

Well ☐ Piezometer ☒

a. Total Well Length 22
b. Water Table Depth _____
c. Casing Material SCS
d. Casing Diameter 2"
e. Length of Water Column _____ (a-b)
f. Calculated Well Volume (see back) _____

WELL PURGING DATA

a. Purge Method Submersible pump

b. Acceptance Criteria defined (from workplan)
- Minimum Required Purge Volume (@ _____ well volumes) _____
- Maximum Allowable Turbidity — NTUs
- Stabilization of parameters 3 %

c. Field Testing Equipment Used:

	Make	Model	Serial Number
	YSI	Professional Plus	17L103732
	HF Sci.	MicroTPW	20150345 1

d. Field Testing Equipment Calibration Documentation Found in Field Notebook # _____ Page # _____

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	Other
0823	Initial	21.7	6.33	0.222	<1000	0.12	Gray		
0828	1	21.7	6.43	0.218	17.2 (?)	0.10	Lt Gray		
0833	2	22.2	6.42	0.220	615.6	0.11	Very lt		
0838	3	22.3	6.45	0.222	870.4	0.13	Very lt		
0843	4	22.2	6.49	0.225	<1000	0.63	Very lt		
* 0920	5	24.5	6.40	0.211	939.3	2.51	Very lt		
0926	6	22.2	5.74	0.233	<1000	0.14	Lt gray		
0931	7	21.8	5.67	0.233	<1000	0.33	Lt gray		
0940	8	22.0	5.68	0.231	<1000	0.36	Lt gray		

* Initial after recharge

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☐	☐	☒
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: _____

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
L-8 17-22'	VOAs	3	HCl	CVOC	0940
L-8 17-22'	Plastic	1	—	NO3, Fl	0940

Comments: Ran dry @ 0847. Allowed to recharge until 9:05. Very little water. Deflated packer to pull up the rods to expose more screen.

Signature: _____ Date: 08/21/19

Well/Piezo ID: L-8 (25-30')

AECOM

Ground Water Sample Collection Record

Client: WCFFF
Project No: 60595649
Site Location: Hopkins, SC
Weather Conds: Warm, muggy
Collector(s): Jeremy Grant
Date: 8/21/19
Time: Start _____ am/pm
Finish _____ am/pm

WATER LEVEL DATA: (measured from Top of Casing)

Well ☐ Piezometer ☑

a. Total Well Length 30
b. Water Table Depth _____
c. Casing Material SS
d. Casing Diameter 2'
e. Length of Water Column _____ (a-b)
f. Calculated Well Volume (see back) _____

WELL PURGING DATA

a. Purge Method Submersible Pump

b. Acceptance Criteria defined (from workplan)
- Minimum Required Purge Volume (@ _____ well volumes) _____
- Maximum Allowable Turbidity — NTUs
- Stabilization of parameters 3 %

c. Field Testing Equipment Used:

	Make	Model	Serial Number
	YSI	Professional Plus	17L103732
	HF SCI	MicroTPW 20000	20150345I

d. Field Testing Equipment Calibration Documentation Found in Field Notebook # _____ Page # _____

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	Other
10:45	Initial	28.6	6.57	0.263	<1000	0.28	Lt gray		
10:53	1	27.9	6.33	0.230	306.6	0.15	Lt gray		
10:58	2	27.4	6.27	0.288	375.6	0.13	Lt gray		
11:03	3	27.0	6.23	0.295	717.3	0.15	Lt gray		
11:08	4	25.8	6.23	0.295	724.7	0.16	Lt tan		
11:13	5	25.3	6.11	0.292	<1000	0.42	Lt gray		
11:18	6	24.2	6.07	0.293	4[illegible]37.2	0.43	Lt gray		

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☐	☐	☑
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: _____

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
L-8 (25-30')	VOAs	3	HCl	CVOC	11:25
L-8 (25-30')	Plastic	1	—	NO3, Fl	11:25

Comments _____

Signature _____ Date 8/21/19

Well/Piezo ID: L-8 41-46'

AECOM

Ground Water Sample Collection Record

Client: WCFPF
Project No: 60595049
Site Location: Hopkins, SC
Weather Conds: Sunny, hot, humid
Collector(s): Jeremy Grant
Date: 8/21/19
Time: Start 1:13 am/pm
Finish _____ am/pm

WATER LEVEL DATA: (measured from Top of Casing)

Well ☐ Piezometer ☐

a. Total Well Length 46
b. Water Table Depth _____
c. Casing Material SCS
d. Casing Diameter 2"
e. Length of Water Column _____ (a-b)
f. Calculated Well Volume (see back) _____

WELL PURGING DATA

a. Purge Method _____

b. Acceptance Criteria defined (from workplan)
- Minimum Required Purge Volume (@ _____ well volumes) _____
- Maximum Allowable Turbidity — NTUs
- Stabilization of parameters 3 %

c. Field Testing Equipment Used: Make Model Serial Number

d. Field Testing Equipment Calibration Documentation Found in Field Notebook # _____ Page #_____

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	Other
1:13	Initial	32.6	5.85	0.254	39.51	1.04	Lt gray		
1:18	1	29.9	6.04	0.237	<1000	3.07	Lt gray		
* 1:55	2	32.5	5.79	0.277	<1000	0.12	Lt gray		
* 2:29	3	32.6	9.71	0.730	515.2	2.34	Very lt		
2:35	4	31.2	9.01	0.630	204.7	0.60	Very lt		
2:40	5	30.5	8.25	0.630	71.49	0.27	Clear		
2:45	6	29.8	7.25	0.610	31.55	0.24	Clear		

* Initial after pulling rods up and/or letting borehole recharg

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☐	☐	☑
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: _____

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
L-8(41-46')	VOA	3	HCl	CVOC	3:20
L-8(41-46')	Plastic	1	—	NO3, Fl	3:20

Comments _____

Signature _____ Date 8/21/19

2:50	7	29.5	6.75	0.590	47.49	0.28	Clear
2:55	8	29.2	6.50	0.570	36.90	0.24	Clear
3:00	9	28.4	6.33	0.550	50.82	0.25	Clear
3:05	10	27.7	6.24	0.530	55.15	0.27	Clear
3:10	11	27.5	6.16	0.500	61.60	0.26	Clear
3:15	12	26.8	6.14	0.490	86.20	0.35	Clear

AECOM

Well ID: L-9 (10-15)

Low Flow Ground Water Sample Collection Record

Client: WCFFF Date: 8/21/19 Time: Start 0934 am/pm
Project No: 60595649 Finish 1018 am/pm
Site Location: WCFFF
Weather Conds: sunny, hot Collector(s): C. Suddeth

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length _____ c. Length of Water Column _____ (a-b)

Casing Diameter/Material 2.0 in Steel

b. Water Table Depth _____ d. Calculated System Volume (see back) _____

2. WELL PURGE DATA

a. Purge Method: Submersible Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0934	0	25.3	8.08	195	4.38	-60.1	>1000	≈0.5 gpm		
0938		24.3	6.53	173	2.43	-9.2	>1000	>1.0 gpm		
0948		20.7	5.69	216	7.28	75.5	276.1	≈1.0 gpm	>17.5/8.49	
0955		20.5	5.61	212	0.27	74.6	109.4	0.5-1.0 gpm	15.69/8.51	
1000		20.2	5.60	211	0.07	70.3	47.5	"		
1009		20.0	5.60	208	0.09	66.6	32.2	"		
1015		20.2	5.59	207	0.07	65.1	28.3	"		

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☐	☐	☑
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Submersible Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
L-9(10-15)	40ml	3	HCL	CVOC	1018
	250 ml	1	None	Fluoride / Nitrate	

Comments _____

Signature Charles K Suddeth Date 8/21/19

AECOM

Well ID: L-9 (23-28)

Low Flow Ground Water Sample Collection Record

Client: Westinghouse CFFF | Date: 8/21/19 | Time: Start 1057 am/pm
Project No: 60595649 | Finish 1135 am/pm
Site Location: Hopkins, SC
Weather Conds: Sunny, hot | Collector(s): C. Suddeth

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length _____ c. Length of Water Column _____ (a-b)

Casing Diameter/Material: 2.0 in Steel

b. Water Table Depth _____ d. Calculated System Volume (see back) _____

2. WELL PURGE DATA

a. Purge Method: Submersible Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make _____ Model _____ Serial Number _____

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1057		27.4	6.26	162	4.05	23.1	>1000	>1.09gpm		
1105		18.9	5.39	151	0.05	70.1	626.6		17.83/13.89	
1110		18.5	5.36	152	0.04	74.0	869.6		~~18.25/14.04~~	
1115		18.4	5.38	151	0.08	73.4	672.5		18.25/14.04	
1120		18.3	5.40	150	0.08	72.6	487.7			
1125		18.3	5.41	151	0.08	72.2	394.0			
1130		18.2	5.40	152	0.08	72.6	303.3			

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☐	☐	☑
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Submersible Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
L-9 (23-28)	40 ml	3	HCL	CVOC	1135
	250 ml	1	None	Fluoride/Nitrate	

Comments _____

Signature Charles K Suddeth Date 8/21/19

AECOM

Well ID: L-9(32-37)

Low Flow Ground Water Sample Collection Record

Client: WCFFF Date: 8/21/19 Time: Start 1343 am/pm
Project No: 60595649 Finish 1423 am/pm
Site Location: WCFFF
Weather Conds: Sunny, hot Collector(s): C Sudderth

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length _____ c. Length of Water Column _____ (a-b)

Casing Diameter/Material 2 in. Steel

b. Water Table Depth _____ d. Calculated System Volume (see back) _____

2. WELL PURGE DATA

a. Purge Method: Submersible Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1343		31.0	6.33	131	4.30	31.6	>1,000	>1.0gpm		
1350		21.4	5.66	159	0.08	12.0	>1,000			
1355		20.3	5.60	152	0.07	32.2	>1,000		23.29/19.78	
1400		19.7	5.48	144	0.34	48.7	>1,000		~~N/A/20.98~~	
1405		19.4	5.44	139	0.65	56.9	>1,000			
1410		19.8	5.61	137	1.23	58.0	>1,000		N/A/20.98	
1415		19.2	5.54	136	1.20	60.7	>1,000			

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☐	☐	☑
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Submersible Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
L-9(32-37)	40ml	3	HCL	VOC	1423
	250ml	1	None	Fluoride/Nitrate	

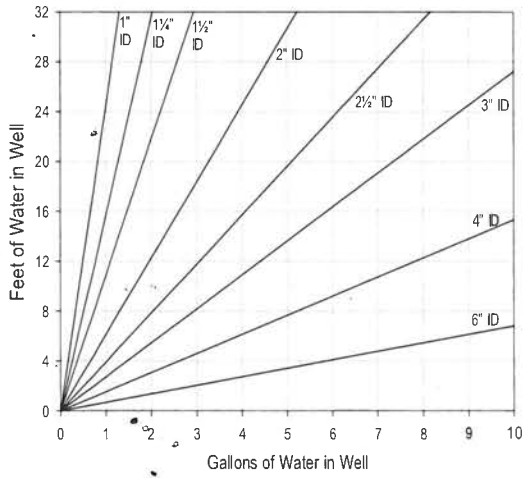
Comments _____

Signature Charles K Sudderth Date 8/21/19

L-9 (32-37)

Purge Volume Calculation

AECOM



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1420		19.1	5.51	134	3.70	62.0				

Well/Piezo ID: L-10(9-14)

AECOM

Ground Water Sample Collection Record

Client: Westinghouse
Project No:
Site Location: Cola, SC
Weather Conds: Ptly Cloudy, Muggy Collector(s) S. Ross

Date: 8/19/19
Time: Start 1658 am/pm
Finish _____ am/pm

WATER LEVEL DATA: (measured from Top of Casing) Well ☐ Piezometer ☒

a. Total Well Length 14
b. Water Table Depth _____
c. Casing Material ~~SS~~ 2"
d. Casing Diameter SS
e. Length of Water Column _____ (a-b)
f. Calculated Well Volume (see back) _____

WELL PURGING DATA

a. Purge Method Sub. Pump

b. Acceptance Criteria defined (from workplan)
- Minimum Required Purge Volume (@ _____ well volumes) _____
- Maximum Allowable Turbidity — NTUs
- Stabilization of parameters 3 %

c. Field Testing Equipment Used: Make Model Serial Number
YSI
HF Scientific

d. Field Testing Equipment Calibration Documentation Found in Field Notebook # _____ Page # _____

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	~~Other~~ ORP
1659	Initial	32.8	8.42	191	>1000	6.1	Brown	N/A	73.8
1715	~~10~~ 10	31.7	7.86	192	542.7	3.91	Cloudy	"	34.3
1729	15	30.7	7.22	193	229.4	3.42	"	"	21.4
1735	17	30.3	6.99	197	183.2	2.88	"	"	16.9
1740	18	29.8	6.90	201	166.7	2.77	"	"	11.3
1746	17	29.3	6.83	203	156.7	2.55	"	"	12.5

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: _____

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
L-10(9-14)	40 ml vial	3	HCL	VOCs	1750
	125 ml poly	1	N/A	Fl, NO	.1

Comments _____

Signature [signature] Date 8/19/19

Well/Piezo ID: L-10 (18-23)

AECOM

Ground Water Sample Collection Record

Client: WCFFF
Project No: 60595649
Site Location: Hopkins, SC
Weather Conds: Partly Cloudy Humid
Collector(s) Jeremy Grant
Date: 8/20/19
Time: Start _____ am/pm
Finish _____ am/pm

WATER LEVEL DATA: (measured from Top of Casing) Well ☐ Piezometer ☒

a. Total Well Length 23
b. Water Table Depth _____
c. Casing Material SS
d. Casing Diameter 2"
e. Length of Water Column _____ (a-b)
f. Calculated Well Volume (see back) _____

WELL PURGING DATA

a. Purge Method Submersible pump

b. Acceptance Criteria defined (from workplan)
- Minimum Required Purge Volume (@ _____ well volumes) _____
- Maximum Allowable Turbidity — NTUs
- Stabilization of parameters 3 %

c. Field Testing Equipment Used:

Make	Model	Serial Number
YSI	Professional Plus	17L103732
HF Scie	MicroTPW20000	201503451

d. Field Testing Equipment Calibration Documentation Found in Field Notebook # _____ Page # _____

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	Other
0848	Initial	25.0	6.64	0.192	413.9	2.16	Brown	NA	
0924	1	25.9	6.55	0.175	136.8	4.31	Lt. Br	NA	
0951	2	25.0	6.24	0.179	45.39	1.62	Lt. Br	NA	
10:32	3	24.5	~~6.12~~ 5.80	0.181	0.0 (?)	0.46	Lt Br	NA	
10:53	4	24.9	5.95	0.158	0.0 (?)	0.70	Lt Br		

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☐	☐	☒
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: _____

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
L-10 (28-33')	VOA	3	HCL	CVOC	11:05
L-10 (28-33')	Plastic	1	—	NO_3, Fl	11:05

Comments Poor recharge

Signature [signature]

Date 8/20/19

Well/Piezo ID: L-10 (28-33')

AECOM

Ground Water Sample Collection Record

Client: WCFF
Project No: RI Implementation
Site Location: Hopkins, SC
Weather Conds: Overcast Collector(s) Jeremy Grant
Date: 8/20/19
Time: Start 12:10 am/pm
Finish 12:35 am/pm

WATER LEVEL DATA: (measured from Top of Casing) Well ☐ Piezometer ☒

a. Total Well Length 33 c. Casing Material SS e. Length of Wate Column _____ (a-b)

b. Water Table Depth _____ d. Casing Diameter 2" f. Calculated Well Volume (see back) _____

WELL PURGING DATA

a. Purge Method Submersible pump

b. Acceptance Criteria defined (from workplan)
- Minimum Required Purge Volume (@ _____ well volumes) _____
- Maximum Allowable Turbidity NA NTUs
- Stabilization of parameters 3 %

c. Field Testing Equipment Used:

	Make	Model	Serial Number
	YSI	Professional Plus	17L103732
	HF Sci.	MicroTPW 20000	20150345

d. Field Testing Equipment Calibration Documentation Found in Field Notebook # _____ Page # _____

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	Other
12:11	Initial	28.5	7.85	0.206	829.2	6.56	Lt. Br		
12:17	1	25.6	6.12	0.150	0.0 (?)	0.12	Lt Gray		
12:22	2	25.0	5.65	0.145	0.0 (?)	0.12	Lt. Gray		
12:30	3	24.5	5.60	0.143	0.0 (?)	0.11	Lt. Gray		

e. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☐	☐	☑
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: _____

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
L-10(28-33)	VOA	3	HCL	CVOC	12:35
L-10(28-33)	Plastic	1	—	NO3, Fl	12:25

Comments _____

Signature Jeremy Grant Date 8/20/19

AECOM

Well ID: L-17 (15-20)

Low Flow Ground Water Sample Collection Record

Client: WCFFF Date: 8/16/19 Time: Start 0921 am/pm
Project No: 60595649 Finish 1005 am/pm
Site Location: WCFFF
Weather Conds: Cloudy, warm, humid Collector(s): C. Sudbeth

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length _____ c. Length of Water Column _____ (a-b)

Casing Diameter/Material 2.0 in Steel

b. Water Table Depth _____ d. Calculated System Volume (see back) _____

2. WELL PURGE DATA

a. Purge Method: Submersible Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0921	0	25.8	7.30	195	4.88	-8.8	133.7			
0925		24.3	5.94	208	0.06	-59.0	1,048			
0928	Pumped Dry						→			
0938	Turn pump on						→	Lower flow ≈ ½		
0939		23.5	6.14	202	1.34	-5.2	681.6			
0944		22.6	6.01	225	0.09	-56.9	897.2			
0950		22.0	6.19	230	0.07	-73.5	444.7			

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☐	☐	☑
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Submersible Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
L-17 (15-20)	40 ml glass vial	3	HCl	CVOC	1003

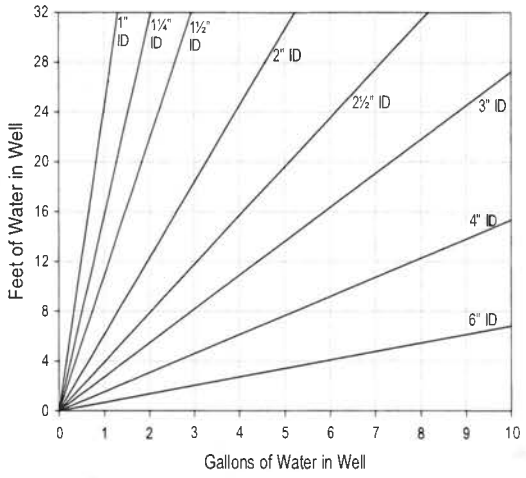
Comments _____

Signature Charles K Sudbeth Date 8/16/19

L-17 (15-20)

Purge Volume Calculation

AECOM



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
0955		21.7	6.23	233	0.11	-84.8	284.0			
1000		21.5	6.25	235	0.09	-89.7	251.9			
1005		21.3	6.27	235	0.08	-93.0	165.5			

AECOM

Well ID: L-17(25-30)

Low Flow Ground Water Sample Collection Record

Client: WCFFF Date: 8/16/19 Time: Start 1048 am/pm
Project No: 60595649 Finish 1120 am/pm
Site Location: WCFFF
Weather Conds: Sunny, hot Collector(s): C. Sudduth

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 30 ft c. Length of Water Column N/A (a-b)

Casing Diameter/Material 2 in Steel

b. Water Table Depth N/A d. Calculated System Volume (see back)

2. WELL PURGE DATA

a. Purge Method: Submersible Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1048	0	27.4	6.32	188	0.37	9.3	>1000			
1055		24.0	5.90	171	0.05	6.2	896.7			
1100		22.6	5.85	170	0.05	6.5	799.9			
1105		21.4	5.80	170	0.06	6.6	524.5			
1110		20.7	5.78	169	0.06	6.5	356.9			
1115		20.1	5.78	167	0.05	4.6	237.6			
1120		19.9	5.79	167	0.05	3.0	191.8			

(continued on back)

d. Acceptance criteria pass/fail

	~~Yes~~	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☐	☐	☑
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.
Turbidity not an acceptance criteria

3. SAMPLE COLLECTION: Method: Submersible Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
L-17 (25-30)	40 ml glass	3	HCL	CVOC	1122

Comments

Signature Charles K Sudduth Date 8/16/19

AECOM

Well ID: L-18 (15-20)

Low Flow Ground Water Sample Collection Record

Client: WCFFF Date: 8/19/19 Time: Start 1403 am/pm
Project No: 60595649 Finish 1450 am/pm
Site Location: WCFFF
Weather Conds: sunny, hot Collector(s): C. Suddeth

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length ____ c. Length of Water Column ____ (a-b)

Casing Diameter/Material: 2.0 in. steel

b. Water Table Depth 10.10 d. Calculated System Volume (see back) ____
6.54 inside 6"

2. WELL PURGE DATA

a. Purge Method: ____

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	~~Drawdown~~ WL (feet)	Color/Odor
1403	0	27.2	7.11	188	1.18	16.2	279.3	<0.5 gpm		
1406	Pumped	Dry								
1409		29.5	6.70	185	5.33	31.7	1,029			
1415		29.3	5.71	158	4.55	46.6	773.0		>21.2	
1420		30.4	5.96	156	3.57	34.5	287.9			
1425	Pumped	Dry								
1430		28.0	6.07	157	2.99	45.1	—	Pumped	Dry	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☐	☐	☑
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Submersible Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
L-18(15-20)	40ml	3	HCL	CVOC	1450

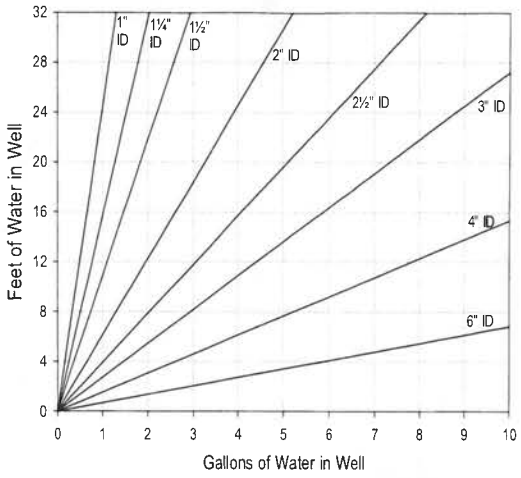
Comments ____

Signature Charles K Suddeth Date 8/19/19

L-18(15-20)

Purge Volume Calculation

AECOM



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1437		28.2	6.12	160	2.55	51.0	436.1		>21.2	
1448		29.1	6.07	160	4.19	54.6	276.7			

AECOM

Well ID: L-18(24-29)

Low Flow Ground Water Sample Collection Record

Client: WCFFF Date: 8/19/19 Time: Start 1538 am/pm
Project No: 60595649 Finish 1612 am/pm
Site Location: WCFFF
Weather Conds: sunny, hot Collector(s): C Suddeth

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length _____ c. Length of Water Column _____ (a-b)

Casing Diameter/Material 2.0 in steel

b. Water Table Depth _____ d. Calculated System Volume (see back) _____

2. WELL PURGE DATA

a. Purge Method: Submersible Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1538	0	28.1	6.96	223	5.52	-29.6	71,000	high	13.2/12.51	
1545		19.3	5.77	207	0.04	-31.6	810.3		13.24/12.38	
1550		18.6	5.86	205	0.06	-37.0	189.1			
1555		18.4	5.96	204	0.08	-43.4	222.0		13.23/12.36	
1600		18.2	6.03	204	0.08	-48.2	129.9			
1605		18.2	6.05	204	0.06	-49.9	131.9			
1610		18.2	6.09	203	0.07	-52.3	132.7		13.22/12.34	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☐	☐	☑
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Submersible Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
L-18(24-29)	40 ml	3	HCL	CVOC	1612

Comments _____

Signature Charles K Suddeth Date 8/19/19

AECOM

Well ID: L-19 (7-12)

Low Flow Ground Water Sample Collection Record

Client: WCFFF Date: 8/20/19 Time: Start 1428 am/pm
Project No: 60595649 Finish 1505 am/pm
Site Location: WCFFF
Weather Conds: Sunny, hot Collector(s): C Suddeth

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length _____ c. Length of Water Column _____ (a-b)

Casing Diameter/Material: 2.0 in. steel

b. Water Table Depth _____ d. Calculated System Volume (see back) _____

2. WELL PURGE DATA

a. Purge Method: Submersible Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1428	0	24.9	7.74	274	3.32	8.5	21000			
1435		20.8	6.21	320	0.23	-25.2	352.3			
1440		20.4	6.23	383	0.11	-31.9	213.2			
1445		19.9	6.29	386	0.13	-38.5	808.1		14.39/7.48	
1450		19.7	6.34	389	0.10	-42.0	285.3			
1455		19.6	6.36	390	0.08	-44.4	192.8		14.40/7.47	
1500		19.6	6.39	390	0.07	-46.9	238			

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☐	☐	☑
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Submersible Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
L-19 (7-12)	40ml	3	HCL	CVOC	1505
	250ml	1	None	Fluoride / Nitrate	

Comments _____

Signature Charles K Suddeth Date 8/20/19

AECOM

Well ID: L-19(21-26)

Low Flow Ground Water Sample Collection Record

Client: WCFFF Date: 8/20/19 Time: Start 1541 am/pm
Project No: 60595649 Finish 1615 am/pm
Site Location:
Weather Conds: p. cloudy, hot Collector(s): C. Sudderth

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length _____ c. Length of Water Column _____ (a-b)

Casing Diameter/Material: 2.0 in Steel

b. Water Table Depth _____ d. Calculated System Volume (see back) _____

2. WELL PURGE DATA

a. Purge Method: Submersible Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1541		27.3	6.97	236	5.37	22.6	>1000			
1545		23.6	5.95	214	7.24	22.5	>1000		28.25/19.5	
1550		20.9	5.67	202	6.24	38.9	>1000			
1555		19.8	5.50	208	6.27	55.1	>1000		30.30/19.95	
1600		19.3	5.50	207	5.22	53.6	>1000			
1605		19.1	5.53	207	6.07	52.6	599.2		30.30/19.95	
1610		18.9	5.55	207	5.81	51.8	770.4			

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☐	☐	☑
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Submersible Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
L-19(21-26)	40ml	3	HCL	CVOC	1615
	250ml	1	None	Fluoride / Nitrate	

Comments

Signature Charles K Sudderth Date 8/20/19

Low Flow Groundwater Sample Collection Record

WELL NO: L-20	SAMPLE ID: L-20-~~20~~ 12-16	DATE: 11/23/20
TOTAL WELL LENGTH (feet) (A): ~~16~~ 16	WATER TABLE DEPTH (feet) (B): 4	LENGTH OF WATER COLUMN (feet) (A-B): 8 12
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 8 12 feet to 16 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

TUBING DIAMETER (inches): 1/4"			PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15	PURGING START TIME: 13:58	PURGING END TIME:	TOTAL VOLUME PURGED (gallons): 1.75

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or ~~µS/cm~~	DISSOLVED OXYGEN (circle units) ~~mg/L~~ or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
13:58	0	0.05	4	65.44	6.35	22.33	462.9	3.25	1640.1	Lt. Orange	
	0.25	0.05	4	73.65	6.12	20.70	490.7	1.92	1416.2	"	"
	0.5	0.05	4	51.94	5.98	20.19	489.1	1.21	1010.2	"	"
	0.75	0.05	4	34.30	5.93	19.98	480.3	0.82	582.5	Opaque	
	1.00	0.05	4	23.39	5.91	19.90	454.6	0.72	636.4	"	"
	1.25	0.05	4	17.15	5.87	19.84	416.1	0.19	248.9	"	"
	1.50	0.05	4	9.11	5.82	19.74	388.6	0.04	196.5	"	"
	1.75	0.05	4	-0.56	5.78	19.73	377.6	0.03	176.0	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

ELL No: L-20 (12-16')	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 14:40	SAMPLING END TIME: 14:55
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet):		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 496336	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A	—	Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	B029301VB	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
					43102000	Tc-99 (liquid scint) (Total + dissolved)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

Dissolved Field Filtered w/ 0.45 micron Filter.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-20	SAMPLE ID: L-20-28-32	DATE: 11/23/20
TOTAL WELL LENGTH (feet) (A): 32	WATER TABLE DEPTH (feet) (B): 4	LENGTH OF WATER COLUMN (feet) (A-B): 28
CASING DIAMATER / MATL (inches): 1" SCS	WELL SCREEN INTERVAL DEPTH: 28 feet to 32 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 31	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 31	PURGING START TIME: 11:48	PURGING END TIME: 12:29	TOTAL VOLUME PURGED (gallons): 3.5

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
11:48	0	0.08	4	-44.0	7.00	19.4	292.1	4.40	1534.3	Yellow	
11:53	0.4	0.08	4	-85.5	6.02	18.9	290.2	0.67	5795.9	Lt. Yellow	
11:59	0.88	" "	4	-132.6	6.01	18.8	286.5	0.73	3134.0	"	"
12:04	1.83	" "	4	-95.1	5.92	18.7	281.3	0.90	614.7	"	"
12:09	~~1.7~~ 1.7	" "	4	-42.8	5.78	18.6	271.1	1.21	291.1	Clear	
12:14	2.1	" "	4	-30.8	5.62	18.6	264.8	1.48	160.0	"	"
12:19	2.6	" "	4	(-54.7)	5.61	18.6	264.1	1.57	123.4	"	"
12:24	3.0	" "	4	-30.8	5.59	18.6	263.6	1.69	111.7	"	"
12:29	3.5	" "	4	-21.0	5.58	18.6	262.5	1.78	102.0	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

ELL No: L-30 (28-32)	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 12:30	SAMPLING END TIME: 12:45
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 31		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced)			SAMPLE COLLECTION METHOD: ~~PDB~~ Low Flow

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 496336	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. **STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:**
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A	—	Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	B029301VB	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
					43103000	Tc-99 (liquid scint) Total + dissolved	

Field filter - 0.45 micron

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-21	SAMPLE ID: L-21-28-32	DATE: 11/18/20
TOTAL WELL LENGTH (feet) (A): ~~28~~ 32'	WATER TABLE DEPTH (feet) (B): 8'	LENGTH OF WATER COLUMN (feet) (A-B): 24'
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 28 feet to 32 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"			PURGE PUMP TYPE OR BAILER: Peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING START TIME:	PURGING END TIME:	TOTAL VOLUME PURGED (gallons): ~~1.0~~ 1.5

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
12:07	0	0.1	8	-164.88	6.61	20.46	101.13	3.51	1689.6	Lt. Brown	
12:13	0.5	0.1	8	-287.24	6.35	20.62	84.98	0.88	4836.9	"	"
12:18	1	0.1	8	-309.93	6.28	20.81	78.88	0.77	5290.8	"	"
12:23	1.5	0.1	8	-298.08	6.31	20.70	78.70	0.84	5403.06	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

ELL No: L-21	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 12:30	SAMPLING END TIME:
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 30'	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	SAMPLE COLLECTION METHOD: PP	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	B029301VB	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-22	SAMPLE ID: L-22-8-12	DATE: 11/19/20
TOTAL WELL LENGTH (feet) (A): 12	WATER TABLE DEPTH (feet) (B): 7	LENGTH OF WATER COLUMN (feet) (A-B): 5
CASING DIAMATER / MATL (inches): 1' SS	WELL SCREEN INTERVAL DEPTH: 8 feet to 12 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1			PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10	PURGING START TIME: 09:24	PURGING END TIME: 09:50	TOTAL VOLUME PURGED (gallons): 1.25

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
09:24	0	0.06	7	402.8	7.57	18.70	58.06	5.74	4053.0	Orange brown	
09:29	0.3	" "	7	-357.2	6.44	21.16	109.49	0.72	2951.6	"	"
09:34	0.6	" "	7	-247.0	6.53	21.29	121.04	0.65	82.7	Lt brown	
09:40	0.9	" "	7	-208.4	6.51	21.24	~~119.82~~	0.66	121.63	" "	
09:45	1.2	" "	7	-186.28	6.48	21.54	120.72	0.66	103.8	" "	
09:50	1.5	" "	7	-161.19	6.46	21.84	119.54	0.701	26.7	Clear	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
L-22-8-12	Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S): Jeremy Grant		SAMPLING START TIME: 9:51	SAMPLING END TIME: 9:55
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 10	DUPLICATE: (Y) N	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	SAMPLE COLLECTION METHOD: Low flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3 6	50 ml	Glass vial	Vendor[b]	B029301VB	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-22	SAMPLE ID: L-22-26-30	DATE: 11/18/20
TOTAL WELL LENGTH (feet) (A): 30	WATER TABLE DEPTH (feet) (B): 7	LENGTH OF WATER COLUMN (feet) (A-B): 23
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH 26 feet to 30 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 28	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 28	PURGING START TIME: 15:57	PURGING END TIME: / TOTAL VOLUME PURGED (gallons):

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) ~~mmhos/cm~~ or ~~uS/cm~~	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
15:57	0		7	6.10	6.43	20.79	76.23	5.68	5559.0	Yellow	
16:03	1		7	-138.02	6.02	20.37	77.44	2.19	5716.6	" "	
16:08	2		7	-161.32	5.94	20.53	72.18	1.73	5021.5	" "	
16:13	3		7	-154.09	5.82	20.13	65.97	1.55	2429.8	Lt. Yellow	
16:18	4		7	-156.48	5.81	20.35	59.87	1.39	872.0	"	"
16:23	5		7	-106.55	5.75	20.26	57.09	2.28	253.7	Opaque	
16:28	6		7	-67.70	5.74	19.90	56.75	3.82	292.7	" "	
16:33	7		7	-124.72	5.75	20.43	56.62	1.32	302.9	" "	
16:38	8		7	-87.98	5.69	20.44	54.53	1.55	69.3	Clear	
16:43	9		7	-88.25	5.67	20.32	54.10	1.54	35.1	" "	
16:48	10		7	-81.40	5.66	20.39	54.07	1.63	4.60	" "	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

ELL No: L-22	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 16:49	SAMPLING END TIME: 16:52
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 28	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	SAMPLE COLLECTION METHOD: Low flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	B029301VB	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-23	SAMPLE ID: L-23-12-146	DATE: 11/20/20
TOTAL WELL LENGTH (feet) (A): 146	WATER TABLE DEPTH (feet) (B): 9	LENGTH OF WATER COLUMN (feet) (A-B): 57
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 12 feet to 146 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 124	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 124	PURGING START TIME:	PURGING END TIME:	TOTAL VOLUME PURGED (gallons):

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
09:35	0	0.05	9	81.4	5.24	19.7	84.7	3.28	4806.5	Brown	
09:40	0.25	0.05	9	17.3	5.10	21.4	61.4	0.91	1697.1	Lt. brown	
09:45	0.5	0.05	9	-38.8	5.02	21.7	57.5	0.80	318.8	Clear	sh
09:50	0.75	0.05	9	-59.4	4.99	21.9	56.3	0.79	205.8	"	"
09:56	1.0	0.05	9	-96.1	4.99	22.0	55.9	0.77	333.5	"	"
10:01	1.25	0.05	9	-59.1	4.97	22.1	55.3	0.78	157.8	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

ELL No: L-23	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 10:01	SAMPLING END TIME: 10:03
TUBING MATERIAL CODE: HDPE/S	PUMP OR TUBING DEPTH IN WELL (feet): 12'		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)		SAMPLE COLLECTION METHOD: Low flow

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: Aqua Troll 600	MODEL:	
SERIAL NO: 496336	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	B029310VB	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-23	SAMPLE ID: L-23-20-24	DATE: 11/19/20
TOTAL WELL LENGTH (feet) (A): 24	WATER TABLE DEPTH (feet) (B): 9	LENGTH OF WATER COLUMN (feet) (A-B): 15
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 20 feet to 24 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 22	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 22	PURGING START TIME: 16:07	PURGING END TIME: 16:32	TOTAL VOLUME PURGED (gallons): 2.5

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
16:07	0	0.1	9	-7.76	5.86	23.1	122.7	1.67	2730.4	Brown	
16:12	0.5	0.1	9	17.1	5.17	22.0	107.7	1.00	1287.4	Lt. brown	
16:17	1	0.1	9	12.5	5.12	21.9	107.2	0.88	715.2	"	"
16:22	1.5	0.1	9	-3.6	5.13	21.7	106.2	0.89	634.7	"	"
16:27	2.0	0.1	9	-24.8	5.13	21.5	105.8	0.91	581.3	"	"
16:32	2.5	0.1	9	-42.7	5.12	21.5	104.9	0.93	417.7	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

ELL No: L-23	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 16:33	SAMPLING END TIME: 16:35
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 22	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. **STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:**
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	B029301VB	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-23	SAMPLE ID: L-23-31-35	DATE: 11/19/20
TOTAL WELL LENGTH (feet) (A): 35	WATER TABLE DEPTH (feet) (B): 9	LENGTH OF WATER COLUMN (feet) (A-B): 26
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 31 feet to 35 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 33	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 33	PURGING START TIME: 14:45	PURGING END TIME: 15:11	TOTAL VOLUME PURGED (gallons): 1

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
14:45	0	0.04	9	11.89	6.39	23.6	109.3	3.70	6127.0	Yellow	
14:[illegible]	0.2	0.04	9	-25.2	6.08	21.8	117.7	0.59	4998.6	Lt. Yellow	
14:56	0.4	0.04	9	-28.16	6.06	21.7	113.9	0.16	3717.8	" "	
15:01	0.6	0.04	9	-32.5	6.07	21.7	110.5	0.06	3514.5	" "	
15:06	0.8	0.04	9	-35.94	6.06	21.7	106.99	0.04	3153.7	" "	
15:11	1.0	0.04	9	-55.78	6.12	20.99	106.5	0.92	5795.5	" "	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

Shook the AT 600 between 15:06 + 15:11 reading stirring up the sediment

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

ELL No: L-23	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 1512	SAMPLING END TIME: 1515
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 33	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	SAMPLE COLLECTION METHOD: Low flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	B029301VB	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-24	SAMPLE ID: L-24-11-15	DATE: 11/20/20
TOTAL WELL LENGTH (feet) (A): 15	WATER TABLE DEPTH (feet) (B): 10	LENGTH OF WATER COLUMN (feet) (A-B): 5
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 11 feet to 15 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER:

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 14	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 14	PURGING START TIME: 15:13	PURGING END TIME: 15:53	TOTAL VOLUME PURGED (gallons): 1

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
15:13	0	0.05	10	86.0	5.74	23.9	788	3.01	1720.4	Yellowish Orange	
15:23	0.25	0.05	10	135	5.32	23.1	75.1	6.15	856.3	Lt. Yellow	
15:33	0.5	0.05	10	147.7	5.17	23.0	72.1	6.70	573.3	Clear	
15:43	0.75	0.05	10	156.6	5.13	22.7	71.7	6.97	491.5	Clear	
15:53	1.00	0.05	10	159.7	5.14	22.3	70.9	7.09	468.7	Clear	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
L-24	Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME:	SAMPLING END TIME:
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 14	DUPLICATE: Y N	
FIELD DECONTAMINATION: PUMP Y N TUBING Y N (replaced)		SAMPLE COLLECTION METHOD:	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE: Proactive Env.	
MODEL: AquaTroll 600	MODEL: Alexis PP	
SERIAL NO: 496336	SERIAL NO: 24,480	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	B029301VB	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

Retain form in area for 1 year, in Records Room - 3 years and offsite - 57 years.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-24	SAMPLE ID: L-24-25-29	DATE: 11/23/20
TOTAL WELL LENGTH (feet) (A): 29	WATER TABLE DEPTH (feet) (B): 10	LENGTH OF WATER COLUMN (feet) (A-B): 19
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 10 feet to 29 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 28	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 28	PURGING START TIME: 09:05	PURGING END TIME: 09:10	TOTAL VOLUME PURGED (gallons): 0.05

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
09:05	0	0.25								Gray	
09:10	0.05	—									

Dry after 5 minutes of purging. Let recharge for 30 minutes and grab a sample. Dry after filling 1 VOA. Leave tooling in the ground to come back later.

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

ELL No: L-24 (25-29')	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant/AECOM		
SAMPLER(S) SIGNATURE(S): Jeremy Grant		SAMPLING START TIME: 15:23	SAMPLING END TIME: 15:26
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 28'		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) replaced)		SAMPLE COLLECTION METHOD: Low flow

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 496336	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	B029301VB	VOC[a]	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

Retain form in area for 1 year, in Records Room - 3 years and offsite - 57 years.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-25-14.7-19.7	SAMPLE ID: L-25-14.7-19.7	DATE: 12/11/20
TOTAL WELL LENGTH (feet) (A): 19.7	WATER TABLE DEPTH (feet) (B): 16.6	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 1.0 / PVC	WELL SCREEN INTERVAL DEPTH: 14.7 feet to 19.7 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25			PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 18.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 18.5	PURGING START TIME: 1419	PURGING END TIME: 1451	TOTAL VOLUME PURGED (gallons): 4.0

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1419	0	0.13		-100.11	7.01	19.87	114.59	4.01	79.6	brown	none
1425	0.78	0.13		-49.82	6.94	20.28	89.67	4.08	56.9	light brown	none
1430	1.43	0.13		-22.69	6.86	20.26	84.82	4.26	27.8	clear	none
1435	2.08	0.13		5.23	6.81	20.30	82.76	4.25	116.29	clear	none
1440	2.73	0.13		50.67	6.74	20.22	78.43	4.41	74.85	clear	none
1445	3.38	0.13		65.47	6.67	20.20	77.20	4.46	43.60	clear	none
1450	4.0	0.13		78.53	6.61	20.21	75.53	4.48	36.0	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
L-25-1417-1917	Chuck Suddeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Suddeth		SAMPLING START TIME: 1419	SAMPLING END TIME: 1451
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 18.5'	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	SAMPLE COLLECTION METHOD: Peristaltic Pump	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40 ml	Glass vial	Vendor[b]	B029301VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-25-215-25.5	SAMPLE ID: L-25-215-25.5	DATE: 12/8/20
TOTAL WELL LENGTH (feet) (A): 25.5	WATER TABLE DEPTH (feet) (B): 17	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5 / steel	WELL SCREEN INTERVAL DEPTH: 21.5 feet to 25.5 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25			PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 23.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 23.5	PURGING START TIME: 1607	PURGING END TIME: 1651	TOTAL VOLUME PURGED (gallons): 4.0

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1607	0	0.09		582.83	6.73	15.17	285.67	7.08	1,243	tan	none
1611	0.36	0.09		-28.85	6.15	18.52	188.33	3.70	78.62	clear	none
1615	0.72	0.09		-7.6	5.93	18.65	129.41	3.59	126	clear	none
1620	1.17	0.09		+ 5.76	5.85	18.08	109.14	3.48	23.2	clear	none
1625	1.62	0.09		20.84	5.79	18.33	99.36	3.33	24.2	clear	none
1630	2.07	0.09		41.03	5.73	18.21	89.35	3.39	33.4	clear	none
1635	2.52	0.09		45.34	5.70	18.32	85.68	3.43	19.0	clear	none
1640	2.97	0.09		54.61	5.66	18.37	82.53	3.48	23.0	clear	none
1645	3.42	0.09		59.74	5.65	18.22	80.49	3.52	15.06	clear	none
1650	4.0	0.09		64.13	5.64	18.39	78.81	3.56	21.5	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
L-25-21.5-25.5	Chuck Suddeth		
SAMPLER(S) SIGNATURE(S): Charles K Suddeth		SAMPLING START TIME: 1607	SAMPLING END TIME: 1651
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 23.5		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced))		SAMPLE COLLECTION METHOD: Peristaltic Pump

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40/50 ml	Glass vial	Vendor[b]	B029301 VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

Retain form in area for 1 year, in Records Room - 3 years and offsite - 57 years.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-25-38-42	SAMPLE ID: L-25-38-42	DATE: 12/9/20
TOTAL WELL LENGTH (feet) (A):	WATER TABLE DEPTH (feet) (B):	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 38 feet to 42 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~~39~~ 40	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~~39~~ 40	PURGING START TIME: 0904	PURGING END TIME: 1042	TOTAL VOLUME PURGED (gallons): ~~45~~ 9

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0904	0	0.09		754.97	7.75	5.96	261.43	12.19	2,277	tan	none
0928	2.16	0.09		734.19	7.71	11.02	346.18	9.65	756	tan	none
0931	2.43	0.09		727.03	7.47	12.85	337.52	6.53	260	clear	none
0935	2.79	0.09		-450.37	6.84	13.66	241.80	0.85	6,974	clear	none
0940	3.24	0.09		-438.33	6.73	14.28	195.32	0.58	822	clear	none
0945	3.69	0.09		-285.43	6.67	14.18	192.63	2.55	207	clear	none
0950	4.14	0.09		-345.35	6.46	14.84	144.64	1.42	102	clear	none
0955	4.59	0.09		-295.88	6.38	15.41	130.52	1.80	36.3	clear	none
1000	5.04	0.09		-208.61	6.29	15.87	115.85	2.15	20.0	clear	none
1005	5.49	0.09		-152.87	6.25	16.06	112.17	2.50	465	clear	none
1010	5.94	0.09		-313.74	6.47	14.71	141.00	1.61	507	clear	none
1016	6.48	0.09		+137.96	6.34	14.48	72.9	9.52	4,186	tan	none
1020	6.84	0.09		28.43	6.01	16.88	93.2	2.94	444	clear	none
1027	7.47	0.09		5.57	6.00	17.38	91.07	3.42	21.1	clear	none
1030	7.74	0.09		20.45	5.99	17.62	90.33	3.48	38.9	clear	none
1035	8.19	0.09		19.41	5.97	17.41	89.66	3.55	27.1	clear	none
1040	8.64	0.09		3.33	5.96	17.69	89.02	3.60	26.6	clear	none
~~1045~~	~~10~~	~~0.09~~									

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
L-25-38-42	Chuck Sudbeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Sudbeth		SAMPLING START TIME: 0904	SAMPLING END TIME: 1040
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 40		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)		SAMPLE COLLECTION METHOD: Peristaltic Pump

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40 ml	Glass vial	Vendor[b]	B029301VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-26-13.7-18.7	SAMPLE ID: L-26-13.7-18.7	DATE: 12/11/20
TOTAL WELL LENGTH (feet) (A): 18.7	WATER TABLE DEPTH (feet) (B): 16.05 TOC / 1.35 Stickup	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 1.0 / PVC	WELL SCREEN INTERVAL DEPTH: 13.7 feet to 18.7 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 17	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 17	PURGING START TIME: 1536	PURGING END TIME: 1621	TOTAL VOLUME PURGED (gallons): 6.0

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1536	0	0.14		15.52	6.74	20.65	1.02	8.33	5,275	brown	none
1540	0.56	0.14		-53.37	6.52	20.08	120.00	3.37	1,112	brown	none
1545	1.26	0.14		131.08	6.54	19.75	125.43	5.27	460	light brown	none
1550	1.96	0.14		-2.54	6.42	20.05	115.96	3.56	345	clear	none
1555	2.66	0.14		6.45	6.33	20.03	106.85	3.61	38.5	clear	none
1600	3.36	0.14		24.48	6.26	20.03	102.31	3.69	37.5	clear	none
1605	4.06	0.14		33.23	6.20	20.02	98.18	3.71	19.3	clear	none
1610	4.76	0.14		49.60	6.14	20.02	95.09	3.74	21.4	clear	none
1615	5.46	0.14		72.11	6.09	20.00	92.38	3.76	21.2	clear	none
1620	6.0	0.14		56.06	6.03	20.00	90.23	3.79	24.4	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

ELL No: L-26-13.7-18.7	SAMPLED BY (PRINT) / AFFILIATION: Chuck Sudderth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Sudderth		SAMPLING START TIME: 1536	SAMPLING END TIME: 1621
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 17	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)	SAMPLE COLLECTION METHOD: Peristaltic Pump	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40 ml	Glass vial	Vendor[b]	B029301 VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

Retain form in area for 1 year, in Records Room - 3 years and offsite - 57 years.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-26-25-29	SAMPLE ID: L-26-25-29	DATE: 12/9/20
TOTAL WELL LENGTH (feet) (A): 29	WATER TABLE DEPTH (feet) (B): 15	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/steel	WELL SCREEN INTERVAL DEPTH: 25 feet to 29 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 27	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 27	PURGING START TIME: 1240	PURGING END TIME: 1337	TOTAL VOLUME PURGED (gallons): 6.5

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1240	0	0.12		635.91	6.65	15.55	0.08	9.78	1,130	brown	none
1245	0.6	0.12		90.79	6.29	18.77	137.26	2.54	1,746	brown	none
1250	1.2	0.12		124.86	5.96	18.79	118.08	2.13	340	light brown	none
1255	1.8	0.12		150.10	5.81	18.74	93.83	2.01	313	"	none
1300	2.4	0.12		134.22	5.82	18.81	100.14	2.03	224	"	none
1305	3.0	0.12		129.21	5.81	18.78	97.23	2.03	237	"	none
1310	3.6	0.12		115.74	5.85	18.85	99.88	2.11	163	clear	none
1315	4.2	0.12		120.26	5.81	18.82	96.37	2.07	198	clear	none
1320	4.8	0.12		116.80	5.82	18.83	96.29	2.11	146	clear	none
1325	5.4	0.12		165.72	5.76	18.72	89.90	2.02	181	clear	none
1330	6.0	0.12		153.95	5.77	18.87	91.64	2.00	164	clear	none
1335	6.5	0.12		152.41	5.77	18.86	91.82	2.02	156	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
L-26-29-29	Chuck Sudderth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Sudderth		SAMPLING START TIME: 1240	SAMPLING END TIME: 1337
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 27		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y ~~N~~ (replaced)		SAMPLE COLLECTION METHOD: Peristaltic Pump

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	**Plastic**	**N/A**		Nitrate	**Shealy**
Y	3	~~40~~ 60 ml	**Glass vial**	**Vendor[b]**	B029301VB	VOC	**Shealy**
	2	250 ml	**Glass-amber**	**N/A**		SVOC	**Shealy**
	1	250 ml	**Plastic**	**N/A**		Tritium	**GEL**
	2	1 liter	**Plastic**	**HNO_3**			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-26-39-43	SAMPLE ID: L-26-39-43	DATE: 12/9/20
TOTAL WELL LENGTH (feet) (A): 43	WATER TABLE DEPTH (feet) (B): 15	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 39 feet to 43 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 41	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 41	PURGING START TIME: 1415	PURGING END TIME: 1511	TOTAL VOLUME PURGED (gallons): 6

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1415	0	0.11		683.58	6.95	16.10	251.89	9.34	1,942	brown	none
1420	0.55	0.11		-508.89	7.16	18.62	252.36	0.32	4,901	brown	none
1425	1.1	0.11		-486.30	6.96	18.72	175.41	1.06	468	brown	none
1430	1.65	0.11		735.43	7.32	18.15	314.39	7.53	865	light brown	none
1435	2.2	0.11		-484.37	6.79	18.49	136.67	0.55	447	clear	none
1440	2.75	0.11		-393.67	6.66	18.94	120.54	0.77	426	clear	none
1445	3.3	0.11		-127.86	6.64	18.98	113.04	1.05	285	clear	none
1450	3.85	0.11		-174.06	6.60	18.88	110.03	1.23	193	clear	none
1455	4.4	0.11		-102.41	6.56	18.90	107.57	1.38	209	clear	none
1500	4.95	0.11		-128.98	6.51	18.89	104.73	1.53	179	clear	none
1505	5.5	0.11		-117.36	6.46	18.81	102.73	1.63	147	clear	none
1510	6.0	0.11		-75.15	6.43	18.75	101.61	1.71	160	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

ELL No: L-26-39-43	SAMPLED BY (PRINT) / AFFILIATION: Chuck Suddeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Suddeth		SAMPLING START TIME: 1415	SAMPLING END TIME: 1511
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 41	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)	SAMPLE COLLECTION METHOD: Peristaltic Pump	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	B029301VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

Retain form in area for 1 year, in Records Room - 3 years and offsite - 57 years.

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TITLE: LOW FLOW GROUNDWATER SAMPLE COLLECTION RECORD
TYPE: REFERENCE USE
DATE: 10-08-20

FORM NO: ROF-06-007-2
REFERENCE NO: NONE
REVISION: 5

Low Flow Groundwater Sample Collection Record

WELL NO: L-27-14-19 stickup = 2.0	SAMPLE ID: L-27-~~14-16~~ 14-19	DATE: 12/11/20
TOTAL WELL LENGTH (feet) (A): 20.95 TOC	WATER TABLE DEPTH (feet) (B): 18.64 TOC	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 1.0/PVC	WELL SCREEN INTERVAL DEPTH: 14 feet to 19 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25			PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 19	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 19	PURGING START TIME: 1648	PURGING END TIME: 1735	TOTAL VOLUME PURGED (gallons):

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1648	0	0.06		-139.22	6.69	19.32	305.22	8.18	2,131	brown	none
1651	0.18	0.06		22.23	6.55	19.71	255.72	5.73	2,628	brown	none
1655	0.42	0.06		99.86	6.51	19.56	237.44	4.88	405	brown	none
1700	0.72	0.06		134.69	6.50	19.50	222.02	4.71	192	light brown	none
1705	1.02	0.06		169.89	6.51	19.45	207.25	4.83	95.3	clear	none
1710	1.32	0.06		189.39	~~[illegible]~~ 6.52	19.34	195.48	5.31	51.2	clear	none
1715	1.62	0.06		182.83	6.54	19.21	186.07	6.18	205	clear	none
1720	1.92	0.06		191.72	6.57	19.17	175.51	7.03	142	clear	none
1725	2.22	0.06		195.50	6.59	19.11	166.22	7.57	54.8	clear	none
1730	2.52	0.06		202.90	6.62	19.05	158.35	7.83	50.2	clear	none
1735	2.82	0.06		200.81	6.64	19.06	151.38	7.98	42.9	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: L-27-14-19	SAMPLED BY (PRINT) / AFFILIATION: Chuck Sudbeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Sudbeth		SAMPLING START TIME: 1648	SAMPLING END TIME: 1735
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 19		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)	SAMPLE COLLECTION METHOD: Peristaltic Pump	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40~~50~~ ml	Glass vial	Vendor[b]	B029301VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

Retain form in area for 1 year, in Records Room - 3 years and offsite - 57 years.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-27-23-27	SAMPLE ID: L-27-23-27	DATE: 12/29/20
TOTAL WELL LENGTH (feet) (A): 29	WATER TABLE DEPTH (feet) (B): 20	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/steel	WELL SCREEN INTERVAL DEPTH: 23 feet to 27 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25	PURGING START TIME: 1421	PURGING END TIME: 1503	TOTAL VOLUME PURGED (gallons): 4.0

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1421	0	0.10		161.99	7.59	24.43	0.0555	8.45	0	tan	none
1425		0.10		168.95	7.48	21.16	0.0593	8.49	0	light tan	none
1430		0.10		131.78	6.90	20.13	0.0606	8.38	0	clear	none
1437		0.10		157.34	6.74	19.65	0.0612	8.10	0	clear	none
1441		0.10		160.33	6.71	19.52	0.0614	7.95	0	clear	none
1445		0.10		164.66	6.66	19.37	0.0616	7.81	0	clear	none
1450		0.10		~~170.12~~	6.58	19.23	0.0617	7.66	0	clear	none
1455		0.10		169.21	6.50	19.13	0.0619	7.50	0	clear	none
1500	4.0	0.10		165.20	6.51	19.13	0.0619	7.35	0	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: L-27-23-27	SAMPLED BY (PRINT) / AFFILIATION: Chuck Sudduth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Sudduth		SAMPLING START TIME: 1421	SAMPLING END TIME:
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 25		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)		SAMPLE COLLECTION METHOD: Peristaltic Pump

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40 ml	Glass vial	Vendor[b]	B029301VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-27-30-34	SAMPLE ID: L-27-30-34	DATE: 12/29/20
TOTAL WELL LENGTH (feet) (A): 34	WATER TABLE DEPTH (feet) (B): 20	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 30 feet to 34 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 32	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 32	PURGING START TIME: 1621	PURGING END TIME: 1656	TOTAL VOLUME PURGED (gallons): 3.0

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1621	0	0.09		139.19	6.51	19.24	0.0617	7.94	0	tan	none
1625		0.09		137.92	6.69	19.02	0.0620	7.86	0	light tan	none
1630		0.09		135.26	6.64	18.86	0.0062	7.75	0	clear	none
1635		0.09		124.05	6.59	18.64	0.0625	7.68	0	clear	none
1640		0.09		113.54	6.60	18.46	0.0628	7.62	0	clear	none
1645		0.09		109.22	6.59	18.31	0.0630	7.63	0	clear	none
1650		0.09		106.37	6.61	18.17	0.0632	7.64	0	clear	none
1655	3.0	0.09		94.58	6.64	18.06	0.0633	7.65	0	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: L-27-30-34	SAMPLED BY (PRINT) / AFFILIATION: Chuck Suddeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Suddeth		SAMPLING START TIME: 1621	SAMPLING END TIME: 1656
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 32	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced))	SAMPLE COLLECTION METHOD: Peristaltic Pump	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; T = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40/50 ml	Glass vial	Vendor[b]	BD29301VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

Retain form in area for 1 year, in Records Room - 3 years and offsite - 57 years.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-27-39-43	SAMPLE ID: L-27-39-43	DATE: 12/30/20
TOTAL WELL LENGTH (feet) (A): 44	WATER TABLE DEPTH (feet) (B): 21	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 39 feet to 43 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 41	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 41	PURGING START TIME: 0857	PURGING END TIME: 0946	TOTAL VOLUME PURGED (gallons): 4.0

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0857	0	0.08		387.93	7.28	10.45	0.0761	11.51	0	tan	none
0901		0.08		362.65	7.16	12.96	0.0713	10.47	0	tan	none
0905		0.08		312.36	7.01	14.53	0.0687	9.99	0	tan	none
0910		0.08		250.85	6.77	15.34	0.0674	9.59	0	tan	none
0915		0.08		215.32	6.77	15.72	0.0668	9.32	0	tan	none
0920		0.08		196.81	6.69	15.96	0.0664	9.10	0	tan	none
0925		0.08		185.23	6.67	16.05	0.0663	8.92	0	tan	none
0930		0.08		176.34	6.61	16.17	0.0661	8.78	0	light tan	none
0935		0.08		171.97	6.57	16.24	0.0660	8.64	0	light tan	none
0940		0.08		163.06	6.59	16.28	0.0659	8.51	0	light tan	none
0945	4.0	0.08		152.77	6.65	16.30	0.0659	8.42	0	light tan	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: L-27-39-43	SAMPLED BY (PRINT) / AFFILIATION: Chuck Sudbeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Sudbeth		SAMPLING START TIME: 0857	SAMPLING END TIME: 0946
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 41	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced))	SAMPLE COLLECTION METHOD: Peristaltic Pump	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	Collected MS and MSD samples
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40 ml	Glass vial	Vendor[b]	B029301VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-28-18-22	SAMPLE ID: L-28-18-22	DATE: 12/30/20
TOTAL WELL LENGTH (feet) (A): 24	WATER TABLE DEPTH (feet) (B): 15	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 18 feet to 22 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING START TIME:	PURGING END TIME: 1141 / TOTAL VOLUME PURGED (gallons): 2.0

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1107	0	0.06		131.42	6.48	12.06	0.0730	10.52	0	tan	none
1110		0.06		151.71	6.64	13.12	0.0711	9.92	0	tan	none
1115		0.06		174.81	6.49	14.72	0.0684	9.53	0	light tan	none
1120		0.06		189.80	6.40	14.92	0.0680	9.45	0	clear	none
1125		0.06		197.34	6.45	14.93	0.0680	9.41	0	clear	none
1130		0.06		197.77	6.36	15.03	0.0679	9.37	0	clear	none
1135		0.06		203.20	6.35	15.09	0.0678	9.33	0	clear	none
1140	2.0	0.06		206.99	6.30	15.15	0.0677	9.30	0	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

ELL No: L-28-18-22	SAMPLED BY (PRINT) / AFFILIATION: Chuck Sudbeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Sudbeth		SAMPLING START TIME: 1107	SAMPLING END TIME: 1141
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 20		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)	SAMPLE COLLECTION METHOD: Peristaltic Pump	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40~~50~~ ml	Glass vial	Vendor[b]	B029301 VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-28-27-31	SAMPLE ID: L-28-27-31	DATE: 12/30/20
TOTAL WELL LENGTH (feet) (A): 34	WATER TABLE DEPTH (feet) (B): 15	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/steel	WELL SCREEN INTERVAL DEPTH: 27 feet to 31 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 29	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 29	PURGING START TIME: 1224	PURGING END TIME: 1314	TOTAL VOLUME PURGED (gallons): 2.5

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
~~1224~~	0	0.05		217.19	5.88	9.75	0.0775	10.97	0	tan	none
1233		0.05		165.10	6.14	8.81	0.0794	10.61	0	tan	none
1243		0.05		76.74	5.95	13.41	4.090	8.70	1.34	light tan	none
1246		0.05		101.22	5.92	14.02	0.0695	8.47	0	clear	none
1250		0.05		111.34	5.91	14.31	0.0690	8.38	0	clear	none
1255		0.05		112.96	5.90	14.40	0.0689	8.20	0	clear	none
1300		0.05		106.41	5.90	14.64	0.0685	8.03	0	clear	none
1308		0.05		105.68	5.92	14.86	0.0681	7.84	0	clear	none
1311	2.5	0.05		101.84	5.91	14.94	0.0680	7.74	0	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: L-28-27-31	SAMPLED BY (PRINT) / AFFILIATION: Chuck Sudlett / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Sublett		SAMPLING START TIME: 1224	SAMPLING END TIME: 1314
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 30	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y ~~N~~ (replaced)	SAMPLE COLLECTION METHOD: Peristaltic Pump	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	Collected MS and MSD samples
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40 ml	Glass vial	Vendor[b]	B029301VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-28-36-40	SAMPLE ID: L-28-36-40	DATE: 12/30/20
TOTAL WELL LENGTH (feet) (A): 44	WATER TABLE DEPTH (feet) (B): 15	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 36 feet to 40 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 38	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 38	PURGING START TIME: 1408	PURGING END TIME: 1451	TOTAL VOLUME PURGED (gallons): 2.0

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1408	0	0.05		135.53	6.06	10.24	0.0765	9.58	0	tan	none
1411		0.05		129.46	6.09	11.82	0.0734	9.02	0	tan	none
1415		0.05		108.30	6.16	12.70	0.0718	8.72	0	tan	none
1420		0.05		89.91	6.13	13.75	0.0707	8.42	0	light tan	none
1425		0.05		69.99	6.12	13.47	0.0705	8.18	0	light tan	none
1430		0.05		61.15	6.11	13.67	0.0701	7.94	0	light tan	none
1435		0.05		53.65	6.10	13.76	0.0700	7.77	0	light tan	none
1440		0.05		50.47	6.08	13.59	0.0703	7.65	0	light tan	none
1445		0.05		35.72	6.15	13.62	0.0702	7.47	0	light tan	none
1450	2.0	0.05		31.11	6.16	13.58	0.0703	7.32	0	light tan	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: L-28-36-40	SAMPLED BY (PRINT) / AFFILIATION: Chuck Sudduth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Sudduth		SAMPLING START TIME: 1408	SAMPLING END TIME: 1451
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 38	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced))	SAMPLE COLLECTION METHOD: Peristaltic Pump	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: ± 1.0 units **Temperature**: ± 3% **Specific Conductance**: ± 3% **Dissolved Oxygen**: optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **ORP**: ± 10 mV
Turbidity: all readings < 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40 50 ml	Glass vial	Vendor[b]	B029301VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-29-13-17	SAMPLE ID: L-29-13-17	DATE: 12/4/20
TOTAL WELL LENGTH (feet) (A): 17	WATER TABLE DEPTH (feet) (B): 10	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 13 feet to 17 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15	PURGING START TIME: 1226	PURGING END TIME: 1312	TOTAL VOLUME PURGED (gallons): 3.75

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1226	0	0.09		37.31	6.29	19.18	0.06	8.19	176	brown	none
1230	0.36	0.09		18.90	6.34	20.46	226.95	0.29	177	brown	none
1235	0.81	0.09		-2.54	6.33	20.23	211.98	1.22	176	brown	none
1240	1.26	0.09		-19.20	6.32	20.23	291.20	1.04	178	light brown	none
1245	1.71	0.09		-34.25	6.34	19.26	290.33	0.30	177	clear	none
1250	2.16	0.09		-49.26	6.34	19.61	289.08	0.25	177	clear	none
1258	2.88	0.09		-71.18	6.34	19.63	220.19	0.17	177	clear	none
1305	3.51	0.09		-92.31	6.33	19.56	258.77	0.12	176	clear	none
1310	3.75	0.09		-104.84	6.33	19.65	253.79	0.10	176	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: L-29-13-17	SAMPLED BY (PRINT) / AFFILIATION: Chuck Suddeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Suddeth		SAMPLING START TIME: 1226	SAMPLING END TIME: 1312
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 15		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)		SAMPLE COLLECTION METHOD: Peristaltic Pump

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40 ml	Glass vial	Vendor[b]	B029301VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-29-26-30	SAMPLE ID: L-29-26-30	DATE: 12/4/20
TOTAL WELL LENGTH (feet) (A): 30	WATER TABLE DEPTH (feet) (B): 10	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 26 feet to 30 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 28	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 28	PURGING START TIME: 1412	**PURGING END TIME:** 1503	**TOTAL VOLUME PURGED (gallons):** 5.0

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1412	0	0.10		-208.46	6.14	22.47	0.06	8.35	179	dark gray	none
1416	0.4	0.10		-190.16	6.26	19.63	160.39	0.10	178	gray	none
1420	0.8	0.10		-248.79	6.25	19.49	155.36	0.10	176	light gray	none
1425	1.3	0.10		-286.37	6.23	19.47	147.22	0.08	176	"	none
1430	1.8	0.10		-335.31	6.22	19.35	137.89	0.07	176	"	none
1435	2.3	0.10		-367.61	6.20	19.31	131.25	0.06	176	"	none
1440	2.8	0.10		-390.16	6.19	19.20	126.64	0.05	176	"	none
1446	3.4	0.10		-411.82	6.17	19.22	121.72	0.05	176	"	none
1450	3.8	0.10		-419.73	6.17	19.30	120.01	0.04	176	"	none
1455	4.3	0.10		-427.19	6.17	19.16	117.25	0.04	175	"	none
1500	5.0	0.10		-430.81	6.17	19.26	114.80	0.04	175	"	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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1502

SAMPLING DATA

WELL No: L-29-26-30	SAMPLED BY (PRINT) / AFFILIATION: Chuck Suddeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Suddeth		SAMPLING START TIME: 1412	SAMPLING END TIME: 1503
TUBING MATERIAL CODE:	PUMP OR TUBING DEPTH IN WELL (feet):	DUPLICATE: Y N	
FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N (replaced))		SAMPLE COLLECTION METHOD: Peristaltic Pump	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40 ml	Glass vial	Vendor[b]	B029301VA	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						~~Tc-99 (liquid scint)~~	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-30-12-16	SAMPLE ID: L-30-12-16	DATE: 12/7/20
TOTAL WELL LENGTH (feet) (A): 16	WATER TABLE DEPTH (feet) (B): 9.0	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5 / Steel	WELL SCREEN INTERVAL DEPTH: 12 feet to 16 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25			PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 14	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 14	PURGING START TIME: 1422	PURGING END TIME: 1517	TOTAL VOLUME PURGED (gallons): 3.5

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1422	0	0.07		60.26	6.38	17.86	303.69	5.20	203	Brown	none
1425		0.07		-33.39	6.42	18.93	260.60	0.90	230	light brown	none
1430		0.07		-204.01	6.44	18.97	217.32	0.57	223	clear	none
1435		0.07		-235.06	6.44	18.97	186.28	0.39	209	clear	none
1440		0.07		-235.06	6.44	18.95	165.13	0.34	206	clear	none
1446		0.07		-241.60	6.45	19.07	148.61	0.29	204	clear	none
1450		0.07		-253.29	6.45	19.03	140.92	0.23	203	clear	none
1455		0.07		-255.60	6.44	19.02	138.43	0.23	208	clear	none
1500		0.07		-265.85	6.44	19.02	131.99	0.19	211	clear	none
1505		0.07		-281.96	6.44	18.99	128.89	0.15	214	clear	none
1510		0.07		-287.86	6.44	19.03	127.20	0.14	213	clear	none
1515	3.5	0.07		-291.80	6.44	18.93	125.55	0.12	217	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: L-30-12-16	SAMPLED BY (PRINT) / AFFILIATION: Chuck Suddeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Suddeth		SAMPLING START TIME: 1422	SAMPLING END TIME: 1517
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 14		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)		SAMPLE COLLECTION METHOD: Peristaltic Pump

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. **STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:**
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40 ml	Glass vial	Vendor[b]	B029301VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-30-22-26	SAMPLE ID: L-30-22-26	DATE: 12/7/20
TOTAL WELL LENGTH (feet) (A): 26	WATER TABLE DEPTH (feet) (B): 9.0	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 22 feet to 26 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 24	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 24	PURGING START TIME: 1557	PURGING END TIME: 1645	TOTAL VOLUME PURGED (gallons): 5.0

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1557	0	0.10		14.74	6.44	16.20	226.20	8.91	213	gray	none
1600	0.3	0.10		-150.43	6.51	17.93	236.38	0.72	213	light gray	none
1605	0.8	0.10		-204.47	6.50	18.10	219.24	0.30	218	clear	none
1610	1.3	0.10		-219.97	6.48	18.16	206.07	0.23	207	clear	none
1611	1.4	0.10		-227.61	6.48	18.16	199.12	0.20	207	clear	none
1615	1.8	0.10		-258.85	6.48	18.30	195.96	0.13	205	clear	none
1620	2.3	0.10		-54.57	6.48	17.55	186.88	2.18	205	clear	Tubing disconnected & flushed pump & reattached
1625	2.8	0.10		-254.26	6.47	18.18	192.92	0.11	206	clear	none
1630	3.3	0.10		-253.94	6.47	18.16	190.70	0.08	209	clear	none
1635	3.8	0.10		-249.26	6.48	18.08	188.40	0.06	209	clear	none
1640	4.3	0.10		-247.79	6.48	18.06	185.13	0.05	211	clear	none
1645	5.0	0.10		-238.72	6.48	18.11	184.90	0.04	209	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: L-30-22-26	SAMPLED BY (PRINT) / AFFILIATION: Chuck Suddeth		
SAMPLER(S) SIGNATURE(S): Charles K Suddeth		SAMPLING START TIME: 1557	SAMPLING END TIME: 1645
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 24		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y ~~N~~ (replaced)		SAMPLE COLLECTION METHOD: Peristaltic Pump

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40 50 ml	Glass vial	Vendor[b]	B029301 VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

29

WELL NO: L-30-29-34	SAMPLE ID: L-30-~~29~~-34	DATE: 12/9/20
TOTAL WELL LENGTH (feet) (A): 35	WATER TABLE DEPTH (feet) (B): 6.11 TOC	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 1.0/PVC	WELL SCREEN INTERVAL DEPTH: 29 feet to 34 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 31	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 31	PURGING START TIME: 1652	PURGING END TIME: 1726	TOTAL VOLUME PURGED (gallons): 3.5

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1652	0	0.11		558.01	7.36	15.13	267.76	9.41	361	gray	none
1655	0.33	0.11		-416.18	7.08	17.89	312.15	1.91	4,643	gray	none
1703	1.21	0.11		-54.84	7.06	15.49	328.52	7.77	408	gray	none
1708	1.76	0.11		-497.72	7.05	17.23	233.08	0.18	2,585	gray	none
1711	2.09	0.11		-466.19	7.07	17.46	224.85	0.18	1,349	gray	none
1715	2.53	0.11		-443.73	7.08	17.38	221.72	0.19	941	gray	none
1720	3.08	0.11		-462.38	7.10	17.34	216.39	0.16	617	light gray	none
1725	3.63	0.11		-378.07	7.10	17.22	212.21	0.15	414	" "	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

ELL No: L-30-29-34	SAMPLED BY (PRINT) / AFFILIATION: Chuck Suddeth / AECOM	
SAMPLER(S) SIGNATURE(S): Charles K Suddeth	SAMPLING START TIME: 1652	SAMPLING END TIME: 1726
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 31	DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N)(replaced)	SAMPLE COLLECTION METHOD: Peristaltic Pump	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. **STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:**
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40 ml	Glass vial	Vendor[b]	B029301VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-31-13-17	SAMPLE ID: L-31-13-17	DATE: 12/3/20
TOTAL WELL LENGTH (feet) (A): 17	WATER TABLE DEPTH (feet) (B): 10	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 13 feet to 17 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15	PURGING START TIME: 1321	PURGING END TIME: 1357	TOTAL VOLUME PURGED (gallons): 2.5

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1321	0	0.07		296	6.51	18.15	200.68	2.87	568	dark gray	none
1325	0.28	0.07		-103.33	6.51	18.85	210.31	0.25	3,222	" "	none
1330	0.63	0.07		-114.40	6.44	19.11	209.36	0.32	1,871	light gray	none
1335	0.98	0.07		-112.46	6.43	19.07	208.75	0.36	749	clear	none
1340	1.33	0.07		-114.20	6.42	19.18	208.40	0.28	536 ~~379~~	clear	none
1345	1.68	0.07		-115.54	6.41	19.21	208.32	0.21	373	clear	none
1350	2.03	0.07		-115.97	6.42	19.16	208.11	0.19	307	clear	none
1355	2.5	0.07		-121.04	6.41	19.21	208.07	0.13	205	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: L-31-13-17	SAMPLED BY (PRINT) / AFFILIATION: Chuck Suddeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Suddeth		SAMPLING START TIME: 1321	SAMPLING END TIME: 1357
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 15	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)	SAMPLE COLLECTION METHOD: Peristaltic Pump	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40~~50~~ ml	Glass vial	Vendor[b]	B029301VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-31-22-26	SAMPLE ID: L-31-22-26	DATE: 12/3/20
TOTAL WELL LENGTH (feet) (A): 26	WATER TABLE DEPTH (feet) (B): 10	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 22 feet to 26 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 24	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 24	PURGING START TIME: 1506	PURGING END TIME: 1552	TOTAL VOLUME PURGED (gallons): 4.0

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1506	0			-156.65	6.66	17.34	183.03	0.03	4,304	gray	
1510				-167.68	6.59	16.66	195.80	0.12	3,189	gray	
1515				-213.33	6.42	17.62	181.66	0.12	2,239	gray	
1520				-205.85	6.35	17.44	172.81	0.09	1,874	light Gray	
1525				-192.72	6.31	17.49	163.16	0.09	638	clear	
1530				-177.81	6.27	17.73	160.17	0.11	308	clear	
1535				-168.14	6.27	17.51	158.11	0.11	232	clear	
1540				-160.73	6.27	17.53	157.07	0.16	176	clear	
1545				-156.47	6.26	17.68	155.96	0.18	160	clear	
1550				-149.84	6.26	17.48	155.02	0.09	130	clear	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: L-31-22-26	SAMPLED BY (PRINT) / AFFILIATION: Chuck Suddeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Suddeth		SAMPLING START TIME: 1506	SAMPLING END TIME: 1552
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 24	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	SAMPLE COLLECTION METHOD: Peristaltic Pump	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40 ml	Glass vial	Vendor[b]	B029301 VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-31-30-34	SAMPLE ID: L-31-30-34	DATE: 12/4/20
TOTAL WELL LENGTH (feet) (A): 34	WATER TABLE DEPTH (feet) (B): 10	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 30 feet to 34 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 32	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 32	PURGING START TIME: 0844	PURGING END TIME: 0932	TOTAL VOLUME PURGED (gallons): 4.0

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0844	0	0.09		48.70	6.94	11.03	227.11	10.07	898	gray	None
0850	0.54	0.09		-28.99	6.28	16.28	120.59	0.35	5,427	light gray	None
0855	0.99	0.09		-56.51	6.24	17.36	116.68	0.11	595	light gray	None
0900	1.44	0.09		-74.20	6.32	17.41	112.72	0.13	129	clear	None
0905	1.89	0.09		-85.43	6.34	17.33	109.55	0.12	126	clear	None
0910	2.34	0.09		-92.69	6.31	17.53	113.26	0.09	126	clear	None
0915	2.79	0.09		-99.99	6.32	17.56	111.93	0.09	127	clear	None
0920											
0925	3.69	0.09		-111.66	6.33	17.64	150.87	0.08	131	clear	None
0930	4.14	0.09		-117.57	6.33	17.62	112.21	0.07	133	clear	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: L-31-30-34	SAMPLED BY (PRINT) / AFFILIATION: Chuck Suddeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Suddeth		SAMPLING START TIME: 0844	SAMPLING END TIME: 0932
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 32	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)	SAMPLE COLLECTION METHOD: Peristaltic Pump	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40~~50~~ ml	Glass vial	Vendor[b]	B029301 VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-32-8-12	SAMPLE ID: L-32-8-12	DATE: 12/2/20
TOTAL WELL LENGTH (feet) (A): ~~20~~ 12	WATER TABLE DEPTH (feet) (B): 9.0	LENGTH OF WATER COLUMN (feet) (A-B): 3
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 8 feet to 12 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 12	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 12	PURGING START TIME: 1434	PURGING END TIME: 1508	TOTAL VOLUME PURGED (gallons): 3.25

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1434	0	0.10		77.65	6.63	15.03	187.99	7.47	4,450	brown	none
1440	0.6	0.10		28.71	5.85	19.13	110.94	0.22	623	clear	none
1445	1.1	0.10		27.59	5.75	19.16	100.40	0.15	65.9	clear	none
1450	1.6	0.10		29.88	5.71	19.30	96.67	0.15	178	clear	none
1458	2.4	0.10		34.29	5.67	19.21	93.86	0.12	37.2	clear	none
1505	3.25	0.10		35.75	5.62	19.15	92.09	0.10	34.6	clear	none
~~1508~~ 1508 Collect Sample											

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

BP

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
L-32-8-12	Chuck Suddeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Suddeth		SAMPLING START TIME: 1434	SAMPLING END TIME: 1508
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 12		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)		SAMPLE COLLECTION METHOD: Peristaltic Pump

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40~~50~~ ml	Glass vial	Vendor[b]	B029301VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-32-19-23	SAMPLE ID: L-32-19-23	DATE: 12/2/20
TOTAL WELL LENGTH (feet) (A): 23	WATER TABLE DEPTH (feet) (B): 6	LENGTH OF WATER COLUMN (feet) (A-B): 17
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 19 feet to 23 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 21	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 21	PURGING START TIME: 1626	PURGING END TIME: 1658	TOTAL VOLUME PURGED (gallons):

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1626	0	0.10		77.13	6.36	12.97	223.60	6.39	6464	gray	none
1630	0.4	0.10		-12.90	6.26	17.53	178.53	0.19	5,338	gray	none
1635	0.9	0.10		-51.63	6.23	17.97	170.70	0.09	3,645	light gray	none
1640	1.4	0.10		-69.87	6.21	17.98	167.28	0.06	2,738	light gray	none
1645	1.9	0.10		-79.24	6.21	18.00	166.89	0.05	2,844	light gray	none
1650	2.4	0.10		-83.76	6.19	18.05	165.68	0.04	2,681	light gray	none
1655	2.9	0.10		-87.09	6.19	18.08	164.23	0.03	2,265	light gray	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. *** Procedure #** ROP-06-007

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
L-32-19-23	Chuck Suddeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Suddeth		SAMPLING START TIME: 1626	SAMPLING END TIME: 1658
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 21	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced))	SAMPLE COLLECTION METHOD: Peristaltic Pump	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40~~50~~ ml	Glass vial	Vendor[b]	B029301VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-32-31-35	SAMPLE ID: L-32-31-35	DATE: 12/7/20
TOTAL WELL LENGTH (feet) (A): 35	WATER TABLE DEPTH (feet) (B): 6	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 31 feet to 35 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): ~~3/8"SD~~ 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 33	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 33	PURGING START TIME: 1008	PURGING END TIME: 1101	TOTAL VOLUME PURGED (gallons): 4.0

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1008	0	0.08		119.59	5.81	13.20	243.46	6.54	1,880	gray	none
1014	0.48	0.08		-114.66	6.38	17.46	213.96	0.28	1,931	gray	none
1020	0.96	0.08		-144.60	6.34	17.49	203.58	0.18	1,890	gray	none
1025	1.36	0.08		-165.55	6.30	17.36	196.49	0.13	1,368	light gray	none
1030	1.76	0.08		-194.10	6.28	17.69	192.17	0.10	1,132	clear	none
1036	2.24	0.08		-240.42	6.27	17.87	189.59	0.07	899	clear	none
1040	2.56	0.08		-258.18	6.27	17.82	187.98	0.06	796	clear	none
1045	2.96	0.08		-273.47	6.27	17.80	189.77	0.06	1,072	clear	none
1050	3.36	0.08		-286.44	6.27	17.74	187.82	0.05	925	clear	none
1055	3.76	0.08		-293.89	6.26	17.81	186.22	0.05	715	clear	none
1100	4.0	0.08		-301.12	6.26	17.94	185.93	0.04	844	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: L-32-31-35	SAMPLED BY (PRINT) / AFFILIATION: Chuck Sudduth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Sudduth		SAMPLING START TIME: 1008	SAMPLING END TIME: 1101
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 33	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced))	SAMPLE COLLECTION METHOD: Peristaltic Pump	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. **STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:**
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40~~50~~ ml	Glass vial	Vendor[b]	B029301VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

Retain form in area for 1 year, in Records Room - 3 years and offsite - 57 years.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-33-13-17	SAMPLE ID: L-33-13-17	DATE: 12/1/20
TOTAL WELL LENGTH (feet) (A): 17	WATER TABLE DEPTH (feet) (B): 9.0	LENGTH OF WATER COLUMN (feet) (A-B): 8
CASING DIAMATER / MATL (inches): 0.5 / Steel	WELL SCREEN INTERVAL DEPTH: 13 feet to 17 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15	PURGING START TIME: 1500	PURGING END TIME: ~~1540~~ 1545 / TOTAL VOLUME PURGED (gallons): 4.0

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1500	0.0	0.1		-20.91	5.88	16.91	138.069	1.61	4,899	brown	None
1506	0.6	0.1		-21.81	5.90	15.22	147.97	1.66	5,944	brown	None
1510	1.0	0.1		-9.45	5.74	18.64	127.05	1.08	1,303	clear	None
1515	1.5	0.1		4.08	5.70	19.04	125.48	0.80	1,180	clear	None
1520	2.0	0.1		9.20	5.69	18.45	125.21	0.27	1,075	clear	None
1525	2.5	0.1		12.20	5.69	18.15	124.94	0.18	1,128	clear	None
1530	3.0	0.1		13.64	5.68	18.29	124.36	0.18	903	clear	None
1535	3.5	0.1		15.88	5.67	18.98	124.00	0.14	712	clear	None
1540	4.0	0.1		15.78	5.66	19.18	123.92	0.17	709	clear	None
1545	Collect	Sample									

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: L-33-13-17	SAMPLED BY (PRINT) / AFFILIATION: Chuck Suddeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Suddeth		SAMPLING START TIME: 1500	SAMPLING END TIME: 1545
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 15 bgs		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y N TUBING Y (N replaced)			SAMPLE COLLECTION METHOD: Peristaltic Pump

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40~~50~~ ml	Glass vial	Vendor[b]	B029301 VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

Retain form in area for 1 year, in Records Room - 3 years and offsite - 57 years.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-33-24-28	SAMPLE ID: L-33-24-28	DATE: 12/2/20
TOTAL WELL LENGTH (feet) (A): 28	WATER TABLE DEPTH (feet) (B): 9.0	LENGTH OF WATER COLUMN (feet) (A-B): 19
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 24 feet to 28 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 26	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 26	PURGING START TIME: 1051	PURGING END TIME: 1140	TOTAL VOLUME PURGED (gallons): 3.5

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1051	0	0.08		122.07	7.39	9.01	262.69	12.28	3,035	brown	None
1055	0.32	0.08		-65.63	6.56	14.16	226.75	0.64	6,778	tan	None
1100	0.72	0.08		-102.76	6.34	14.67	190.32	0.62	1,766	tan	None
1105	1.12	0.08		-86.06	6.26	15.27	178.38	0.43	820	clear	None
1110	1.52	0.08		-76.36	6.22	15.62	173.00	0.35	872	clear	None
1115	1.92	0.08		-75.95	6.20	15.85	169.52	0.29	577	clear	None
1120	2.32	0.08		-78.22	6.18	16.57	167.34	0.25	283	clear	None
1125	2.72	0.08		-83.78	6.17	16.74	166.33	0.22	199	clear	None
1130	3.12	0.08		-88.14	6.16	16.65	164.78	0.19	187	clear	None
1135	3.50	0.08		-91.56	6.16	16.70	163.80	0.17	92.3	clear	None
1140	Collect	Sample									

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: L-33-24-28	SAMPLED BY (PRINT) / AFFILIATION: Chuck Sudduth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Sudduth		SAMPLING START TIME: 1051	SAMPLING END TIME: 1140
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 26 bgs	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y ~~N~~ (replaced)	SAMPLE COLLECTION METHOD: Peristaltic Pump	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	~~40~~ 50 ml	Glass vial	Vendor[b]	B029301VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-34	SAMPLE ID: L-34-14-18	DATE: 12/4/20
TOTAL WELL LENGTH (feet) (A): 18	WATER TABLE DEPTH (feet) (B): 8	LENGTH OF WATER COLUMN (feet) (A-B): 10
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 14 feet to 18 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"			PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 17.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 17.5	PURGING START TIME: 12:09	PURGING END TIME: 12:29	TOTAL VOLUME PURGED (gallons): 2.0

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
12:09	0	0.1	8	6.69	6.19	20.65	141.3	4.8090	3697.6	Orange brown	
12:14	0.5	0.1	8	-91.0	5.95	19.85	121.6	0.74	3451.9	Lt Orange brown	
12:19	1.0	0.1	8	-107.1	5.89	19.34	115.4	0.71	2516.4	"	"
12:24	1.5	0.1	8	-96.7	5.85	19.37	112.3	0.74	1674.4	Opaque	
12:29	2.0	0.1	8	-90.1	5.84	19.37	110.4	0.77	1218.9	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: L-34-14-18	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 12:30	SAMPLING END TIME: 12:35
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 17.5	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced)		SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 496336	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A	1406	Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-34	SAMPLE ID: L-34-26-30	DATE: 12/14/20
TOTAL WELL LENGTH (feet) (A): 30	WATER TABLE DEPTH (feet) (B): 8	LENGTH OF WATER COLUMN (feet) (A-B): 22
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 26 feet to 30 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 29.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 29.5	PURGING START TIME:	PURGING END TIME:	TOTAL VOLUME PURGED (gallons):

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1305	0	0.05	8	-148.6	6.28	21.3	178.4	6.01	540.4	Gray brown	
1310	0.25	0.05	8	-152.2	6.20	19.4	182.0	0.48	4955.4	Lt. gray	brown
13:15	0.5	0.05	8	-147.9	6.19	19.1	178.4	0.54	4990.1	"	"
13:20	0.75	0.05	8	-144.0	6.29	18.9	168.3	0.57	4192.0	"	"
13:25	1.0	0.05	8	-144.7	6.31	18.7	166.7	0.45	3183.8	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

ELL No: L-34-26-30	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 12:26	SAMPLING END TIME: 12:28
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 29.5	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 496336	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	1406	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-35	SAMPLE ID: L-35-11-15	DATE: 12/4/20
TOTAL WELL LENGTH (feet) (A): 8	WATER TABLE DEPTH (feet) (B): 15	LENGTH OF WATER COLUMN (feet) (A-B): 7
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 11 feet to 15 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING START TIME: 0821	PURGING END TIME: 0841 / TOTAL VOLUME PURGED (gallons): 2

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0821	0	0.10	8	39.3	6.06	14.5	135.5	5.26	2948.8	orange	brown
0826	0.5	0.10	8	67.7	5.57	16.8	115.2	0.77	2169.4	Lt brown	
0831	1	0.10	8	58.4	5.57	17.0	111.5	0.73	1730.7	"	"
0836	1.5	0.10	8	49.6	~~5.57~~	~~17.0~~	111.0	0.74	1688.1	"	"
0841	2	0.10	8	44.8	5.59	17.1	110.2	0.74	1205.4	"	"
					5.58	17.3					

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

ELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
L-35-11-15	Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 0843	SAMPLING END TIME: 0855
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 14.5		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)		SAMPLE COLLECTION METHOD: Low Flow

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 496336	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
					—	Fluoride[a]	
Y	1	250 ml	Plastic	N/A	—	Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	1496	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
					413020000	Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-35	SAMPLE ID: L-35-21-25	DATE: 12/14/20
TOTAL WELL LENGTH (feet) (A): 25	WATER TABLE DEPTH (feet) (B): 8	LENGTH OF WATER COLUMN (feet) (A-B): 17
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 21 feet to 25 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 24.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 24.5	PURGING START TIME: 0911	PURGING END TIME: 0937	TOTAL VOLUME PURGED (gallons): 1.25

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0911	0	0.05	8	-63.3	6.26	13.8	186.4	9.08	340.6	Gray brown	
0917	0.25	0.05	8	-132.5	6.45	16.4	163.0	0.39	1902.3	"	"
0922	0.5	0.05	8	-157.3	6.50	16.3	143.0	0.37	1560.0	Yellow brown	
0927	0.75	0.05	8	-189.7	6.53	16.4	123.7	0.44	1707.2		
0932	1.0	0.05	8	-235.7	6.54	16.4	117.7	0.56	142.8	Lt. Yellow brown	
0937	1.25	0.05	8	-367.1	6.55	16.4	115.5	0.63	5.2	Clear	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

ELL No: L-35-21-25	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 0939	SAMPLING END TIME: 0951
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 24.5		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)		SAMPLE COLLECTION METHOD: Low Flow

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: AquaTroll 600	MAKE:	
MODEL: In-Situ	MODEL:	
SERIAL NO: 496336	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	1496	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
					431020000	Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-35	SAMPLE ID: L-35-30-34	DATE: 12/4/20
TOTAL WELL LENGTH (feet) (A): 34	WATER TABLE DEPTH (feet) (B): 8	LENGTH OF WATER COLUMN (feet) (A-B): 26
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 30 feet to 34 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 33.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 33.5	PURGING START TIME: 1011	PURGING END TIME: 1047 / TOTAL VOLUME PURGED (gallons): 1.75

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1011	0	0.05	8	-44.5	6.41	15.06	185.7	9.30	762.2	Yellow brown	
1016	0.25	0.05	8	-212.6	6.63	16.51	196.7	0.41	660.6	"	"
1021	0.5	0.05	8	-412.5	6.67	16.32	189.7	0.68	974.2	"	"
1026	0.75	0.05	8	-476.5	6.69	16.35	167.8	1.05	167.8	"	"
1031	1.0	0.05	8	-504.7	6.70	16.39	156.0	2.58	744.3	Clear	
1036	1.25	0.05	8	-522.4	6.72	16.36	153.4	3.19	162.8	"	"
1041	1.5	0.05	8	-528.3	6.73	16.57	170.7	2.98	149.4	"	"
1047	1.75	0.05	8	-541.8	6.74	16.72	170.0	2.94	78.6	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: L-35-30-34	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 10:48	SAMPLING END TIME: 11:14
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 34.5	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: Aqua Troll 600	MODEL:	
SERIAL NO: 496336	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	1496	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
					431020000	Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-36	SAMPLE ID: L-36-18-22	DATE: 12/3/20
TOTAL WELL LENGTH (feet) (A): 22	WATER TABLE DEPTH (feet) (B): 9	LENGTH OF WATER COLUMN (feet) (A-B): 13
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 18 feet to 22 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

TUBING DIAMETER (inches): 1/4"			PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 21	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 21	PURGING START TIME: 10:08	PURGING END TIME: 10:39	TOTAL VOLUME PURGED (gallons): 1.5

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1008	0	0.05	9	73.5	6.31	8.89	161.5	8.56	3804.5	Brown	
1013	0.25	0.05	9	-55.6	6.27	15.00	173.0	1.07	1491.1	Lt brown	
1018	0.5	0.05	9	-47.1	6.32	15.27	166.6	1.10	2116.3	"	"
1023	0.75	0.05	9	24.3	6.20	14.73	139.2	5.23	2674.9	"	"
1029	1.0	0.05	9	43.0	6.25	14.05	134.3	6.93	551.5	Clear	
10:34	1.25	0.05	9	44.5	6.25	14.15	133.6	7.21	35.6	Clear	
1039	1.5	0.05	9	45.52	6.27	14.17	133.4	7.29	3.14	Clear	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

ELL No: L-36-18-32	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 10:45	SAMPLING END TIME: 12:20
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 21		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)		SAMPLE COLLECTION METHOD: Low Flow

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	MS/MSD
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 496336	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
					—	Fluoride[a]	
Y	1	250 ml	Plastic	N/A	—	Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	1497	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3	431020000		
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-36	SAMPLE ID: L-36-27.5-31.5	DATE: 12/3/20
TOTAL WELL LENGTH (feet) (A): 9	WATER TABLE DEPTH (feet) (B): 31.5	LENGTH OF WATER COLUMN (feet) (A-B): 22.5
CASING DIAMATER / MATL (inches): 1"	WELL SCREEN INTERVAL DEPTH: 27.5 feet to 31.5 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 30	PURGING START TIME:	PURGING END TIME:	TOTAL VOLUME PURGED (gallons):

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
12:39	0	0.05	9	-43.34	6.53	14.0	211.9	7.33	1724.2	Lt brown	
12:44	1	0.05	9	-105.27	6.56	16.2	214.9	0.21	1934.0	"	"
PURGED	DRY										

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

ELL No: L-36-27.5-31.5	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S): Jer 98		SAMPLING START TIME: 13:00	SAMPLING END TIME: 15:20
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 30	DUPLICATE: (Y) N	
FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N replaced)		SAMPLE COLLECTION METHOD: Low flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	Purge dry, Runs dry after ± 0.8L, Repeat process. Recharge time = 15 minutes.
MODEL: Aqua Troll 600	MODEL:	
SERIAL NO: 496336	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: ± 1.0 units **Temperature**: ± 3% **Specific Conductance**: ± 3% **Dissolved Oxygen**: optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **ORP**: ± 10 mV
Turbidity: all readings < 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
					—	Fluoride[a]	
Y	1	250 ml	Plastic	N/A	—	Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	1497	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3	431020000		
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

Retain form in area for 1 year, in Records Room - 3 years and offsite - 57 years.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-36	SAMPLE ID: L-36-37-41	DATE: 12/3/20
TOTAL WELL LENGTH (feet) (A): 41	WATER TABLE DEPTH (feet) (B): 9	LENGTH OF WATER COLUMN (feet) (A-B): 32
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 37 feet to 41 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 40	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 40	PURGING START TIME: 1549	PURGING END TIME: 1614	TOTAL VOLUME PURGED (gallons): 2.5

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1549	0	0.10	9	-53.0	6.55	15.0	213.8	5.83	340.4	Brownish gray	
1554	0.5	0.10	9	-195.1	6.66	16.4	183.0	0.59	4186.6	Lt. gray	
1559	1	0.10	9	-262.6	6.74	16.8	173.8	0.63	2333.2	Opaque	
1604	1.5	0.10	9	-316.3	6.79	16.9	176.5	0.68	1559.6	"	"
16:09	2	0.10	9	-410.0	6.82	16.9	178.5	0.67	1321.6	"	"
16:44	2.5	0.10	9	-459.0	6.84	16.9	179.6	0.68	1278.7	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

ELL No: L-36-37-41	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 16:15	SAMPLING END TIME: 16:30
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 40	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	SAMPLE COLLECTION METHOD: Low flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 496336	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
					—	Fluoride[a]	
Y	1	250 ml	Plastic	N/A	—	Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	1497	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
					43102000	Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-37	SAMPLE ID: L-37-17-21	DATE: 12/8/20
TOTAL WELL LENGTH (feet) (A): 21	WATER TABLE DEPTH (feet) (B): 5	LENGTH OF WATER COLUMN (feet) (A-B): 16
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 17 feet to 21 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5	PURGING START TIME: 1607	PURGING END TIME: 1627	TOTAL VOLUME PURGED (gallons): 2

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1607	0	0.1	5	-13.7	6.08	15.5	231.7	5.06	3909.1	Gray	
1612	0.5	0.1	5	-41.7	6.12	17.3	228.2	0.20	2337.3		
1617	1.0	0.1	5	-44.6	6.12	17.3	225.9	0.15	1358.4	Lt gray	
1622	1.5	0.1	5	-38.6	6.11	17.2	224.0	0.18	762.9		
1627	2.0	0.1	5	-35.8	6.13	17.1	223.6	0.22	640.3		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016
PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
L-37-17-21	Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S): Jeremy Grant		SAMPLING START TIME: 1628	SAMPLING END TIME: 1638
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 20.5		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)		SAMPLE COLLECTION METHOD: Low Flow

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: Aqua Troll 600	MODEL:	
SERIAL NO: 496336	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	1496	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
					43102000	Tc-99 (liquid scint) (Total + dissolved)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-37	SAMPLE ID: L-37-26-30	DATE: 12/5/20
TOTAL WELL LENGTH (feet) (A): 30	WATER TABLE DEPTH (feet) (B): 5	LENGTH OF WATER COLUMN (feet) (A-B): 25
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 26 feet to 30 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 29.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 29.5	PURGING START TIME: 1654	PURGING END TIME: 1714	TOTAL VOLUME PURGED (gallons): 2

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1654	0	0.1	5	-8.28	6.19	14.4	228.0	9.06	713.9	Gray	
1659	0.5	0.1	5	-21.5	5.99	17.0	176.1	0.40	4313.7	"	
1704	1	0.1	5	-37.6	6.03	17.1	176.1	0.27	3565.1	"	
1709	1.5	0.1	5	-54.0	6.17	17.0	176.5	0.16	2238.2	LE Gray	
1714	2.0	0.1	5	-60.4	6.22	17.0	176.7	0.36	2146.2	"	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: L-37-26-30	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant/AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 1715	SAMPLING END TIME: 1725
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 29.5	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 496336	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	1496	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
					431020000	Tc-99 (liquid scint) (Total + dissolved)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

Retain form in area for 1 year, in Records Room - 3 years and offsite - 57 years.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-38-17-21	SAMPLE ID: L-38-17-21	DATE: 12/8/20
TOTAL WELL LENGTH (feet) (A): 21	WATER TABLE DEPTH (feet) (B): 5	LENGTH OF WATER COLUMN (feet) (A-B): 16
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 17 feet to 21 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5	PURGING START TIME: 12:39	PURGING END TIME: 13:07	TOTAL VOLUME PURGED (gallons): 0.25

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
239 [illegible]	0	0.05	5	-52.65	6.15	16.9	393.3	2.76	2163.3	Gray	
1302	0.125	0.05	5	-92.2	6.22	16.[illegible]	3[illegible]75.4	[illegible]0.39	2536.0	Lt gray	
1307	0.25	0.05	5	-55.7	6.06	16.7	380.8	1.13	277.7	Clear gray	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

ELL No: L-38-17-21	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S): Jeremy Grant		SAMPLING START TIME: 1323	SAMPLING END TIME: 1431
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 20.5		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)		SAMPLE COLLECTION METHOD: Low Flow

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	Pumped dry < 1 Liter. Pumped dry twice then pulled sample.
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 496336	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	1496	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
					43102000	Tc-99 (liquid scint) (Total + dissolved)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-38	SAMPLE ID: L-38-20-30	DATE: 12/8/20
TOTAL WELL LENGTH (feet) (A): 30	WATER TABLE DEPTH (feet) (B): 5	LENGTH OF WATER COLUMN (feet) (A-B): 25
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 20 feet to 30 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

TUBING DIAMETER (inches): 1/4"			PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 29.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 29.5	PURGING START TIME: 1450	PURGING END TIME: 1510	TOTAL VOLUME PURGED (gallons): 2

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1450	0	0.1	5	-49.3	6.32	16.2	393.9	7.06	604.3	Gray brown	
1455	0.5	0.1	5	-40.1	6.00	17.0	314.0	0.45	2918.1	"	"
1500	1.0	0.1	5	-48.8	5.99	16.9	313.6	0.47	2543.5	"	"
1505	1.5	0.1	5	-60.6	6.13	16.8	312.3	0.48	2022.0	"	"
1510	2.0	0.1	5	-66.5	6.30	16.8	313.3	0.49	1960.4	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016
PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: L-38-36-30	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant/AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 15:11	SAMPLING END TIME: 1520
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 29.5	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	SAMPLE COLLECTION METHOD: Low flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 496336	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	1496	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
					43102000	Tc-99 (liquid scint) (Total + dissolved)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-39	SAMPLE ID: L-39-31-35	DATE: 11/16/20
TOTAL WELL LENGTH (feet) (A): 35	WATER TABLE DEPTH (feet) (B): ~ 9'	LENGTH OF WATER COLUMN (feet) (A-B): ≈ 26
CASING DIAMATER / MATL (inches): 1"	WELL SCREEN INTERVAL DEPTH: 31 feet to 35 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches):		PURGE PUMP TYPE OR BAILER:

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING START TIME: 14:35	PURGING END TIME: 15:10	TOTAL VOLUME PURGED (gallons): 1.5

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
14:37				211.34	6.98	22.96	0.1566	8.59	0	Orange	
14:44				209.61	7.26	23.23	0.1658	8.11	0	Lt Or	
14:49				212.14	7.13	22.86	0.1649	8.08	0	Lt Or	
14:54				214.20	7.03	22.48	0.1362	8.11	0	clear	
14:59				215.41	6.99	22.23	0.1451	8.13	0	clear	
15:05				216.45	6.98	22.13	0.0900	8.12	0	clear	
15:10				217.49	6.93	22.02	0.0893	8.14	0	clear	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

ELL No: L-39	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S): [signature]		SAMPLING START TIME:	SAMPLING END TIME:
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 33	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	SAMPLE COLLECTION METHOD: PP	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
2 500mL plastic w/ nitric acid Dissolved sample field filtered w/ 0.45 micron filter						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
					431020000	Tc-99 (liquid scint) Total + dissolved	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

Retain form in area for 1 year, in Records Room - 3 years and offsite - 57 years.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-B40	SAMPLE ID: L-40-33-37	DATE: 11/17/20
TOTAL WELL LENGTH (feet) (A): 37	WATER TABLE DEPTH (feet) (B): ≈13'	LENGTH OF WATER COLUMN (feet) (A-B): 24'
CASING DIAMATER / MATL (inches): 1"/SS	WELL SCREEN INTERVAL DEPTH: 33 feet to 37 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER: Peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING START TIME:	PURGING END TIME:	TOTAL VOLUME PURGED (gallons):

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
13:50	0		13	-59.88	6.68	24.06	103.76	1.89	5986.9	Orange	
13:55	0.05	0.1	13	-311.97	6.44	23.17	108.94	0.89	5540.01	Lt. Orange	
14:00	1.0	0.1	13	-269.63	6.25	22.88	105.63	1.32	3578.60	"	
14:05	1.5	0.1	13	-239.88	6.13	22.77	100.49	1.61	2104.68	"	"
14:10	2.0	0.1	13	-225.81	6.09	22.60	97.69	1.73	1062.05	"	"
14:15	2.5	0.1	13	-212.36	6.07	22.55	95.11	1.88	558.06	Clear	
14:20	3.0	0.1	13	-202.81	6.06	22.44	92.88	1.97	136.07	Clear	
Total purge ≈ 3 gallons											
Sample collected @ 14:24											

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: L-40	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S): Jeremy Grant		SAMPLING START TIME: 14:24	SAMPLING END TIME: 14:45
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 35	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced)		SAMPLE COLLECTION METHOD:	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. **STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:**
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b] HCl	B029301VB	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
2 500 mL Plastic HNO_3 Dissolved and total Tc-99 ↑ Field filtered w/ 0.45 micron filter						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
					43102000	Tc-99 (liquid scint) Total + dissolved	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-41	SAMPLE ID: L-41-31-35	DATE: 12/7/20
TOTAL WELL LENGTH (feet) (A): 35	WATER TABLE DEPTH (feet) (B): 12	LENGTH OF WATER COLUMN (feet) (A-B): 23
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 31 feet to 35 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER:

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 34.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 34.5	PURGING START TIME: 1349	PURGING END TIME: 1425	TOTAL VOLUME PURGED (gallons): 3.5

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1349	0	0.1	12	2.3	6.10	22.1	83.0	6.24	3684.8	Lt gray	
1354	0.5	0.1	12	-74.7	6.15	23.3	71.1	1.37	4947.8	"	"
1359	1	0.1	12	-61.3	6.17	22.8	68.6	1.84	4507.8	"	"
1404	1.5	0.1	12	-54.0	6.17	22.8	64.3	2.28	3480.6	"	"
1410	2	0.1	12	-43.8	6.15	22.5	62.9	2.55	3011.5	"	"
1415	2.5	0.1	12	-74.0	6.19	22.2	60.4	2.67	1748.2	"	"
1420	3	0.1	12	~~-82.0~~	6.20	22.0	62.1	2.75	1267.2	"	"
1425	3.5	0.1	12	-47.5	6.20	21.8	62.0	2.68	1160.9	"	"
				-44.7							

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: L-41-31-35	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant/AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 14:26	SAMPLING END TIME: 14:36
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 34.5	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	SAMPLE COLLECTION METHOD: Low flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: Aqua Troll 600	MODEL:	
SERIAL NO: 496336	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: ± 1.0 units **Temperature**: ± 3% **Specific Conductance**: ± 3% **Dissolved Oxygen**: optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **ORP**: ± 10 mV
   Turbidity: all readings < 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	1496	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
					431020000	Tc-99 (liquid scint) (Total + dissolved)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

Retain form in area for 1 year, in Records Room - 3 years and offsite - 57 years.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-42	SAMPLE ID: L-42-24-28	DATE: 11/24/20
TOTAL WELL LENGTH (feet) (A): 28	WATER TABLE DEPTH (feet) (B): 18	LENGTH OF WATER COLUMN (feet) (A-B): 10
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 24 feet to 28 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

TUBING DIAMETER (inches): 1/4"			PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 27	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 27	PURGING START TIME: 11:07	PURGING END TIME: 11:43	TOTAL VOLUME PURGED (gallons): 3.5

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
11:07	0	0.1	18	-245.1	6.33	17.3	344.7	3.21	3946.7	Gray	
11:12	0.5	0.1	18	-439.0	6.53	18.6	342.2	0.13	3268.6	Lt. brown	
11:18	1.0	0.1	18	-369.6	6.47	18.2	322.0	0.14	3812.0	~~Clear~~ "	"
11:23	1.5	0.1	18	-36.2	6.36	17.5	294.4	3.88	279.5	clear	
11:28	2.0	0.1	18	-60.1	6.32	17.5	295.5	2.92	523.4	" "	
11:33	2.5	0.1	18	-66.1	6.32	17.4	290.1	2.42	141.4	" "	
11:38	3.0	0.1	18	-66.1	6.32	17.3	288.5	2.35	147.1	" "	
11:43	3.5	0.1	18	-67.1	6.30	17.6	288.8	2.24	129.2	" "	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

ELL No: L-42 (24-28')	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant/AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 11:45	SAMPLING END TIME: 12:00
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 27		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)		SAMPLE COLLECTION METHOD: Low flow

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 496336	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
N	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3	43102000		
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint) (Total + dissolved)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

Dissolved Tc-99 field filtered w/ a 0.45 micron filter

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Low Flow Groundwater Sample Collection Record

WELL NO: L-43	SAMPLE ID: L-43-29.5-33.5	DATE: 12/9/20
TOTAL WELL LENGTH (feet) (A): 33.5	WATER TABLE DEPTH (feet) (B): 11	LENGTH OF WATER COLUMN (feet) (A-B): 22.5
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 29.5 feet to 33.5 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"			PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 33	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 33	PURGING START TIME: 1219	PURGING END TIME:	TOTAL VOLUME PURGED (gallons): 2 1/3

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1219	0	0.06	11	-100.6	7.40	18.8	725.6	7.52	2186.9	Yellow brown	
1225	0.33	0.06	11	-82.1	7.01	20.6	467.9	0.89	4444.0	Lt Yellow brown	
1230	0.67	0.06	11	-79.0	7.00	20.2	453.5	0.82	4081.7	"	"
1235	1	0.06	11	-68.9	6.95	19.8	426.8	0.90	2745.7	"	"
1240	1.33	0.06	11	-59.8	6.90	19.9	418.5	1.16	2058.3	"	"
1245	1.67	0.06	11	-51.4	6.88	20.3	403.1	1.23	1317.5	"	"
1250	2	0.06	11	-47.1	6.87	19.9	399.3	1.25	898.2	Very lt.	Yellow
1255	2.33	0.06	11	-35.9	6.83	20.0	382.0	1.11	263.3	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: L-43	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 1256	SAMPLING END TIME: 1308
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 32.5	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced)		SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 496336	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. **STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:**
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
N	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
					4310 20000	Tc-99 (liquid scint) (Total + dissolved)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

Retain form in area for 1 year, in Records Room - 3 years and offsite - 57 years.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-44	SAMPLE ID: L-44-27-31	DATE: 12/7/20
TOTAL WELL LENGTH (feet) (A): 31	WATER TABLE DEPTH (feet) (B): 8	LENGTH OF WATER COLUMN (feet) (A-B): 23
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 27 feet to 31 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 30.5	PURGING START TIME: 10:54	PURGING END TIME:	TOTAL VOLUME PURGED (gallons): 1.5

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1054	0	0.05	8	220.35	6.60	18.29	184.9	4.08	5546.3	Lt yellow	
1059	0.25	0.05	8	-306.0	6.22	20.41	161.8	1.25	4386.6	~~clear~~ Opaque	
1105	0.5	0.05	8	-298.0	6.30	20.41	154.6	1.07	5225.6	Lt Yellow	
1110	0.75	0.05	8	-264.3	6.36	20.21	152.7	1.17	3150.5	"	"
1115	1.0	0.05	8	-231.7	6.35	20.21	148.3	1.38	4034.0		
1120	1.25	0.05	8	-191.7	6.32	20.21	145.6	1.61	3407.0		
1125	1.5	0.05	8	-178.0 5	6.33	20.08	144.9	1.73	3885.6	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: L-44	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 11:26	SAMPLING END TIME: 11:28
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet):	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	SAMPLE COLLECTION METHOD: low flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 496334	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	14[illegible]96	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

Retain form in area for 1 year, in Records Room - 3 years and offsite - 57 years.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-45-29-33	SAMPLE ID: L-45-29-33	DATE: 12/28/20
TOTAL WELL LENGTH (feet) (A): 34	WATER TABLE DEPTH (feet) (B): 11	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): ~~2~~ 0.5/steel	WELL SCREEN INTERVAL DEPTH: 29 feet to 33 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 31	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 31	PURGING START TIME: 1312	PURGING END TIME: 1354	TOTAL VOLUME PURGED (gallons): 1.5 ~~1.75~~

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1312	0	0.04		-88.27	7.09	22.03	0.0682 0.06	8.76	1,010	gray	none
1316		0.04		-25.77	6.69	21.02	0.0595 0.06	8.14	0.17 *	gray	none
1320		0.04		-12.99	6.52	20.87	0.0597 0.06	7.88	0 *	light gray	none
1325		0.04		-29.82	6.68	20.52	0.0601	7.92	0 *	light gray	none
1330		0.04		-9.79	6.64	20.25	0.0604	7.85	0 *	light gray	none
1335		0.04		-2.11	6.64	20.25	0.0604	7.78	0 *	light gray	none
1340		0.04		13.14	6.56	20.41	0.0602	7.62	0 *	light gray	none
1345		0.04		20.51	6.61	20.40	0.0602	7.65	0 *	light gray	none
1350	1.5	0.04		32.93	6.60	20.59	0.0600	7.81	0 *	light gray	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

ELL No: L-45-29-33	SAMPLED BY (PRINT) / AFFILIATION: Chuck Sudbeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Sudbeth		SAMPLING START TIME: 1312	SAMPLING END TIME: 1354
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 31	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N replaced)	SAMPLE COLLECTION METHOD: Peristaltic Pump	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40 ml	Glass vial	Vendor[b]	B029301VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-45	SAMPLE ID: L-45-11-15	DATE: 5/12/21
TOTAL WELL LENGTH (feet) (A): 15	WATER TABLE DEPTH (feet) (B): 10	LENGTH OF WATER COLUMN (feet) (A-B): 5
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 11 feet to 15 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

TUBING DIAMETER (inches): 0.25			PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 13	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 13	PURGING START TIME: 1003	PURGING END TIME:	TOTAL VOLUME PURGED (gallons):

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1003	0	0.08		127.19	5.97	28.97	55.48	4.88	4,531	tan	none
1010		0.08		92.56	5.94	21.92	62.22	2.65	2,336	tan	none
1015	1.0	0.08		82.40	5.96	21.56	60.88	2.49	2,064	light tan	none
1020		0.08		75.23	5.91	21.43	59.12	2.47	887	light tan	none
1025	2.0	0.08		94.57	5.85	21.31	57.42	2.57	315	clear	none
1030		0.08		102.06	5.83	21.15	57.04	2.55	134	clear	none
1035	3.0	0.08		103.35	5.88	21.01	57.13	2.66	62.2	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

ELL No: L-45-1115	SAMPLED BY (PRINT) / AFFILIATION: Chuck Sudduth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Sudduth		SAMPLING START TIME: 1037	SAMPLING END TIME: 1039
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 13	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: Aqua Troll 600	MODEL:	
SERIAL NO: 808878	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	B110701 VB	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-45	SAMPLE ID: L-45-20-24	DATE: 5/17/20
TOTAL WELL LENGTH (feet) (A): 24	WATER TABLE DEPTH (feet) (B): 10	LENGTH OF WATER COLUMN (feet) (A-B): 14
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 20 feet to 24 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 22	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 22	PURGING START TIME: 1127	PURGING END TIME: 1150	TOTAL VOLUME PURGED (gallons): 2.0

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1122	0	0.09		97.55	5.61	37.23	63.84	2.63	535	tan	none
1126		0.09		-26.51	5.67	25.74	85.64	0.19	6,621	tan	none
1130		0.09		-4.40	5.60	23.67	83.20	0.27	5,225	tan	none
1135	1.0	0.09		14.16	5.58	22.82	82.01	0.28	3,512	tan	none
1140		0.09		14.04	5.59	22.57	81.89	0.22	2,647	tan	none
1145		0.09		10.26	5.58	22.62	81.69	0.27	2,221	tan	none
1150	2.0	0.09		10.13	5.58	22.29	81.39	0.28	1,777	tan	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

ELL No: L-45-20-24	SAMPLED BY (PRINT) / AFFILIATION: Chuck Sudduth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Sudduth		SAMPLING START TIME: 1152	SAMPLING END TIME: 1154
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 22	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced))	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 808878	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	B110701 VB	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-46-31-35	SAMPLE ID: L-46-31-35	DATE: 12/28/20
TOTAL WELL LENGTH (feet) (A): 39	WATER TABLE DEPTH (feet) (B): 17	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 31 feet to 35 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

TUBING DIAMETER (inches): 0.25			PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 33	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 33	PURGING START TIME: 1613	PURGING END TIME: 1712	TOTAL VOLUME PURGED (gallons): 2.5

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1613	0	0.04		86.62	7.15	34.75	0.9561	6.53	1.29 *	gray	none
1616		0.04		85.53	7.70	28.93	0.8712	6.89	0.49 *	gray	none
1620		0.04		92.53	7.92	25.36	0.4426	7.30	0.24 *	gray	none
1625		0.04		83.72	7.84	23.38	0.7124	7.52	0 *	gray	none
1630		0.04		82.64	7.70	22.25	0.4332	7.70	0 *	gray	none
1635		0.04		93.17	7.62	21.52	0.3522	7.91	0 *	gray	none
1640		0.04		72.59	7.51	21.07	0.3196	7.89	0 *	gray	none
1645		0.04		70.19	7.38	20.77	0.2468	7.92	0 *	light gray	none
1650		0.04		68.02	7.25	20.49	0.2365	7.86	0 *	clear	none
1655		0.04		62.28	7.18	20.25	0.3231	7.79	0 *	clear	none
1700		0.04		59.56	7.05	20.02	0.3491	7.72	0 *	clear	none
1705		0.04		49.66	7.02	19.75	0.1349	7.74	0 *	clear	none
1710	2.5	0.04		44.61	6.99	19.46	0.1373	7.75	0 *	clear	none

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

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SAMPLING DATA

WELL No: L-46-31-35	SAMPLED BY (PRINT) / AFFILIATION: Chuck Suddeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Suddeth		SAMPLING START TIME: 1613	SAMPLING END TIME: 1712
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 33	DUPLICATE: (Y) N	
FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N (replaced))		SAMPLE COLLECTION METHOD: Peristaltic Pump	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40 ml	Glass vial	Vendor[b]	B029301VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-46	SAMPLE ID: L-46-14-18	DATE: 5/14/21
TOTAL WELL LENGTH (feet) (A): 18	WATER TABLE DEPTH (feet) (B): 12	LENGTH OF WATER COLUMN (feet) (A-B): 6
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 14 feet to 18 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 16	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 16	PURGING START TIME:	PURGING END TIME: / TOTAL VOLUME PURGED (gallons):

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1344	0	0.07		136.92	5.92	31.02	32.44	4.71	7,150	gray	none
1350		0.07		87.32	5.64	22.30	92.33	2.29	1,074	gray	none
1355		0.07		86.82	5.65	21.89	92.93	0.22	1,130	gray	none
1400	1.0	0.07		102.32	5.66	21.31	93.50	0.17	978	light gray	none
1406		0.07		114.37	5.66	21.52	93.42	0.15	746	light gray	none
1410	2.0	0.07		131.79	5.65	21.35	93.23	0.14	658	light gray	none
1415		0.07		141.09	5.65	21.30	93.00	0.13	470	clear	none
1420		0.07		163.73	5.64	20.89	93.19	0.13	448	clear	none
1425	3.0	0.07		185.25	5.63	20.88	92.92	0.13	287	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

ELL No: L-46-14-18	SAMPLED BY (PRINT) / AFFILIATION: Chuck Sudbeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Sudbeth		SAMPLING START TIME: 1427	SAMPLING END TIME: 1429
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 16	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 808878	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	B110701VB	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-46	SAMPLE ID: L-46-22-26	DATE: 5/17/21
TOTAL WELL LENGTH (feet) (A): 26	WATER TABLE DEPTH (feet) (B): 12	LENGTH OF WATER COLUMN (feet) (A-B): 14
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 22 feet to 26 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 24	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 24	PURGING START TIME: 0849	PURGING END TIME: 0920	TOTAL VOLUME PURGED (gallons): 2.0

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0849	0	0.06		5.14	7.85	20.57	1.98	6.84	5.75	tan	none
0855		0.06		-55.56	5.98	20.09	126.11	0.51	6,929	tan	none
0900		0.06		-119.36	5.89	20.06	114.23	0.44	6,693	tan	none
0906	1.0	0.06		-133.72	5.80	19.93	103.39	1.29	3,520	tan	none
0910		0.06		-81.36	5.71	19.96	97.22	0.31	1,015	light tan	none
0915		0.06		-11.29	5.67	19.94	94.60	0.25	253	clear	none
0920	2.0	0.06		25.16	5.66	19.96	92.69	0.25	48.9	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: L-46-22-26	SAMPLED BY (PRINT) / AFFILIATION: Chuck Sudbeth / AECOM		
SAMPLER(S) SIGNATURE(S): Chuck K Sudbeth		SAMPLING START TIME: 0922	SAMPLING END TIME: 0924
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 24	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 808878	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. **STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:**
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	B110701 VB	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-47-25-29	SAMPLE ID: L-47-25-29	DATE: 12/29/20 / sampled on 12/30/20
TOTAL WELL LENGTH (feet) (A): 29	WATER TABLE DEPTH (feet) (B): 12	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/steel	WELL SCREEN INTERVAL DEPTH: 25 feet to 29 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 27	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 27	PURGING START TIME: 1246	PURGING END TIME: 1255	TOTAL VOLUME PURGED (gallons): 0.36 ~~0.56~~

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
12/29/20											
1246	0	0.04		156.77	7.69	34.02	0.9585	7.25	1.08 *	gray	none
1250		0.04		48.07	8.00	26.90	0.8614	7.28	0.43 *	gray	none
1255	0.36	0.04		-12.57	8.03	24.83	0.7988	8.00	0.17 *	gray	none
Pumped dry											
Left screen & tooling in the ground and moved to the next location											
12/30/20	@ 0745 Pumped	L-47-25-29 for 5 minutes, During this time collected sample L-47-25-29.									
	Again pumped dry after 5 minutes. Pumped 0.2 gallons.										

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: L-47-25-29	SAMPLED BY (PRINT) / AFFILIATION: Chuck Sudduth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Sudduth		SAMPLING START TIME: 1746 12/29/20	SAMPLING END TIME:
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 27		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)		SAMPLE COLLECTION METHOD: Peristaltic Pump

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40 ~~50~~ ml	Glass vial	Vendor[b]	B029301VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-47	SAMPLE ID: L-47-16-20	DATE: 5/13/21
TOTAL WELL LENGTH (feet) (A): 20	WATER TABLE DEPTH (feet) (B): 11	LENGTH OF WATER COLUMN (feet) (A-B): 9
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 16 feet to 20 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 18	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 18	PURGING START TIME: 1436	PURGING END TIME: 1500	TOTAL VOLUME PURGED (gallons): 1.5

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1436	0	0.06		29.50	6.34	33.16	4.50	4.80	25.5	dark gray	none
1440		0.06		-114.64	6.29	22.25	145.58	0.78	2,362	dark gray	none
1445		0.06		-348.83	6.33	20.83	142.77	0.19	3,166	gray	none
1450	1.0	0.06		-208.57	6.18	20.15	140.73	0.14	4,134	gray	none
1455		0.06		-160.02	6.15	19.88	141.05	0.12	3,992	gray	none
1500	1.5	0.06		-236.05	6.15	19.74	137.82	0.13	4,342	gray	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

ELL No: L-47-16-20	SAMPLED BY (PRINT) / AFFILIATION: Chuck Suddeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Suddeth		SAMPLING START TIME: 1502	SAMPLING END TIME: 1504
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 18	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: Aqua Troll 600	MODEL:	
SERIAL NO: 808878	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	B110701 VB	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-48-16-20	SAMPLE ID: L-48-16-20	DATE: 3/17/21
TOTAL WELL LENGTH (feet) (A): 20	WATER TABLE DEPTH (feet) (B): 16	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 16 feet to 20 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 18	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 18	PURGING START TIME: 1308	PURGING END TIME:	TOTAL VOLUME PURGED (gallons): 1.9

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1308	0	160ml/min		215.87	4.61	16.67	0.97	9.88	0 *	tan	none
1315		0.04		221.52	4.67	18.63	0.94	9.05	0 *	light tan	none
1320		0.04		227.71	4.84	19.29	0.89	8.84	0 *	light tan	none
1325		0.04		229.96	4.81	19.77	0.30	8.70	0	light tan	none
1330		0.04		230.68	4.79	20.02	0.29	8.62	0	light tan	none
1335		0.04		230.23	4.76	20.29	0.27	8.53	0	light tan	none
1340		0.04		229.19	4.74	20.31	0.26	8.51	0	light tan	none
1345		0.04		228.37	4.74	20.54	0.26	8.45	0	light tan	none
1350		0.04		227.60	4.73	20.62	0.24	8.41	0	light tan	none
1355	1.9	0.04									

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: L-48-16-20	SAMPLED BY (PRINT) / AFFILIATION: Chuck Suddeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Suddeth		SAMPLING START TIME: 1357	SAMPLING END TIME: 1359
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 18	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: Aqua Troll 600	MODEL:	
SERIAL NO: 808958	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40~~50~~ ml	Glass vial	Vendor[b]	B101601VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-48-30-34	SAMPLE ID: L-48-30-34	DATE: 3/17/21
TOTAL WELL LENGTH (feet) (A): 34	WATER TABLE DEPTH (feet) (B): 16	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 30 feet to 34 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 32	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 32	PURGING START TIME: 1427	PURGING END TIME: 1505	TOTAL VOLUME PURGED (gallons): 1.3

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1427	0	160 mL/min		175.91	5.92	20.04	123.53	6.53	9.76	gray	none
1431		0.04		-11.50	6.49	20.94	161.41	0.10	4,587	gray	none
1435		0.04		-0.40	6.36	21.24	138.36	0.26	5,564	gray	none
1440		0.04		10.79	6.22	21.16	95.41	0.33	3,745	gray	none
1445		0.04		11.30	6.18	21.19	92.15	0.31	2,523	light gray	none
1450		0.04		9.79	6.16	21.04	92.20	0.31	3,037	light gray	none
1455		0.04		3.37	6.24	21.06	86.27	0.28	2,794	light gray	none
1500		0.04		7.35	6.19	20.78	84.21	0.25	2,267	light gray	none
1505	1.3	0.04		1.38	6.17	20.92	82.98	0.26	1,848	light gray	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
L-48-30-34	Chuck Sudbeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Sudbeth		SAMPLING START TIME: 1507	SAMPLING END TIME: 1509
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 32		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced))		SAMPLE COLLECTION METHOD: Low Flow

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 808958	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40 ~~50~~ ml	Glass vial	Vendor[b]	B101601 VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

Retain form in area for 1 year, in Records Room - 3 years and offsite - 57 years.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-48-40.5-44.5	SAMPLE ID: L-48-40.5-44.5	DATE: 3/17/21
TOTAL WELL LENGTH (feet) (A): 44.5	WATER TABLE DEPTH (feet) (B): 16	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5 / Steel	WELL SCREEN INTERVAL DEPTH: 41.5 feet to 44.5 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	PURGING START TIME: 1613	PURGING END TIME:	TOTAL VOLUME PURGED (gallons): 1.1

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1613	0	160mL/min		-5.39	6.65	23.39	144.47	3.55	5,376	gray	none
1620		0.04		-148.79	7.13	21.64	199.67	0.01	2,450	gray	none
1625		0.04		-104.97	6.84	21.44	144.69	0.08	5,591	gray	none
1630		0.04		-84.54	6.68	21.37	120.59	0.11	6,037	gray	none
1635		0.04		-75.70	6.60	21.42	112.06	0.15	4,821	gray	none
1640		0.04		-72.50	6.56	21.13	109.67	0.26	4,802	gray	none
1645	1.1	0.04		-75.15	6.55	21.05	108.14	0.34	4,789	gray	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: L-48-405-4415	SAMPLED BY (PRINT) / AFFILIATION: Chuck Sudderth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Sudderth		SAMPLING START TIME:	SAMPLING END TIME:
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 42.5	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N replaced)		SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 808958	SERIAL NO:	

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40 ml	Glass vial	Vendor[b]	B101601 VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

Retain form in area for 1 year, in Records Room - 3 years and offsite - 57 years.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-49-15-19	SAMPLE ID: L-49-15-19	DATE: 3/11/21
TOTAL WELL LENGTH (feet) (A): 19	WATER TABLE DEPTH (feet) (B): 16	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 15 feet to 19 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 17	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 17	PURGING START TIME: 1300	PURGING END TIME: 1332	TOTAL VOLUME PURGED (gallons):

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1300	0			230.27	6.12	25.24	226.33	3.98	5,112	tan	none
1305		160ml/min 0.04 gpm		-148.06	5.60	20.45	119.01	3.31	6,651	tan	none
1310		0.04		-39.67	5.50	20.30	106.50	2.65	3,482	light gray	none
1315		0.04		-41.71	5.47	19.95	103.26	1.91	2,156	light gray	none
1320		0.04		-31.31	5.44	19.94	100.60	1.20	878	light gray	none
1325		0.04		-27.27	5.42	19.93	99.54	0.88	514	light gray	none
1330	1.3	0.04		4.18	5.41	19.93	98.63	0.68	232	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: L-49-15-19	SAMPLED BY (PRINT) / AFFILIATION: Chuck Sudbeth / AECOM		
SAMPLER(S) SIGNATURE(S): Chuck Sudbeth		SAMPLING START TIME: 1300	SAMPLING END TIME: 1332
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 17		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N replaced)	SAMPLE COLLECTION METHOD: Peristaltic Pump Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: Aqua Troll 600	MODEL:	
SERIAL NO: 808958	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40 ml	Glass vial	Vendor[b]	B108601VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

Retain form in area for 1 year, in Records Room - 3 years and offsite - 57 years.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-49-29-33	SAMPLE ID: L-49-29-33	DATE: 7/11/21
TOTAL WELL LENGTH (feet) (A): 33	WATER TABLE DEPTH (feet) (B): 15	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 29 feet to 33 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 31	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 31	PURGING START TIME: 1526	PURGING END TIME:	TOTAL VOLUME PURGED (gallons):

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1526	0			64.52	5.97	41.83	150.10	1.82	0.37	gray	none
1530				-328.21	5.97	29.81	125.05	0.19	6,146	gray	none
	Peristaltic Pump down 1530 - 1546										
1546		190 mL/min = 0.05 gpm		-123.69	5.93	30.55	112.82	0.04	5,958	gray	none
1550		190 mL/min = 0.05 gpm		-223.49	5.93	24.17	108.50	0.07	5,550	gray	none
1555		0.05		-239.89	5.66	21.41	92.90	0.19	3,586	light gray	none
1600		0.05		-220.57	5.47	21.08	87.86	0.21	2,473	light gray	none
1605		0.05		-208.48	5.27	20.77	87.47	0.24	2,315	light gray	none
1610		0.05		-190.50	5.14	20.77	89.44	0.25	1,673	light gray	none
1615	1.45	0.05		-195.95	5.13	20.85	86.27	0.25	1,622	light gray	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: L-49-29-33	SAMPLED BY (PRINT) / AFFILIATION: Chuck Sublett / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Sublett		SAMPLING START TIME: 1617	SAMPLING END TIME: ~~1617~~ 1619
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 31		DUPLICATE: (Y) N
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced)		SAMPLE COLLECTION METHOD: Low Flow

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: Aqua Troll 600	MODEL:	
SERIAL NO: 808958	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	~~40~~ 40 ml	Glass vial	Vendor[b]	B101601VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-49-37.5-41.5	SAMPLE ID: L-49-37.5-41.5	DATE: 3/11/21
TOTAL WELL LENGTH (feet) (A): 41.5	WATER TABLE DEPTH (feet) (B): 17	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 37.5 feet to 41.5 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25			PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 39.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 39.5	PURGING START TIME: 1645	PURGING END TIME:	TOTAL VOLUME PURGED (gallons):

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1645	0	170 ml/min=0.05		-18.50	5.75	24.73	108.97	0.85	5,336	gray	none
1650		0.05		-173.13	5.59	22.08	61.69	0.28	4,196	gray	none
1655		170 ml/min=0.05		-194.33	5.53	21.49	57.26	0.33	1,602	light gray	none
1700		0.05		-186.90	5.47	20.74	57.05	0.31	1,252	light gray	none
1705		0.05		-159.53	5.49	20.37	57.54	0.30	1,664	light gray	none
1710		0.05		-226.79	5.49	20.17	61.27	0.26	2,173	light gray	none
1715		0.05		-155.28	5.45	19.99	57.22	0.29	1,631	light gray	none
1720		0.05		-163.44	5.43	19.81	56.55	0.30	1,251	light gray	none
1725	2.0	0.05		-158.46	5.40	19.45	56.17	0.31	941	light gray	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: L-49-37.5-4.5	SAMPLED BY (PRINT) / AFFILIATION: Chuck Subblett / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Subblett		SAMPLING START TIME: 1726	SAMPLING END TIME: 1728
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 39.5	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 808958	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40~~50~~ ml	Glass vial	Vendor[b]	B101601 VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-50-20-24	SAMPLE ID: L-50-20-24	DATE: 2/19/21
TOTAL WELL LENGTH (feet) (A): 24	WATER TABLE DEPTH (feet) (B): 17	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 20 feet to 24 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 22	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 22	PURGING START TIME: 1430	PURGING END TIME: 1452	TOTAL VOLUME PURGED (gallons): 1.0

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1430	0			-19.62	6.23	15.31	108.19	3.18	953	tan	none
1435				-214.51	5.71	15.41	89.10	0.33	7,218	tan	none
1440		0.21 L/M		-137.54	5.60	15.69	83.70	1.04	1,510	light gray	none
1445		0.184 L/M		-123.31	5.57	15.58	83.75	1.15	1,251	light gray	none
1450	1.0	0.05		-106.58	5.54	15.45	83.83	1.17	978	light gray	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: L-50-20-24	SAMPLED BY (PRINT) / AFFILIATION: Chuck Sudbeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Sudbeth		SAMPLING START TIME: 1430	SAMPLING END TIME: 1452
TUBING MATERIAL CODE:	PUMP OR TUBING DEPTH IN WELL (feet):		DUPLICATE: Y N
FIELD DECONTAMINATION: PUMP Y (N) TUBING Y N (replaced)		SAMPLE COLLECTION METHOD: Peristaltic Pump	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40~~50~~ ml	Glass vial	Vendor[b]		VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-50 ~~MW-50~~ -46-50	SAMPLE ID: L-50-46-50	DATE: 2/19/21
TOTAL WELL LENGTH (feet) (A): 50	WATER TABLE DEPTH (feet) (B): 17	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 46 feet to 50 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 48	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 48	PURGING START TIME: 1319	PURGING END TIME: 1350	TOTAL VOLUME PURGED (gallons): 1.3

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1319	0			48.03	5.84	11.34	179.02	5.85	3,340	tan	none
1325		0.17 L/m		-82.76	6.34	15.03	123.80	0.78	4,894	tan	none
1330				-32.44	6.03	15.44	109.82	1.69	2,648	light gray	none
1335				-17.13	5.93	15.45	106.54	1.85	1,687	light gray	none
1340		0.18 L/m		-8.29	5.86	15.47	103.41	1.94	1,267	light gray	none
1345	1.3	0.09		-2.52	5.84	15.53	102.55	2.01	1,178	light gray	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: L-50-46-50	SAMPLED BY (PRINT) / AFFILIATION: Chuck Sudbeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Sudbeth		SAMPLING START TIME: 1319	SAMPLING END TIME: 1350
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 48	DUPLICATE: (Y) N	
FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N (replaced))		SAMPLE COLLECTION METHOD: Peristaltic Pump	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40~~50~~ ml	Glass vial	Vendor[b]		VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-51-21-25	SAMPLE ID: L-51-21-25	DATE: 2/22/21
TOTAL WELL LENGTH (feet) (A): 25	WATER TABLE DEPTH (feet) (B): 19	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 21 feet to 25 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 23	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 23	PURGING START TIME: 1243	PURGING END TIME: 1312	TOTAL VOLUME PURGED (gallons): 1.4

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1243	0			-31.94	6.09	17.60	104.30	2.33	1,890	tan	none
1246				-75.69	5.79	17.45	121.02	0.04	5,121	tan	none
1250				-32.49	5.72	17.61	102.16	0.77	6,860	tan	none
1255		0.18 mL/m		-17.27	5.70	17.45	100.63	0.90	6,058	light gray	none
~~1300~~		0.05		~~-17.27~~	~~5.70~~	~~17.45~~					
1300		0.05		-16.53	5.70	17.33	100.44	0.90	5,519	light gray	none
1305		0.05		-22.90	5.69	17.13	99.64	0.86	4,605	light gray	none
1310	1.4	0.05		-19.71	5.68	16.90	99.06	0.98	~~4,165~~ 4,165	light gray	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: L-51-21-25	SAMPLED BY (PRINT) / AFFILIATION: Chuck Suddeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Suddeth		SAMPLING START TIME: 1243	SAMPLING END TIME: 1312
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 23		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)		SAMPLE COLLECTION METHOD: Peristaltic Pump

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40 ml	Glass vial	Vendor[b]		VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-51-41-45	SAMPLE ID: L-51-41-45	DATE: 2/22/21
TOTAL WELL LENGTH (feet) (A): 45	WATER TABLE DEPTH (feet) (B): 19	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 41 feet to 45 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25			PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 43	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 43	PURGING START TIME: 1136	PURGING END TIME: 1205	TOTAL VOLUME PURGED (gallons): 1.3

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1136	0			17.66	6.96	16.42	169.27	6.52	1,669	tan	none
1140		0.24 L/M		1.09	6.11	17.72	97.07	1.85	5,400	tan	none
1145		0.06		9.79	5.95	17.57	95.21	2.04	3,999	light gray	none
1150		0.18 L/M		-0.31	6.02	17.35	95.68	2.01	4,028	light gray	none
1155		0.05		-4.82	5.99	17.29	96.42	2.09	3,975	light gray	none
1200	1.3	0.05		-9.29	6.00	17.32	96.13	2.05	3,753	light gray	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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1205

SAMPLING DATA

WELL No: L-51-41-45	SAMPLED BY (PRINT) / AFFILIATION: Chuck Sudbeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Sudbeth		SAMPLING START TIME:	SAMPLING END TIME:
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 43	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced))	SAMPLE COLLECTION METHOD: Peristaltic Pump	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40~~50~~ ml	Glass vial	Vendor[b]		VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-52-18-22	SAMPLE ID: L-52-18-22	DATE: 3/12/21
TOTAL WELL LENGTH (feet) (A): 22	WATER TABLE DEPTH (feet) (B): 18	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 18 feet to 22 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25			PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING START TIME: 1523	PURGING END TIME: 1550	TOTAL VOLUME PURGED (gallons): 1.1

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1523	0	150ml/min		147.09	5.15	23.37	107.53	6.36	1,571	gray	none
1530		150ml/min		169.80	5.58	20.73	102.56	5.00	215	light gray	none
1535		0.04		172.23	5.52	20.02	102.02	5.28	218	clear	none
1540		0.04		183.74	5.43	19.83	99.47	5.55	48.4	clear	none
1545		0.04		191.65	5.40	19.50	99.11	5.58	42.0	clear	none
1550	1.1	0.04		198.59	5.37	19.34	98.11	5.64	7.17	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: L-52-18-22	SAMPLED BY (PRINT) / AFFILIATION: Chuck Sudbeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Sudbeth		SAMPLING START TIME: 1552	SAMPLING END TIME: 1554
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 20		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)		SAMPLE COLLECTION METHOD: Low Flow

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 808958	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40 ml	Glass vial	Vendor[b]	B101601VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

Retain form in area for 1 year, in Records Room - 3 years and offsite - 57 years.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-52-30-34	SAMPLE ID: L-52-30-34	DATE: 3/15/21
TOTAL WELL LENGTH (feet) (A): 34	WATER TABLE DEPTH (feet) (B):	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/steel	WELL SCREEN INTERVAL DEPTH: 30 feet to 34 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 32	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 32	PURGING START TIME: 1043	PURGING END TIME: 1110	TOTAL VOLUME PURGED (gallons): 0.92

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1043	0	150 ml/min		327.73	6.00	18.37	112.53	7.94	1,868	gray	none
1050		0.04		242.76	5.61	18.33	72.95	6.12	~~1,690~~ 1,690	light gray	none
1055		0.04		226.01	5.56	18.15	70.43	6.19	676	clear	none
1100		0.04		215.52	5.56	18.09	69.73	6.23	661	clear	none
1106		0.04		201.77	5.56	18.00	69.59	6.29	553	clear	none
1110	0.92	0.04		195.95	5.57	17.87	70.37	6.19	700	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: L-52-30-34	SAMPLED BY (PRINT) / AFFILIATION: Chuck Suddeth / AECOM		
SAMPLER(S) SIGNATURE(S): Chuck K Suddeth		SAMPLING START TIME:	SAMPLING END TIME:
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 32	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N (replaced))		SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: Aqua Troll 600	MODEL:	
SERIAL NO: 808958	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40 ml	Glass vial	Vendor[b]	B101601VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-52-39-43	SAMPLE ID: L-52-39-43	DATE: 3/16/21
TOTAL WELL LENGTH (feet) (A): 43	WATER TABLE DEPTH (feet) (B): 20	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5 / Steel	WELL SCREEN INTERVAL DEPTH: 39 feet to 43 feet	CALCULATED SYSTEM VOLUME: [redacted]

PURGING DATA

	TUBING DIAMETER (inches): 0.25			PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 41	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 41	PURGING START TIME: 1328	PURGING END TIME: 1400	TOTAL VOLUME PURGED (gallons): 1.3

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1328	0	160mL/min		137.56	6.02	10.50	157.59	5.24	637	gray	none
1335		0.04		-13.61	6.42	14.71	123.97	0.60	1,343	gray	none
1340		0.04		-14.18	6.35	14.94	114.77	0.47	4,043	gray	none
1345		0.04		11.39	6.39	15.20	110.72	0.33	5,497	gray	none
1350		0.04		63.96	6.50	15.43	110.92	0.35	5,583	gray	none
1353		0.04		77.31	6.56	15.50	110.32	0.31	5,954	gray	none
~~1356~~				~~94.77~~	~~6.56~~	~~15.50~~	~~110.32~~				
1356		0.04		94.77	6.62	15.39	109.87	0.34	5831	gray	none
1400	1.3	0.04		102.39	6.65	15.33	109.55	0.29	5,342	gray	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: L-52-39-43	SAMPLED BY (PRINT) / AFFILIATION: Chuck Suddeth		
SAMPLER(S) SIGNATURE(S): Charles K Suddeth		SAMPLING START TIME: 1402	SAMPLING END TIME: 1404
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 41	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 808958	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40 ml	Glass vial	Vendor[b]	B101601VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-53-18-22	SAMPLE ID: L-53-18-22	DATE: 3/12/21
TOTAL WELL LENGTH (feet) (A): 22	WATER TABLE DEPTH (feet) (B): 17	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 18 feet to 22 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING START TIME: 1043	PURGING END TIME: 1120	TOTAL VOLUME PURGED (gallons): 1.9

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1043	0	170ml/min =0.05		112.44	5.33	19.04	78.31	9.21	7.86	tan	none
1050		0.05		135.68	5.53	17.72	59.99	6.91	5,790	tan	none
1055		0.05		116.02	5.50	17.55	61.13	7.06	6,595	tan	none
1100		0.05		59.51	5.52	17.65	64.55	5.72	5,519	tan	none
1107		0.05		28.61	5.52	17.83	66.63	4.33	3,190	tan	none
1110		0.05		13.01	5.54	17.99	67.25	3.76	3,165	tan	none
1115		0.05		48.28	5.56	18.08	66.50	4.01	4,965	tan	none
1120	1.9	0.05		45.17	5.54	18.08	65.72	3.88	5,936	tan	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016
PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
L-53-18-22	Chuck Sudduth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Sudduth		SAMPLING START TIME: 1122	SAMPLING END TIME: 1124
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 20		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced))		SAMPLE COLLECTION METHOD: Low Flow

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 808958	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40 ml	Glass vial	Vendor[b]	B101601 VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-53-30-34	SAMPLE ID: L-53-30-34	DATE: 3/12/21
TOTAL WELL LENGTH (feet) (A): 34	WATER TABLE DEPTH (feet) (B):	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 30 feet to 34 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25			PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 32	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 32	PURGING START TIME: 1148	PURGING END TIME: 1215	TOTAL VOLUME PURGED (gallons):

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1148	0	170ml/min		164.47	5.90	21.25	63.66	4.37	1,243	brown	none
1155		0.05		39.28	5.86	20.26	19.17	2.17	4,353	tan	none
1200		0.05		69.23	5.82	19.60	86.93	2.99	3,582	tan	none
1205		0.05		90.38	5.76	19.60	84.88	3.50	2,409	tan	none
1210		0.05		98.37	5.74	19.54	83.65	3.66	1,965	tan	none
1215	1.4	0.05		106.58	5.71	19.48	82.46	3.80	1,426	light tan	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
L-53-30-34	Chuck Suddeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Suddeth		SAMPLING START TIME: 1217	SAMPLING END TIME: 1219
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 32		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced))		SAMPLE COLLECTION METHOD: Low Flow

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: Aquatroll 600	MODEL:	
SERIAL NO: 808958	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40 ml	Glass vial	Vendor[b]	B101601VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-53-44.5-48.5	SAMPLE ID: L-53-44.5-48.5	DATE: 3/16/21
TOTAL WELL LENGTH (feet) (A): 48.5	WATER TABLE DEPTH (feet) (B): 20	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 44.5 feet to 48.5 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 46.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 46.5	PURGING START TIME: 1145	PURGING END TIME:	TOTAL VOLUME PURGED (gallons): 1.6

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1145	0	150 ml/min		92.77	5.91	10.78	91.43	7.31	397	tan	none
1150		0.04		38.07	6.59	13.08	136.54	0.48	4,891	tan	none
1155		0.04		-18.18	6.46	13.20	116.46	0.49	5,644	tan	none
1200		0.04		-11.63	6.35	12.46	109.76	0.48	5,161	tan	none
1205		0.04		-9.24	6.25	13.04	104.84	0.31	4,215	tan	none
1210		0.04		-5.31	6.18	13.28	101.76	0.35	4,255	tan	none
1215		0.04		-6.02	6.20	12.77	102.97	0.36	3,645	tan	none
1220		0.04		-42.23	6.43	13.34	112.95	1.03	4,947	tan	none
1225	1.6	0.04		-21.49	6.25	13.44	104.19	0.28	4,526	tan	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: L-53-445-485	SAMPLED BY (PRINT) / AFFILIATION: Chuck Sudbeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Sudbeth		SAMPLING START TIME: 1228	SAMPLING END TIME: 1230
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 46,5		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 808958	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40~~50~~ ml	Glass vial	Vendor[b]	B101601VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-54-24-28	SAMPLE ID: L-54-24-28	DATE: 3/16/21
TOTAL WELL LENGTH (feet) (A): 28	WATER TABLE DEPTH (feet) (B): 25	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 24 feet to 28 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 26	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 26	PURGING START TIME: 1500	PURGING END TIME:	TOTAL VOLUME PURGED (gallons): 1.2

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1500	0	160 ml/min		123.37	5.99	11.19	106.62	7.86	9.39	tan	none
1505		0.04		109.70	5.79	13.96	92.94	3.75	5,569	tan	none
1510		0.04		111.45	5.82	13.94	93.07	4.01	5,622	tan	none
1515		0.04		142.81	5.79	13.91	87.98	4.11	4,673	tan	none
1520		0.04		124.89	5.74	14.46	85.02	3.87	2,965	tan	none
1525		0.04		121.58	5.71	14.26	83.32	3.98	1,751	light tan	none
1530	1.2	0.04		119.11	5.72	14.34	82.94	4.10	1,485	light tan	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. | * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: L-54-28	SAMPLED BY (PRINT) / AFFILIATION: Chuck Suddeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Suddeth		SAMPLING START TIME: 1532	SAMPLING END TIME: 1534
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 26	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 808958	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40 ml	Glass vial	Vendor[b]	B101601VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-55-18-22	SAMPLE ID: L-55-18-22	DATE: 3/15/21
TOTAL WELL LENGTH (feet) (A): 22	WATER TABLE DEPTH (feet) (B): 18	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5 / Steel	WELL SCREEN INTERVAL DEPTH: 18 feet to 22 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25			PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING START TIME: 1445	PURGING END TIME: 1510	TOTAL VOLUME PURGED (gallons): 1.0

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1445	0	160ml/min		148.24	6.08	18.47	75.90	9.06	8,203	gray	none
1450		0.04		203.16	5.40	18.15	73.08	6.53	4,554	gray	none
1455		0.04		206.25	5.40	17.91	73.57	6.59	3,082	light gray	none
1500		0.04		208.50	5.39	17.84	73.66	6.67	1,102	light gray	none
1505		0.04		213.03	5.37	17.73	74.22	6.81	172	clear	none
1510	1.0	0.04		216.97	5.37	17.67	75.14	6.88	95.1	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: L-55-18-22	SAMPLED BY (PRINT) / AFFILIATION: Chuck Sudderth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Sudderth		SAMPLING START TIME: 1512	SAMPLING END TIME: 1514
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 20		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)		SAMPLE COLLECTION METHOD: Low Flow

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: Aqua Troll 600	MODEL:	
SERIAL NO: 808958	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; T = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40 ml	Glass vial	Vendor[b]	B101601VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-55-31-35	SAMPLE ID: L-55-31-35	DATE: 3/15/21
TOTAL WELL LENGTH (feet) (A): 35	WATER TABLE DEPTH (feet) (B): 18	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 31 feet to 35 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 33	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 33	PURGING START TIME: 1540	PURGING END TIME: 1605	TOTAL VOLUME PURGED (gallons):

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1540	0	150 mL/min		214.39	5.50	18.96	76.91	7.75	6,788	dark gray	none
1545		0.04		132.14	6.05	18.78	80.26	0.29	133 *	dark gray	none
1550		0.04		141.76	5.93	18.59	73.38	1.83	3,140	dark gray	none
1555		0.04		144.65	5.89	18.46	73.12	1.82	4,332	dark gray	none
1600		0.04		142.74	5.90	18.47	73.65	1.81	4,214	gray	none
1605		0.04		139.76	5.89	18.58	73.85	1.81	4,679	gray	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Sample is very turbid

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: L-55-31-35	SAMPLED BY (PRINT) / AFFILIATION: Chuck Siddeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Siddeth		SAMPLING START TIME: 1607	SAMPLING END TIME: 1609
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 33	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced))	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 808958	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40 ml	Glass vial	Vendor[b]	B101601VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-55-40-44	SAMPLE ID: L-55-40-44	DATE: 3/15/21
TOTAL WELL LENGTH (feet) (A): 44	WATER TABLE DEPTH (feet) (B): 18	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 40 feet to 44 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 42	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 42	PURGING START TIME: 1636	PURGING END TIME:	TOTAL VOLUME PURGED (gallons): 1.4

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1636	0	150 ml/min		70.80	5.97	19.94	75.96	2.48	4,587	dark brown	none
1640		0.04		-157.41	6.15	18.69	54.42	0.14	1,644	dark brown	none
1645		0.04		-289.91	6.13	18.42	51.06	0.09	3,335	dark brown	none
1649		0.04		-305.55	6.15	18.42	51.06	0.09	3,397	dark brown	none
1655		0.04		-303.67	6.20	18.28	52.35	0.09	3,530	dark brown	none
1700		0.04		-309.05	6.21	18.19	56.11	0.07	3,079	dark brown	none
1705		0.04		-299.29	6.23	18.06	54.55	0.08	3,273	dark brown	none
1710	1.4	0.04		-305.24	6.24	18.04	55.00	0.08	3,588	dark brown	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: L-55-40-44	SAMPLED BY (PRINT) / AFFILIATION: Chuck Sudduth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Sudduth		SAMPLING START TIME: 1712	SAMPLING END TIME: 1714
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 42	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: Aqua Troll 600	MODEL:	
SERIAL NO: 808958	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	40~~30~~ ml	Glass vial	Vendor[b]	B101601VB	VOC	Shealy
	2	250 ml	Glass-amber	N/A		SVOC	Shealy
	1	250 ml	Plastic	N/A		Tritium	GEL
	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-56	SAMPLE ID: L-56-41-45	DATE: 2/17/21
TOTAL WELL LENGTH (feet) (A): 45	WATER TABLE DEPTH (feet) (B): 21	LENGTH OF WATER COLUMN (feet) (A-B): 24
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 41 feet to 45 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER: Peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 45	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 45	PURGING START TIME: 1525	PURGING END TIME: 1535	TOTAL VOLUME PURGED (gallons): 0.025

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1525	0	0	21	-16.17	6.74	13.1	92.4	2.43	614.4	Gray	
1535	0.025	0.025	21	28.01	6.73	12.7	88.1	3.80	987.4	Gray	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
L-50-41-45	Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 1603	SAMPLING END TIME: 1620
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 45	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	SAMPLE COLLECTION METHOD: Low flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: Aqua Troll 600	MODEL:	
SERIAL NO: 519131	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. **STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:**
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	1504	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

Retain form in area for 1 year, in Records Room - 3 years and offsite - 57 years.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-56	SAMPLE ID: L-56-33-37	DATE: 2/17/21
TOTAL WELL LENGTH (feet) (A): 37	WATER TABLE DEPTH (feet) (B): 21	LENGTH OF WATER COLUMN (feet) (A-B): 16
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 33 feet to 37 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER: Peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING START TIME: 1317	PURGING END TIME: 1343	TOTAL VOLUME PURGED (gallons): 1.25

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1317	0	0.05	21	6.65	-63.8	11.6	96.2	4.24	2.9	Brown SH	gray
1323	0.25	0.05	21	6.30	-190.6	13.9	95.4	0.01	19.6	"	"
1328	0.50	0.05	21	6.32	-217.4	14.3	89.0	0	44.9	"	"
1333	0.75	0.05	21	6.28	-226.7	14.7	84.5	0	106.3	"	"
1338	1.0	0.05	21	6.25	-235.1	14.9	80.1	0	195.9	"	"
1343	1.25	0.05	21	6.24	-239.9	15.1	76.6	0	266.9	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
L-56-33-37	Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 1344	SAMPLING END TIME: 1347
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 37		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)		SAMPLE COLLECTION METHOD: Low Flow

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 519131	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
✓	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	1504	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

Retain form in area for 1 year, in Records Room - 3 years and offsite - 57 years.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-56	SAMPLE ID: L-56-22-26	DATE: 2/17/21
TOTAL WELL LENGTH (feet) (A): 26	WATER TABLE DEPTH (feet) (B): 21	LENGTH OF WATER COLUMN (feet) (A-B): 5
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 22 feet to 26 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER: Peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25	PURGING START TIME: 1206	PURGING END TIME: 1242	TOTAL VOLUME PURGED (gallons): 1.75

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1206	0	0.25	21	60.4	6.234	9.59	102.6	5.32	126.8	Brown	
1211	0.25	0.25	21	0.7	6.23	10.3	102.7	2.69	49.6	Lt. brown	
1216	0.5	0.25	21	-49.5	5.99	11.1	102.9	1.19	26.7	Opaque	
1221	0.75	0.25	21	-70.1	5.90	11.9	103.4	0.26	18.8	"	"
1227	1.0	0.25	21	-80.2	5.88	12.4	97.5	0.10	53.9	"	"
1232	1.25	0.25	21	-97.2	5.84	12.9	98.1	0	50.4	"	"
1237	1.5	0.25	21	-119.0	5.82	13.3	98.5	0	37.0	"	"
1242	1.75	0.25	21	-147.4	5.81	13.4	98.9	0	29.3	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: L-56-22-26	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 1243	SAMPLING END TIME: 1246
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 25.5	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	SAMPLE COLLECTION METHOD: Low flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 519131	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	1504	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-57	SAMPLE ID: L-57-42-46	DATE: 2/17/21
TOTAL WELL LENGTH (feet) (A): 46	WATER TABLE DEPTH (feet) (B): 24	LENGTH OF WATER COLUMN (feet) (A-B): 22
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 42 feet to 46 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER: peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING START TIME: 0827	PURGING END TIME: / TOTAL VOLUME PURGED (gallons): 0.

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0827	0	0.0125	24	201.49	7.00	7.96	106.6	8.58	7486.5	Lt. gray	
0832	0.025	0.025	24	-205.6	7.37	10.81	107.1	1.77	4483.4	"	
0838	0.0375	0.0375 1.25	24	-179.0	7.34	9.03	105.7	1.589	3512.6	"	"
0843	0.05	0.05125	24	-159.4	7.20	8.40	104.3	1.48	3124.6	"	"
0849	0.0625	0.0125	Dry	-133.3	7.10	6.95	103.5	2.44	3010.0	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
L-57-42-46	Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 0906	SAMPLING END TIME: 0917
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 45	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced)		SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 519131	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. **STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:**
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	1504	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-57	SAMPLE ID: L-57-26-30	DATE: 2/16/21
TOTAL WELL LENGTH (feet) (A): 30	WATER TABLE DEPTH (feet) (B): 24	LENGTH OF WATER COLUMN (feet) (A-B): 6
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 26 feet to 30 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

TUBING DIAMETER (inches): 1/4"			PURGE PUMP TYPE OR BAILER: Peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 29	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 29	PURGING START TIME: 1608	PURGING END TIME: 1633	TOTAL VOLUME PURGED (gallons):

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1608	0	0.25	24	74.7	6.37	14.2	103.9	5.28	2675.9	Lt. gray	
1613	0.25	0.25	24	100.4	5.92	15.4	103.4	2.99	2889.0	"	"
1618	0.5	0.25	24	121.0	5.77	15.5	103.6	2.22	1538.3	"	"
1623	0.75	0.25	24	133.6	5.72	15.6	101.8	1.56	1342.4	"	"
1628	1	0.25	24	141.3	5.66	15.7	103.4	0.95	932.4	"	"
1633	1.25	0.25	24	148.3	5.64	15.7	104.1	0.36	1024.1	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: L-57	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 1634	SAMPLING END TIME: 1637
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 29	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced)		SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 519131	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	1504	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-58	SAMPLE ID: L-58-31-35	DATE: 2/16/21
TOTAL WELL LENGTH (feet) (A): 35	WATER TABLE DEPTH (feet) (B): 23	LENGTH OF WATER COLUMN (feet) (A-B): 12
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 31 feet to 35 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER: Peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 34	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 34	PURGING START TIME: 1218	PURGING END TIME: 1243	TOTAL VOLUME PURGED (gallons):

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1218	0	0.25	23	-114.3	6.84	16.03	192.6	0.78	51.24	Brown	
1223	0.25	0.25	23	-150.4	6.58	16.85	185.5	0	3040.0	"	"
1228	0.5	0.25	23	-93.9	6.25	17.01	163.2	0	4805.5	Lt. brown	
1233	0.75	0.25	23	-63.7	6.13	16.89	157.8	0	4347.4	"	"
1238	1	0.25	23	-45.5	6.05	16.74	154.5	0	3637.1	"	"
1243	1.25	0.25	23	-35.9	5.99	16.76	151.8	0	3001.2	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
L-58	L-58-31-35		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 1244	SAMPLING END TIME: 1247
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 34	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 519131	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	1504	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-58	SAMPLE ID: L-58-23-27	DATE: 2/16/21
TOTAL WELL LENGTH (feet) (A): 27	WATER TABLE DEPTH (feet) (B): 23	LENGTH OF WATER COLUMN (feet) (A-B): 4
CASING DIAMATER / MATL (inches): 1"	WELL SCREEN INTERVAL DEPTH: 23 feet to 27 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"			PURGE PUMP TYPE OR BAILER: Peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 26	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 26	PURGING START TIME: 1103	PURGING END TIME: 1128	TOTAL VOLUME PURGED (gallons):

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1103	0	0.25	23	-224.7	6.55	15.8	62.4	0	2102.7	white	
1108	0.25	0.25	23	-47.8	5.65	15.3	74.1	0	1481.1	" "	
1113	0.50	0.25	23	72.1	5.60	15.8	70.5	0.05	99.1	clear	
1118	0.75	0.25	23	83.3	5.56	15.9	74.5	0	183.2	" "	
1123	1.0	0.25	23	90.0	5.53	15.8	76.7	0	25.5	" "	
1128	1.25	0.25	23	94.3	5.51	15.8	78.0	0	57.1	" "	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
L-58	L-58-23-27		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 1129	SAMPLING END TIME: 1132
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 26	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 519131	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	1504	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-58	SAMPLE ID: L-58-40-44	DATE: 2/16/21
TOTAL WELL LENGTH (feet) (A): 44	WATER TABLE DEPTH (feet) (B): 23	LENGTH OF WATER COLUMN (feet) (A-B): 21
CASING DIAMATER / MATL (inches): 1' SS	WELL SCREEN INTERVAL DEPTH: 40 feet to 44 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER: Peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 43	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 43	PURGING START TIME: 10:04	PURGING END TIME: 1029	TOTAL VOLUME PURGED (gallons):

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
10:04	0	0.25	23	-217.83	6.99	12.51	99.06	3.42	608.6	Brown	
10:09	0.25	0.25	23	-304.8	6.60	15.01	62.92	0.86	5009.9	Lt brown	
1014	0.5	0.25	23	-276.5	6.55	15.21	60.56	0.12	4199.9	"	"
1019	0.75	0.25	23	-260.7	6.52	15.32	61.13	0.03	4180.9	"	"
1024	1.0	0.25	23	-252.3	6.48	15.49	57.83	0.00	3430.4	"	"
1029	1.25	0.25	23	-247.0	6.48	15.51	54.90	0.00	3377.2	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
L-58	L-58-40-44		
SAMPLER(S) SIGNATURE(S): Jeremy Bo		SAMPLING START TIME: 10:30	SAMPLING END TIME: 1033
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 43		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)		SAMPLE COLLECTION METHOD: Low flow

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 519131	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	1504	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-59-16-20	SAMPLE ID: L-59-16-20	DATE: 5/10
TOTAL WELL LENGTH (feet) (A): 20	WATER TABLE DEPTH (feet) (B): 13	LENGTH OF WATER COLUMN (feet) (A-B): 7
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 16 feet to 20 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING START TIME: 1451	PURGING END TIME: 1511	TOTAL VOLUME PURGED (gallons): 2

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
14:51	0	0.1	13	197.40	5.61	18.33	130.22	5.61	2008.3	LT gray	
1456	0.5	0.1	13	207.63	5.52	18.08	122.36	5.52	287.6	clear	
1501	1.0	0.1	13	209.26	5.51	17.94	121.03	5.51	145.0	clear	
1506	1.5	0.1	13	213.55	5.50	17.98	120.10	5.50	150.4	clear	
1511	2.0	0.1	13	214.31	5.50	17.77	120.31	5.50	160.3	clear	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

ELL No: L-59-16-20	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant/AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 1512	SAMPLING END TIME: 1514
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 20	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	SAMPLE COLLECTION METHOD: Low flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 808878	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
N						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	1513	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

Retain form in area for 1 year, in Records Room - 3 years and offsite - 57 years.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-59	SAMPLE ID: L-59-31-35	DATE: 5/10/21
TOTAL WELL LENGTH (feet) (A): 35	WATER TABLE DEPTH (feet) (B): 13	LENGTH OF WATER COLUMN (feet) (A-B): 22
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 31 feet to 35 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"			PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 34.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 34.5	PURGING START TIME: 1540	PURGING END TIME: 1605	TOTAL VOLUME PURGED (gallons): 3

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1540	0	0.12	13	144.4	6.09	22.87	0.06	8.47	0.37	orange brown	
1545	0.[illegible]6	0.12	13	75.6	6.13	19.41	149.1	4.38	5330.2	Lt. brown	
1550	1.[illegible]2	0.12	13	106.0	5.97	18.91	139.4	5.80	2359.9	Lt. brown	
1555	1.8	0.12	13	185.8	5.91	18.77	135.4	6.05	1192.6	Lt. brown	
1600	2.4	0.12	13	121.7	5.90	18.67	136.6	6.15	1206.4	Opaque	
1605	3.0	0.12	13	125.0	5.89	18.59	135.4	6.21	883.9	Opaque	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

ELL No: L-59-31-35	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 1606	SAMPLING END TIME: 1608
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 34.5	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N replaced)	SAMPLE COLLECTION METHOD: Low flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: Aqua Troll 605	MODEL:	
SERIAL NO: 808878	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. **STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:**
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	1513	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

Retain form in area for 1 year, in Records Room - 3 years and offsite - 57 years.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-59	SAMPLE ID: L-59-46-50	DATE: 5/10/21
TOTAL WELL LENGTH (feet) (A): 50	WATER TABLE DEPTH (feet) (B): 13	LENGTH OF WATER COLUMN (feet) (A-B): 37
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 46 feet to 50 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 49.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 49.5	PURGING START TIME: 1639	PURGING END TIME: 1714	TOTAL VOLUME PURGED (gallons): 1.75

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1639	0	0.05	13	-112.5	6.87	22.09	95.85	1.12	1879.5	Orange	
1644	0.25	0.05	13	-316.2	6.62	20.17	66.52	0.32	5694.3	"	"
1649	0.5	0.05	13	-181.4	6.43	19.88	58.32	0.43	6132.6	"	"
1654	0.75	0.05	13	-115.5	6.35	19.78	52.88	0.51	4906.2	Lt orange	
1659	1	0.05	13	-86.3	6.30	19.66	49.48	0.58	3328.4	"	"
1704	1.25	0.05	13	-81.49	6.31	19.65	48.60	0.60	2966.2	"	"
1709	1.5	0.05	13	-77.11	6.30	19.64	48.93	0.63	2921.1	"	"
1714	1.75	0.05	13	-71.4	6.30	19.59	49.96	0.63	2816.0	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. | * Procedure # ROP-06-007

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SAMPLING DATA

ELL No: L-59-46-50	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant/AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 1715	SAMPLING END TIME: 1717
TUBING MATERIAL CODE:	PUMP OR TUBING DEPTH IN WELL (feet):	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	SAMPLE COLLECTION METHOD:	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 808878	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. **STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:**
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	1513	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-60	SAMPLE ID: L-60-16-20	DATE: 5/11/21
TOTAL WELL LENGTH (feet) (A): 20	WATER TABLE DEPTH (feet) (B): 13	LENGTH OF WATER COLUMN (feet) (A-B): 7
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 16 feet to 20 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING START TIME: 1139	PURGING END TIME: 1200	TOTAL VOLUME PURGED (gallons): 1

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1139	0	0.05	13	167.0	6.04	23.36	123.8	7.13	4000.9	Yellow orange	
1145	0.25	0.05	13	226.6	5.51	18.62	89.6	6.41	465.3	clear	
1150	0.5	0.05	13	236.0	5.50	18.28	88.9	6.29	307.2	"	"
1155	0.75	0.05	13	241.0	5.50	18.05	88.8	6.31	186.7	"	"
1200	1	0.05	13	246.7	5.48	17.89	88.3	6.37	119.9	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: L-60-16-20	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant AECOM		
SAMPLER(S) SIGNATURE(S): Jeremy Grant		SAMPLING START TIME: 1201	SAMPLING END TIME: 1203
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 20	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 808878	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	1513	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

Retain form in area for 1 year, in Records Room - 3 years and offsite - 57 years.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-60	SAMPLE ID: L-60-26-30	DATE: 5/11/21
TOTAL WELL LENGTH (feet) (A): 30	WATER TABLE DEPTH (feet) (B): 13	LENGTH OF WATER COLUMN (feet) (A-B): 17
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 26 feet to 30 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 30	PURGING START TIME: 1230	PURGING END TIME:

TOTAL VOLUME PURGED (gallons):

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1230	0	0.05	13	221.2	5.80	22.0	113.9	6.13	6328.0	Lt. brown	
1235	0.25	0.05	13	174.0	5.91	19.5	116.9	5.82	4672.4	"	"
1240	0.5	0.05	13	179.1	5.89	19.4	116.1	5.93	2690.6	"	"
1245	0.75	0.05	13	185.9	5.87	19.2	115.1	6.21	1856.0	very lt	brown
1250	1	0.05	13	190.1	5.85	19.1	114.5	6.23	1172.1	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

ELL No: L-00-26-30	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME:	SAMPLING END TIME:
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 30	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced)		SAMPLE COLLECTION METHOD:	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: Aqua Troll 600	MODEL:	
SERIAL NO: 808878	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	1513	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

Retain form in area for 1 year, in Records Room - 3 years and offsite - 57 years.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-60	SAMPLE ID: L-60-36-40	DATE: 5/11/21
TOTAL WELL LENGTH (feet) (A): 40	WATER TABLE DEPTH (feet) (B): 13	LENGTH OF WATER COLUMN (feet) (A-B): 27
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 36 feet to 40 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"			PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 40	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 40	PURGING START TIME: 1322	PURGING END TIME: 1348	TOTAL VOLUME PURGED (gallons): 1

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1322	0	0.04	13	112.8	6.36	22.44	106.0	0.23	5409.3	Lt brown	
1327	0.2	0.04	13	98.1	6.23	20.57	104.0	2.11	5724.7	"	"
1333	0.4	0.04	13	102.5	6.22	20.60	103.1	2.49	5035.9	"	"
1338	0.6	0.04	13	115.7	6.18	21.10	98.4	3.13	3815.5	"	"
1343	0.8	0.04	13	129.0	6.13	20.93	94.3	3.69	2759.4	"	"
1348	1.0	0.04	13	143.5	6.05	20.84	90.5	3.85	1583.0	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

ELL No: L-60-36-40	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 1349	SAMPLING END TIME: 1351
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 40	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	SAMPLE COLLECTION METHOD: Low flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 808878	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	1513	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-60	SAMPLE ID: L-60-16-20	DATE: 5/11/21
TOTAL WELL LENGTH (feet) (A): 20	WATER TABLE DEPTH (feet) (B): 13	LENGTH OF WATER COLUMN (feet) (A-B): 7
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 16 feet to 20 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING START TIME: 1139	PURGING END TIME: 1200	TOTAL VOLUME PURGED (gallons): 1

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1139	0	0.05	13	167.0	6.04	23.36	123.8	7.13	4000.9	Yellow orange	
1145	0.25	0.05	13	226.6	5.51	18.62	89.6	6.41	465.3	clear	
1150	0.5	0.05	13	236.0	5.50	18.28	88.9	6.29	307.2	"	"
1155	0.75	0.05	13	241.0	5.50	18.05	88.8	6.31	186.7	"	"
1200	1	0.05	13	246.7	5.48	17.89	88.3	6.37	119.9	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: L-60-16-20	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant AECOM		
SAMPLER(S) SIGNATURE(S): Jeremy Grant		SAMPLING START TIME: 1201	SAMPLING END TIME: 1203
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 20	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 808878	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	1513	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-60	SAMPLE ID: L-60-26-30	DATE: 5/11/21
TOTAL WELL LENGTH (feet) (A): 30	WATER TABLE DEPTH (feet) (B): 13	LENGTH OF WATER COLUMN (feet) (A-B): 17
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 26 feet to 30 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 30	PURGING START TIME: 1230	PURGING END TIME:

TOTAL VOLUME PURGED (gallons):

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1230	0	0.05	13	221.2	5.80	22.0	113.9	6.13	6328.0	Lt. brown	
1235	0.25	0.05	13	174.0	5.91	19.5	116.9	5.82	4672.4	"	"
1240	0.5	0.05	13	179.1	5.89	19.4	116.1	5.93	2690.6	"	"
1245	0.75	0.05	13	185.9	5.87	19.2	115.1	6.21	1856.0	very lt	brown
1250	1	0.05	13	190.1	5.85	19.1	114.5	6.23	1172.1	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

ELL No: L-00-26-30	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME:	SAMPLING END TIME:
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 30	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced)		SAMPLE COLLECTION METHOD:	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: Aqua Troll 600	MODEL:	
SERIAL NO: 808878	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	1513	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-60	SAMPLE ID: L-60-36-40	DATE: 5/11/21
TOTAL WELL LENGTH (feet) (A): 40	WATER TABLE DEPTH (feet) (B): 13	LENGTH OF WATER COLUMN (feet) (A-B): 27
CASING DIAMATER / MATL (inches): 1" SS	WELL SCREEN INTERVAL DEPTH: 36 feet to 40 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4"			PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 40	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 40	PURGING START TIME: 1322	PURGING END TIME: 1348	TOTAL VOLUME PURGED (gallons): 1

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1322	0	0.04	13	112.8	6.36	22.44	106.0	0.23	5409.3	Lt brown	
1327	0.2	0.04	13	98.1	6.23	20.57	104.0	2.11	5724.7	"	"
1333	0.4	0.04	13	102.5	6.22	20.60	103.1	2.49	5035.9	"	"
1338	0.6	0.04	13	115.7	6.18	21.10	98.4	3.13	3815.5	"	"
1343	0.8	0.04	13	129.0	6.13	20.93	94.3	3.69	2759.4	"	"
1348	1.0	0.04	13	143.5	6.05	20.84	90.5	3.85	1583.0	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

ELL No: L-60-36-40	SAMPLED BY (PRINT) / AFFILIATION: Jeremy Grant / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 1349	SAMPLING END TIME: 1351
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 40	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	SAMPLE COLLECTION METHOD: Low flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 808878	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	1513	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-61-[redacted]	SAMPLE ID: L-61-15-19	DATE: 5/13/21
TOTAL WELL LENGTH (feet) (A): 19	WATER TABLE DEPTH (feet) (B): 12	LENGTH OF WATER COLUMN (feet) (A-B): 7
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 15 feet to 19 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 17	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 17	PURGING START TIME: 0920	PURGING END TIME: 0955	TOTAL VOLUME PURGED (gallons): 2

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0920	0	0.06		88.64	6.11	18.64	110.38	5.29	6,145	tan	none
0925		0.06		87.93	5.91	17.44	97.80	3.26	6,321	tan	none
0930		0.06		94.74	5.87	17.12	95.33	3.54	5,183	tan	none
0935		0.06		108.18	5.80	17.09	88.55	3.77	2,194	tan	none
0940	1.0	0.06		118.79	5.76	17.10	85.90	4.09	841	light tan	none
0945		0.06		126.53	5.74	17.19	84.86	3.68	386	light tan	none
0950		0.06		132.14	5.73	17.20	83.68	3.61	140	clear	none
0955	2.0	0.06		132.20	5.77	17.49	83.36	3.63	90.8	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: L-61-15-19	SAMPLED BY (PRINT) / AFFILIATION: Chuck Sudbeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Sudbeth		SAMPLING START TIME: 0957	SAMPLING END TIME: 0959
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 17		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N replaced)		SAMPLE COLLECTION METHOD: Low Flow

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: Aqua Troll 600	MODEL:	
SERIAL NO: 308878	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	B110701 VB	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-61	SAMPLE ID: L-61-25-29	DATE: 5/13/21
TOTAL WELL LENGTH (feet) (A): 29	WATER TABLE DEPTH (feet) (B): 12	LENGTH OF WATER COLUMN (feet) (A-B): 17
CASING DIAMATER / MATL (inches): 1.5/Steel	WELL SCREEN INTERVAL DEPTH: 25 feet to 29 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 27	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 27	PURGING START TIME: 1009	PURGING END TIME: 1040	TOTAL VOLUME PURGED (gallons): 2

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1009	0	0.06		138.74	5.73	23.89	88.11	3.50	464	Dark Gray	none
1015		0.06		-505.71	6.80	21.81	145.32	0.04	2,849	Dark Gray	None
1020		0.06		-385.15	6.71	21.74	134.35	0.11	2,985	Dark Gray	None
1025	1.0	0.06		-156.79	6.32	19.56	110.11	0.10	2,309	Gray	None
1031		0.06		-86.11	6.15	19.18	105.06	0.08	4,007	gray	None
1035		0.06		-89.39	6.19	19.06	103.48	0.14	3,738	gray	None
1040	2.0	0.06		-91.36	6.15	18.70	105.97	0.57	4,327	gray	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: L-61-25-29	SAMPLED BY (PRINT) / AFFILIATION: Chuck Sudduth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Sudduth		SAMPLING START TIME: 1042	SAMPLING END TIME: 1044
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 27	DUPLICATE: (Y) N	
FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N (replaced))		SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: Aqua Troll 600	MODEL:	
SERIAL NO: 808878	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	B110701 VB	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-61	SAMPLE ID: L-61-35-39	DATE: 5/13/21
TOTAL WELL LENGTH (feet) (A): 61	WATER TABLE DEPTH (feet) (B): 12	LENGTH OF WATER COLUMN (feet) (A-B): 49
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 35 feet to 39 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 37	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 37	PURGING START TIME: 1258	PURGING END TIME: 1350	TOTAL VOLUME PURGED (gallons): 3.0

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1258	0	0.06		-320.53	7.25	33.02	135.13	0.13	78.3	gray	none
1304		0.06		-523.46	7.24	33.93	158.53	0.004	407	gray	none
1310		0.06		-543.54	7.28	33.34	149.91	0.006	1,566	gray	none
1315	1.0	0.06		-526.06	7.26	28.04	134.43	0.03	2,840	gray	none
1320		0.06		-414.89	7.04	23.37	91.61	0.02	4,628	gray	none
1325		0.06		-374.64	6.94	22.36	85.20	0.02	6,048	gray	none
1331	2.0	0.06		-320.53	6.82	22.09	81.83	0.03	6,153	gray	none
1335		0.06		-336.29	6.94	21.91	76.69	0.05	6,043	gray	none
1340		0.06		-314.17	6.93	21.61	77.54	0.03	5,884	gray	none
1345		0.06		-414.84	6.98	22.25	98.00	0.00	5,215	gray	none
1350	3.0	0.06		-509.86	7.03	22.13	82.25	0.00	6,548	gray	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

ELL No: L-61-35-39	SAMPLED BY (PRINT) / AFFILIATION: Chuck Sudduth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Sudduth		SAMPLING START TIME: 1352	SAMPLING END TIME: 1354
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 37	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 808878	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	B110701 VB	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-62	SAMPLE ID: L-62-26-30	DATE: 5/14/21
TOTAL WELL LENGTH (feet) (A): 30	WATER TABLE DEPTH (feet) (B): 9	LENGTH OF WATER COLUMN (feet) (A-B): 21
CASING DIAMATER / MATL (inches): 0.5/Steel	WELL SCREEN INTERVAL DEPTH: 26 feet to 30 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 0.25		PURGE PUMP TYPE OR BAILER: Peristaltic Pump
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 28	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 28	PURGING START TIME: 1052	PURGING END TIME: 1125	TOTAL VOLUME PURGED (gallons): 2.0

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1052	0	0.06		49.69	6.91	24.83	0.85	6.67	1,165	gray	none
1056		0.06		-1.54	6.58	21.81	55.09	3.64	6,192	gray	none
1100		0.06		-139.14	6.37	21.02	51.80	3.57	6,111	gray	none
1105		0.06		-310.33	6.35	20.89	50.49	1.14	5,340	gray	none
1110	1.0	0.06		-313.53	6.34	20.91	51.09	1.88	6,201	gray	none
1115		0.06		-232.57	6.35	20.94	52.59	1.87	6,206	gray	none
1120		0.06		-280.56	6.37	20.96	52.75	1.82	5,996	gray	none
1125	2.0	0.06		-274.80	6.31	20.87	50.46	1.99	6,246	gray	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: L-62-26-30	SAMPLED BY (PRINT) / AFFILIATION: Chuck Sudbeth / AECOM		
SAMPLER(S) SIGNATURE(S): Charles K Sudbeth		SAMPLING START TIME: 1127	SAMPLING END TIME: 1129
TUBING MATERIAL CODE: HDPE	PUMP OR TUBING DEPTH IN WELL (feet): 28	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: In-Situ	MAKE:	
MODEL: AquaTroll 600	MODEL:	
SERIAL NO: 808878	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
N	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
N	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
N	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]	B110701VB	VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
N	2	1 liter	Plastic	HNO_3			
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: WRN-1	SAMPLE ID: WRN-1-2021-Q4	DATE: 10/14/21
TOTAL WELL LENGTH (feet) (A): 33.25	WATER TABLE DEPTH (feet) (B): 8.87	LENGTH OF WATER COLUMN (feet) (A-B): ~~15.4~~
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 19.2 feet to 30 feet	CALCULATED SYSTEM VOLUME: 15.9

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: Peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25.7	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25.7	PURGING START TIME: 0902	PURGING END TIME: 0944	TOTAL VOLUME PURGED (gallons): 3.2L

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0924	0	160	8.87	-24.75	5.70	23.2	108.35	5.454	0.5	clear	none
0929	0.8	160	8.87	17.89	5.56	23.7	99.93	5.167	0.4	clear	none
0934	1.6	160	8.87	18.74	5.56	23.7	99.47	5.057	0.30	clear	none
0939	2.4	160	8.87	18.41	5.56	23.8	99.46	4.971	0.1	clear	none
0944	3.2	160	8.87							clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016
PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: W-RW-1	SAMPLED BY (PRINT) / AFFILIATION: RANDY CREWS		
SAMPLER(S) SIGNATURE(S): RCW		SAMPLING START TIME: 0940	SAMPLING END TIME: 1012
TUBING MATERIAL CODE:	PUMP OR TUBING DEPTH IN WELL (feet): 25.7	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: LOW FLOW	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206143	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-RW2	SAMPLE ID: W-RW2-2021-Q4	DATE: 10-21-21
TOTAL WELL LENGTH (feet) (A): 31.30	WATER TABLE DEPTH (feet) (B): 18.42	LENGTH OF WATER COLUMN (feet) (A-B): 12.88
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 19 feet to 29.2 feet	CALCULATED SYSTEM VOLUME: 2.10

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 18.30	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 18.30	PURGING START TIME: 0940	PURGING END TIME: 1002	TOTAL VOLUME PURGED (gallons): 4.40

TIME (24 HR)	CUMUL VOLUME PURGED (gallons) ~~(liters)~~	PURGE RATE ~~(gpm)~~ mL Per Min	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC COND (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe) ~~liters~~	ODOR (describe)
0942	INITIAL	220	18.68	250.43	5.18	19.43	192.81	4.93	0	CLEAR	NS
0947	1.10	220	18.74	286.68	5.12	19.92	200.31	1.10	0	"	"
0952	2.20	220	18.75	286.31	5.10	20.05	200.81	0.92	0	"	"
0957	3.30	220	18.75	291.76	5.16	20.15	199.60	0.85	0	"	"
1002	4.40	220	18.76	298.10	5.13	20.16	198.91	0.80	0	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
W-RW2	JAMES GRAPHMEYER / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 1003	SAMPLING END TIME: 1033
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 18.36	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD:	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: IPSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
Y	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
Y	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-3A	SAMPLE ID: W-3A-2021-Q4	DATE: 10-25-21
TOTAL WELL LENGTH (feet) (A): 85.25	WATER TABLE DEPTH (feet) (B): 7.54	LENGTH OF WATER COLUMN (feet) (A-B): 77.71
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 72.5 feet to 82.5 feet	CALCULATED SYSTEM VOLUME: 12.67

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 81.25	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 81.25	PURGING START TIME: 0929	PURGING END TIME: 0956 / TOTAL VOLUME PURGED (~~gallons~~ LITERS): 5.0

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons) LITERS	PURGE RATE (gpm) mL PM	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0930	INITIAL	200	7.64	29.52	5.79	19.69	35.07	5.18	2.20	CLEAR	NO
0935	1.00	200	7.64	117.60	4.90	19.11	24.45	0.46	0	"	"
0941	2.00	200	7.64	120.55	4.90	19.07	24.35	0.30	0	"	"
0946	3.00	200	7.64	128.83	4.86	19.06	24.40	0.23	0	"	"
0951	4.00	200	7.64	131.78	4.87	19.07	24.40	0.21	0	"	"
0956	5.00	200	7.64	133.07	4.87	19.04	24.40	0.18	0	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: W-3A	SAMPLED BY (PRINT) / AFFILIATION: JAMES LEAHART / ACCOM		
SAMPLER(S) SIGNATURE(S): JLeahart		SAMPLING START TIME: 0957	SAMPLING END TIME: 1051
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 81.25	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	MS/MSD COLLECTED
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity[a]~~	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	207555	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-4R	SAMPLE ID: W-4R-2021-Q4	DATE: 10-25-21
TOTAL WELL LENGTH (feet) (A): 17.27	WATER TABLE DEPTH (feet) (B): 11.50	LENGTH OF WATER COLUMN (feet) (A-B): 5.77
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 5 feet to 15 feet	CALCULATED SYSTEM VOLUME: 0.94

PURGING DATA

	TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 14.27	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 14.27	PURGING START TIME: 0829	PURGING END TIME: 0902	TOTAL VOLUME PURGED ~~(gallons)~~ LITERS: 3.30

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons) LITERS	PURGE RATE (gpm) mL Per Min	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0831	INITIAL	160	11.62	-13.21	5.94	19.84	200.50	1.86	9.38	CLEAR	NO
0836	0.80	0.80	11.79	9.24	5.77	20.22	170.53	0.44	0.70	"	"
0841	1.30	100	11.86	42.80	5.70	20.42	162.81	0.32	0	"	"
0846	1.80	100	11.89	62.41	5.68	20.47	160.13	0.30	1.22	"	"
0852	2.30	100	11.92	71.52	5.70	20.54	160.76	0.29	2.20	"	"
0857	2.80	100	11.93	74.71	5.68	20.55	160.76	0.26	3.39	"	"
0902	3.30	100	11.94	78.48	5.69	20.58	162.13	0.24	4.01	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: W-4R	SAMPLED BY (PRINT) / AFFILIATION: J A 3 (illegible) / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 0903	SAMPLING END TIME: 0922
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 1427	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity[a]~~	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-6	SAMPLE ID: W-6-2021-Q4	DATE: 10-8-21
TOTAL WELL LENGTH (feet) (A): 27.30	WATER TABLE DEPTH (feet) (B): 10.32	LENGTH OF WATER COLUMN (feet) (A-B): 16.98
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 23.5 feet to 28.5 feet	CALCULATED SYSTEM VOLUME: 2.77

PURGING DATA

TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25.5	PURGING START TIME: 1008	PURGING END TIME: 1025 / TOTAL VOLUME PURGED (~~gallons~~ LITERS): 1.65

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ L)	PURGE RATE (~~gpm~~)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1010	INITIAL	130	10.77	165.63	6.27	23.25	2286.83	1.93	6.51	CLEAR	NO
1015	0.65	100	11.30	152.27	6.34	23.12	2306.87	0.44	2.56	"	"
1020	1.15	100	11.42	155.41	6.34	23.02	2305.58	0.32	2.85	"	"
1025	1.65	100	11.45	156.03	6.34	23.11	2318.39	0.30	5.16	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
W-6	JAMES LEATHART / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 1028	SAMPLING END TIME: 1055
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 25.5	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature:** + 3% **Specific Conductance:** + 3% **Dissolved Oxygen:** optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP:** + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: 7A	SAMPLE ID: W-7A-2021-Q4	DATE: 10/5/21
TOTAL WELL LENGTH (feet) (A): 20.1	WATER TABLE DEPTH (feet) (B): 11.71	LENGTH OF WATER COLUMN (feet) (A-B): 8.39
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH 13.0 feet to 18.0 feet	CALCULATED SYSTEM VOLUME: 1.4

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: Peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15.5	PURGING START TIME: 1323	PURGING END TIME: 1350	TOTAL VOLUME PURGED (gallons): 3.7

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
						24.4					
1324	0	180	12.04	-12.89	6.95	39.78	1.832	5.268	1.8	clear	none
1329	0.9	180	12.2	-15.21	7.01	~~3160.8~~	3160.8	0.578	0.6	clear	none
1334	1.5	120	12.23	-17.94	7.02	23.8	3174.1	0.341	1.2	clear	none
1339	2.3	160	12.23	-21.05	7.03	23.7	3159.9	0.307	4.7	clear	none
~~1344~~ 1350	3.7	130	12.23	-26.64	7.04	23.7	3163.9	0.297	10.7	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: 7A	SAMPLED BY (PRINT) / AFFILIATION: R. CREWS		
SAMPLER(S) SIGNATURE(S): R		SAMPLING START TIME: 1352	SAMPLING END TIME: 1430 ~~1430~~
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet):		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: Low Flow

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
Y						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
Y	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3	201942	GAMMA	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-10	SAMPLE ID: W-10-2021-Q4	DATE: 10-5-21
TOTAL WELL LENGTH (feet) (A): 22.25	WATER TABLE DEPTH (feet) (B): 15.80	LENGTH OF WATER COLUMN (feet) (A-B): 6.45
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 18.5 feet to 23.5 feet	CALCULATED SYSTEM VOLUME: 1.05

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5	PURGING START TIME: 1249	PURGING END TIME: 1316	TOTAL VOLUME PURGED (~~gallons~~ LITERS): 3.30

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ LITERS)	PURGE RATE (~~gpm~~ mL PM)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1251	INITIAL	180	16.45	78.03	6.27	25.96	424.41	2.06	3.90	CLEAR	NO
1256	0.90	120	16.72	106.24	6.16	24.43	422.96	0.42	2.35	"	"
1301	1.50	120	16.70	111.86	6.17	24.49	441.73	0.35	4.51	"	"
1306	2.10	120	16.70	116.91	6.19	24.18	517.14	0.32	6.77	"	"
1311	2.70	120	16.70	119.23	6.20	24.27	523.99	0.30	0.68	"	"
1316	3.30	120	16.70	115.75	6.22	24.40	527.64	0.27	0.87	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:	
W-10	JAMES LEAHART / AECOM	
SAMPLER(S) SIGNATURE(S):	SAMPLING START TIME: 1319	SAMPLING END TIME: 1349
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 20.5	DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: PERISTALTIC

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
Y	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3	201942	GAMMA SPEC	
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: 11	SAMPLE ID: W-11-2021-Q4-[redacted]	DATE: 10/5/21
TOTAL WELL LENGTH (feet) (A): 27.25	WATER TABLE DEPTH (feet) (B): 18.3	LENGTH OF WATER COLUMN (feet) (A-B): 1.5
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH 25.5 feet to 28.5 feet	CALCULATED SYSTEM VOLUME 4.5

PURGING DATA

TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: Peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 27.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 27.0	PURGING START TIME: 1018	PURGING END TIME: 1039 / TOTAL VOLUME PURGED (gallons): 1.7L

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1018	0	100	18.82	-48.90	5.91	30.04	439.14	3.81	19.8	CLEAR	NONE
1023	0.5	100	19.52	-30.81	5.68	23.6	281.61	0.466	5.28	CLEAR	NONE
1028	0.9	90	20.07	-19.21	5.74	23.2	279.8	0.510	4.85	CLEAR	NONE
1033	1.3	90	20.62	-14.41	5.73	23.0	273.68	0.376	6.7	CLEAR	NONE
1038	1.7	90	21.25	-11.45	5.74	23.1	271.74	0.332	5.8	CLEAR	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
11	R. Crews		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 1045	SAMPLING END TIME: 1121
TUBING MATERIAL CODE:	PUMP OR TUBING DEPTH IN WELL (feet):	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3	201942	GAMMA	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-13R	SAMPLE ID: W-1312-2021-Q4	DATE: 10-5-21
TOTAL WELL LENGTH (feet) (A): 20.28	WATER TABLE DEPTH (feet) (B): 12.13	LENGTH OF WATER COLUMN (feet) (A-B): 8.15
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 15 feet to 20 feet	CALCULATED SYSTEM VOLUME: 1.33

PURGING DATA

	TUBING DIAMETER (inches): 1/4"		PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 17	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 17	PURGING START TIME: 1004	PURGING END TIME: 1049	TOTAL VOLUME PURGED (~~gallons~~ LITERS): 4.25

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ LITERS)	PURGE RATE (~~gpm~~ mL Pm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or(µS/cm)	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1009	INITIAL	150	12.25	84.93	6.05	24.61	564.30	1.13	43.01	CLEAR	NO
1014	0.75	100	12.25	107.29	6.28	24.16	746.76	0.72	287	CLOUDY	"
1019	1.25	100	12.13	108.19	6.35	24.36	769.40	0.68	129	"	"
1024	1.75	100	12.13	115.28	6.33	24.37	757.23	0.64	116	"	"
1029	2.25	100	12.13	117.84	6.35	24.32	772.54	0.62	90.62	"	"
1034	2.75	100	12.13	120.80	6.33	24.37	763.01	0.57	42.27	CLEAR	"
1039	3.25	100	12.13	121.11	6.35	24.40	768.16	0.61	20.62	"	"
1044	3.75	100	12.13	121.88	6.34	24.40	766.06	0.62	21.13	"	"
1049	4.25	100	12.13	123.73	6.33	24.43	764.73	0.60	23.44	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: W-13R	SAMPLED BY (PRINT) / AFFILIATION: JAMES LEADHART / AECOM		
SAMPLER(S) SIGNATURE(S): JLeadhart		SAMPLING START TIME: 1051	SAMPLING END TIME: 1125
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 17	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity[a]~~	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
Y	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3	201942	GAMMA SPEC	
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-14	SAMPLE ID: W-14-2021-Q4	DATE: 10-18-21
TOTAL WELL LENGTH (feet) (A): 30.50	WATER TABLE DEPTH (feet) (B): 16.83	LENGTH OF WATER COLUMN (feet) (A-B): 13.67
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 23.5 feet to 28.5 feet	CALCULATED SYSTEM VOLUME: 2.23

PURGING DATA

TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5	PURGING START TIME: 1300	PURGING END TIME: 1328	TOTAL VOLUME PURGED (~~gallons~~ LITERS): 3.5

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1303	INITIAL	140	16.94	-11.17	6.13	23.05	556.48	5.64	2.74	CLEAR	NS
1308	0.70	140	16.94	-45.83	6.21	21.72	594.97	0.62	0.84	"	"
1313	1.40	140	16.94	-57.19	6.23	21.52	586.66	0.40	3.05	"	"
1318	2.10	140	16.94	-71.33	6.23	21.56	575.58	0.34	1.85	"	"
1323	2.80	140	16.94	-73.90	6.24	21.56	561.66	0.29	4.81	"	"
1328	3.50	140	16.94	-76.11	6.23	21.59	551.28	0.28	0.94	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:	
W-14	JAMES LEGHART / AECOM	
SAMPLER(S) SIGNATURE(S): J Leghart	SAMPLING START TIME: 1330	SAMPLING END TIME: 1352
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 27.5	DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. **STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:**
pH: + 1.0 units **Temperature:** + 3% **Specific Conductance:** + 3% **Dissolved Oxygen:** optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP:** + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-15	SAMPLE ID: W-15-2021-Q4	DATE: 10-19-21
TOTAL WELL LENGTH (feet) (A): 21.85	WATER TABLE DEPTH (feet) (B): 12.15	LENGTH OF WATER COLUMN (feet) (A-B): 9.7
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 13.5 feet to 18.5 feet	CALCULATED SYSTEM VOLUME: 1.58

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 19	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 19	PURGING START TIME: 1029	PURGING END TIME: 1051	TOTAL VOLUME PURGED ~~(gallons)~~ LITERS: 3.00

TIME (24 HR)	CUMUL. VOLUME PURGED ~~(gallons)~~ LITERS	PURGE RATE ~~(gpm)~~ mL/m	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1031	INITIAL	150	12.36	151.42	5.78	20.34	456.45	4.51	0	CLEAR	NO
1036	0.75	150	12.40	192.39	5.80	21.05	470.17	0.56	0	"	"
1041	1.50	150	12.40	189.68	5.98	21.03	548.04	0.41	0	"	"
1046	2.25	150	12.40	183.40	5.99	21.24	552.06	0.35	3.24	"	"
1051	3.00	150	12.40	182.22	5.99	21.35	555.96	0.28	0	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
W-15	JAMES LEAPHART / AECOM		
SAMPLER(S) SIGNATURE(S): JLeaphart	SAMPLING START TIME: 1054	SAMPLING END TIME: 1117	
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 19	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: PERISTALTIC		

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
Y	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: D-16	SAMPLE ID: D-16-2021-Q4	DATE: Oct 19-21
TOTAL WELL LENGTH (feet) (A): 13.56	WATER TABLE DEPTH (feet) (B): 4.20	LENGTH OF WATER COLUMN (feet) (A-B): 9.36
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 15.5 feet to 18.5 feet ?	CALCULATED SYSTEM VOLUME: 1.53

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 11.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 11.0	PURGING START TIME: 1133	PURGING END TIME: 1217 / TOTAL VOLUME PURGED (~~gallons~~ LITERS): 4.95

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ LITERS)	PURGE RATE (~~gpm~~ ML PM)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1137	INITIAL	180	4.20	107.78	6.51	21.46	433.92	7.18	1.53	CLEAR	NO
1142	0.90	150	6.20	110.61	6.51	21.64	434.78	0.47	3.91	"	"
1147	1.65	120	6.70	109.26	6.50	21.49	433.07	0.29	2.71	"	"
1152	2.25	120	6.88	24.96	6.34	21.37	412.27	0.24	13.27	"	"
1202	3.45	100	6.80	5.03	6.19	21.28	391.25	0.24	66.07	"	"
1207	3.95	100	6.78	5.79	6.17	21.25	387.20	0.24	0.20	"	"
1212	4.45	100	6.75	7.86	6.16	21.29	383.94	0.23	2.89	"	"
1217	4.95	100	6.73	9.60	6.16	21.30	379.97	0.22	3.53	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
W-16	James Leaphart / AECOM		
SAMPLER(S) SIGNATURE(S): JLeaphart	SAMPLING START TIME: 1218	SAMPLING END TIME: 1238	
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 11.0	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD:		

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	20668	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
Y	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: 17	SAMPLE ID: W-17-2021-Q4	DATE: 10/12/21
TOTAL WELL LENGTH (feet) (A): 29.60	WATER TABLE DEPTH (feet) (B): 14.1	LENGTH OF WATER COLUMN (feet) (A-B): 15.5
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 23.5 feet to 28.0 feet	CALCULATED SYSTEM VOLUME: 2.5

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25.5	PURGING START TIME: 1210	PURGING END TIME: 1254	TOTAL VOLUME PURGED (~~gallons~~): 6.6

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1214	0	180	14.25	-71.07	6.60	26.5	357.13	3.466	1.2	CLEAR	NONE
1219	0.9	180	14.3	-84.19	6.68	22.5	538.2	1.240	1.3	CLEAR	NONE
1224	1.8	180	14.31	-84.73	6.61	22.5	495.31	1.121	7.5	CLEAR	NONE
1229	2.6	160	14.32	-84.06	6.57	22.4	483.37	0.508	6.2	CLEAR	NONE
1234	3.4	160	1432	-84.08	6.57	22.5	477.75	0.240	8.2	CLEAR	NONE
1239	4.2	160	14.32	-84.47	6.50	22.7	453.69	0.253	12.8	CLEAR	NONE
1244	5.0	160	14.32	-83.79	6.47	22.7	442.40	0.270	7.8	CLEAR	NONE
1249	5.8	160	14.32	-83.32	6.44	22.7	434.30	0.268	18.7	CLEAR	NONE
1254	6.6	160	14.32	-82.63	6.48	22.5	432.94	0.276	4.2	CLEAR	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016
PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: 17	SAMPLED BY (PRINT) / AFFILIATION: R. Crews		
SAMPLER(S) SIGNATURE(S): RCrews		SAMPLING START TIME: 1258	SAMPLING END TIME: 1355
TUBING MATERIAL CODE:	PUMP OR TUBING DEPTH IN WELL (feet): 25.5	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-18R	SAMPLE ID: W-18R-2021-Q4	DATE: 10-8-21
TOTAL WELL LENGTH (feet) (A): ~~27.30~~ 27.28 (JL)	WATER TABLE DEPTH (feet) (B): 11.49	LENGTH OF WATER COLUMN (feet) (A-B): 15.81
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 12.5 feet to 17.5 feet	CALCULATED SYSTEM VOLUME: 2.58

PURGING DATA

	TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25.30	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25.30	PURGING START TIME: 1117	PURGING END TIME: 1149	TOTAL VOLUME PURGED (~~gallons~~ Liters): 3.25 Liters

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ Liters)	PURGE RATE (~~gpm~~ mL Per Min)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1119	INITIAL	150	12.11	119.44	7.25	23.34	4516.54	1.89	1.01	CLEAR	NO
1124	0.75	100	13.20	112.82	7.28	22.90	4068.89	0.46	1.69	"	"
1129	1.25	100	13.44	111.67	7.28	23.41	4295.00	0.47	4.49	"	"
1134	1.75	100	13.60	109.50	7.33	23.41	4413.31	0.36	0.30	"	"
1139	2.25	100	13.70	107.60	7.37	23.39	4557.89	0.35	0.79	"	"
1144	2.75	100	13.81	105.60	7.41	23.30	4635.09	0.31	2.83	"	"
1149	3.25	100	13.87	104.23	7.43	23.18	4703.98	0.30	0.28	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:	
W-18R	James Leadhart / AECOM	
SAMPLER(S) SIGNATURE(S): JLeadhart	SAMPLING START TIME: 1150	SAMPLING END TIME: 1223
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 25.30	DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature:** + 3% **Specific Conductance:** + 3% **Dissolved Oxygen:** optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP:** + 10 mV **Turbidity:** all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	266168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
Y	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-19B	SAMPLE ID: W-19B-2021-Q4	DATE: 10-20-21
TOTAL WELL LENGTH (feet) (A): 43.00	WATER TABLE DEPTH (feet) (B): 24.64	LENGTH OF WATER COLUMN (feet) (A-B): 18.36
CASING DIAMATER / MATL (inches): 4" / PVC	WELL SCREEN INTERVAL DEPTH: 30 feet to 40.5 feet	CALCULATED SYSTEM VOLUME: 11.93

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 40	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 40	PURGING START TIME: 1323	PURGING END TIME: ~~1424~~ 1351 (JL) / TOTAL VOLUME PURGED (~~gallons~~ LITERS): 4.50

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ LITERS)	PURGE RATE (~~gpm~~ mL/m)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1326	INITIAL	180	24.69	176.29	5.46	21.39	78.14	5.86	6.05	CLEAR	NO
1331	0.90	180	24.70	232.31	5.41	19.54	78.43	4.71	1.87	"	"
1336	1.80	180	24.70	246.91	5.41	19.33	78.45	4.55	0.47	"	"
1341	2.70	180	24.70	281.18	5.39	19.52	79.73	4.44	0	"	"
1346	3.60	180	24.70	275.56	5.37	19.57	79.79	4.40	0	"	"
1351	4.50	180	24.70	272.09	5.35	19.65	79.85	4.38	0	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

ELL No: W-193	SAMPLED BY (PRINT) / AFFILIATION: James Leadbetter / Arcadis		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 1353	SAMPLING END TIME: 1424
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 40	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: Peristaltic	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3	201942		
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: 20	SAMPLE ID: W-20-2021-Q4	DATE: 10/26/21
TOTAL WELL LENGTH (feet) (A): 18.5	WATER TABLE DEPTH (feet) (B): 9.03	LENGTH OF WATER COLUMN (feet) (A-B): 9.47
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 10.5 feet to 15.5 feet	CALCULATED SYSTEM VOLUME: 1.5

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PP

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 13.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 13.0	PURGING START TIME: 1020	PURGING END TIME: 1101	TOTAL VOLUME PURGED (gallons): 7.1

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1021	0	160	9.07	-144.65	5.68	16.9	0.06	9.687	12	CLEAR	NONE
1026	0.8	160	9.07	-77.81	5.54	19.4	138.67	0.678	3	CLEAR	NONE
1031	1.7	180	9.07	-60.75	5.47	19.3	136.50	0.611	0	CLEAR	NONE
1036	2.6	180	9.07	-51.35	5.45	19.4	136.23	0.579	0	CLEAR	NONE
1041	3.5	180	9.07	-43.84	5.42	19.4	135.87	0.770	0	CLEAR	NONE
1046	4.4	180	9.07	-40.51	5.46	19.4	135.46	0.617 mg/L 10/26/21	0	CLEAR	NONE
1051	5.3	180	9.05	-40.70	5.54	19.4	135.46	0.307	0	CLEAR	NONE
1056	6.2	180	9.05	-38.85	5.57	19.5	135.92	0.261	0	CLEAR	NONE
1101	7.1	180	9.05							CLEAR	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016
PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: 20	SAMPLED BY (PRINT) / AFFILIATION: RANDY CREWS		
SAMPLER(S) SIGNATURE(S): RC		SAMPLING START TIME: 1103	SAMPLING END TIME: 1123
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet):	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: LOW FLOW	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	2061168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	207555	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-22	SAMPLE ID: W-22-2021-Q4	DATE: 10-8-21
TOTAL WELL LENGTH (feet) (A): 14.37	WATER TABLE DEPTH (feet) (B): 10.80	LENGTH OF WATER COLUMN (feet) (A-B): 4.07
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 13.4 feet to 17.8 feet	CALCULATED SYSTEM VOLUME: 0.66

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 14.8	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 14.8	PURGING START TIME: ~~0859~~ 0912	PURGING END TIME: 0933	TOTAL VOLUME PURGED (~~gallons~~ Liters): 3.20

TIME (24 HR)	CUMUL. VOLUME PURGED ~~(gallons)~~ LITERS	PURGE RATE ~~(gpm)~~ ML PM	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0913	INITIAL	160	10.95	163.39	6.29	24.52	182.05	5.05	0.28	CLEAR	NS
0918	0.80	160	11.03	227.46	5.60	24.73	1172.13	0.60	0.22	"	"
0923	1.60	160	11.07	222.46	5.59	24.65	1285.53	0.39	0.22	"	"
0928	2.40	160	11.07	224.01	5.60	24.61	1311.05	0.29	0.26	"	"
0933	3.20	160	11.08	225.01	5.61	24.59	1317.13	0.27	2.39	"	"

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

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SAMPLING DATA

WELL No: W-22	SAMPLED BY (PRINT) / AFFILIATION: James Leathart / AECOM		
SAMPLER(S) SIGNATURE(S): JLeathart		SAMPLING START TIME: 0934	SAMPLING END TIME: 1001
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 14.8		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: Peristaltic

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: AG = Amber Glass; S = Silicone; CG = Clear Glass; T = Teflon; HDPE = High Density Polyethylene; O = Other (Specify); LDPE = Low Density Polyethylene; PP = Polypropylene;

NOTES:
1. **STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:**
pH: + 1.0 units **Temperature:** + 3% **Specific Conductance:** + 3% **Dissolved Oxygen:** optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP:** + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity[a]~~	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
Y	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: L-23R	SAMPLE ID: L-23R-2021-Q4	DATE: 10-18-21
TOTAL WELL LENGTH (feet) (A): 23.95	WATER TABLE DEPTH (feet) (B): 18.69	LENGTH OF WATER COLUMN (feet) (A-B): 5.26
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 15.5 feet to feet	CALCULATED SYSTEM VOLUME: 0.86

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: P
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20.95	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20.95	PURGING START TIME: 1006	PURGING END TIME: 1028	TOTAL VOLUME PURGED (~~gallons~~ LITERS): 4.40

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ LITERS)	PURGE RATE (~~gpm~~ mL PM)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1008	INITIAL	220	18.88	138.85	5.35	20.09	0	9.17	1.01	CLEAR	NO
1013	1.10	220	18.88	272.03	4.76	18.54	49.41	4.16	0	"	"
1018	2.20	220	18.88	285.48	4.80	18.54	51.58	4.19	0	"	"
1023	3.30	220	18.88	283.94	4.89	18.59	52.96	4.21	0	"	"
1028	4.40	220	18.88	284.23	4.92	18.63	56.20	4.15	0	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: W-23R	SAMPLED BY (PRINT) / AFFILIATION: James Leaphart / AECOM		
SAMPLER(S) SIGNATURE(S): JLeaphart		SAMPLING START TIME: 1029	SAMPLING END TIME: 1048
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 20.95	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: Peristaltic	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units Temperature: + 3% Specific Conductance: + 3% Dissolved Oxygen: optionally, + 0.2 mg/L or + 10% (whichever is greater) ORP: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: 24	SAMPLE ID: W-24-2021-Q4	DATE: 10/21/21
TOTAL WELL LENGTH (feet) (A): 17.12	WATER TABLE DEPTH (feet) (B): 10.15	LENGTH OF WATER COLUMN (feet) (A-B): 6.97
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 10.1 feet to 15.1 feet	CALCULATED SYSTEM VOLUME: 1.1

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 12.6	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 12.6	PURGING START TIME: 1336	PURGING END TIME: 1412	TOTAL VOLUME PURGED (gallons): 6.3L

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1337	0	180	15.17	-98.78	5.52	27.5	44.94	2.343	2.5	clear	NONE
1342	0.9	180	15.17	-131.52	5.51	23.3	43.69	0.421	1.9	clear	NONE
1347	1.8	180	15.17	-131.27	5.52	23.3	46.88	0.267	2.9	clear	NONE
1352	2.7	180	15.17	-129.72	5.55	23.2	51.38	0.203	4.3	clear	NONE
1357	3.6	180	15.17	-128.51	5.56	23.2	54.75	0.174	3.1	clear	NONE
1402	4.5	180	15.17	-123.9	5.54	23.0	57.64	0.167	6.1	clear	NONE
1407	5.4	180	15.17	-123.8	5.55	23.0	58.31	0.157	1.8	clear	NONE
1412	6.3	180	15.17	-122.5	5.56	23.1	58.33	0.178	8.6	clear	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
24	RANDY CREWS		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 1415	SAMPLING END TIME: 1140
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 12.6	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: LOW FLOW	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
Y	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: 25	SAMPLE ID: W-25-2021-Q4	DATE: 10/26/21
TOTAL WELL LENGTH (feet) (A): 28.15	WATER TABLE DEPTH (feet) (B): 9.38	LENGTH OF WATER COLUMN (feet) (A-B): 18.77
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 22.5 feet to 27.5 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25.0	PURGING START TIME: 1139	PURGING END TIME: 1207	TOTAL VOLUME PURGED (~~gallons~~): 3.6

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1142	0	140	9.42	-159.08	6.58	18.5	149.96	5.278	6	CLEAR	NONE
1147	0.7	140	9.42	-216.62	6.60	18.5	145.95	0.662	6	CLEAR	NONE
1152	1.4	140	9.42	-228.73	6.63	18.5	148.60	0.419	11	CLEAR	NONE
1157	2.1	140	9.42	-237.90	6.67	18.5	150.37	0.357	15	CLEAR	NONE
1202	2.8	140	9.42	-242.29	6.68	18.5	150.33	0.226	13	CLEAR	NONE
1207	3.6	140	9.42	-246.16	6.70	18.4	150.36	0.188	10	CLEAR	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: 25	SAMPLED BY (PRINT) / AFFILIATION: RANDY CREWS		
SAMPLER(S) SIGNATURE(S): R Crews		SAMPLING START TIME: 1209	SAMPLING END TIME: 1230
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet):	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: LOW FLOW	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	207555	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: 26	SAMPLE ID: W-26-2021-Q4	DATE: 10/19/21
TOTAL WELL LENGTH (feet) (A): 32.14	WATER TABLE DEPTH (feet) (B): 25.6	LENGTH OF WATER COLUMN (feet) (A-B): 6.54
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: feet to feet	CALCULATED SYSTEM VOLUME: 1.1

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 28.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 28.0	PURGING START TIME: 1125	PURGING END TIME: 1147	TOTAL VOLUME PURGED (gallons): 2.0L

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1127	0	100	25.65	92.19	5.68	18.6	0.062	5.246	1.1	clear	none
1132	0.5	100	25.66	77.52	5.90	19.0	235.20	0.735	0	clear	none
1137	1.0	100	25.66	66.46	6.04	19.0	230.54	0.797	0	clear	none
1142	1.5	100	25.66	62.77	6.07	19.1	230.04	0.730	0	clear	none
1147	2.0	100	25.66	60.72	6.08	19.0	226.59	0.611	0	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: 26	SAMPLED BY (PRINT) / AFFILIATION: Randy Crews		
SAMPLER(S) SIGNATURE(S): R Crews		SAMPLING START TIME: 1153	SAMPLING END TIME: 1233
TUBING MATERIAL CODE:	PUMP OR TUBING DEPTH IN WELL (feet):	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	20616B	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
Y	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
Y	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-27	SAMPLE ID: W-27-2021-Q4	DATE: 10-22-21
TOTAL WELL LENGTH (feet) (A): 16.38	WATER TABLE DEPTH (feet) (B): 10.44	LENGTH OF WATER COLUMN (feet) (A-B): 5.94
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 14.1 feet to 18.9 feet	CALCULATED SYSTEM VOLUME: 0.97

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 13.38	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 13.38	PURGING START TIME: 1231	PURGING END TIME: 1258	TOTAL VOLUME PURGED (gallons): 3.25

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPE COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
										LITERS	
1233	INITIAL	200	10.85	-62.20	6.07	21.42	348.88	5.45	29.39		NO
1238	1.00	150	10.97	-92.18	6.19	20.02	356.14	0.56	64.37	CLOUDY	"
1243	1.75	100	10.89	-98.98	6.22	20.05	360.81	0.32	16.61	CLEAR	"
1248	2.25	100	10.80	-96.67	6.19	20.85	3	0.36	0.94	"	"
1253	2.75	100	10.80	-97.33	6.19	20.90	348.74	0.33	0.91	"	"
1258	3.25	100	10.80	-102.87	6.23	20.73	357	0.29	0.16	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016
PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: W-22	SAMPLED BY (PRINT) / AFFILIATION: James Leaphart / Accom		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 1303	SAMPLING END TIME: 1330
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 13.38	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: Peristaltic	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: Solinst	
MODEL: Troll 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity[a]~~	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Water Sample Collection Record

WELL NO: W-28	SAMPLE ID: W-28-2021-Q4	DATE: 10-6-21
TOTAL WELL LENGTH (feet) (A): 17.25	WATER TABLE DEPTH (feet) (B): 11.66	LENGTH OF WATER COLUMN (feet) (A-B): 5.59
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH 9.8 feet to 14.7 feet	CALCULATED SYSTEM VOLUME: 0.91

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 14.25	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 14.25	PURGING START TIME: 1120	PURGING END TIME: 1153	TOTAL VOLUME PURGED (gallons):

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~) LITERS	PURGE RATE (~~gpm~~) mL PM	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1123	INITIAL	200	11.71	97.11	6.39	25.46	1047.80	2.27	1.10	CLEAR	NO
1128	1.00	200	11.72	186.75	5.75	25.08	1011.14	0.60	0.85	"	"
1133	2.00	200	11.72	259.99	5.81	25.09	955.04	0.41	2.52	"	"
1138	3.00	200	11.72	391.96	5.90	25.13	894.64	0.51	7.88	"	"
1143	4.00	200	11.72	437.74	5.94	25.14	854.22	0.68	12.68	"	"
1148	5.00	100	11.70	443.04	5.97	25.18	829.83	0.74	18.02	"	"
1153	5.50	100	11.70	440.38	6.02	25.26	809.56	0.84	17.54	"	"
~~1158~~	~~6.00~~	~~100~~	~~11.70~~	JL						"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. | * Procedure # ROP-06-007

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SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING START TIME:	SAMPLING END TIME:
James Leaphart / Accom		1158	1222

TUBING MATERIAL CODE:	PUMP OR TUBING DEPTH IN WELL (feet):	DUPLICATE:
T	14.25	Y (N)

FIELD DECONTAMINATION:	SAMPLE COLLECTION METHOD:
PUMP Y (N) TUBING (Y) N (replaced)	PERISTALTIC

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3	201942	~~RAD~~ GAMMA SPEC	
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: 29	SAMPLE ID: W-29-2021-EQ4	DATE: 10/8/21
TOTAL WELL LENGTH (feet) (A): 15.6	WATER TABLE DEPTH (feet) (B): 11.43	LENGTH OF WATER COLUMN (feet) (A-B): 4.17
CASING DIAMATER / MATL (inches): 2	WELL SCREEN INTERVAL DEPTH: 10 feet to 15 feet	CALCULATED SYSTEM VOLUME: 0.7

PURGING DATA

12.5	TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~~0837~~	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 12.5	PURGING START TIME: 0837	PURGING END TIME: 0900	TOTAL VOLUME PURGED (gallons): 2.7

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0840	0	120	11.47	7.37	7.33	21.8	0.058	7.417	0	CLEAR	NONE
0845	0.6	120	11.47	-6.19	7.40	24.2	436.8	0.900	0	CLEAR	NONE
0850	1.3	140	11.47	-10.45	7.36	24.2	429.47	0.353	0	CLEAR	NONE
0855	2.0	140	11.47	-13.72	7.33	24.3	422.4	0.316	0	CLEAR	NONE
0900	2.7	140	11.47	-15.49	7.27	24.3	412.19	0.270	0	CLEAR	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: 29	SAMPLED BY (PRINT) / AFFILIATION: R Crews		
SAMPLER(S) SIGNATURE(S): R Cr		SAMPLING START TIME: 0905	SAMPLING END TIME: 1010
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet):	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS: Pulled MS & MSD
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
Y	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: 30	SAMPLE ID: W-30-2021-Q4	DATE: 10/8/21
TOTAL WELL LENGTH (feet) (A): 16.77	WATER TABLE DEPTH (feet) (B): 11.78	LENGTH OF WATER COLUMN (feet) (A-B): 4.99
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 10.2 feet to 15.2 feet	CALCULATED SYSTEM VOLUME: 0.8

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: Peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 12.7	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 12.7	PURGING START TIME: 1220	PURGING END TIME: 1252	TOTAL VOLUME PURGED (gallons): 4.2

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1222	0	140	11.8	-12.05	5.90	24.4	840.66	4.782	0	CLEAR	NONE
1227	0.7	140	11.8	-2.48	5.85	25.0	825.36	0.521	0	CLEAR	NONE
1232	1.4	140	11.8	+1.53	5.88	25.1	839.17	0.362	0	CLEAR	NONE
1237	2.1	140	11.8	2.64	5.89	25.2	842.80	0.285	0	CLEAR	NONE
1242	2.8	140	11.8	3.38	5.89	25.3	847.21	0.382	0	CLEAR	NONE
1247	3.5	140	11.8	3.62	5.89	25.3	849.89	0.218	0	CLEAR	NONE
1252	4.2	140	11.8	4.65	5.89	25.3	849.03	0.189	0	CLEAR	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016
PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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TITLE: LOW FLOW GROUNDWATER SAMPLE COLLECTION RECORD
TYPE: REFERENCE USE
DATE: 10-07-21

FORM NO: ROF-06-007-2
REFERENCE NO: NONE
REVISION: 6

SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
30	R. Gibbs		
SAMPLER(S) SIGNATURE(S): R Gibbs	SAMPLING START TIME: 1255	SAMPLING END TIME: 1325	
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 12.7	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
Y	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: 32	SAMPLE ID: W-32-2021-Q4	DATE: 10/5/21
TOTAL WELL LENGTH (feet) (A): 23.92	WATER TABLE DEPTH (feet) (B): 18.81	LENGTH OF WATER COLUMN (feet) (A-B): 5.11
CASING DIAMATER / MATL (inches): 2	WELL SCREEN INTERVAL DEPTH: 17.0 feet to 22.5 feet	CALCULATED SYSTEM VOLUME: 0.8

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 19.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 19.5	PURGING START TIME: 1125	PURGING END TIME: 1152	TOTAL VOLUME PURGED (gallons): 2.8

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1127	0	140	18.90	21.40	6.92	35.85	1064.9	2.75	2.3	CLEAR	NONE
1132	0.7	140	18.94	5.30	7.02	23.9	1245.9	0.706	1.9	CLEAR	NONE
1137	1.3	120	18.96	-5.05	7.07	23.8	1249.8	0.369	1.8	CLEAR	NONE
1142	1.8	100	18.96	-10.48	7.09	24.0	1267.9	0.379	3.2	CLEAR	NONE
1147	2.3	100	18.96	-16.34	7.10	24.0	1262.1	0.354	5.6	CLEAR	NONE
1152	2.8	100	18.96	-19.60	7.10	23.6	1258.6	0.327	7.9	CLEAR	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
32	T. CREWS		
SAMPLER(S) SIGNATURE(S): TC Crews		SAMPLING START TIME: 1153	SAMPLING END TIME: 1222
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet):	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: LOW FLOW	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
Y	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3	701942	GAMMA	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: 33	SAMPLE ID: W-33-2021-Q4	DATE: 10/14/21
TOTAL WELL LENGTH (feet) (A): 21.06	WATER TABLE DEPTH (feet) (B): 15.58	LENGTH OF WATER COLUMN (feet) (A-B): 5.48
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 15.1 feet to 20.7 feet	CALCULATED SYSTEM VOLUME: 0.9

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: peristaltic

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 17.6	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 17.6	PURGING START TIME: 1411	PURGING END TIME: 1449	TOTAL VOLUME PURGED ~~(gallons)~~: 4.9L	

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1413	0	140	15.62	-3.68	5.83	25.3	239.42	2.469	0.6	CLEAR	NONE
1418	0.7	140	15.63	11.19	5.84	22.6	245.07	1.420	0.1	CLEAR	NONE
1423	1.4	140	15.64	13.48	5.87	22.1	246.16	0.895	0	CLEAR	NONE
1428	2.1	140	15.64	12.28	5.89	22.0	246.63	0.901	0	CLEAR	NONE
1433	2.8	140	15.64	12.86	5.91	22.0	245.55	1.246	0	CLEAR	NONE
1438	3.5	140	15.64	11.91	5.94	22.0	242.49	0.921	0	CLEAR	NONE
1443	4.2	140	15.64	13.71	5.93	21.8	239.11	0.834	0	CLEAR	NONE
1448	4.9	140	15.64	13.47	5.95	21.9	239.33	0.811	0.1	CLEAR	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:	
33	RANDY CREWS	
SAMPLER(S) SIGNATURE(S): R Crews	SAMPLING START TIME: 1451	SAMPLING END TIME: 1520
TUBING MATERIAL CODE:	PUMP OR TUBING DEPTH IN WELL (feet):	DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: Low Flow

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
Y	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: 35	SAMPLE ID: W-35-2021-Q4	DATE: 10/14/21
TOTAL WELL LENGTH (feet) (A): 22.9	WATER TABLE DEPTH (feet) (B): 10.99	LENGTH OF WATER COLUMN (feet) (A-B): 11.91
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 16.8 feet to 21.0 feet	CALCULATED SYSTEM VOLUME: 2.0

PURGING DATA

	TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 18.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 18.5	PURGING START TIME: 1239	PURGING END TIME:	TOTAL VOLUME PURGED (gallons):

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1240	0	160	11.01	-78.95	6.10	25.7	145.73	5.668	5.8	CLEAR	NONE
1245	0.8	160	11.01	-46.62	6.07	23.4	152.19	4.725	1.7	CLEAR	NONE
1250 1250	1.6	160	11.01	-32.31	6.07	23.7	152.54	4.670	2.0	CLEAR	NONE
1255	2.4	160	11.01	-19.79	6.07	23.5	152.86	4.491	0.2	CLEAR	NONE
1300	3.1	140	11.01	-16.38	6.08	23.4	153.02	4.496	0.1	CLEAR	NONE
1305	3.8	140	11.01	21.25	6.08	23.6	152.69	4.514	0.2	CLEAR	NONE
1310	4.5	140	11.01	11.07	6.08	23.5	152.05	4.459	0.0	CLEAR	NONE
1315	5.2	140	11.01	7.56	6.08	23.6	151.77	4.432	0.9	CLEAR	NONE
1320	5.9	140	11.01	5.41	6.08	24.0	151.24	4.487	1.3	CLEAR	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016
PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:	
35	Randy Crews	
SAMPLER(S) SIGNATURE(S): R Crews	SAMPLING START TIME: 1323	SAMPLING END TIME: 1350
TUBING MATERIAL CODE:	PUMP OR TUBING DEPTH IN WELL (feet): 18.5	DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: Low Flow

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-36	SAMPLE ID: W-36-2021-Q4	DATE: 10-13-21
TOTAL WELL LENGTH (feet) (A): 21.95	WATER TABLE DEPTH (feet) (B): 7.76	LENGTH OF WATER COLUMN (feet) (A-B): 14.19
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 15 feet to 20 feet	CALCULATED SYSTEM VOLUME: 2.31

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 19	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 19	PURGING START TIME: 0904	PURGING END TIME: 0953	TOTAL VOLUME PURGED (~~gallons~~ LITERS): 6.60

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ LITERS)	PURGE RATE (gpm) mL PM	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0907	INITIAL	200	8.26	112.56	6.54	22.70	42.88	7.72	1.75	CLEAR	NO
0912	1.00	140	8.38	205.47	5.08	22.58	40.25	0.57	12.67	"	"
0917	1.70	140	8.44	213.63	5.04	22.61	4.59	0.30	16.60	"	"
0922	2.40	140	8.48	217.52	5.06	22.57	40.86	0.26	23.17	"	"
0928	3.10	140	8.48	213.39	5.10	22.53	40.75	0.23	22.29	"	"
0933	3.80	140	8.48	205.51	5.08	22.54	40.38	0.22	27.89	"	"
0938	4.50	140	8.48	209.98	4.98	22.55	40.28	0.22	10.70	"	"
0943	5.20	140	8.48	195.23	5.14	22.56	40.46	0.24	10.13	"	"
0948	5.90	140	8.48	198.30	5.15	22.58	40.74	0.23	7.89	"	"
0953	6.60	140	8.48	196.53	5.16	22.60	40.96	0.23	3.12	"	"
0											

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016
PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: W-36	SAMPLED BY (PRINT) / AFFILIATION: James Leaphart / AECOM		
SAMPLER(S) SIGNATURE(S): JLeaphart		SAMPLING START TIME: 0955	SAMPLING END TIME: 1022
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 19	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD:	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: IN-SITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature:** + 3% **Specific Conductance:** + 3% **Dissolved Oxygen:** optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP:** + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-37	SAMPLE ID: W-37-2021-Q4	DATE: 10-11-21
TOTAL WELL LENGTH (feet) (A): 22.90	WATER TABLE DEPTH (feet) (B): 11.15	LENGTH OF WATER COLUMN (feet) (A-B): 11.75
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 15.5 feet to 20.5 feet	CALCULATED SYSTEM VOLUME: 1.92

PURGING DATA

	TUBING DIAMETER (inches):		PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20.90	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20.90	PURGING START TIME: 1243	PURGING END TIME: 1306

TOTAL VOLUME PURGED ~~(gallons)~~ LITERS: 3.20

TIME (24 HR)	CUMUL. VOLUME PURGED ~~(gallons)~~ LITERS	PURGE RATE ~~(gpm)~~ ML PM	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1246	INITIAL	160	11.18	182.05	5.79	24.55	138.07	5.14	31.27	CLEAR	NO
1251	0.80	160	11.18	217.71	5.67	24.02	137.18	3.86	26.19	"	"
1256	1.60	160	11.18	226.81	5.67	23.90	136.80	3.76	4.40	"	"
1301	2.40	160	11.18	230.59	5.65	23.86	136.84	3.68	0.44	"	"
1306	3.20	160	11.18	234.44	5.64	23.91	137.30	3.66	0.73	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: W-37	SAMPLED BY (PRINT) / AFFILIATION: [illegible] / ACCAM		
SAMPLER(S) SIGNATURE(S): [signature]		SAMPLING START TIME: 1307	SAMPLING END TIME: 1330
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 20.90	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: 38	SAMPLE ID: W-38-2021-Q4	DATE: 10/7/21
TOTAL WELL LENGTH (feet) (A): 19.9	WATER TABLE DEPTH (feet) (B): 9.07	LENGTH OF WATER COLUMN (feet) (A-B): 10.83
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 15 feet to 20 feet	CALCULATED SYSTEM VOLUME: 1.8

PURGING DATA

TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 17.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 17.5	PURGING START TIME: 1358	PURGING END TIME: 1419	TOTAL VOLUME PURGED (gallons): 2.9

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1359	0	140	9.2	50.80	5.35	28.9	0.051	6.438	0.5	CLEAR	NONE
1404	0.7	140	9.2	58.68	5.40	25.3	174.79	3.454	0.3	CLEAR	NONE
1409	1.4	140	9.2	59.53	5.45	25.2	173.98	3.397	0.3	CLEAR	NONE
1414	2.1	140	9.2	61.72	5.44	25.1	174.39	3.423	0.4	CLEAR	NONE
1419	2.8	140	9.2	63.68	5.45	25.2	173.95	3.164	1.0	CLEAR	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: 38	SAMPLED BY (PRINT) / AFFILIATION: R. GREWS		
SAMPLER(S) SIGNATURE(S): [signature]		SAMPLING START TIME: 1422	SAMPLING END TIME:
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 17.5	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3	201942	GAMMA	
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: 39	SAMPLE ID: W-39-2021-Q4	DATE: 10/18/21
TOTAL WELL LENGTH (feet) (A): 25.2	WATER TABLE DEPTH (feet) (B): 15.9	LENGTH OF WATER COLUMN (feet) (A-B): 9.3
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 12 feet to 22 feet	CALCULATED SYSTEM VOLUME: 1.5

PURGING DATA

	TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: Peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 17.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 17.0	PURGING START TIME:	PURGING END TIME: 1200	TOTAL VOLUME PURGED (gallons): 2.8L

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1140	0	140	15.9	25.69	5.79	36.3	0.299	5.885	0	CLEAR	NONE
1145	0.7	140	15.9	50.01	5.66	24.2	630.6	2.450	0.5	CLEAR	NONE
1150	1.4	140	15.9	47.92	5.68	24.0	633.1	2.390	0.3	CLEAR	NONE
1155	2.1	140	15.9	49.81	5.70	23.9	621.4	2.350	0.2	CLEAR	NONE
1200	2.8	140	15.9	48.62	5.71	24.1	617.1	2.317	0.1	CLEAR	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
39	RANDY CREWS		
SAMPLER(S) SIGNATURE(S): RC	SAMPLING START TIME: 1203	SAMPLING END TIME: 1228	
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 17	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: LOW FLOW	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
Y	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: 40	SAMPLE ID: W-40-2021-Q4	DATE: 10/12/21
TOTAL WELL LENGTH (feet) (A): 17.24	WATER TABLE DEPTH (feet) (B): 11.2	LENGTH OF WATER COLUMN (feet) (A-B): 6.04
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 5 feet to 15 feet	CALCULATED SYSTEM VOLUME: 1.0

PURGING DATA

	TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10.0	PURGING START TIME: 0856	PURGING END TIME: 0917	TOTAL VOLUME PURGED (~~gallons~~): 2.4L

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0857	0	120	11.3	-139.6	6.31	23.1	105.42	3.509	17.8	CLEAR	NONE
0902	0.6	120	11.32	-128.8	6.18	23.4	95.96	0.736	7.6	CLEAR	NONE
0907	1.2	120	11.32	-121.31	6.16	23.6	94.93	0.672	6.3	CLEAR	NONE
0912	1.8	120	11.32	-118.4	6.21	23.6	92.74	0.593	7.5	CLEAR	NONE
0917	2.4	120	11.32	-115.2	6.24	23.7	92.37	0.531	6.42	CLEAR	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: 40	SAMPLED BY (PRINT) / AFFILIATION: R. Crews		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 0920	SAMPLING END TIME: 0945
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 10.0	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: 41R	SAMPLE ID: W-41R-2021-Q4	DATE: 10/21/21
TOTAL WELL LENGTH (feet) (A): 27.05	WATER TABLE DEPTH (feet) (B): 15.6	LENGTH OF WATER COLUMN (feet) (A-B): 11.45
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 14.0 feet to 24.2 feet	CALCULATED SYSTEM VOLUME: 1.8

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 19.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 19.0	PURGING START TIME: 0841	PURGING END TIME: 0903	TOTAL VOLUME PURGED (~~gallons~~): 2.8L

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0843	0	140	15.68	66.97	5.69	18.3	523.80	7.236	0	clear	none
0848	0.7	140	15.68	112.80	5.64	19.3	534.81	4.002	0	clear	none
0853	1.4	140	15.68	110.33	5.63	19.4	531.11	3.775	0	clear	none
0858	2.1	140	15.68	108.58	5.63	19.3	532.10	3.716	0	clear	none
0903	2.8	140	15.68	107.39	5.63	19.4	533.61	3.721	0	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: 41R	SAMPLED BY (PRINT) / AFFILIATION: Randy Crews		
SAMPLER(S) SIGNATURE(S): R Crews		SAMPLING START TIME: 0906	SAMPLING END TIME: 1026
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 19.0		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: Low Flow

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	MS & MSD collected
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
Y	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
Y	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-42	SAMPLE ID: W-42-2021-Q4	DATE: 10-20-21
TOTAL WELL LENGTH (feet) (A): 32.89	WATER TABLE DEPTH (feet) (B): 25.62	LENGTH OF WATER COLUMN (feet) (A-B): 7.27
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 20 feet to 30 feet	CALCULATED SYSTEM VOLUME: 1.19

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERI T
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 29.	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 29	PURGING START TIME: 0848	PURGING END TIME: 0916	TOTAL VOLUME PURGED (~~gallons~~ L

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~) L	PURGE RATE (~~gpm~~) mL PM	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0851	INITIAL	160	25.70	241.10	5.05	17.83	68.89	2.43	0	"	
0856	0.80	140	25.82	316.93	4.79	18.43	65.56	0.58	0	"	"
0901	1.50	140	25.89	325.53	4.78	18.27	64.58	0.48	0	"	"
0906	2.20	140	25.91	330.23	4.77	18.53	61.29	0.63	0	"	"
0911	2.90	140	25.94	332.25	4.77	18.49	60.12	0.70	0	"	"
0916	3.60	140	25.96	330.66	4.80	18.69	61.05	0.63	0	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: W-42	SAMPLED BY (PRINT) / AFFILIATION: JAMES LEADHART / ACCOM		
SAMPLER(S) SIGNATURE(S): JA Leadhart		SAMPLING START TIME: 0917	SAMPLING END TIME: 0936
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 29		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 868958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature:** + 3% **Specific Conductance:** + 3% **Dissolved Oxygen:** optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP:** + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: 43	SAMPLE ID: W.43.2021 - DUP	DATE: 10/13/21
TOTAL WELL LENGTH (feet) (A): 24.07	WATER TABLE DEPTH (feet) (B): 15.0	LENGTH OF WATER COLUMN (feet) (A-B): 9.07
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 10.5 feet to 20.5 feet	CALCULATED SYSTEM VOLUME: 1.5

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: peristaltic

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15.5	PURGING START TIME: 1240	PURGING END TIME: 1258	TOTAL VOLUME PURGED (gallons):

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1243	0	140	15.0	35.29	5.42	29.1	128.43	3.225	0.6	CLEAR	NONE
1248	0.7	140	15.0	52.82	5.43	22.8	109.84	3.082	0.3	CLEAR	NONE
1253	1.4	140	15.0	58.72	5.45	23.2	110.09	3.250	0.1	CLEAR	NONE
1258	2.1	140	15.0	61.78	5.45	23.3	110.04	3.211	0.8	CLEAR	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016
PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: 43	SAMPLED BY (PRINT) / AFFILIATION: Randy Crews		
SAMPLER(S) SIGNATURE(S): R Crews		SAMPLING START TIME: 1302	SAMPLING END TIME: 1322
TUBING MATERIAL CODE:	PUMP OR TUBING DEPTH IN WELL (feet):	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	EB-01-101821 pulled after W-43
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
Y	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: 44	SAMPLE ID: W-44-2021-Q4	DATE: 10/18/21
TOTAL WELL LENGTH (feet) (A): 29.95	WATER TABLE DEPTH (feet) (B): 18.02	LENGTH OF WATER COLUMN (feet) (A-B): 11.93
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 16 feet to 26 feet	CALCULATED SYSTEM VOLUME: 2.0

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 21.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 21.0	PURGING START TIME: 1400	PURGING END TIME: 1418	TOTAL VOLUME PURGED (gallons): 1.9L

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1403	0	100	18.07	51.82	5.35	28.5	0.051	6.274	0.1	clear	none
1408	0.5	100	18.07	61.97	5.37	20.4	92.07	3.806	0	clear	none
1413	1.2	140	18.08	67.89	5.42	19.8	92.13	3.720	0	clear	none
1418	1.9	140	18.08	68.22	5.50	20.0	92.33	3.527	0	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: 44	SAMPLED BY (PRINT) / AFFILIATION: Randy Cells		
SAMPLER(S) SIGNATURE(S): R Cells		SAMPLING START TIME: 1423	SAMPLING END TIME: 1448
TUBING MATERIAL CODE:	PUMP OR TUBING DEPTH IN WELL (feet): 21.0	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
Y	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-45	SAMPLE ID: W-45-2021-Q4	DATE: 10/14/21
TOTAL WELL LENGTH (feet) (A): 18.2	WATER TABLE DEPTH (feet) (B): 12.04	LENGTH OF WATER COLUMN (feet) (A-B): 6.16
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 6.0 feet to 16.0 feet	CALCULATED SYSTEM VOLUME: 1.0

PURGING DATA

	TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 11.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 11.0	PURGING START TIME: 1019	PURGING END TIME: 1107	TOTAL VOLUME PURGED (gallons): 6.3 L

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1022	0	140	12.17	-84.44	5.94	25.5	119.66	0.920	9.8	CLEAR	NONE
1027	0.7	140	12.29	-53.62	5.83	24.5	112.54	0.457	7.9	CLEAR	NONE
1032	1.4	140	12.33	-52.66	5.86	24.4	114.82	0.353	9.8	CLEAR	NONE
1037	2.1	140	12.34	-126.26	6.03	24.4	129.91	0.356	4.5	CLEAR	NONE
1042	2.8	140	12.35	-165.78	6.15	24.4	139.20	0.368	2.5	CLEAR	NONE
1047	3.5	140	12.35	-182.39	6.21	24.5	143.57	0.346	2.5	CLEAR	NONE
1052	4.2	140	12.36	-194.26	6.26	24.5	147.06	0.370	3.0	CLEAR	NONE
1057	4.9	140	12.36	-201.14	6.29	24.5	149.82	0.357	2.1	CLEAR	NONE
1102	5.6	140	12.37	-206.96	6.32	24.5	152.92	0.380	1.0	CLEAR	NONE
1107	6.3	140	12.37	-209.91	6.33	24.5	154.99	0.354	1.0	CLEAR	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016
PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: W-45	SAMPLED BY (PRINT) / AFFILIATION: Randy Crews		
SAMPLER(S) SIGNATURE(S): R Crews		SAMPLING START TIME: 1111	SAMPLING END TIME: 1135
TUBING MATERIAL CODE:	PUMP OR TUBING DEPTH IN WELL (feet):	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: Low Flow	
FIELD EQUIPMENT USED: MAKE: MODEL: SERIAL NO:	FIELD EQUIPMENT USED: MAKE: MODEL: SERIAL NO:	REMARKS: 101421 EB-DI - ~~20211014~~ pulled After SAMPLING Complete	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-46	SAMPLE ID: W-46-2021-Q4	DATE: 10-21-21
TOTAL WELL LENGTH (feet) (A): 28.03	WATER TABLE DEPTH (feet) (B): 13.78	LENGTH OF WATER COLUMN (feet) (A-B): 14.25
CASING DIAMATER / MATL (inches): 4" / PVC	WELL SCREEN INTERVAL DEPTH: 15.5 feet to 25.5 feet	CALCULATED SYSTEM VOLUME: 2.32

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PU TYPE
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25	PURGING START TIME: 0839	PURGING END TIME: 0902 / TOTAL VOLUME PURGED (gallons): 3.10

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons) LITERS	PURGE RATE (gpm) mL PM	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe) LITERS	ODOR (describe)
0841	INITIAL	200	13.87	191.40	6.19	19.15	198.33	5.55	0	CLEAR	NO
0846	1.00	150	14.14	244.24	5.46	19.19	196.73	0.53	0	"	"
0852	1.75	150	14.33	254.58	5.43	19.27	196.29	0.39	0	"	"
0857	2.50	120	14.46	257.80	5.44	19.31	1	0.33	0	"	"
0902	3.10	120	14.62	259.21	5.46	19.37	196.43	0.28	1.62	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: L-46	SAMPLED BY (PRINT) / AFFILIATION: JAMES LEIGHTON / AECOM		
SAMPLER(S) SIGNATURE(S): JLeighton		SAMPLING START TIME: 0903	SAMPLING END TIME: 0925
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 25	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PER	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 809958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-47	SAMPLE ID: W-47-2021-Q4	DATE: 10-19-21
TOTAL WELL LENGTH (feet) (A): 46.80	WATER TABLE DEPTH (feet) (B): 26.20	LENGTH OF WATER COLUMN (feet) (A-B): 20.6
CASING DIAMATER / MATL (inches): 4" / PVC	WELL SCREEN INTERVAL DEPTH: 34.3 feet to 44.8 feet	CALCULATED SYSTEM VOLUME: 3.36

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 42	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 42	PURGING START TIME: 0922	PURGING END TIME: 0946	TOTAL VOLUME PURGED (~~gallons~~ LITERS): 4.10

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ LITERS)	PURGE RATE (~~gpm~~ ML PM)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0925	INITIAL	220	26.25	161.97	5.89	16.78	559.78	5.24	0	CLEAR	NO
0931	1.10	200	26.28	193.08	5.88	18.01	543.50	0.60	1.80	"	"
0936	2.10	200	26.28	197.36	5.90	18.11	543.18	0.41	0	"	"
0941	3.10	200	26.28	198.70	5.90	18.20	542.36	0.32	0	"	"
0946	4.10	200	26.28	200.47	5.90	18.27	542.32	0.31	0	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:	
W-47	JAMES LEAPHART / AECOM	
SAMPLER(S) SIGNATURE(S): J Leaphart	SAMPLING START TIME: 0947	SAMPLING END TIME: 1016
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 42	DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
Y	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: 48	SAMPLE ID: W-48-2021-Q4	DATE: 10/19/21
TOTAL WELL LENGTH (feet) (A): 44.02	WATER TABLE DEPTH (feet) (B): 26.5	LENGTH OF WATER COLUMN (feet) (A-B): 17.52
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH 30.7 feet to 41.3 feet	CALCULATED SYSTEM VOLUME: 11.5

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: peristaltic

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING START TIME:	PURGING END TIME:	TOTAL VOLUME PURGED (gallons):
36.0	36.0	1054	1331	4.2

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1256	0	100	26.59	42.18	5.79	20.4	126.31	3.694	1.8	CLEAR	NONE
1301	0.5	100	28.65	64.07	5.63	19.6	126.35	2.378	1.4	CLEAR	NONE
1306	1.2	140	25.70	68.44	5.64	19.3	126.56	2.720	0.2	CLEAR	NONE
1311	1.8	120	25.72	71.06	5.64	19.3	126.22	2.249	0	CLEAR	NONE
1316	2.4	120	26.74	75.40	5.63	19.3	125.95	2.624	0.1	CLEAR	NONE
1321	3.0	120	26.74	76.56	5.64	19.4	125.82	2.314	1.7	CLEAR	NONE
1326	3.6	120	26.75	77.82	5.64	19.4	126.24	2.274	2.1	CLEAR	NONE
1331	4.2	120	26.75	81.06	5.64	19.4	125.57	2.381	0.9	CLEAR	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: 4B	SAMPLED BY (PRINT) / AFFILIATION: Randy Crews		
SAMPLER(S) SIGNATURE(S): R Crews		SAMPLING START TIME: 1335	SAMPLING END TIME: 1410
TUBING MATERIAL CODE:	PUMP OR TUBING DEPTH IN WELL (feet): 36.0	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
Y	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
Y	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-49	SAMPLE ID: W-49-2021-Q4	DATE: 10-26-21
TOTAL WELL LENGTH (feet) (A): 120.20	WATER TABLE DEPTH (feet) (B): 29.45	LENGTH OF WATER COLUMN (feet) (A-B): 90.75
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 105 feet to 115 feet	CALCULATED SYSTEM VOLUME: 14.79

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PDZ1
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 116	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 116	PURGING START TIME: 0945	PURGING END TIME: 1017	TOTAL VOLUME PURGED (~~gallons~~ LITERS): 3.0

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ LITERS)	PURGE RATE (~~gpm~~ ML PM)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0946	INITIAL	100	29.47	280.36	4.49	20.94	30.70	3.67	3.70	2	N
0952	0.50	100	29.47	78.00	5.27	19.82	45.56	3.42	489.28	CLOUDY	"
0957	1.00	100	29.47	131.16	4.87	19.87	31.98	0.70	63.77	"	"
1002	1.50	100	29.47	133.73	4.77	19.96	30.85	0.57	8.63	CLEAR	"
1007	2.00	100	29.47	132.00	4.74	20.11	30.89	0.56	4.46	"	"
1012	2.50	100	29.47	128.08	4.81	20.22	30.82	0.48	2.43	"	"
1017	3.00	100	29.47	126.16	4.84	20.27	30.83	0.45	3.38	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: W-49	SAMPLED BY (PRINT) / AFFILIATION: James Leaghart / Accom		
SAMPLER(S) SIGNATURE(S): J Leaghart		SAMPLING START TIME: 1018	SAMPLING END TIME: 1050
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 116		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)			SAMPLE COLLECTION METHOD: PERISTALTIC

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 5C924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: 50	SAMPLE ID: W-50-2021-Q4	DATE: 10/12/21
TOTAL WELL LENGTH (feet) (A): 128.7	WATER TABLE DEPTH (feet) (B): 23.71	LENGTH OF WATER COLUMN (feet) (A-B): 104.99
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 114.5 feet to 124.5 feet	CALCULATED SYSTEM VOLUME: 17.2

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: peristaltic

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 119.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 119.5	PURGING START TIME: 0950	PURGING END TIME: 1038	TOTAL VOLUME PURGED (gallons): 3.8

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0952	0	140	23.72	-161.3	5.44	24.7	2.36	4.478	1.6	clear	NONE
0957	0.7	140	23.73	-137.7	5.17	22.0	28.0	0.739	106	clear	NONE
1002	1.2	100	23.72	-122.1	5.16	22.0	28.0	0.870	111	Cloudy	NONE
1007	1.6	80	23.71	-120.0	5.18	22.2	28.0	0.863	54.7	clearing	NONE
1012	2.0	80	23.71	-121.0	5.18	22.3	27.8	0.538	36.8	Clear	NONE
1017	2.4	80	23.71	-121.9	5.18	22.4	27.7	0.955	80.1	Clear	NONE
1022	2.8	80	23.71	-119.0	5.18	22.5	27.9	0.502	51.5	Clear	NONE
1027	3.2	80	23.71	-115.0	5.16	22.6	28.0	0.626	48.1	Clear	NONE
1032	3.5	60	23.71	-112.24	5.16	22.8	28.2	0.478	51.6	Clear	NONE
1038	3.8	60	23.71	-108.8	5.15	22.8	28.3	0.439	44.7	Clear	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016
PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: 50	SAMPLED BY (PRINT) / AFFILIATION: R. Crews		
SAMPLER(S) SIGNATURE(S): R Crews		SAMPLING START TIME: 1045	SAMPLING END TIME: 1120
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 119.5	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-51	SAMPLE ID: W-51-2021-Q4	DATE: 10-13-21
TOTAL WELL LENGTH (feet) (A): 14.50	WATER TABLE DEPTH (feet) (B): 8.42	LENGTH OF WATER COLUMN (feet) (A-B): 6.08
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 5 feet to 15 feet	CALCULATED SYSTEM VOLUME: 0.99

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 11.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 11.5	PURGING START TIME: 1426	PURGING END TIME: 1449	TOTAL VOLUME PURGED (~~gallons~~ Liters): 3.60

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~) Liters	PURGE RATE (~~gpm~~) mL Per Min	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1429	INITIAL	180	8.43	-110.84	6.45	28.39	225.50	3.58	13.16	CLEAR	NO
1434	0.90	180	8.43	-181.92	6.73	26.64	232.74	0.40	3.02	"	"
1439	1.80	180	8.43	-190.43	6.74	26.15	233.56	0.23	5.52	"	"
1444	2.70	180	8.43	-195.07	6.73	26.18	234.02	0.17	1.71	"	"
1449	3.60	180	8.43	-198.98	6.74	26.12	234.39	0.14	2.21	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
W-51	James Leathett / Accom		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 1450	SAMPLING END TIME: 1513
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 12.5	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 868958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature:** + 3% **Specific Conductance:** + 3% **Dissolved Oxygen:** optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP:** + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-52	SAMPLE ID: W-52-2021-Q4	DATE: 10-13-21
TOTAL WELL LENGTH (feet) (A): 15.0	WATER TABLE DEPTH (feet) (B): 8.30	LENGTH OF WATER COLUMN (feet) (A-B): 6.70
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 10 feet to 15 feet	CALCULATED SYSTEM VOLUME: 1.09

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 12	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 12	PURGING START TIME: 1318	PURGING END TIME: 1354 / TOTAL VOLUME PURGED (~~gallons~~ LITERS): 5.10

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ LITERS)	PURGE RATE (~~gpm~~ ML PM)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1320	INITIAL	150	8.30	82.53	5.93	27.50	160.31	2.35	5.44	CLEAR	NO
1325	0.75	150	8.30	113.24	5.94	26.13	167.74	0.70	1.99	"	"
1330	1.50	150	8.30	90.57	5.95	25.97	163.15	0.44	2.63	"	"
1335	2.25	150	8.30	75.81	5.94	25.99	157.83	0.35	1.23	"	"
1340	3.00	150	8.30	68.69	5.94	26.07	157.17	0.31	1.23	"	"
* 1345	3.75	150	8.30							"	"
1354	5.10	150	8.30	70.65	5.78	26.24	155.97	0.33	1.16	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016
PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

* IPAD BATTER DEAD

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SAMPLING DATA

WELL No: W-52	SAMPLED BY (PRINT) / AFFILIATION: James Leaphart / AECOM		
SAMPLER(S) SIGNATURE(S): JLeaphart		SAMPLING START TIME: 1355	SAMPLING END TIME: 1418
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 12		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)			SAMPLE COLLECTION METHOD: PERISTALTIC

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-53	SAMPLE ID: W-53-2021-Q4	DATE: 10-12-21
TOTAL WELL LENGTH (feet) (A): 15.45	WATER TABLE DEPTH (feet) (B): 8.62	LENGTH OF WATER COLUMN (feet) (A-B): 6.83
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 10 feet to 15 feet	CALCULATED SYSTEM VOLUME: 1.11

PURGING DATA

	TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 13.00	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 13.00	PURGING START TIME: 1347	PURGING END TIME: 1424	TOTAL VOLUME PURGED (~~gallons~~ LITERS): 7.70

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ LITERS)	PURGE RATE (~~gpm~~ mL/min)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1349	INITIAL	220	8.81	37.12	6.11	25.89	223.60	1.26	8.30	CLEAR	NO
1354	1.10	220	8.82	-37.62	6.11	25.70	221.91	0.44	2.38	"	"
1359	2.20	220	8.82	-60.75	6.10	25.76	221.95	0.29	5.78	"	"
1404	3.30	220	8.82	-72.18	6.11	25.69	222.42	0.23	7.95	"	"
1409	4.40	220	8.82	-78.75	6.13	25.91	221.58	0.21	6.64	"	"
1414	5.50	220	8.82	-84.20	6.10	25.84	219.78	0.20	0.94	"	"
1419	6.60	220	8.82	-89.82	6.12	25.69	219.65	0.20	1.08	"	"
1424	7.70	220	8.82	-93.42	6.12	25.63	219.95	0.21	1.92	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: W-53	SAMPLED BY (PRINT) / AFFILIATION: JAMES LEIGHART / ACCOM		
SAMPLER(S) SIGNATURE(S): JLeighart		SAMPLING START TIME: 1426	SAMPLING END TIME: 1450
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 13		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD:	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TRoll 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 569	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. **STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:**
pH: + 1.0 units **Temperature:** + 3% **Specific Conductance:** + 3% **Dissolved Oxygen:** optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP:** + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-54	SAMPLE ID: W-54-2021-Q4	DATE: 10-12-21
TOTAL WELL LENGTH (feet) (A): 15.55	WATER TABLE DEPTH (feet) (B): 8.70	LENGTH OF WATER COLUMN (feet) (A-B): 6.85
CASING DIAMATER / MATL (inches): 2" PVC	WELL SCREEN INTERVAL DEPTH: 10 feet to 15 feet	CALCULATED SYSTEM VOLUME: 1.12

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 12.55	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 12.55	PURGING START TIME: 1222	PURGING END TIME: 1248	TOTAL VOLUME PURGED (~~gallons~~ LITERS): 6.0

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ LITERS)	PURGE RATE (~~gpm~~ mL/Min)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1223	INITIAL	240	8.70	163.90	5.72	25.49	132.89	5.60	1.68	CLEAR	NO
1228	1.20	240	8.71	105.33	5.66	24.82	136.24	3.76	0.69	"	"
1233	2.40	240	8.71	92.28	5.70	24.87	139.86	3.38	0.81	"	"
1238	3.60	240	8.71	85.62	5.75	24.85	143.40	3.20	3.28	"	"
1243	4.80	240	8.71	81.12	5.78	24.79	142.45	3.12	5.66	"	"
1248	6.00	240	8.71	76.30	5.83	24.78	142.36	3.03	6.38	"	"
~~1253~~											

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: W-54	SAMPLED BY (PRINT) / AFFILIATION: James Leoplatt / AECOM		
SAMPLER(S) SIGNATURE(S): JLeoplatt		SAMPLING START TIME: 1249	SAMPLING END TIME: 1316
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 12.55	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: B08758	SERIAL NO: 56424	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-55	SAMPLE ID: W-55-2021-Q4	DATE: 10-11-21
TOTAL WELL LENGTH (feet) (A): 15.05	WATER TABLE DEPTH (feet) (B): 8.83	LENGTH OF WATER COLUMN (feet) (A-B): 6.22
CASING DIAMATER / MATL (inches): 2" PVC	WELL SCREEN INTERVAL DEPTH: 10 feet to 15 feet	CALCULATED SYSTEM VOLUME: 1.01

PURGING DATA

	TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: PERI METRIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 12	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 12	PURGING START TIME: 1153	PURGING END TIME: 1215	TOTAL VOLUME PURGED ~~(gallons)~~ LITERS: 4.80

TIME (24 HR)	CUMUL. VOLUME PURGED ~~(gallons)~~ LITERS	PURGE RATE ~~(gpm)~~ mL/min	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1155	INITIAL	240	8.85	149.50	5.99	25.09	136.94	5.62	23.14	CLEAR	NO
1200	1.20	240	8.85	195.62	5.72	24.71	135.58	4.42	4.90	"	"
1205	2.40	240	8.85	218.09	5.62	24.73	135.68	4.27	3.99	"	"
1210	3.60	240	8.85	214.51	5.74	24.69	135.75	4.22	5.32	"	"
1215	4.80	240	8.85	216.56	5.71	24.70	135.79	4.25	1.55	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

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SAMPLING DATA

WELL No: W-55	SAMPLED BY (PRINT) / AFFILIATION: JAMES LEATHART / ACCOM		
SAMPLER(S) SIGNATURE(S): JLeathart		SAMPLING START TIME: 1216	SAMPLING END TIME: 1234
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 12	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-56	SAMPLE ID: W-56-2021-Q4	DATE: 10-11-21
TOTAL WELL LENGTH (feet) (A): 14.98	WATER TABLE DEPTH (feet) (B): 8.82	LENGTH OF WATER COLUMN (feet) (A-B): 6.16
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 10 feet to 15 feet	CALCULATED SYSTEM VOLUME: 1.00

PURGING DATA

TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 12	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 12	PURGING START TIME: 1348	PURGING END TIME: 1415	TOTAL VOLUME PURGED ~~(gallons)~~ LITERS: 5.0

TIME (24 HR)	CUMUL. VOLUME PURGED ~~(gallons)~~ LITERS	PURGE RATE ~~(gpm)~~ mL PM	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1350	INITIAL	200	8.89	160.09	6.09	26.71	134.99	5.98	3.55	CLEAR	NO
1355	1.00	200	8.89	200.06	5.73	26.08	137.21	3.36	1.35	"	"
1400	2.00	200	8.89	207.44	5.70	25.99	137.32	3.25	1.16	"	"
1405	3.00	200	8.89	228.37	5.67	25.91	136.83	3.29	0.80	"	"
1410	4.00	200	8.89	227.23	5.69	25.90	136.14	3.21	2.77	"	"
1415	5.00	200	8.89	224.17	5.70	25.93	134.78	3.19	8.36	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:	
W-56	JAMES LEATHART / AECOM	
SAMPLER(S) SIGNATURE(S): JA Leathart	SAMPLING START TIME: 1418	SAMPLING END TIME: 1435
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 12	DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature:** + 3% **Specific Conductance:** + 3% **Dissolved Oxygen:** optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP:** + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity[b]~~	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-57	SAMPLE ID: W-57-2021-Q4	DATE: 10-7-21
TOTAL WELL LENGTH (feet) (A): 14.96	WATER TABLE DEPTH (feet) (B): 8.97	LENGTH OF WATER COLUMN (feet) (A-B): 5.99
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 10 feet to 15 feet	CALCULATED SYSTEM VOLUME: 0.98

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 12	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 12	PURGING START TIME: 1416	PURGING END TIME: 1438	TOTAL VOLUME PURGED (~~gallons~~ LITERS): 2.60

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ LITERS)	PURGE RATE (~~gpm~~ mL PM)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1418	INITIAL	130	9.09	149.19	5.73	27.72	150.00	4.41	3.27	CLEAR	NO
1423	0.65	130	9.10	205.42	5.57	26.95	144.80	2.57	1.29	"	"
1428	1.30	130	9.10	214.34	5.59	26.82	139.84	2.76	1.18	"	"
1433	1.95	130	9.10	218.56	5.58	26.80	138.76	2.82	2.61	"	"
1438	2.60	130	9.10	219.53	5.58	26.78	138.84	2.86	3.46	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
W-57	JAMES LEATHART / AECOM		
SAMPLER(S) SIGNATURE(S): J Leathart	SAMPLING START TIME: 1439	SAMPLING END TIME: 1505	
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet):	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. **STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:**
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity[a]~~	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3	201942	RAD GAMMA SPEC	
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-58	SAMPLE ID: W-58-2021-Q4	DATE: 10-11-21
TOTAL WELL LENGTH (feet) (A): 15.02	WATER TABLE DEPTH (feet) (B): 9.15	LENGTH OF WATER COLUMN (feet) (A-B): 5.87
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 10 feet to 15 feet	CALCULATED SYSTEM VOLUME: 0.96

PURGING DATA

	TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 12	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 12	PURGING START TIME: 0851	PURGING END TIME: 0909	TOTAL VOLUME PURGED (~~gallons~~ LITERS): 3.30

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ LITERS)	PURGE RATE (~~gpm~~ mL PM)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0854	INITIAL	220	9.21	166.0	6.22	24.67	209.17	2.67	0.86	CLEAR	NO
0859	1.10	220	9.23	185.23	5.93	25.76	191.63	0.32	0.49	"	"
0904	2.20	220	9.23	186.68	5.95	25.98	191.33	0.23	0.31	"	"
0909	3.30	220	9.23	187.19	5.96	26.19	192.16	0.19	0.68	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: W-58	SAMPLED BY (PRINT) / AFFILIATION: JAMES LEADHEART / AECOM		
SAMPLER(S) SIGNATURE(S): JAMES LEADHEART		SAMPLING START TIME: 0911	SAMPLING END TIME: 0933
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 12	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
H	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-59	SAMPLE ID: W-59-2021-04	DATE: 10-11-21
TOTAL WELL LENGTH (feet) (A): 15.0	WATER TABLE DEPTH (feet) (B): 9.23	LENGTH OF WATER COLUMN (feet) (A-B): 5.77
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 10 feet to 15 feet	CALCULATED SYSTEM VOLUME: 0.94

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 12	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 12	PURGING START TIME: 1004	PURGING END TIME: 1117	TOTAL VOLUME PURGED (~~gallons~~ LITERS): 10.65

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ LITERS)	PURGE RATE (~~gpm~~ mL PM)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1006	INITIAL	180	9.35	147.12	6.41	26.23	360.36	3.43	0.29	CLEAR	NO
1011	0.90	150	9.43	289.23	6.41	26.57	341.10	2.31	0.93	"	"
1016	1.65	150	9.46	318.36	6.39	26.69	351.37	1.97	0.75	"	"
1021	2.40	150	9.47	316.99	6.39	26.58	356.35	1.77	0.78	"	"
1026	3.15	150	9.47	312.15	6.39	26.52	362.35	1.58	2.25	"	"
1031	3.90	150	9.47	308.40	6.39	26.56	364.62	1.45	1.71	"	"
1036	4.65	150	9.47	300.67	6.39	26.44	369.85	1.31	1.38	"	"
1041	5.40	150	9.47	286.15	6.38	26.49	379.03	1.11	1.01	"	"
1046	6.15	150	9.47	268.35	6.37	26.52	385.34	0.98	1.07	"	"
1051	6.90	150	9.47	261.53	6.37	26.45	386.95	0.92	1.27	"	"
1056	7.65	150	9.47	254.01	6.35	26.49	391.36	0.86	1.78	"	"
1101	8.40	150	9.47	249.60	6.34	26.50	400.62	0.68	2.66	"	"
1106	9.15	150	9.47	239.65	6.34	26.49	402.75	0.65	2.62	"	"
1112	9.90	150	9.47	232.36	6.34	26.48	405.11	0.62	3.22	"	"
1117	10.65	150	9.47	231.09	6.34	26.37	409.01	0.58	3.81	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: W-59	SAMPLED BY (PRINT) / AFFILIATION: JAMES LEAPHART / ACCOM		
SAMPLER(S) SIGNATURE(S): JLeaphart		SAMPLING START TIME: 1118	SAMPLING END TIME: 1138
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 12	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-60	SAMPLE ID: W-60-2021-Q4	DATE: 10/15/21
TOTAL WELL LENGTH (feet) (A): 40.69	WATER TABLE DEPTH (feet) (B): 21.59	LENGTH OF WATER COLUMN (feet) (A-B): 19.1
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 32 feet to 37 feet	CALCULATED SYSTEM VOLUME: 3.1

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: Peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 34.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 34.5	PURGING START TIME: 1051	PURGING END TIME: 1131	TOTAL VOLUME PURGED (gallons): 3.6

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1054	0	100	21.59	-73.78	5.93	26.2	106.27	3.145	34.7	Clear	None
1059	0.5	100	21.59	-100.5	5.92	20.5	109.31	0.947	45.7	Clear	None
1104	1.1	120	21.59	-110.91	5.95	19.8	110.01	0.615	45.5	Clear	None
1109	1.7	120	21.59	-116.11	5.99	19.6	110.47	0.642	36.6	Clear	None
1114	2.1	90	21.59	-119.59	6.03	19.9	110.38	0.423	45.5	Clear	None
1119	2.6	100	21.59	-124.40	6.07	20.1	110.67	0.452	21.5	Clear	None
1124	3.1	100	21.59	-127.98	6.11	20.0	110.71	0.472	45.4	Clear	None
1129	3.5	90	21.59	-130.9	6.13	19.8	110.50	0.552	32.4	Clear	None

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: 6D	SAMPLED BY (PRINT) / AFFILIATION: R. Clews		
SAMPLER(S) SIGNATURE(S): R		SAMPLING START TIME: 1134	SAMPLING END TIME: 1200
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet):	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y N TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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TITLE: LOW FLOW GROUNDWATER SAMPLE COLLECTION RECORD
TYPE: REFERENCE USE
DATE: 10-07-21

FORM NO: ROF-06-007-2
REFERENCE NO: NONE
REVISION: 6

Low Flow Groundwater Sample Collection Record

WELL NO: ~~6-0~~ 6/10/15/21	SAMPLE ID: W-61-2021-Q4	DATE: 10/15/2
TOTAL WELL LENGTH (feet) (A): 26.66	WATER TABLE DEPTH (feet) (B): 18.2	LENGTH OF WATER COLUMN (feet) (A-B): 8.46
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 13.0 feet to 23.0 feet	CALCULATED SYSTEM VOLUME: 1.4

PURGING DATA

	TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: peristalic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 18.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 18.0	PURGING START TIME: 1205	PURGING END TIME: 1242	TOTAL VOLUME PURGED (~~gallons~~): 3.3L

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1207	0	100	18.41	-69.79	5.52	25.2	0.054	6.140	23	CLEAR	NONE
1212	0.5	100	18.62	36.96	5.53	21.0	123.81	3.661	23	CLEAR	NONE
1217	1.1	120	18.86	54.55	5.54	20.9	124.08	3.989	20	CLEAR	NONE
1222	1.5	90	19.01	65.33	5.55	20.9	134.61	4.095	9.3	CLEAR	NONE
1227	2.0	100	19.18	77.33	5.53	21.1	134.03	4.241	6.5	CLEAR	NONE
1232	2.5	100	19.31	82.06	5.53	21.2	132.94	4.316	6.7	CLEAR	NONE
1237	2.9	90	19.43	88.49	5.54	21.2	129.93	4.268	4.5	CLEAR	NONE
1242	3.3	90	19.55	85.67	5.55	20.9	125.14	4.150	3.8	CLEAR	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016
PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

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SAMPLING DATA

WELL No: 61	SAMPLED BY (PRINT) / AFFILIATION: RANDY CREWS		
SAMPLER(S) SIGNATURE(S): R Crews		SAMPLING START TIME: 1246	SAMPLING END TIME: 1318
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 18.0	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: 62	SAMPLE ID: W-62-2021-Q4	DATE: 10/19/21
TOTAL WELL LENGTH (feet) (A): 27.5	WATER TABLE DEPTH (feet) (B): 13.1	LENGTH OF WATER COLUMN (feet) (A-B): 14.4
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 19 feet to 24 feet	CALCULATED SYSTEM VOLUME: 2.4

PURGING DATA

TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 21.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 21.5	PURGING START TIME: 0959	PURGING END TIME: 1021	TOTAL VOLUME PURGED (gallons): 2.4

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1001	0	120	13.18	114.81	4.87	17.1	88.63	5.888	0	clear	none
1006	0.6	120	13.18	118.49	4.86	17.6	86.72	3.752	4	clear	none
1011	1.2	120	13.18	119.82	4.87	17.7	87.00	3.665	0	clear	none
1016	1.8	120	13.18	120.80	4.87	17.8	86.75	3.585	0	clear	none
1021	2.4	120	13.18	121.02	4.88	17.8	86.68	3.569	0	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: 62	SAMPLED BY (PRINT) / AFFILIATION: RANdy CREWS		
SAMPLER(S) SIGNATURE(S): RC		SAMPLING START TIME: 1024	SAMPLING END TIME: 1048
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 21.5	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-63	SAMPLE ID: W-63-2021-Q4	DATE: 10-19-21
TOTAL WELL LENGTH (feet) (A): 44.03	WATER TABLE DEPTH (feet) (B): 26.68	LENGTH OF WATER COLUMN (feet) (A-B): 17.35
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 37 feet to 42 feet	CALCULATED SYSTEM VOLUME: 2.83

PURGING DATA

TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 39	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 39	PURGING START TIME: 1258	PURGING END TIME: 1321	TOTAL VOLUME PURGED ~~(gallons)~~ LITERS: 2.30

TIME (24 HR)	CUMUL. VOLUME PURGED ~~(gallons)~~ LITERS	PURGE RATE ~~(gpm)~~ mL PM	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1301	INITIAL	160	27.14	75.26	6.47	22.23	385.20	4.99	4.59	CLEAR	NO
1306	0.80	100	27.49	59.06	6.69	21.22	416.01	0.73	4.03	"	"
1311	1.30	100	27.65	59.50	6.69	21.43	407.99	0.61	5.79	"	"
1316	1.80	100	27.65	61.81	6.75	21.82	401.74	0.55	6.75	"	"
1321	2.30	100	27.65	60.25	6.65	21.97	393.24	0.54	8.83	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: W-63	SAMPLED BY (PRINT) / AFFILIATION: James Leathart / AECOM		
SAMPLER(S) SIGNATURE(S): J Leathart		SAMPLING START TIME: 1323	SAMPLING END TIME: 1403
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 39		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-64	SAMPLE ID: W-64-2021-Q4	DATE: 10-19-24
TOTAL WELL LENGTH (feet) (A): 34.20	WATER TABLE DEPTH (feet) (B): 26.47	LENGTH OF WATER COLUMN (feet) (A-B): 7.73
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 21 feet to 31 feet	CALCULATED SYSTEM VOLUME: 1.26

PURGING DATA

TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 30	PURGING START TIME: 0829	PURGING END TIME: 0852 / TOTAL VOLUME PURGED (~~gallons~~ LITERS): 3.2

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ LITERS)	PURGE RATE (~~gpm~~ mL PM)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0832	INITIAL	160	26.60	134.06	5.79	17.53	510.67	3.22	0	CLEAR	NO
0837	0.80	160	26.63	218.99	5.58	17.88	500.88	0.53	0	"	"
0842	1.60	160	26.63	221.36	5.60	18.27	502.95	0.42	0	"	"
0847	2.40	160	26.63	226.41	5.62	18.39	506.52	0.32	0	"	"
0852	3.20	160	26.63	228.03	5.64	18.46	509.23	0.30	0	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: W-64	SAMPLED BY (PRINT) / AFFILIATION: JAMES LEADHART		
SAMPLER(S) SIGNATURE(S): JLeadhart		SAMPLING START TIME: 0854	SAMPLING END TIME: 0915
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 30		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)			SAMPLE COLLECTION METHOD: PERISTALTIC

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: 65	SAMPLE ID: W-65-2021 - Q4	DATE: 10/18/21
TOTAL WELL LENGTH (feet) (A): 34.37	WATER TABLE DEPTH (feet) (B): 13.49	LENGTH OF WATER COLUMN (feet) (A-B): 20.88
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 26.5 feet to 31.5 feet	CALCULATED SYSTEM VOLUME: 3.4

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 29.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 29.0	PURGING START TIME: 0842	PURGING END TIME: 0930	TOTAL VOLUME PURGED (gallons): 6.2 L

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0845	0	120	13.75	-38.56	6.24	18.1	116.10	1.761	21	clear	none
0850	0.6	120	13.75	-26.70	6.20	19.2	123.84	1.035	1.8	clear	none
0855	1.2	120	13.75	-16.01	6.18	19.6	124.16	1.209	0.1	clear	none
0900	1.8	120	13.76	-15.63	6.16	19.9	124.27	0.593	0.1	clear	none
0905	2.4	120	13.74	-15.55	6.15	20.1	124.26	0.947	0.9	clear	none
0910	3.0	120	13.77	-13.61	6.14	20.1	124.24	1.262	0	clear	none
0915	3.6	120	13.78	-14.73	6.15	20.1	124.06	1.032	0	clear	none
0920	4.2	120	13.79	-15.22	6.16	20.2	123.50	0.501	0	clear	none
0925	4.8	120	13.80	-15.21	6.16	20.3	122.67	0.350	0	clear	none
0930	5.6	120	13.81	-15.02	6.15	20.3	121.49	0.586	0	clear	none
0935	6.2	120	13.82	-12.94	6.15	20.4	119.99	0.449	0	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016
PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: 65	SAMPLED BY (PRINT) / AFFILIATION: Randy Crews		
SAMPLER(S) SIGNATURE(S): R Crews		SAMPLING START TIME: 0938	SAMPLING END TIME: 1002 Rzc
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 29.0	DUPLICATE: (Y) N	Dup of 64
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-66	SAMPLE ID: W-66-2021-Q4	DATE: 10/18/21
TOTAL WELL LENGTH (feet) (A): 25.24	WATER TABLE DEPTH (feet) (B): 13.11	LENGTH OF WATER COLUMN (feet) (A-B): 12.13
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 12 feet to 22 feet	CALCULATED SYSTEM VOLUME: 1.9

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 17.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 17.0	PURGING START TIME: 1004	PURGING END TIME: 1036	TOTAL VOLUME PURGED (gallons): 4.2

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1006	0	140	13.12	10.78	5.65	25.7	4.34	3.797	0	CLEAR	NONE
1011	0.7	140	13.12	27.66	5.54	21.8	82.78	1.083	0	CLEAR	NONE
1016	1.4	140	13.12	31.52	5.56	21.8	84.62	0.935	0.3	CLEAR	NONE
1021	2.1	140	13.12	33.93	5.57	21.8	85.34	0.660	0	CLEAR	NONE
1026	2.8	140	13.12	37.03	5.58	22.5	84.61	0.686	0.2	CLEAR	NONE
1031	3.5	140	13.12	37.26	5.58	22.1	84.53	0.712	0.7	CLEAR	NONE
1036	4.2	140	13.12	37.48	5.58	22.1	85.04	0.653	4.3	CLEAR	NONE

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016
PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: 66	SAMPLED BY (PRINT) / AFFILIATION: RANDY CREW		
SAMPLER(S) SIGNATURE(S): R Crew		SAMPLING START TIME: 1040	SAMPLING END TIME: 1123
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 17.0	DUPLICATE: (Y) N	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: LOW FLOW	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-67	SAMPLE ID: W-67-2021-Q4	DATE: 10-18-21
TOTAL WELL LENGTH (feet) (A): 34.41	WATER TABLE DEPTH (feet) (B): 17.85	LENGTH OF WATER COLUMN (feet) (A-B): 16.56
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 21 feet to 31 feet	CALCULATED SYSTEM VOLUME: 2.70

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 29	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 29	PURGING START TIME: 1100	PURGING END TIME: 1123	TOTAL VOLUME PURGED (gallons) 4 LITER

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~) LITERS	PURGE RATE (~~gpm~~) ML/MIN	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1103	INITIAL	200	18.08	256.42	5.29	18.63	208.03	5.50	1.51	CLEAR	NO
1108	1.00	200	18.08	239.41	5.44	18.67	209.00	0.50	0	"	"
1113	2.00	200	18.08	221.34	5.45	18.75	208.68	0.37	0	"	"
1118	3.00	200	18.08	219.36	5.46	18.86	208.94	0.31	0	"	"
1123	4.00	200	18.09	217.14	5.46	18.94	209.69	0.28	0	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

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SAMPLING DATA

WELL No: W-67	SAMPLED BY (PRINT) / AFFILIATION: James Leaphart / AECOM		
SAMPLER(S) SIGNATURE(S): JA Leaphart		SAMPLING START TIME: 1124	SAMPLING END TIME: 1136
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 29	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: IN SITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[g]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: 68	SAMPLE ID: W-68-2021-Q4	DATE: 10/19/21
TOTAL WELL LENGTH (feet) (A): 21.25	WATER TABLE DEPTH (feet) (B): 6.78	LENGTH OF WATER COLUMN (feet) (A-B): 14.47
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 13 feet to 18 feet	CALCULATED SYSTEM VOLUME: 2.4

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15.5	PURGING START TIME: 0839	PURGING END TIME: 0910	TOTAL VOLUME PURGED (gallons): 4.26

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0840	0	140	6.95	38.05	5.78	10.6	0.075	11.131	10.4	clear	none
0845	0.7	140	6.98	40.53	5.79	17.7	88.80	5.104	0	clear	none
0850	1.4	140	6.98	61.74	5.52	17.9	88.64	4.955	0	clear	none
0855	2.1	140	6.98	86.30	5.14	17.9	88.29	4.977	0	clear	none
0900	2.8	140	6.98	99.27	4.95	18.2	88.45	4.960	0	clear	none
0905	3.5	140	6.98	99.51	4.97	18.0	88.29	4.973	0	clear	none
0910	4.2	140	6.98	102.25	4.97	18.2	88.14	4.947	0	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: 68	SAMPLED BY (PRINT) / AFFILIATION: Randy Crews		
SAMPLER(S) SIGNATURE(S): R Crews		SAMPLING START TIME: 0913	SAMPLING END TIME: 0938
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 15.5	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-C9	SAMPLE ID: W-C9-2021-Q4	DATE: 10-21-21
TOTAL WELL LENGTH (feet) (A): 21.05	WATER TABLE DEPTH (feet) (B): 8.83	LENGTH OF WATER COLUMN (feet) (A-B): 12.22
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 3.75 feet to 17.75 feet	CALCULATED SYSTEM VOLUME: 1.99

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTART
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 16	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 16	PURGING START TIME: 1159	PURGING END TIME: 1222	TOTAL VOLUME PURGED (~~gallons~~ LITERS): 2.25

TIME (24 HR)	CUMUL VOLUME PURGED (~~gallons~~ LITERS)	PURGE RATE (~~gpm~~ mL PM)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (desc ib)	ODOR (describe)
1201	INITIAL	150	9.22	128.67	5.38	25.37	72.96	4.86	26.79	CLEAR	NO
1206	0.75	100	9.80	111.76	5.37	23.66	74.57	0.43	16.63	"	"
1212	1.25	100	10.15	112.49	5.37	23.89	74.39	0.34	7.12	"	"
1217	1.75	100	10.30	114.29	5.38	23.87	73.66	0.30	6.82	"	"
1222	2.25	100	10.45	119.67	5.37	23.69	72.89	0.26	5.26	"	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016
PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: W-69	SAMPLED BY (PRINT) / AFFILIATION: James Leaphart / AECOM		
SAMPLER(S) SIGNATURE(S): JLeaphart		SAMPLING START TIME: 1223	SAMPLING END TIME: 1248
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 16	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 569	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-70	SAMPLE ID: W-70-2021-Q4	DATE: 10-21-21
TOTAL WELL LENGTH (feet) (A): 51.9	WATER TABLE DEPTH (feet) (B): 13.02	LENGTH OF WATER COLUMN (feet) (A-B): 38.88
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 44 feet to 49 feet	CALCULATED SYSTEM VOLUME: 6.34

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 48.9	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 48.9	PURGING START TIME: 1056	PURGING END TIME:

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons) LITERS	PURGE RATE (gpm) mL/Min	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPE COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYG N (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1058	INITIAL	240	13.09	209.56	5.63	22.98	59.47	7.35	22.08	CLEAR	NO
1103	1.20	240	13.10	321.06	4.71	21.20	56.34	5.85	24.24	"	"
1108	2.40	200	13.08	319.84	4.82	21.43	55.89	5.82	19.50	"	"
1113	3.40	200	13.08	322.16	4.80	21.42	55.64	5.79	3.95	"	"
1118	4.40	200	13.08	323.31	4.83	21.37	56.17	5.86	6.13	"	"
1123	5.40	200	13.08	321.22	4.86	21.30	56.01	5.78	2.41	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016
PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
W-10	JAMES LEATHART / ACCOM		
SAMPLER(S) SIGNATURE(S): JA Leathart		SAMPLING START TIME: 1127	SAMPLING END TIME: 1150
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 48.9	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity[a]~~	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-71	SAMPLE ID: W-71-2021-Q4	DATE: 10-21-21
TOTAL WELL LENGTH (feet) (A): 105.70	WATER TABLE DEPTH (feet) (B): 24.73	LENGTH OF WATER COLUMN (feet) (A-B): 80.97
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 93 feet to 103 feet	CALCULATED SYSTEM VOLUME: 13.20

PURGING DATA

	TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 101	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 101	PURGING START TIME: 1257	PURGING END TIME: 1321	TOTAL VOLUME PURGED (gallons): 4.0

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm) mL/m	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
										LITTLE	
1301	INITIAL	200	24.75	116.30	5.75	25.09	36.66	4.74	34.29	CLEAR	NO
1306	1.00	200	24.75	36.84	5.52	22.10	34.82	0.50	12.46	"	"
1311	2.00	200	24.75	41.07	5.47	22.09	33.80	0.40	4.66	"	"
1316	3.00	200	24.75	39.96	5.48	21.83	33.62	0.33	5.55	"	"
1321	4.00	200	24.75	42.11	5.47	21.79	33.50	0.30	5.47	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: W-71	SAMPLED BY (PRINT) / AFFILIATION: James Leathart / Arcom		
SAMPLER(S) SIGNATURE(S): JLeathart		SAMPLING START TIME: 1324	SAMPLING END TIME: 1415
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 101	DUPLICATE: (Y) N	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (N) N (replaced)		SAMPLE COLLECTION METHOD: Peristaltic	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: Solinst	W-71-2021-Q4-DP
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 5924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity[a]~~	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-72	SAMPLE ID: W-72-2021-Q4	DATE: 10-12-21
TOTAL WELL LENGTH (feet) (A): 14.43	WATER TABLE DEPTH (feet) (B): 8.45	LENGTH OF WATER COLUMN (feet) (A-B): 5.98
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 5 feet to 15 feet	CALCULATED SYSTEM VOLUME: 0.97

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 13	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 13	PURGING START TIME: 1109	PURGING END TIME: 1132	TOTAL VOLUME PURGED (~~gallons~~ LITERS): 4.0

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ LITERS)	PURGE RATE (~~gpm~~ ml Pm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1112	INITIAL	200	8.50	177.67	5.92	25.17	202.19	2.71	8.90	CLEAR	NO
1117	1.00	200	8.51	192.95	5.88	23.96	194.95	1.63	6.30	"	"
1122	2.00	200	8.51	194.71	5.87	23.86	182.68	1.46	5.01	"	"
1127	3.00	200	8.52	194.93	5.88	23.94	181.60	1.37	4.25	"	"
1132	4.00	200	8.52	195.68	5.89	23.77	183.33	1.37	3.71	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:	
W-72	JAMES LEAPHART / AECOM	
SAMPLER(S) SIGNATURE(S): JLeaphart	SAMPLING START TIME: 1133	SAMPLING END TIME: 1156
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 13	DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-73	SAMPLE ID: W-73-2021-Q4	DATE: 10-8-21
TOTAL WELL LENGTH (feet) (A): 15.63	WATER TABLE DEPTH (feet) (B): 8.43	LENGTH OF WATER COLUMN (feet) (A-B):
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 5 feet to 15 feet	CALCULATED SYSTEM VOLUME:

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 12	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 12	PURGING START TIME: 1253	PURGING END TIME: 1325	TOTAL VOLUME PURGED (~~gallons~~ Liters): 6.00

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ Liters)	PURGE RATE (~~gpm~~ mL/min)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1255	INITIAL	200	8.68	94.12	7.16	26.16	160.19	4.16	58.06	CLEAR	NO
1300	1.00	200	8.69	187.69	5.69	25.62	133.87	2.78	46.69	"	"
1305	2.00	200	8.69	196.02	5.64	25.45	132.31	2.67	32.22	"	"
1310	3.00	200	8.69	205.02	5.63	25.47	131.94	2.59	21.98	"	"
1315	4.00	200	8.69	242.58	5.57	25.44	132.77	2.61	5.59	"	"
1320	5.00	200	8.69	246.28	5.59	25.37	132.50	2.64	2.35	"	"
1325	6.00	200	8.69	250.90	5.60	25.35	132.46	2.59	3.51	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: B = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

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SAMPLING DATA

WELL No: W-13	SAMPLED BY (PRINT) / AFFILIATION: JAMES LEATHART / AECOM		
SAMPLER(S) SIGNATURE(S): JLeathart		SAMPLING START TIME: 1330	SAMPLING END TIME: 1355
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 12		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)			SAMPLE COLLECTION METHOD: PERISTALTIC

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 868958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-74	**SAMPLE ID:** W-74-2021-Q4	**DATE:** 10-12-21
TOTAL WELL LENGTH (feet) (A): 33.90	WATER TABLE DEPTH (feet) (B): 12.65	LENGTH OF WATER COLUMN (feet) (A-B): 21.25
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 25 feet to 30 feet	**CALCULATED SYSTEM VOLUME:** 3.46

PURGING DATA

	TUBING DIAMETER (inches): 1/4		**PURGE PUMP TYPE OR BAILER:** PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 31	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 31	PURGING START TIME: 0916	**PURGING END TIME:** 0948	**TOTAL VOLUME PURGED ~~(gallons)~~ LITERS:** 4.80

TIME (24 HR)	CUMUL. VOLUME PURGED ~~(gallons)~~ LITERS	PURGE RATE ~~(gpm)~~ mL PM	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0917	INITIAL	160	12.88	74.04	6.05	23.69	126.12	7.15	1.03	CLEAR	NO
0922	0.80	160	12.90	236.30	5.21	22.93	128.58	1.89	1.46	"	"
0928	1.60	160	12.95	262.66	5.15	22.86	127.86	1.70	2.22	"	"
0933	2.40	160	12.95	276.28	5.13	22.78	127.74	1.59	0.11	"	"
0938	3.20	160	12.96	264.13	5.13	22.75	127.54	1.53	0	"	"
0943	4.00	160	12.96	269.40	5.14	22.68	127.60	1.50	0	"	"
0948	4.80	160	12.97	272.47	5.12	22.69	127.56	1.48	0.15	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

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SAMPLING DATA

WELL No: W-74	SAMPLED BY (PRINT) / AFFILIATION: JAMES LEIGHART / AECOM		
SAMPLER(S) SIGNATURE(S): JLeighart		SAMPLING START TIME: 0949	SAMPLING END TIME: 1031
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 31	DUPLICATE: (Y) N	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-75	SAMPLE ID: W-75-2021-Q4	DATE: 10-12-21
TOTAL WELL LENGTH (feet) (A): 18.58	WATER TABLE DEPTH (feet) (B): 12.30	LENGTH OF WATER COLUMN (feet) (A-B): 6.28
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 5 feet to 15 feet	CALCULATED SYSTEM VOLUME: 1.02

PURGING DATA

	TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: Peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15.0	PURGING START TIME: 0832	PURGING END TIME: 0850	TOTAL VOLUME PURGED (~~gallons~~ LITERS): 2.40

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ LITERS)	PURGE RATE (~~gpm~~ mL PM)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0835	INITIAL	160	12.30	17.41	6.36	23.38	164.45	3.20	1.06	CLEAR	NO
0840	0.80	160	12.30	16.28	5.74	24.07	143.98	0.37	0.93	"	"
0845	1.60	160	12.32	24.17	5.69	24.34	140.45	0.20	0.11	"	"
0850	2.40	160	12.32	20.77	5.67	24.43	139.99	0.18	0.19	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: W-75	SAMPLED BY (PRINT) / AFFILIATION: JAMES LEADHART / AECOM		
SAMPLER(S) SIGNATURE(S): JAMES LEADHART		SAMPLING START TIME: 0851	SAMPLING END TIME: 0915
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 15.0	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 868958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature:** + 3% **Specific Conductance:** + 3% **Dissolved Oxygen:** optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP:** + 10 mV **Turbidity:** all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: 76	SAMPLE ID: W.76-2021-Q4	DATE: 10/7/21
TOTAL WELL LENGTH (feet) (A): 14.92	WATER TABLE DEPTH (feet) (B): 9.5	LENGTH OF WATER COLUMN (feet) (A-B): 5.42
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 5.0 feet to 15.0 feet	CALCULATED SYSTEM VOLUME: 0.9

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10.0	PURGING START TIME: 1235	PURGING END TIME: 1303	TOTAL VOLUME PURGED (gallons): 4.5

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1237	0	140	9.6	6.14	5.14	26.3	204.4	5.258	2.2	CLEAR	NONE
1242	0.7	140	9.6	44.44	4.98	26.7	202.9	1.956	1.0	CLEAR	NONE
1247	1.6	180	9.6	58.68	5.00	26.8	201.79	1.946	0.6	CLEAR	NONE
1252	2.4	160	9.6	64.94	4.97	26.8	198.87	1.941	0.4	CLEAR	NONE
1258	3.6	160	9.6	71.41	4.97	26.8	196.80	2.040	0.4	CLEAR	NONE
1302	4.4	160	9.6	74.55	4.98	26.8	195.92	2.070	0.3	CLEAR	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: 76	SAMPLED BY (PRINT) / AFFILIATION: R. Gerlis		
SAMPLER(S) SIGNATURE(S): R Cm		SAMPLING START TIME: 1306	SAMPLING END TIME: 1340
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet):		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: Low Flow

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. **STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:**
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3	201942	GAMMA	
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-77	SAMPLE ID: W-77-2021-Q4	DATE: 10-6-21
TOTAL WELL LENGTH (feet) (A): 15.30	WATER TABLE DEPTH (feet) (B): 8.80	LENGTH OF WATER COLUMN (feet) (A-B): 6.5
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 5 feet to 15 feet	CALCULATED SYSTEM VOLUME: 1.06

PURGING DATA

	TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 12	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 12	PURGING START TIME: 1021	PURGING END TIME: 1044	TOTAL VOLUME PURGED ~~(gallons)~~ LITERS: 3.30

TIME (24 HR)	CUMUL. VOLUME PURGED ~~(gallons)~~ LITERS	PURGE RATE ~~(gpm)~~ mL PM	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1024	INITIAL	180	8.88	-39.90	11.57	26.06	6605.27	2.81	0.54	CLEAR	NO
1029	0.90	160	8.92	-101.35	11.60	26.17	6346.52	1.76	1.05	"	"
1034	1.70	160	8.94	-111.13	11.50	26.22	5505.61	1.34	0.67	"	"
1039	2.50	160	8.94	-113.93	11.51	26.26	5662.37	1.40	0.80	"	"
1044	3.30	160	8.94	-115.24	11.52	26.30	5785.58	1.45	0.71	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
W-77	James Leaphart / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 1045	SAMPLING END TIME: 1108
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 12	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3	201942	RAD GAMMA SPEC	
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Water Sample Collection Record

WELL NO: W-78	SAMPLE ID: W-78-2021-Q4	DATE: 10-6-21
TOTAL WELL LENGTH (feet) (A): 15.10	WATER TABLE DEPTH (feet) (B): 9.13	LENGTH OF WATER COLUMN (feet) (A-B): 5.97
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 5 feet to 15 feet	CALCULATED SYSTEM VOLUME: 0.97

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 12	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 12	PURGING START TIME: 1238	PURGING END TIME: 1259 / TOTAL VOLUME PURGED (gallons):

TIME (24 HR)	CUMUL. VOLUME PURGED ~~(gallons)~~ LITERS	PURGE RATE ~~(gpm)~~ ML PM	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1239	INITIAL	200	9.18	175.19	6.27	27.26	206.86	5.57	2.29	CLEAR	NO
1244	1.00	200	9.18	208.84	6.05	26.20	198.44	4.43	1.77	"	"
1249	2.00	200	9.18	214.79	6.05	26.15	210.68	4.21	1.15	"	"
1254	3.00	200	9.18	217.95	6.00	26.13	208.02	4.18	1.17	"	"
1259	4.00	200	9.18	216.98	6.02	26.13	209.82	4.12	1.11	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING START TIME:	SAMPLING END TIME:
James Leaphart / AECOM		1300	1322

TUBING MATERIAL CODE:	PUMP OR TUBING DEPTH IN WELL (feet):	DUPLICATE:
T	12	Y (N)

FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced) — SAMPLE COLLECTION METHOD: PERISTALTIC

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity[a]~~	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3	201942	~~RAD~~ GAMMA SPEC	GEL
						Gross Alpha	
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Water Sample Collection Record

WELL NO: W-79	SAMPLE ID: W-79. 2021. Q4	DATE: 10-6-21
TOTAL WELL LENGTH (feet) (A): 15.33	WATER TABLE DEPTH (feet) (B): 8.18	LENGTH OF WATER COLUMN (feet) (A-B): 7.15
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 5 feet to 15 feet	CALCULATED SYSTEM VOLUME: 1.17

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: Peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 12	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 12	PURGING START TIME: 13.41	PURGING END TIME: 1410	TOTAL VOLUME PURGED ~~(gallons)~~: 3.75 LITERS

TIME (24 HR)	CUMUL. VOLUME PURGED ~~(gallons)~~ LITERS	PURGE RATE ~~(gpm)~~ ML PM	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1345	INITIAL	150	8.33	151.99	6.21	27.95	189.01	6.51	5.64	CLEAR	NO
1350	0.75	150	8.33	199.08	6.06	27.23	187.16	5.81	3.09	"	"
1355	1.50	150	8.33	210.28	6.01	27.19	184.32	5.22	2.20	"	"
1400	2.25	150	8.33	216.72	5.94	27.13	182.87	4.83	1.69	"	"
1405	3.00	150	8.33	220.53	5.90	27.07	180.98	4.53	2.27	"	"
1410	3.75	150	8.33	222.83	5.87	27.06	180.41	4.43	2.78	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING START TIME:	SAMPLING END TIME:
James Leaphart / AECOM		1412	1440

TUBING MATERIAL CODE:	PUMP OR TUBING DEPTH IN WELL (feet):	DUPLICATE:
T	12	Y (N)

FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)

SAMPLE COLLECTION METHOD: PERISTALTIC

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: Troll 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	20616B	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity[a]~~	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3	20194B	~~RAD~~ GAMMA SPEC	GEL
						Gross Alpha	
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

Retain form in area for 1 year, in Records Room - 3 years and offsite - 57 years.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-80	SAMPLE ID: W-80-2021-Q4	DATE: 10-7-21
TOTAL WELL LENGTH (feet) (A): 15.32	WATER TABLE DEPTH (feet) (B): 9.50	LENGTH OF WATER COLUMN (feet) (A-B): 5.82
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 5 feet to 15 feet	CALCULATED SYSTEM VOLUME: 0.95

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 12	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 12	PURGING START TIME: 1246	PURGING END TIME: 1329	TOTAL VOLUME PURGED (~~gallons~~ LITERS): 4.40

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1249	INITIAL	120	9.76	134.32	5.80	26.93	425.89	4.46	0.80	CLEAR	NO
1254	0.60	100	9.84	201.76	5.62	27.17	424.72	3.37	0.91	"	"
1259	1.10	100	9.94	210.83	5.63	27.25	424.76	3.30	25.32	"	"
1304	1.60	100	10.07	213.91	5.63	27.33	426.88	3.23	25.32	"	"
1309	2.10	100	10.18	215.85	5.62	27.27	427.50	3.25	33.49	"	"
1314	2.60	100	10.30	219.90	5.62	27.25	426.22	3.29	38.48	"	"
1319	3.10	100	10.40	222.08	5.62	27.24	426.50	3.29	24.47	"	"
1324	3.60	100	10.47	223.58	5.61	27.34	427.28	3.29	16.83	"	"
1329	4.10	100	10.53	225.84	5.60	27.29	427.00	3.28	7.62	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
W-80	JAMES LEATHART / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 1331	SAMPLING END TIME: 1400
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 12	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	20616B	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity[a]~~	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3	201942	~~RAD~~ GAMMA SPEC	
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

Retain form in area for 1 year, in Records Room - 3 years and offsite - 57 years.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-81	SAMPLE ID: W-81-2021-Q4	DATE: 10-7-21
TOTAL WELL LENGTH (feet) (A): 15.33	WATER TABLE DEPTH (feet) (B): 11.34	LENGTH OF WATER COLUMN (feet) (A-B): 3.99
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 5 feet to 15 feet	CALCULATED SYSTEM VOLUME: 0.65

PURGING DATA

TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 12	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 12	PURGING START TIME: 1055	PURGING END TIME: 1143	TOTAL VOLUME PURGED (~~gallons~~ LITERS): 4.50

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1058	INITIAL	100	11.72	143.18	4.85	23.68	125.83	0.78	0.46	CLEAR	NO
1103	0.50	100	12.12	133.95	5.08	23.57	128.09	0.38	0.38	"	"
1108	1.00	100	12.35	108.02	5.31	23.50	152.20	0.29	0.30	"	"
1113	1.50	100	12.42	86.43	5.52	23.59	191.57	0.22	0.22	"	"
1118	2.00	100	12.56	34.72	6.17	23.39	405.95	0.20	0.43	"	"
1123	2.50	100	12.64	9.98	6.33	23.32	439.79	0.22	0.41	"	"
1128	3.00	100	12.72	2.98	6.42	23.30	466.86	0.33	0.44	"	"
1133	3.50	100	12.70	1.44	6.49	23.29	481.25	0.40	0.26	"	"
1138	4.00	100	12.70	3.18	6.51	23.29	486.44	0.49	0.32	"	"
1143	4.50	100	12.70	4.93	6.54	23.27	488.12	0.58	0.05	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
W-81	JAMES LEOPHART / AECOM		
SAMPLER(S) SIGNATURE(S): JLeophart		SAMPLING START TIME: 1144	SAMPLING END TIME: 1230
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 12	DUPLICATE: (Y) N	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	W-81-2021-Q4-DUP
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity[a]~~	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3	201942	~~RAD~~ GAMMA SPEC	
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

Retain form in area for 1 year, in Records Room - 3 years and offsite - 57 years.

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Low Flow Groundwater Water Sample Collection Record

WELL NO: W-82	SAMPLE ID: W-82-2021-Q4	DATE: 10-7-21
TOTAL WELL LENGTH (feet) (A): 15.30	WATER TABLE DEPTH (feet) (B): 11.90	LENGTH OF WATER COLUMN (feet) (A-B): 3.40
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 5 feet to 15 feet	CALCULATED SYSTEM VOLUME: 0.55

PURGING DATA

	TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 12	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 12	PURGING START TIME: 0851	PURGING END TIME: 0953	TOTAL VOLUME PURGED (~~gallons~~ LITERS): 5.00

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ LITERS)	PURGE RATE (gpm) mL/Min	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0857	INITIAL	100	12.07	130.63	5.76	23.60	213.63	3.67	23.77	CLEAR	NO
0902	0.50	100	12.24	161.68	5.02	23.67	206.94	0.59	15.05	"	"
0907	1.00	100	12.44	202.44	4.86	23.72	147.83	1.89	7.23	"	"
0912	1.50	100	12.62	225.71	4.84	23.80	137.14	2.31	7.11	"	"
0917	2.00	100	12.74	230.39	4.86	23.76	147.47	1.83	7.13	"	"
0922	2.50	100	12.84	230.17	4.88	23.79	152.99	1.54	8.12	"	"
0927	3.00	80	12.84	196.83	4.95	23.78	167.05	1.20	11.48	"	"
0933	3.40	80	12.85	202.72	4.94	23.77	176.53	1.15	12.36	"	"
0938	3.80	80	12.86	217.68	4.92	23.76	169.70	1.04	12.80	"	"
0943	4.20	80	12.86	221.66	4.92	23.75	177.57	1.02	7.74	"	"
0948	4.60	80	12.87	222.70	4.94	23.75	172.66	0.95	5.94	"	"
0953	5.00	80	12.88	230.76	4.95	23.76	174.15	0.93	4.05	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING START TIME:	SAMPLING END TIME:
JAMES LEIGHART / AECOM		0954	1030

TUBING MATERIAL CODE:	PUMP OR TUBING DEPTH IN WELL (feet):	DUPLICATE:
T	12	Y (N)

FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced) SAMPLE COLLECTION METHOD: PERISTALTIC

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3	201942	~~Ra~~ GAMMA SPEC	GEL
						Gross Alpha	
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

Retain form in area for 1 year, in Records Room - 3 years and offsite - 57 years.

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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Low Flow Groundwater Sample Collection Record

WELL NO: 83	SAMPLE ID: W-83-2021-Q4	DATE: 10/7/21
TOTAL WELL LENGTH (feet) (A): 26.05	WATER TABLE DEPTH (feet) (B): 12.92	LENGTH OF WATER COLUMN (feet) (A-B): 13.13
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 15.5 feet to 25.5 feet	CALCULATED SYSTEM VOLUME: 2.2

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5	PURGING START TIME: 10:00	PURGING END TIME: 1107	TOTAL VOLUME PURGED (gallons): 6.6

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1001	0	100	13.26	-104.1	6.41	24.3	278.52	4.44	7.4	CLEAR	NONE
1006	0.5	100	13.58	-84.80	6.50	23.6	321.05	1.380	4.4	CLEAR	NONE
1011	1.0	100	13.9	-76.14	6.48	23.5	317.69	1.291	2.8	CLEAR	NONE
1016	1.5	100	14.05	-68.83	6.42	23.6	309.74	1.159	5.2	CLEAR	NONE
1021	2.0	100	14.13	-61.09	6.34	23.7	291.21	1.361	4.5	CLEAR	NONE
1026	2.5	100	14.25	-56.32	6.30	23.6	277.23	0.859	2.1	CLEAR	NONE
1031	3.0	100	14.34	-50.95	6.24	23.6	255.35	0.815	3.9	CLEAR	NONE
1036	3.5	100	14.34	-46.03	6.19	23.6	242.08	0.805	2.7	CLEAR	NONE
1041	4.0	100	14.34	-41.57	6.18	23.6	231.38	0.874	2.8	CLEAR	NONE
1046	4.5	100	14.34	-37.28	6.14	23.6	221.89	0.902	3.2	CLEAR	NONE
1051	5.0	100	14.35	-33.07	6.11	23.6	210.17	0.982	1.7	CLEAR	NONE
1056	5.5	100	14.35	-29.83	6.09	23.6	702.55	0.992	1.9	CLEAR	NONE
1101	6.0	100	1436	-25.58	6.04	23.6	191.13	1.048	2.5	CLEAR	NONE
1106	6.5	100	14.36	-21.93	6.03	23.5	184.47	1.075	1.6	CLEAR	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: 83	SAMPLED BY (PRINT) / AFFILIATION: R. Crews		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 1109	SAMPLING END TIME: 1143
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 20.5	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	200168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3 *	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N Y	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2 *	1 liter	Plastic	HNO_3	201942	GAMMA.	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: 84	SAMPLE ID: W.84-2021-Q4	DATE: 10/7/21
TOTAL WELL LENGTH (feet) (A): 20.3	WATER TABLE DEPTH (feet) (B): 6.4	LENGTH OF WATER COLUMN (feet) (A-B): 13.9
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 10.0 feet to 20.0 feet	CALCULATED SYSTEM VOLUME: 2.3

PURGING DATA

TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING START TIME: 0842	PURGING END TIME: 0904	TOTAL VOLUME PURGED (gallons): 2.4

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0843	0	120	6.7	-109.5	6.22	23.1	241.37	6.20	14.8	CLEAR	NONE
0848	0.6	120	6.98	-157.11	6.22	25.5	226.97	0.551	5.9	CLEAR	NONE
0853	1.2	120	7.3	-158.35	6.20	25.7	225.59	0.453	14.4	CLEAR	NONE
0858	1.8	120	7.55	-157.44	6.18	25.8	226.36	0.348	11.8	CLEAR	NONE
0903	2.4	120	7.65	-155.67	6.14	25.8	223.51	0.354	16.5	CLEAR	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: 84	SAMPLED BY (PRINT) / AFFILIATION: R. Gaells		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 0906	SAMPLING END TIME: 0937
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 15.0	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3	201942	GAMMA	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: 85	SAMPLE ID: W-85-2021-Q4	DATE: 10/22/21
TOTAL WELL LENGTH (feet) (A): 47.78	WATER TABLE DEPTH (feet) (B): 20.66	LENGTH OF WATER COLUMN (feet) (A-B): 27.12
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 39 feet to 44 feet	CALCULATED SYSTEM VOLUME: 4.3

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 41.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 41.5	PURGING START TIME: 1000	PURGING END TIME: 1108	TOTAL VOLUME PURGED (gallons): 6.6L

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1003	0	100	21.01	-198.6	7.30	23.2	270.75	4.618	5.2	clear	none
1008	0.5	100	21.27	-226.9	7.29	20.7	348.2	0.898	7.3	clear	none
1013	1.1	120	21.35	-294.3	7.34	20.5	332.02	0.639	8.8	clear	none
1018	1.6	100	21.35	-314.7	7.95	20.6	247.71	1.134	17.8	clear	none
1023	2.1	100	21.35	-321.8	8.52	20.7	236.7	1.121	11.4	clear	none
1028	2.6	100	21.35	-311.3	7.68	20.6	246.53	1.168	5.1	clear	none
1033	3.1	100	21.35	-280.4	7.33	20.6	256.67	1.269	1.2	clear	none
1038	3.6	100	21.35	-266.5	7.18	20.9	257.34	1.273	1.9	clear	none
1043	4.1	100	21.35	-257.7	7.06	21.1	266.85	0.699	0.5	clear	none
1048	4.6	100	21.35	-251.3	7.00	21.1	271.33	1.082	0	clear	none
1053	5.1	100	21.35	-244.7	6.93	21.4	272.51	0.803	0.3	clear	none
1058	5.6	100	21.35	-237.3	6.83	21.3	274.00	0.405	5.3	clear	none
1103	6.1	100	21.35	-233.8	6.79	21.4	273.45	0.467	0.3	clear	none
1108	6.6	100	21.35	-231.5	6.75	21.2	274.85	0.456	0.0	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016
PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: 85	SAMPLED BY (PRINT) / AFFILIATION: RANDY CREWS		
SAMPLER(S) SIGNATURE(S): RC		SAMPLING START TIME: 1113	SAMPLING END TIME: 1139
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 41.5	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: LOW FLOW	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: 86	SAMPLE ID: W-86-2021-Q4	DATE: 10/22/21
TOTAL WELL LENGTH (feet) (A): 38.17	WATER TABLE DEPTH (feet) (B): 19.35	LENGTH OF WATER COLUMN (feet) (A-B): 18.82
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 24 feet to 34 feet	CALCULATED SYSTEM VOLUME: 3.0

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 29.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 29.0	PURGING START TIME: 0856	PURGING END TIME: 0919	TOTAL VOLUME PURGED (gallons): 2.7

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0859	0	140	19.85	-12.77	5.97	20.0	269.61	3.794	24.1	clear	none
0904	0.7	140	20.16	-63.05	6.00	19.9	277.43	0.549	13.7	clear	none
0909	1.4	140	20.33	-74.01	6.02	19.8	277.70	0.368	15.9	clear	none
0914	2.0	120	20.45	-76.74	6.01	19.8	277.95	0.297	9.8	clear	none
0919	2.7	140	20.55	-76.82	5.98	19.9	277.71	0.314	12.9		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: 86	SAMPLED BY (PRINT) / AFFILIATION: Randy Crew		
SAMPLER(S) SIGNATURE(S): R Crew		SAMPLING START TIME: 0923	SAMPLING END TIME: 0949
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 29.0	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	204168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-87	SAMPLE ID: W-87-2021-Q4	DATE: 10-13-21
TOTAL WELL LENGTH (feet) (A): 32.90	WATER TABLE DEPTH (feet) (B): 8.10	LENGTH OF WATER COLUMN (feet) (A-B): 24.80
CASING DIAMATER / MATL (inches): 2 / PVC	WELL SCREEN INTERVAL DEPTH: 27 feet to 32 feet	CALCULATED SYSTEM VOLUME: 4.04

PURGING DATA

	TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 29.90	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 29.90	PURGING START TIME: 1143	PURGING END TIME: 1225	TOTAL VOLUME PURGED (~~gallons~~ LITERS): 4.25

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ LITERS)	PURGE RATE (~~gpm~~ ML PM)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1145	INITIAL	150	8.38	14.85	6.17	25.30	106.89	5.19	42.78	CLOUDY	NO
1150	0.75	100	8.51	-33.01	6.15	23.91	111.55	0.64	73.57	"	"
1155	1.25	100	8.50	-37.77	6.16	24.36	110.72	0.42	55.01	"	"
1200	1.75	100	8.51	-44.00	6.21	24.35	109.97	0.37	54.40	"	"
1205	2.25	100	8.51	-51.35	6.30	24.40	108.25	0.32	52.93	"	"
1210	2.75	100	8.51	-37.58	6.07	24.28	108.38	0.36	53.46	"	"
1215	3.25	100	8.52	-57.17	6.31	24.30	108.66	0.26	50.64	"	"
1220	3.75	100	8.52	-62.24	6.32	24.34	108.19	0.25	52.84	"	"
1225	4.25	100	8.52	-66.32	6.34	24.25	108.16	0.24	56.93	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: W-87	SAMPLED BY (PRINT) / AFFILIATION: James Leuthart / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 1225	SAMPLING END TIME: 1255
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 29.90	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
Y						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: 88	SAMPLE ID: W-88-2021-Q4	DATE: 10/21/21
TOTAL WELL LENGTH (feet) (A): 44.40	WATER TABLE DEPTH (feet) (B): 22.8	LENGTH OF WATER COLUMN (feet) (A-B): 21.6
CASING DIAMATER / MATL (inches): 2 11	WELL SCREEN INTERVAL DEPTH: 15 feet to 25. feet	CALCULATED SYSTEM VOLUME: 3.5

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20.0	PURGING START TIME: 1046	PURGING END TIME: 1109	TOTAL VOLUME PURGED (gallons): 2.8

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1049	0	140	22.95	69.8	5.69	23.5	21.12	6.950	0	CLEAR	NONE
1054	0.7	140	23.05	79.37	5.64	20.1	77.28	6.514	0	CLEAR	NONE
1059	1.4	140	23.1	82.27	5.64	19.7	75.50	6.485	0.1	CLEAR	NONE
1104	2.1	140	23.12	87.02	5.64	19.4	75.32	6.439	0	CLEAR	NONE
1109	2.8	140	23.13	91.02	5.63	19.3	75.71	6.508	0	CLEAR	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: 88	SAMPLED BY (PRINT) / AFFILIATION: RANDY CREWS		
SAMPLER(S) SIGNATURE(S): RCrews		SAMPLING START TIME: 1112	SAMPLING END TIME: 1130
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 20	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: LOW FLOW	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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TITLE: LOW FLOW GROUNDWATER SAMPLE COLLECTION RECORD
TYPE: REFERENCE USE
DATE: 10-07-21

FORM NO: ROF-06-007-2
REFERENCE NO: NONE
REVISION: 6

Low Flow Groundwater Sample Collection Record

WELL NO: 89	SAMPLE ID: W-89-2021-Q4	DATE: 10/21/21
TOTAL WELL LENGTH (feet) (A): 28.10	WATER TABLE DEPTH (feet) (B): 21.4	LENGTH OF WATER COLUMN (feet) (A-B): 6.7
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: ~~19.8~~ 19.8 feet to 15 → 25 feet	CALCULATED SYSTEM VOLUME: 1.1

REC 10/21/21

PURGING DATA

~~23 → 28~~

	TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~~25.5~~ 20.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~~25.5~~ 20.0	PURGING START TIME: 1143	PURGING END TIME: 1205	TOTAL VOLUME PURGED (~~gallons~~): 2.8 L

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet) 10/21/21 REC	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1145	0	140	21.42	86.49	5.43	25.1	67.91	6.360	0.7	CLEAR	NONE
1150	0.7	140	21.43	93.64	5.48	20.3	63.42	6.288	0.5	CLEAR	NONE
1155	1.4	140	21.43	96.55	5.48	20.2	63.70	6.161	0	CLEAR	NONE
1200	2.1	140	21.43	100.22	5.49	20.1	64.59	6.171	0.3	CLEAR	NONE
1205	2.8	140	21.43	101.9	5.49	20.4	65.12	6.081	0.2	CLEAR	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016
PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: 89	SAMPLED BY (PRINT) / AFFILIATION: Randy Crews		
SAMPLER(S) SIGNATURE(S): RC		SAMPLING START TIME: 1208	SAMPLING END TIME: 1130
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet):	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	EB-01-102121 Collect After Well complete
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3		Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-90	SAMPLE ID: W-90-2021-Q4	DATE: 10-20-21
TOTAL WELL LENGTH (feet) (A): 43.01	WATER TABLE DEPTH (feet) (B): 26.71	LENGTH OF WATER COLUMN (feet) (A-B): 16.3
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 35 feet to 40 feet	CALCULATED SYSTEM VOLUME: 2.66

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 40	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 40	PURGING START TIME: 1103	PURGING END TIME: 1126	TOTAL VOLUME PURGED (gallons): 3.2

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons) LITERS	PURGE RATE (gpm) mL/Min	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe) LITERS	ODOR (describe)
1106	INITIAL	160	26.88	156.98	5.21	21.52	70.67	7.40	31.39	CLEAR	NO
1111	0.80	160	26.92	247.74	5.16	19.82	73.83	5.93	0.48	"	"
1116	1.60	160	26.92	259.18	5.15	19.74	74.30	5.85	1.70	"	"
1121	2.40	160	26.92	262.94	5.15	19.86	74.36	5.87	2.00	"	"
1126	3.20	160	26.92	265.02	5.15	19.80	74.28	5.92	2.47	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016
PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: 6-90	SAMPLED BY (PRINT) / AFFILIATION: JAMES LOCKHART / AECOM		
SAMPLER(S) SIGNATURE(S): JLockhart		SAMPLING START TIME: 1127	SAMPLING END TIME: 1152
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 40	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 868958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-91	SAMPLE ID: W-91-2021-Q4	DATE: 10-20-21
TOTAL WELL LENGTH (feet) (A): 28.25	WATER TABLE DEPTH (feet) (B): 26.53	LENGTH OF WATER COLUMN (feet) (A-B): 1.72
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 15 feet to 25 feet	CALCULATED SYSTEM VOLUME: 0.28

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 27.50	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 27.50	PURGING START TIME: 1155	PURGING END TIME: 1219	TOTAL VOLUME PURGED ~~(gallons)~~ LITERS: 2.00

TIME (24 HR)	CUMUL. VOLUME PURGED ~~(gallons)~~ LITERS	PURGE RATE ~~(gpm)~~ mL/m	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1159	INITIAL	100	26.74	212.41	5.08	22.62	59.83	6.92	36.22	CLEAR	NO
1204	0.50	100	26.81	265.21	5.12	20.63	60.31	5.44	3.56	"	"
1209	1.00	100	26.85	263.64	5.14	20.63	60.20	5.34	0.69	"	"
1214	1.50	100	26.87	265.62	5.14	20.57	60.05	5.35	0.15	"	"
1219	2.00	100	26.87	269.62	5.14	20.59	60.11	5.37	0.59	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. *** Procedure #** ROP-06-007

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SAMPLING DATA

ELL No: D-91	SAMPLED BY (PRINT) / AFFILIATION: JAMES LEAPHART / AECOM		
SAMPLER(S) SIGNATURE(S): JLeaphart		SAMPLING START TIME: 1220	SAMPLING END TIME: 1250
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 27.50	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: HYDROLAB	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3	201942		
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-92	SAMPLE ID: W-92-2021-Q4	DATE: 10-22-21
TOTAL WELL LENGTH (feet) (A): 36.92	WATER TABLE DEPTH (feet) (B): 16.22	LENGTH OF WATER COLUMN (feet) (A-B): 20.70
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 29 feet to 34 feet	CALCULATED SYSTEM VOLUME: 3.37

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 33.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 33.0	PURGING START TIME: 1136	PURGING END TIME: 1158 / TOTAL VOLUME PURGED (gallons): 4.0

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1138	INITIAL	200	16.25	-43.41	6.01	20.07	242.22	2.19	0.24	CLEAR	NO
1143	1.00	200	16.25	-62.68	6.01	19.34	252.33	0.44	1.90	"	"
1148	2.00	200	16.25	-70.53	6.02	19.15	255.64	0.30	1.17	"	"
1153	3.00	200	16.25	-70.85	5.97	19.08	253.66	0.24	1.10	"	"
1158	4.00	200	16.25	-74.97	5.98	19.16	253.02	0.20	0	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: W-92	SAMPLED BY (PRINT) / AFFILIATION: James Leaphart / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 1201	SAMPLING END TIME: 1222
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 33.0	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-93	SAMPLE ID: W-93-2021-Q4	DATE: 10-6-21
TOTAL WELL LENGTH (feet) (A): 35.00	WATER TABLE DEPTH (feet) (B): 9.48	LENGTH OF WATER COLUMN (feet) (A-B): 25.52
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 30 feet to 35 feet	CALCULATED SYSTEM VOLUME: 4.14

PURGING DATA

	TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 32	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 32	PURGING START TIME: 0915	PURGING END TIME: 0947	TOTAL VOLUME PURGED (~~gallons~~ LITERS): 6.00

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ LITERS)	PURGE RATE (~~gpm~~ mL PM)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0917	INITIAL	200	9.70	110.77	5.90	23.99	126.68	4.12	0	CLEAR	NO
0922	1.00	200	9.69	206.50	5.41	23.60	123.39	1.70	0.26	"	"
0927	2.00	200	9.69	231.67	5.37	23.48	122.32	1.51	0.05	"	"
0932	3.00	200	9.69	241.93	5.35	23.46	122.12	1.45	0.08	"	"
0937	4.00	200	9.69	247.94	5.37	23.34	121.97	1.40	0.17	"	"
0942	5.00	200	9.69	252.16	5.36	23.31	122.03	1.39	0.55	"	"
0947	6.00	200	9.69	255.85	5.35	23.29	122.04	1.40	1.98	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: W-93	SAMPLED BY (PRINT) / AFFILIATION: JAMES LEADHART / AECOM		
SAMPLER(S) SIGNATURE(S): JLeadhart		SAMPLING START TIME: 0949	SAMPLING END TIME: 1015
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 32	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3	201942	~~RAD~~ GAMMA SPEC	
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-94	SAMPLE ID: W-94-2021-Q4	DATE: 10-26-21
TOTAL WELL LENGTH (feet) (A): 32.15	WATER TABLE DEPTH (feet) (B): 10.49	LENGTH OF WATER COLUMN (feet) (A-B): 21.66
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 24.5 feet to 29.5 feet	CALCULATED SYSTEM VOLUME: 3.53

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 39.15	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 39.15	PURGING START TIME: 1000	PURGING END TIME: 1022	TOTAL VOLUME PURGED (~~gallons~~ LITERS): 3.00

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ LITERS)	PURGE RATE (~~gpm~~ mL Pm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1002	INITIAL	150	10.57	-6.83	6.41	17.96	14	7.17	0	CLEAR	NO
1007	0.75	150	10.58	-38.18	6.02	17.72	163.19	0.53	0	"	"
1012	1.50	150	10.58	-41.61	5.99	17.69	162.83	0.30	0	"	"
1017	2.25	150	10.58	-44.26	5.98	17.70	163.60	0.24	0.80	"	"
1022	3.00	150	10.58	-46.78	6.00	17.69	163.84	0.21	0.11	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: W-94	SAMPLED BY (PRINT) / AFFILIATION: JAMES LEAPHART / AECOM		
SAMPLER(S) SIGNATURE(S): JLeaphart		SAMPLING START TIME: 1024	SAMPLING END TIME: 1041
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 39.15	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	20668	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
Y						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-95	SAMPLE ID: W-95-2021-Q4	DATE: 10-26-21
TOTAL WELL LENGTH (feet) (A): 36.27	WATER TABLE DEPTH (feet) (B): 9.14	LENGTH OF WATER COLUMN (feet) (A-B): 27.13
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 28.5 feet to 33.5 feet	CALCULATED SYSTEM VOLUME: 4.42

PURGING DATA

TUBING DIAMETER (inches): 1/4				
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 33.27	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 33.27	PURGING START TIME: 1050	PURGING END TIME: 1112	TOTAL VOLUME PURGED (gallons): 2.80

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons) ~~LITERS~~	PURGE RATE (gpm) ~~mL Per~~	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	CO OR (describe) ~~LITERS~~	ODOR (describe)
1052	INITIAL	140	9.14	-8.20	6.05	18.28	208.10	2.66	51.03	CLOUDY	
1057	0.70	140	9.14	-74.44		18.14	229.94	0.42	27.66	CLEAR	
1102	1.40	140	9.14		6.22	18.10	230.32	0.28	8.65	"	
1107	2.10	140	9.14	-84.35	6.22	18.17	231.02	0.23	2.82	"	
1112	2.80	140	9.14	-86.90	6.23	18.16	232.63	0.19	2.89	"	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: W-95	SAMPLED BY (PRINT) / AFFILIATION: JAMES LEAPHART / AECOM		
SAMPLER(S) SIGNATURE(S): JLeaphart		SAMPLING START TIME: 1113	SAMPLING END TIME: 1130
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 33.27	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: 96	SAMPLE ID: W-96-2021-Q4	DATE: 10/25/21
TOTAL WELL LENGTH (feet) (A): 32.82	WATER TABLE DEPTH (feet) (B): 9.62	LENGTH OF WATER COLUMN (feet) (A-B): 23.2
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 25 feet to 30 feet	CALCULATED SYSTEM VOLUME: 3.7

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PP

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5	PURGING START TIME: 0826	PURGING END TIME: 0853	TOTAL VOLUME PURGED (gallons): 4.3L

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0828	0	~~180~~ 160	9.62	-208.34	6.40	19.9	280.88	1.754	10.4	CLEAR	NONE
0833	0.8	160	9.62	-208.13	6.40	19.4	280.85	0.416	0.7	CLEAR	NONE
0838	1.6	160	9.62	-210.89	6.42	19.3	279.30	0.368	10.3	CLEAR	NONE
0843	2.5	180	9.62	-211.77	6.42	19.2	277.44	0.171	6.2	CLEAR	NONE
0848	3.4	180	9.62	-211.68	6.40	19.2	277.06	0.147	17.1	CLEAR	NONE
0853	4.3	180	9.62	-209.23	6.35	19.2	275.51	0.206	0.6	CLEAR	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
96	Randy Crews		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 0855	SAMPLING END TIME: 0945
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet):		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS: MS / MSD Collected
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. **STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:**
   pH: + 1.0 units **Temperature:** + 3% **Specific Conductance:** + 3% **Dissolved Oxygen:** optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP:** + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: 97	SAMPLE ID: W-97-2021-Q4	DATE: 10/25/21
TOTAL WELL LENGTH (feet) (A): 21.90	WATER TABLE DEPTH (feet) (B): 6.0	LENGTH OF WATER COLUMN (feet) (A-B): 15.9
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 13 feet to 18 feet	CALCULATED SYSTEM VOLUME: 2.5

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15.5	PURGING START TIME: 1326	PURGING END TIME: 13.48	TOTAL VOLUME PURGED (gallons): 4.0

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1328	0	200	6.0	-126.04	6.08	23.3	249.61	2.186	15	CLEAR	NONE
1333	1.0	200	6.0	-99.76	6.12	19.9	247.21	0.703	0.4	CLEAR	NONE
1338	2.0	200	6.0	-95.11	6.18	19.7	248.74	0.283	0	CLEAR	NONE
1343	3.0	200	6.0	-93.86	6.24	19.7	249.65	0.307	0	CLEAR	NONE
1348	4.0	200	6.0	-93.73	6.30	19.6	250.03	0.342	0	CLEAR	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016
PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: 97	SAMPLED BY (PRINT) / AFFILIATION: Randy Crews		
SAMPLER(S) SIGNATURE(S): RC		SAMPLING START TIME: 1350	SAMPLING END TIME: 1427
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 15.5	DUPLICATE: (Y) N	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature:** + 3% **Specific Conductance:** + 3% **Dissolved Oxygen:** optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP:** + 10 mV **Turbidity:** all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-98	SAMPLE ID: W-98-2021-Q4	DATE: 10-19-21
TOTAL WELL LENGTH (feet) (A): 29.85	WATER TABLE DEPTH (feet) (B): 24.45	LENGTH OF WATER COLUMN (feet) (A-B): 5.40
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 17 feet to 27 feet	CALCULATED SYSTEM VOLUME: 0.88

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: Redi Flo 2
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25	PURGING START TIME: 1415	PURGING END TIME: 1450

TOTAL VOLUME PURGED ~~(gallons)~~ Liters

TIME (24 HR)	CUMUL. VOLUME PURGED ~~(gallons)~~ Liters	PURGE RATE ~~(gpm)~~ mL/min	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1419	INITIAL	100	24.58	98.34	6.52	22.39	169.86	4.85	2.2	CLEAR	NO
1424	0.50	100	24.63	256.33	5.15	20.57	170.38	0.86	24.54	"	"
1429	1.00	100	24.65	265.20	5.14	20.56	168.47	0.65	14.78	"	"
1434	1.50	100	24.65	267.56	5.13	20.48	167.56	0.58	10.09	"	"
1439	2.00	100	24.65	251.61	5.14	20.53	167.51	0.59	6.13	"	"
1445	2.50	100	24.65	258.15	5.15	20.77	167.06	0.57	1.66	"	"
1450	3.00	100	24.65	261.54	5.15	20.58	167.95	0.58	1.25	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: U-98	SAMPLED BY (PRINT) / AFFILIATION: James Leathart / AECOM		
SAMPLER(S) SIGNATURE(S): JLeathart		SAMPLING START TIME: 1451	SAMPLING END TIME: 1520
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 25	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. **STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:**
pH: + 1.0 units Temperature: + 3% Specific Conductance: + 3% Dissolved Oxygen: optionally, + 0.2 mg/L or + 10% (whichever is greater) ORP: + 10 mV Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-99	SAMPLE ID: W-99-2021-Q4	DATE: 10-15-21
TOTAL WELL LENGTH (feet) (A): 23.80	WATER TABLE DEPTH (feet) (B): 12.37	LENGTH OF WATER COLUMN (feet) (A-B): 11.43
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 16 feet to feet	CALCULATED SYSTEM VOLUME: 1.86

PURGING DATA

	TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: PERI ALT
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20.80	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20.80	PURGING START TIME: 1232	PURGING END TIME: 1259	TOTAL VOLUM PURGED ~~(gallons)~~ L TERS

TIME (24 HR)	CUMUL. VOLUME PURGED ~~(gallons)~~ LITERS	PURGE RATE ~~(gpm)~~ mL PM	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1234	INITIAL	150	12.84	31.61	7.06	26.73	572.57	5.53	12.26	CLEAR	NO
1239	0.75	100	13.24	55.63	6.60	23.55	5	0.51	3.92	"	"
1244	1.25	100	13.33	55.43	6.62	23.81	587	0.38	6		"
1249	1.75	100	13.37	54.96	6.63	23.68	578.66	0.30	1.12	"	"
1254	2.25	100	13.40	62.69	6.62	23.59	569.04	0.44	1.04	"	"
1259	2.75	100	13.42	53.99	6.62	23.65	560.55	0.36	1.55	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
W-99	James Leaphart / AECOM		
SAMPLER(S) SIGNATURE(S): JLeaphart		SAMPLING START TIME: 1300	SAMPLING END TIME: 1323
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 20.80		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)			SAMPLE COLLECTION METHOD: PERISTALTIC

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-100	SAMPLE ID: W-100-2021-Q4	DATE: 10-15-21
TOTAL WELL LENGTH (feet) (A): 15.07	WATER TABLE DEPTH (feet) (B): 10.51	LENGTH OF WATER COLUMN (feet) (A-B): 4.56
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 7 feet to 12 feet	CALCULATED SYSTEM VOLUME: 0.74

PURGING DATA

	TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 12	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 12	PURGING START TIME: 1122	PURGING END TIME: 1202	TOTAL VOLUME PURGED (~~gallons~~ LITERS): 4.50

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~) LITERS	PURGE RATE (~~gpm~~) mL Per	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1124	INITIAL	180	10.71	89.08	6.04	25.12	350.06	3.57	1.46	CLEAR	NO
1130	0.90	120	10.90	76.59	6.07	24.48	390.45	1.22	33.36	"	"
1135	1.50	120	10.90	25.58	6.17	24.49	415.43	1.03	25.00	"	"
1140	2.10	120	10.90	-4.56	6.26	24.46	469.84	1.01	15.82	"	"
1145	2.70	120	10.90	-14.89	6.30	24.40	491.40	0.94	7.69	"	"
1150	3.30	120	10.90	-18.40	6.30	24.45	507.80	0.92	4.44	"	"
1155	3.90	120	10.90	-21.35	6.33	24.47	513.83	0.87	1.94	"	"
1202	4.50	120	10.90	-17.50	6.32	24.55	510.81	0.90	1.17	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:	
W-100	James Leaphart / AECOM	
SAMPLER(S) SIGNATURE(S): JA Leaphart	SAMPLING START TIME: 1203	SAMPLING END TIME: 1225
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 12	DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: 102	SAMPLE ID: W-102-2021-Q4	DATE: 10/8/21
TOTAL WELL LENGTH (feet) (A): 33.45	WATER TABLE DEPTH (feet) (B): 10.25	LENGTH OF WATER COLUMN (feet) (A-B): 23.2
CASING DIAMATER / MATL (inches): 2	WELL SCREEN INTERVAL DEPTH: feet to feet	CALCULATED SYSTEM VOLUME: 3.8

PURGING DATA

	TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: peristal.c
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 28.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 23.5	PURGING START TIME: 1042	PURGING END TIME: 1104	TOTAL VOLUME PURGED (gallons): 3.0L

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1044	0	160	10.47	-5.23	7.04	23.8	1003.5	5.160	3.7	CLEAR	NONE
1049	0.8	160	10.53	-0.03	7.01	23.2	1395.4	1.257	7.2	CLEAR	NONE
1054	1.6	160	1052	-3.70	6.96	23.2	1287.8	0.436	3.8	CLEAR	NONE
1059	2.3	140	10.48	-6.14	6.95	23.4	1270.0	0.250	4.0	CLEAR	NONE
1104	3.0	140	10.43	-8.37	6.96	23.4	1278.2	0.255	4.9	CLEAR	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016
PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: 102	SAMPLED BY (PRINT) / AFFILIATION: R. CREWS		
SAMPLER(S) SIGNATURE(S): RC		SAMPLING START TIME: 1107	SAMPLING END TIME: 1140
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 28.5	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: LOW FLOW	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-103	SAMPLE ID: W-103-2021-Q4	DATE: 10-18-21
TOTAL WELL LENGTH (feet) (A): 41.68	WATER TABLE DEPTH (feet) (B): 18.62	LENGTH OF WATER COLUMN (feet) (A-B): 23.06
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 34 feet to 39 feet	CALCULATED SYSTEM VOLUME: 3.76

PURGING DATA

	TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 38	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 38	PURGING START TIME: 1149	PURGING END TIME: 1220	TOTAL VOLUME PURGED (~~gallons~~ Liters): 5.70

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ Liters)	PURGE RATE (~~gpm~~ mL/min)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard unit)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1152	INITIAL	210	18.70	193.43	5.48	20.05	169.43	5.69	2.56	CLEAR	NO
1157	1.05	210	18.71	236.32	5.33	19.03	171.57	1.46	0	"	"
1202	2.10	210	18.71	246.14	5.32	19.04	172.48	1.19	0	"	"
1207	3.15	210	18.71	251.57	5.34	19.07	170.05	1.26	0	"	"
1212	4.20	210	18.72	257.49	5.31	19.12	168.36	1.31	0	"	"
1220	5.70	210	18.72	260.71	5.34	19.11	166.89	1.40	0	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: W-103	SAMPLED BY (PRINT) / AFFILIATION: James Leaphart / AECOM		
SAMPLER(S) SIGNATURE(S): JLeaphart		SAMPLING START TIME: 1222	SAMPLING END TIME: 1242
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 38		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)			SAMPLE COLLECTION METHOD: PERISTALTIC

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: HORIBA	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: 104	SAMPLE ID: W-104-2021-Q4	DATE: 10/25/21
TOTAL WELL LENGTH (feet) (A): 20.30	WATER TABLE DEPTH (feet) (B): 7.79	LENGTH OF WATER COLUMN (feet) (A-B): 12.51
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 7 feet to 17 feet	CALCULATED SYSTEM VOLUME: 2.0

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PP

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 12.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 12.0	PURGING START TIME: 1047	PURGING END TIME: 1144	TOTAL VOLUME PURGED (~~gallons~~): 9.6

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1049	0	160	7.79	-136.03	5.85	24.6	0.05	4.020	51.1	Clear	NONE
1054	0.8	160	7.79	-80.87	5.76	20.6	250.11	1.060	6.5	Clear	NONE
1059	1.6	160	7.79	-62.98	5.74	20.6	241.65	1.113	14.7	Clear	NONE
1104	2.4	160	7.79	-51.26	5.72	20.6	235.96	0.225	4.6	clear	NONE
1109	3.2	180	7.79	-42.58	5.70	20.7	226.04	0.175	14.1	clear	NONE
1114	4.2	180	7.79	-31.33	5.63	20.8	222.19	1.011	3.4	clear	NONE
1119	5.1	180	7.79	-24.15	5.61	21.0	219.24	0.962	2.1	clear	NONE
1124	6.0	180	7.79	-18.94	5.61	20.9	219.32	0.717	0.4	clear	NONE
1129	6.9	180	7.79	-14.80	5.60	21.1	216.54	0.430	1.9	clear	NONE
1134	7.8	180	7.79	-10.40	5.59	21.0	215.91	0.181	1.7	clear	NONE
1139	8.7	180	7.79	-7.56	5.59	21.1	218.23	0.159	0	clear	NONE
1144	9.6	180	7.79	-4.87	5.59	21.4	215.89	0.160	0.8	clear	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:	
104	Randy Crews	
SAMPLER(S) SIGNATURE(S): R Crews	SAMPLING START TIME: 1146	SAMPLING END TIME: 1205
TUBING MATERIAL CODE:	PUMP OR TUBING DEPTH IN WELL (feet):	DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: Low flow

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-105	SAMPLE ID: W-105-2021-Q4	DATE: 10-25-21
TOTAL WELL LENGTH (feet) (A): 25.80	WATER TABLE DEPTH (feet) (B): 10.86	LENGTH OF WATER COLUMN (feet) (A-B): 14.94
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 14 feet to 24 feet	CALCULATED SYSTEM VOLUME: 2.44

PURGING DATA

	TUBING DIAMETER (inches): 1/4			P P P TYPE P72
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 21.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING START TIME: 1059	PURGING END TIME: 1125	TOTAL VOLUME PURGED (gallons): 3.0

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons) LITERS	PURGE RATE (gpm) mL PM	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	CO OR (desc ibe) LITERS	ODOR (describe)
1105	INITIAL	150	11.04	-106.38	6.31	19.14	377.24	0.54	25.10	CLEAR	NO
1110	0.75	150	11.04	-110.26	6.33	19.09	366.33	0.28	5.31	"	"
1115	1.50	150	11.04	-114.35	6.37	19.22	360.55	0.24	3.15	"	"
1120	2.25	150	11.04	-113.22	6.35	19.24	366.32	0.22	0.85	"	"
1125	3.00	150	11.04	-116.78	6.41	19.25	362.44	0.20	0.42	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016
PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: W-105	SAMPLED BY (PRINT) / AFFILIATION: JAMES LENHART / AECOM		
SAMPLER(S) SIGNATURE(S): JLenhart		SAMPLING START TIME: 1126	SAMPLING END TIME: 1146
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 21.0	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity[a]~~	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	207555	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-106	SAMPLE ID: W-106-2021-Q4	DATE: 10-18-21
TOTAL WELL LENGTH (feet) (A): 32.57	WATER TABLE DEPTH (feet) (B): 11.43	LENGTH OF WATER COLUMN (feet) (A-B): 21.14
CASING DIAMATER / MATL (inches): 2" | PVC	WELL SCREEN INTERVAL DEPTH: 25 feet to 30 feet	CALCULATED SYSTEM VOLUME: 3.45

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 30	PURGING START TIME: 1408	PURGING END TIME: 1430	TOTAL VOLUME PURGED (gallons): 4.0

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1410	INITIAL	200	11.45	-92.22	6.12	22.72	373.50	4.70	23.66	CLEAR	NO
1415	1.0	200	11.45	-82.13	5.94	19.63	388.23	0.34	12.96	"	"
1420	2.0	200	11.45	-85.69	5.97	19.66	376.68	0.22	3.15	"	"
1425	3.0	200	11.45	-87.22	6.01	19.49	376.92	0.18	5.64	"	"
1430	4.0	200	11.45	-83.91	5.99	19.39	373.74	0.16	1.89	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
W-106	James Leaphart / AECOM		
SAMPLER(S) SIGNATURE(S): JA Leaphart	SAMPLING START TIME: 1433	SAMPLING END TIME: 1453	
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 30	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature:** + 3% **Specific Conductance:** + 3% **Dissolved Oxygen:** optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP:** + 10 mV **Turbidity:** all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-107	SAMPLE ID: W-107-2021-Q4	DATE: 10-26-21
TOTAL WELL LENGTH (feet) (A): 37.20	WATER TABLE DEPTH (feet) (B): 8.21	LENGTH OF WATER COLUMN (feet) (A-B): 28.99
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 29 feet to 34 feet	CALCULATED SYSTEM VOLUME: 4.73

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 34.20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 34.20	PURGING START TIME: 12.32	PURGING END TIME: 1254	TOTAL VOLUME PURGED (gallons): 3.20

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons) LITERS	PURGE RATE (gpm) mL Per	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe) LITERS	ODOR (describe)
1234	INITIAL	160	8.22	-39.53	6.05	19.36	180.31	2.75	32.64	CLEAR	NO
1239	0.80	160	8.22	-57.66	6.08	18.79	172.54	0.51	2.26	"	"
1244	1.60	160	8.22	-59.50	6.06	18.68	171.93	0.29	1.03	"	"
1249	2.40	160	8.22	-63.10	6.07	18.60	173.02	0.23	3.50	"	"
1254	3.20	160	8.22	-66.46	6.07	18.60	173.44	0.21	4.55	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: W-107	SAMPLED BY (PRINT) / AFFILIATION: James Leathart / AECOM		
SAMPLER(S) SIGNATURE(S): JLeathart		SAMPLING START TIME: 1255	SAMPLING END TIME: 1313
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 34.20	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity[a]~~	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-108	SAMPLE ID: W-108-2021-Q4	DATE: 10-25-21
TOTAL WELL LENGTH (feet) (A): 35.92	WATER TABLE DEPTH (feet) (B): 8.48	LENGTH OF WATER COLUMN (feet) (A-B): 27.44
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 28 feet to 33 feet	CALCULATED SYSTEM VOLUME: 4.47

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 32.92	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 32.92	PURGING START TIME: 1257	PURGING END TIME: 1319	TOTAL VOLUME PURGED (~~gallons~~ Liters): 2.60

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ Liters)	PURGE RATE (~~gpm~~ mL/min)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1259	INITIAL	130	8.50	-47.78	6.20	20.96	175.43	4.81	43.89	CLOUDY	NO
1304	0.65	130	8.50	-64.79	6.17	19.80	180.32	0.40	18.40	CLEAR	"
1309	1.30	130	8.50	-69.47	6.18	19.58	179.65	0.26	4.36	"	"
1314	1.95	130	8.50	-71.99	6.18	19.50	178.60	0.22	1.49	"	"
1319	2.60	130	8.50	-73.77	6.18	19.43	178.40	0.19	2.16	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: W-108	SAMPLED BY (PRINT) / AFFILIATION: James Leaphart / AECOM		
SAMPLER(S) SIGNATURE(S): [signature]		SAMPLING START TIME: 1320	SAMPLING END TIME: 1359
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 9	DUPLICATE: (Y) N	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: Peristaltic	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4		Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	207555	Gamma Spec[c]	GEL
						Gross Alpha	
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: 109	SAMPLE ID: W-109-2021-Q4	DATE: 10/26/21
TOTAL WELL LENGTH (feet) (A): 35.02	WATER TABLE DEPTH (feet) (B): 8.7	LENGTH OF WATER COLUMN (feet) (A-B): 26.32
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 27 feet to 32 feet	CALCULATED SYSTEM VOLUME: 4.2

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 29.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 29.5	PURGING START TIME: 0932	PURGING END TIME: 0954	TOTAL VOLUME PURGED (gallons): 2.7

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0934	0	120	8.71	-127.78	6.38	15.7	115.48	5.814	264	clear	none
0939	0.6	120	8.71	-181.54	6.31	18.2	102.77	0.624	84	clear	none
0944	1.3	140	8.71	-187.94	6.32	18.3	102.25	0.446	31	clear	none
0949	2.0	140	8.71	-195.19	6.36	18.4	103.54	0.329	17	clear	none
0954	2.7	140	8.71	-196.81	6.35	18.4	104.02	0.273	9.5	clear	none

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016
PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: 109	SAMPLED BY (PRINT) / AFFILIATION: TRAndy CLEWS		
SAMPLER(S) SIGNATURE(S): TR		SAMPLING START TIME: 0957	SAMPLING END TIME: 1019
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet):	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced)		SAMPLE COLLECTION METHOD: Low flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	207555	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: 110	SAMPLE ID: W-110-2021-Q4	DATE: 10/26/21
TOTAL WELL LENGTH (feet) (A): 36.9	WATER TABLE DEPTH (feet) (B): 9.25	LENGTH OF WATER COLUMN (feet) (A-B): 27.65
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 29 feet to 34 feet	CALCULATED SYSTEM VOLUME: 4.4

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 31.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 31.5	PURGING START TIME: 1247	PURGING END TIME: 1320	TOTAL VOLUME PURGED (~~gallons~~): 4.8

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1250	0	160	9.27	-161.12	6.27	19.1	76.51	1.201	32	CLEAR	NONE
1255	0.8	160	9.27	-108.33	5.75	18.9	37.35	0.466	10	CLEAR	NONE
1300	1.6	160	9.27	-109.11	5.77	18.8	38.62	0.315	9	CLEAR	NONE
1305	2.4	160	9.27	-109.65	5.80	18.8	39.63	0.258	7	CLEAR	NONE
1310	3.2	160	9.27	-114.33	5.85	18.9	42.40	0.196	8	CLEAR	NONE
1315	4.0	160	9.27	-117.02	5.88	18.8	43.46	0.156	4	CLEAR	NONE
1320	4.8	160	9.27	-112.35	5.76	18.8	44.85	0.143	4	CLEAR	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: 110	SAMPLED BY (PRINT) / AFFILIATION: TRAndy CREWS		
SAMPLER(S) SIGNATURE(S): TRC		SAMPLING START TIME: 1323	SAMPLING END TIME: 1342
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet):	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	SAMPLE COLLECTION METHOD: LOW FLOW	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	207555	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-111	SAMPLE ID: W-111-2021-Q4	DATE: 10-26-21
TOTAL WELL LENGTH (feet) (A): 84.40	WATER TABLE DEPTH (feet) (B): 6.63	LENGTH OF WATER COLUMN (feet) (A-B): 77.77
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 76 feet to 81 feet	CALCULATED SYSTEM VOLUME: 12.68

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 81.40	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 81.40	PURGING START TIME: 1137	PURGING END TIME: 1159	TOTAL VOLUME PURGED (gallons): 3.0

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons) LITERS	PURGE RATE (gpm) mL PM	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYG N (circle units) mg/L or % saturation	TURB DITY (NTUs)	COLOR (desc ib) LITERS	ODOR (descabe)
1139	INITIAL	150	6.66		6.12		72.30	3.80	1.97	CLEAR	NO
1144	0.75	150	6.66	125.10		18.38	26.56		6.74	"	
1149	1.50	150	6.66	129.96	5.04	18.38	26.15	0.27	4.71	"	"
1154	2.25	150	6.66	128.21	5.04	18.39	26.19	0.22	1.54	"	"
1159	3.00	150	6.66	126.88	5.03	18.37	26.08	0.20	0	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:	
W-111	James Leaphart / AECOM	
SAMPLER(S) SIGNATURE(S): JL Leaphart	SAMPLING START TIME: 1159	SAMPLING END TIME: 1218
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 81.40	DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: Peristaltic	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: Solinst	
MODEL: Troll 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 5C924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-112	SAMPLE ID: W-112-2021-Q4	DATE: 10-26-21
TOTAL WELL LENGTH (feet) (A): 36.87	WATER TABLE DEPTH (feet) (B): 8.68	LENGTH OF WATER COLUMN (feet) (A-B): 28.19
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 29 feet to 34 feet	CALCULATED SYSTEM VOLUME: 4.59

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 33.87	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 33.87	PURGING START TIME: 0907	PURGING END TIME: 0929 / TOTAL VOLUME PURGED (~~gallons~~ LITERS): 3.20

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ LITERS)	PURGE RATE (~~gpm~~ mL PM)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0909	INITIAL	160	8.68	-70.52	6.21	18.38	25	2.63	28.93	CLEAR	NO
0914	0.80	160	8.68	-95.84	6.26	18.05	268.18	0.59	6.64	"	"
0919	1.60	160	8.68	-100.41	6.28	17.98	267.92	0.37	3.26	"	"
0924	2.40	160	8.68	-102.73	6.28	17.93	268.47	0.26	5.15	"	"
0929	3.20	160	8.68	-104.17	6.29	17.92	268.18	0.23	0.86	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: L-112	SAMPLED BY (PRINT) / AFFILIATION: James Leaphart		
SAMPLER(S) SIGNATURE(S): JLeaphart		SAMPLING START TIME: 0930	SAMPLING END TIME: 0946
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 33.87	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: IPSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	20668	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-113	SAMPLE ID: W-113-2021-Q4	DATE: 10-15-21
TOTAL WELL LENGTH (feet) (A): 38.99	WATER TABLE DEPTH (feet) (B): 10.94	LENGTH OF WATER COLUMN (feet) (A-B): 28.05
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 31 feet to 36 feet	CALCULATED SYSTEM VOLUME: 4.57

PURGING DATA

	TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 36	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 36	PURGING START TIME: 0827	PURGING END TIME: 0911	TOTAL VOLUME PURGED (~~gallons~~ LITERS): 4.80

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~) LITERS	PURGE RATE (~~gpm~~) mL Pm	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0830	INITIAL	200	11.21	124.21	6.97	19.90	215.52	5.19	59.01	CLOUDY	NO
0835	1.00	160	11.52	73.30	6.10	19.43	182.91	0.58	6.06	CLEAR	"
0840	1.80	100	11.73	67.54	6.06	19.39	176.51	0.46	11.30	"	"
0845	2.30	100	11.89	50.64	6.06	19.54	173.28	0.45	21.18	"	"
0850	2.80	100	12.02	29.96	6.07	19.57	168.14	0.41	31.08	"	"
0856	3.30	100	12.13	27.40	6.04	19.47	164.66	0.40	42.13	"	"
0901	3.80	100	12.22	29.60	6.02	19.59	160.55	0.41	1.15	"	"
0906	4.30	100	12.32	34.32	5.97	19.53	159.23	0.55	0.39	"	"
0911	4.80	100	12.40	30.33	5.98	19.58	157.94	0.43	1.06	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:	
W-113	James Leathart / AECOM	
SAMPLER(S) SIGNATURE(S):	SAMPLING START TIME: 0912	**SAMPLING END TIME:** 0939
TUBING MATERIAL CODE: T	**PUMP OR TUBING DEPTH IN WELL (feet):** 36	**DUPLICATE:** Y (N)
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		**SAMPLE COLLECTION METHOD:** PERISTALTIC

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 868758	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity[a]~~	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
Y						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-114	SAMPLE ID: W-114-2021-Q4	DATE: 10-15-21
TOTAL WELL LENGTH (feet) (A): 23.47	WATER TABLE DEPTH (feet) (B): 10.55	LENGTH OF WATER COLUMN (feet) (A-B): 12.92
CASING DIAMATER / MATL (inches): 2" / P	WELL SCREEN INTERVAL DEPTH: 10 feet to 20 feet	CALCULATED SYSTEM VOLUME: 2.11

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: Peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 18.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING START TIME: 0945	PURGING END TIME: 1034

TOTAL VOLU PURGED ~~gallons~~ L 5

TIME (24 HR)	CUMUL. VOLUME PURGED ~~(gallons)~~ LITERS	PURGE RATE ~~(gpm)~~ mL/m	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0949	INITIAL	150	10.78	124.53	5.44	20.91	92.31	4.66	174.37	TAN	NO
0954	0.75	100	10.85	150.76	5.35	20.89	86.16	0.67	75.67	CLOUDY	"
0959	1.25	100	10.89	137.78	5.37	21.03	88.10	0.54	35.93	CLEAR	"
1004	1.75	100	10.94	127.01	5.44	21.10	93.55	0.66	14.23	"	"
1009	2.25	100	10.97	98.06	5.43	21.19	92	0.75	4.83	"	"
1014	2.75	100	10.99	82.67	5.45	21.26	93.89	0.87	3.60	"	"
1019	3.25	100	11.01	72.87	5.46	21.32	95.92	0.97	3.86	"	"
1024	3.75	100	11.02	64.46	5.49	21.37	92.37	1.08	4.27	"	"
1029	4.25	100	11.02	66.16	5.46	21.55	93.83	1.21	3.88	"	"
1034	4.75	100	11.02	65.19	5.41	21.64	94.16	1.26	2.73	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
W-114	JAMES LEAPHART / AECOM		
SAMPLER(S) SIGNATURE(S):		**SAMPLING START TIME:** 1036	**SAMPLING END TIME:** 1102
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 18	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	**SAMPLE COLLECTION METHOD:** PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	**MAKE:** SOLINST	
MODEL: TROLL 600	**MODEL:** 107	
SERIAL NO: 808958	**SERIAL NO:** 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-115	SAMPLE ID: W-115-2021-Q4	DATE: 10-14-21
TOTAL WELL LENGTH (feet) (A): 47.87	WATER TABLE DEPTH (feet) (B): 18.02	LENGTH OF WATER COLUMN (feet) (A-B): 29.85
CASING DIAMATER / MATL (inches): 2" PVC	WELL SCREEN INTERVAL DEPTH: 40.5 feet to 45.5 feet	CALCULATED SYSTEM VOLUME: 4.87

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 44.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 44.0	PURGING START TIME: 1000	PURGING END TIME: 1023	TOTAL VOLUME PURGED (~~gallons~~ Liters): 3.40

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ Liters)	PURGE RATE (~~gpm~~ mL Pm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1003	INITIAL	170	18.15	104.48	5.52	19.62	129.49	4.09	3.39	CLEAR	NO
1008	0.85	170	18.20	230.98	5.18	18.98	101.09	4.23	0	"	"
1013	1.70	170	18.20	244.36	5.28	18.90	99.74	3.80	0	"	"
1018	2.55	170	18.21	241.70	5.32	18.88	98.62	3.49	1.74	"	"
1023	3.40	170	18.21	242.57	5.35	18.84	97.73	3.17	4.52	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: W-115	SAMPLED BY (PRINT) / AFFILIATION: JAMES LIGHTHART / ACCOM		
SAMPLER(S) SIGNATURE(S): [signature]		SAMPLING START TIME: 1024	SAMPLING END TIME: 1047
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 44.0	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature:** + 3% **Specific Conductance:** + 3% **Dissolved Oxygen:** optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP:** + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-116	SAMPLE ID: W-116-2021-Q4	DATE: 10-14-21
TOTAL WELL LENGTH (feet) (A): 23.01	WATER TABLE DEPTH (feet) (B): 17.48	LENGTH OF WATER COLUMN (feet) (A-B): 5.53
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 10 feet to 20 feet	CALCULATED SYSTEM VOLUME: 0.90

PURGING DATA

	TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 18	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 18	PURGING START TIME: 1054	PURGING END TIME: 1157	TOTAL VOLUME PURGED ~~(gallons)~~ LITERS: 11.40

TIME (24 HR)	CUMUL. VOLUME PURGED ~~(gallons)~~ LITERS	PURGE RATE ~~(gpm)~~ mL/min	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1057	INITIAL	190	17.59	207.60	5.09	20.49	118.65	7.19	0	CLEAR	NO
1102	0.95	190	17.84	282.66	4.91	19.66	117.62	6.13	0	"	"
1107	1.90	190	17.89	272.29	4.95	19.70	118.24	5.88	0	"	"
1112	2.85	190	17.92	259.39	4.99	19.60	118.90	5.73	0	"	"
1117	3.80	190	17.95	240.33	5.03	19.63	119.31	5.56	0	"	"
1122	4.75	190	17.96	221.04	5.06	19.57	119.60	5.46	0	"	"
1127	5.70	190	17.96	207.39	5.09	19.68	119.75	5.51	0	"	"
1132	6.65	190	17.96	199.17	5.10	19.79	120.16	5.36	0	"	"
1137	7.60	190	17.96	175.68	5.17	19.77	120.59	5.14	0	"	"
1142	8.55	190	17.96	161.43	5.19	19.63	120.98	5.09	0	"	"
1147	9.50	190	17.96	148.82	5.21	19.71	121.80	5.21	0	"	"
1152	10.45	190	17.96	132.36	5.20	19.69	122.06	5.22	0	"	"
1157	11.40	190	17.96	118.80	5.22	19.73	122.83	5.12	0	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:	
W-116	James Leatherbury / AECOM	
SAMPLER(S) SIGNATURE(S):	SAMPLING START TIME: 1159	SAMPLING END TIME: 1222
TUBING MATERIAL CODE:	PUMP OR TUBING DEPTH IN WELL (feet): 18	DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-117	SAMPLE ID: W-117-2021-Q4	DATE: 10-14-21
TOTAL WELL LENGTH (feet) (A): 46.65	WATER TABLE DEPTH (feet) (B): 21.97	LENGTH OF WATER COLUMN (feet) (A-B): 24.68
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 39 feet to 44 feet	CALCULATED SYSTEM VOLUME: 4.02

PURGING DATA

TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 43.65	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 43.65	PURGING START TIME: 1323	PURGING END TIME: 1422	TOTAL VOLUME PURGED (~~gallons~~ LITERS): 11.0

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ LITERS)	PURGE RATE (~~gpm~~ mL/m)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1327	INITIAL	200	22.01	102.67	5.61	23.31	158.65	5.31	117.01	~~GLOUDY~~ CLOUDY	NO
1332	1.0	200	22.01	29.68	6.02	19.99	143.77	0.88	13.43	CLEAR	"
1337	2.0	200	22.01	36.31	5.92	19.79	124.68	1.61	10.93	"	"
1342	3.0	200	22.01	51.90	5.83	19.65	110.36	2.08	7.40	"	"
1347	4.0	200	22.01	69.94	5.73	19.76	103.23	2.56	5.25	"	"
1352	5.0	200	22.01	75.81	5.74	19.73	105.30	2.45	6.06	"	"
1357	6.0	200	22.01	84.34	5.74	19.55	103.08	2.53	8.19	"	"
1402	7.0	200	22.01	94.47	5.69	19.53	96.48	2.71	5.34	"	"
1407	8.0	200	22.01	107.57	5.64	19.73	93.88	2.90	6.42	"	"
1412	9.0	200	22.01	111.30	5.67	19.70	98.57	2.93	7.83	"	"
1417	10.0	200	22.01	109.57	5.69	19.71	97.60	2.88	6.13	"	"
1422	11.0	200	22.01	112.03	5.73	19.77	97.29	2.98	4.96	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:	
W-117	JAMES LEIGHTON / AECOM	
SAMPLER(S) SIGNATURE(S): JLeighton	SAMPLING START TIME: 1425	SAMPLING END TIME: 1448
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 43.65	DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: IN SITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: ± 1.0 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **ORP:** ± 10 mV
   Turbidity: all readings < 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-118	SAMPLE ID: W-118-2021-Q4	DATE: 10-14-21
TOTAL WELL LENGTH (feet) (A): 32.34	WATER TABLE DEPTH (feet) (B): 19.78	LENGTH OF WATER COLUMN (feet) (A-B): 12.56
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 19.5 feet to 29.5 feet	CALCULATED SYSTEM VOLUME: 2.05

PURGING DATA

TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 28.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 28.0	PURGING START TIME: 1236	PURGING END TIME: 1259	TOTAL VOLUME PURGED (~~gallons~~ Liters): 3.60

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ LITERS)	PURGE RATE (~~gpm~~ mL PM)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs) (JU)	COLOR (describe)	ODOR (describe)
1239	INITIAL	180	19.83	142.45	5.48	22.21	95.91	5.86	~~152.05~~ 6.88	CLEAR	NO
1244	0.90	180	19.83	236.30	5.17	19.55	94.38	2.62	2.99	"	"
1249	1.80	180	19.83	254.66	5.12	19.54	94.48	2.52	3.04	"	"
1254	2.70	180	19.83	261.33	5.13	19.31	94.34	2.56	1.43	"	"
1259	3.60	180	19.83	262.40	5.16	19.49	94.48	2.48	0.55	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: W-11B	SAMPLED BY (PRINT) / AFFILIATION: James Leaphart / AECOM		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 1300	SAMPLING END TIME: 1318
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 28.0	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	20616B	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity~~[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	20192	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-119	SAMPLE ID: W-119-2021-Q4	DATE: 10-18-21
TOTAL WELL LENGTH (feet) (A): 32.95	**WATER TABLE DEPTH (feet) (B):** 15.48	LENGTH OF WATER COLUMN (feet) (A-B): 17.47
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: feet to 30 feet	CALCULATED SYSTEM VOLUME: 2.85

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERIST
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	**PURGING START TIME:** 0834	PURGING END TIME: 0856 / TOTAL VOLUME PURGED (~~gallons~~ Liters):

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ Liters)	PURGE RATE (~~gpm~~ mL/min)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0836	INITIAL	180	15.49	127.25	5.44	15.25	83.95	5.29	6.88	CLEAR	NO
0841	0.90	180	15.49	169.38	4.81	17.19	82.02	0.70	0	"	"
0846	1.80	180	15.49	175.96	4.86	17.80	81.38	0.44	0	"	"
0851	2.70	180	15.49	172.43	4.92	17.95	81.45	0.34	0	"	"
0856	3.60	180	15.49	174.88	4.91	18.04	81.15	0.28	0		"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:		
W-119	JAMES LEATHART / AECOM		
SAMPLER(S) SIGNATURE(S): JA Leathart		SAMPLING START TIME: 0858	SAMPLING END TIME: 0946
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 30		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: PERISTALTIC	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	MS / MSD COLLECTED
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity[a]~~	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: 120	SAMPLE ID: W-120-2021-Q4	DATE: 10/15/21
TOTAL WELL LENGTH (feet) (A): 36.81	WATER TABLE DEPTH (feet) (B): 14.15	LENGTH OF WATER COLUMN (feet) (A-B): 22.66
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 29 feet to 34 feet	CALCULATED SYSTEM VOLUME: 3.7

PURGING DATA

	TUBING DIAMETER (inches): T		PURGE PUMP TYPE OR BAILER: peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 31.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 31.5	PURGING START TIME: 0841	PURGING END TIME: 0903	TOTAL VOLUME PURGED (gallons): 2.5L

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0843	0	140	14.31	-27.03	6.05	21.7	166.95	2.835	219.	cloudy	NONE
0848	0.7	140	14.25	-39.32	6.07	21.6	164.57	1.017	5	clear	NONE
0853	1.3	120	14.25	-47.31	6.12	21.8	165.21	0.920	3	clear	NONE
0858	1.9	120	14.25	-49.38	6.12	21.9	162.3	0.781	2.6	clear	NONE
0903	2.5	120	14.25	-48.47	6.11	22.0	161.25	0.754	2.1	clear	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016
PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: 120	SAMPLED BY (PRINT) / AFFILIATION: Randy Crews		
SAMPLER(S) SIGNATURE(S):		SAMPLING START TIME: 0906	SAMPLING END TIME: 0932
TUBING MATERIAL CODE:	PUMP OR TUBING DEPTH IN WELL (feet): 31.5	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: 121	SAMPLE ID: W-121-2021-Q4	DATE: 10/15/21
TOTAL WELL LENGTH (feet) (A): 25.5	WATER TABLE DEPTH (feet) (B): 14.2	LENGTH OF WATER COLUMN (feet) (A-B): 11.3
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 12 feet to 22 feet	CALCULATED SYSTEM VOLUME: 1.8

PURGING DATA

	TUBING DIAMETER (inches): T		PURGE PUMP TYPE OR BAILER: peristaltic
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 17.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 17.0	PURGING START TIME: 0935	PURGING END TIME: 1006	TOTAL VOLUME PURGED (gallons): 4.1L

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0936	0	140	14.38	-48.41	5.72	27.8	126.39	3.047	2.2	clear	none
0941	0.7	140	14.43	-29.19	5.60	23.7	122.29	0.717	1.9	clear	none
0946	1.3	120	14.44	-25.62	5.60	23.6	122.11	0.354	1.8	clear	none
0951	2.0	140	14.45	-22.87	5.61	23.7	121.33	0.460	3	clear	none
0956	2.7	140	14.45	-19.50	5.61	23.5	120.62	0.600	0.7	clear	none
1001	3.4	140	14.45	-16.78	5.61	23.7	120.69	0.426	3.7	clear	none
1006	4.1	140	14.46	-14.11	5.60	23.5	119.43	0.518	0.2	clear	none

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016
PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: W. 121	SAMPLED BY (PRINT) / AFFILIATION: Randy Crews		
SAMPLER(S) SIGNATURE(S): R Crews		SAMPLING START TIME: 1010	SAMPLING END TIME: 1034
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 17.9	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: Low Flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-122	SAMPLE ID: W-122-2021-Q4	DATE: 10-13-21
TOTAL WELL LENGTH (feet) (A): 33.13	WATER TABLE DEPTH (feet) (B): 8.47	LENGTH OF WATER COLUMN (feet) (A-B): 24.66
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 25 feet to 30 feet	CALCULATED SYSTEM VOLUME: 4.02

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30.13	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 30.13	PURGING START TIME: 1033	PURGING END TIME: 1055	TOTAL VOLUME PURGED (~~gallons~~ LITERS): 2.90 L

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ LITERS)	PURGE RATE (~~gpm~~ mL/Min)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1035	INITIAL	160	8.82	-34.07	5.84	23.90	99.50	4.94	2.50	CLEAR	NO
1040	0.80	140	8.96	-63.58	5.78	22.49	53.84	0.46	4.60	"	"
1045	1.50	140	8.99	-63.76	5.74	22.58	48.84	0.32	2.09	"	
1050	2.20	140	8.98	-65.39	5.72	22.68	47.65	0.28	4.66	"	
1055	2.90	140	8.98	-68.64	5.67	22.61	48.58	0.25	6.90	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

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SAMPLING DATA

WELL No: W-122	SAMPLED BY (PRINT) / AFFILIATION: JAMES LEAPHART / AECOM		
SAMPLER(S) SIGNATURE(S): JA Leaphart		SAMPLING START TIME: 1056	SAMPLING END TIME: 1120
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 30.13		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: PERISTALTIC

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 868958	SERIAL NO: 56924	

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity[a]~~	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-123	SAMPLE ID: W-123-2021-Q4	DATE: 10-5-21
TOTAL WELL LENGTH (feet) (A): 34.68	WATER TABLE DEPTH (feet) (B): 13.87	LENGTH OF WATER COLUMN (feet) (A-B): 20.81
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 29 feet to 34 feet	CALCULATED SYSTEM VOLUME: 3.39

PURGING DATA

	TUBING DIAMETER (inches): 1/4			PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 31	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 31	PURGING START TIME: 1133	PURGING END TIME: 1201	TOTAL VOLUME PURGED (~~gallons~~ Liters): 4.00

TIME (24 HR)	CUMUL. VOLUME PURGED (~~gallons~~ Liters)	PURGE RATE (~~gpm~~ ml PM)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1135	INITIAL	160	14.18	81.61	7.35	25.32	1584.82	4.72	59.58	CLOUDY	NO
1141	0.80	160	14.31	64.33	7.85	23.49	1691.99	0.60	15.85	CLEAR	"
1146	1.60	160	14.28	55.63	7.78	23.62	1673.76	0.45	13.56	"	"
1151	2.40	160	14.25	49.64	7.72	23.44	1663.01	0.38	16.98	"	"
1156	3.20	160	14.25	45.10	7.67	23.37	1654.66	0.33	9.30	"	"
1201	4.00	160	14.24	39.99	7.64	23.43	1642.15	0.30	3.07	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No:	SAMPLED BY (PRINT) / AFFILIATION:	
MW-123	James Leaphart / AECOM	
SAMPLER(S) SIGNATURE(S): JLeaphart	SAMPLING START TIME: 1202	SAMPLING END TIME: 1230
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet):	DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Y (N)	TUBING (Y) N (replaced)	SAMPLE COLLECTION METHOD: PERISTALTIC

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: SOLINST	
MODEL: TROLL 600	MODEL: 107	
SERIAL NO: 868958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. **STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:**
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		~~Conductivity[a]~~	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC	Shealy
N	1	250 ml	Plastic	N/A		Tritium	GEL
Y	2	1 liter	Plastic	HNO_3	201942	GAMMA SPEC	
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.

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Low Flow Groundwater Sample Collection Record

WELL NO: 124	SAMPLE ID: W-124.2021-Q4	DATE: 10/25/21
TOTAL WELL LENGTH (feet) (A): 33.46	WATER TABLE DEPTH (feet) (B): 10.86	LENGTH OF WATER COLUMN (feet) (A-B): 22.6
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 26 feet to 31 feet	CALCULATED SYSTEM VOLUME: 3.6

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 28.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 28.5	PURGING START TIME: 1207	PURGING END TIME: 1253	TOTAL VOLUME PURGED (~~gallons~~): 7.0 L

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1208	0	120	10.89	-142.46	6.15	33.3	0.04	3.683	40.1	CLEAR	NONE
1213	0.6	120	10.89	-154.86	6.02	21.3	146.81	1.395	0.4	CLEAR	NONE
1218	1.4	160	10.89	-162.69	6.05	20.4	150.16	0.961	0.1	CLEAR	NONE
1223	2.2	160	10.89	-163.60	6.01	20.1	136.57	0.650	0.3	CLEAR	NONE
1228	3.0	160	10.89	-165.83	6.09	20.0	144.50	0.482	0.8	CLEAR	NONE
1233	3.8	160	10.89	-168.99	6.06	20.0	138.70	0.322	3.5	CLEAR	NONE
1238	4.6	160	10.89	-168.37	6.04	19.9	141.79	0.568	0	CLEAR	NONE
1243	5.4	160	10.89	-172.95	6.07	19.9	146.48	0.693	0.4	CLEAR	NONE
1248	6.2	160	10.89	-171.92	6.04	19.7	142.49	0.619	0.9	CLEAR	NONE
1253	7.0	160	10.89	-173.28	6.06	19.7	145.19	0.410	0.3	CLEAR	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016
PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

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SAMPLING DATA

WELL No: 124	SAMPLED BY (PRINT) / AFFILIATION: Randy Crews		
SAMPLER(S) SIGNATURE(S): RCrews		SAMPLING START TIME: 1255	SAMPLING END TIME: 1315
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 28.5		DUPLICATE: Y (N)
FIELD DECONTAMINATION: PUMP Acetone (Y) N	TUBING Y (N) (replaced)		SAMPLE COLLECTION METHOD: Low Flow

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	2Xe168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: W-125	SAMPLE ID: W-125-2021-Q4	DATE: 10-25-21
TOTAL WELL LENGTH (feet) (A): 47.33	WATER TABLE DEPTH (feet) (B): 10.95	LENGTH OF WATER COLUMN (feet) (A-B): 36.38
CASING DIAMATER / MATL (inches): 2" / PVC	WELL SCREEN INTERVAL DEPTH: 40 feet to 45 feet	CALCULATED SYSTEM VOLUME: 5.93

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PERISTALTIC
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 45	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING START TIME: 1150	PURGING END TIME: 1213 / TOTAL VOLUME PURGED (gallons): 2.80

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons) LITERS	PURGE RATE (gpm) mL Pm	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe) LITERS	ODOR (describe)
1153	INITIAL	140	10.97	-97.33	6.38	19.68	382.15	1.58	7.34	CLEAR	NO
1158	0.70	140	10.97	-109.74	6.24	19.27	393.26	0.41	4.61	"	"
1203	1.40	140	10.97	-117.90	6.23	19.18	394.66	0.33	5.73	"	"
1208	2.10	140	10.97	-124.85	6.26	19.13	394.12	0.22	9.56		"
1213	2.80	140	10.97	-122.72	6.15	19.14	396.47	0.20	6.42	"	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12**
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5**
PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Oth

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: W-125	SAMPLED BY (PRINT) / AFFILIATION: James Leathart / Accom		
SAMPLER(S) SIGNATURE(S): [signature]		SAMPLING START TIME: 1215	SAMPLING END TIME: 1237
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 45	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING (Y) N (replaced)		SAMPLE COLLECTION METHOD: Peristaltic	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE: INSITU	MAKE: Solinst	
MODEL: Troll 600	MODEL: 107	
SERIAL NO: 808958	SERIAL NO: 56924	

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	207555	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Low Flow Groundwater Sample Collection Record

WELL NO: 126	SAMPLE ID: W-126-2021-Q4	DATE: 10/25/21
TOTAL WELL LENGTH (feet) (A): 46.32	WATER TABLE DEPTH (feet) (B): 9.05	LENGTH OF WATER COLUMN (feet) (A-B): 37.27
CASING DIAMATER / MATL (inches): 2"	WELL SCREEN INTERVAL DEPTH: 37.5 feet to 42.5 feet	CALCULATED SYSTEM VOLUME: 6.0

PURGING DATA

	TUBING DIAMETER (inches): 1/4		PURGE PUMP TYPE OR BAILER: PP
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 40.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 40.0	PURGING START TIME: 0946	PURGING END TIME: 1013	TOTAL VOLUME PURGED (gallons): 4.5

TIME (24 HR)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	ORP (mV)	pH (standard units)	TEMP. (°C)	SPEC. COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0948	0	180	9.08	-186.33	6.25	19.9	293.38	2.157	307	cloudy	NONE
0953	0.9	180	9.08	-205.75	6.32	19.4	327.42	1.020	49	clear-ish	NONE
0958	~~1.8~~ 1.8	180	9.08	-214.20	6.36	19.4	330.09	0.355	31	clear	NONE
1003	2.7	180	9.08	-221.39	6.41	19.3	333.85	0.250	18	clear	NONE
1008	3.6	180	9.08	-226.64	6.45	19.3	335.26	0.211	15	clear	NONE
1013	4.5	180	9.08	-228.74	6.46	19.3	336.37	0.274	12	clear	NONE

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016
PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

*Parent Procedure, other procedures may reference this form in ETAPS. * Procedure # ROP-06-007

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SAMPLING DATA

WELL No: 126	SAMPLED BY (PRINT) / AFFILIATION: Randy Crews		
SAMPLER(S) SIGNATURE(S): R Crews		SAMPLING START TIME: 1016	SAMPLING END TIME: 1034
TUBING MATERIAL CODE: T	PUMP OR TUBING DEPTH IN WELL (feet): 40.0	DUPLICATE: Y (N)	
FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced)		SAMPLE COLLECTION METHOD: Low flow	

FIELD EQUIPMENT USED:	FIELD EQUIPMENT USED:	REMARKS:
MAKE:	MAKE:	
MODEL:	MODEL:	
SERIAL NO:	SERIAL NO:	

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

NOTES:
1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS:
   pH: + 1.0 units **Temperature**: + 3% **Specific Conductance**: + 3% **Dissolved Oxygen**: optionally, + 0.2 mg/L or + 10% (whichever is greater) **ORP**: + 10 mV
   Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

SAMPLED? Y OR N	# of bottles	Size	Material	Preservative	Preservative Lot Number	Analysis	Preferred Lab
Y	1	250 ml	Plastic	H_2SO_4	206168	Ammonia	WEC Chem Lab
Y	1	250 ml	Plastic	N/A		Conductivity[a]	WEC Chem Lab
						Fluoride[a]	
Y	1	250 ml	Plastic	N/A		Nitrate	Shealy
Y	3	50 ml	Glass vial	Vendor[b]		VOC	Shealy
N	2	250 ml	Glass-amber	N/A		SVOC[d]	Shealy
N	1	250 ml	Plastic	N/A		Tritium[c]	GEL
Y	2	1 liter	Plastic	HNO_3	201942	Gamma Spec[c]	GEL
						Gross Alpha	GEL
						Gross Beta	
						Isotopic U (α Spec)	
						Isotopic U (ICP-MS)	
						Total U (ICP-MS)	
						Tc-99 (liquid scint)	

Notes: [a] Ensure there is no headspace in the bottle.
[b] Glass vials for VOC collection are acidified by the vendor supplying the vials.
[c] Tritium and Gamma Spec Analysis are only performed on Wells W-7, W-10, W-13, W-15, W-16, W-18, W-22, W-24, W-26, W-29, W-30, W-32, W-33, W-39, W-41, W-43, W-44, W-47, W-48, and W-RW2 per NPDES SC0001848 requirements.
[d] SVOC analysis is only performed on Wells W-26, W-41, W-48, and W-RW2 per NPDES SC0001848 requirements.

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Appendix I
Well Development Records

AECOM

Well/Piez. ID: PZ-1

Well/Piezometer Development Record

Client: WESTINGHOUSE Site Location: CFFF Hopkins SC

Project No: 60595649 Date: 7-27-21 Developer: James Leaphart

WELL/PIEZOMETER DATA

Well ☒ Piezometer ☒ Diameter 2" Material PVC

Measuring Point Description * TOC / + GS

Depth to Top of Screen (ft.) + 7.0

Depth to Bottom of Screen (ft.) + 17.0

Total Well Depth (ft.) * 19.49

Depth to Static Water Level (ft.) * 8.39

Geology at Screen Interval (if known)

Time of Water Level Measurement 1230

Calculate Purge Volume (gal.) 1.81

Disposal Method SITE TOTE

Wellhead PID/FID NA

Original Well Development ☒ Redevelopment ☐ Date of Original Development

DEVELOPMENT METHOD WHALE PUMP **PURGE METHOD**

Field Testing Equipment Used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Field Testing Calibration Documentation Found in Field Notebook # Page #

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	Other
1239	1.0	21.51	7.40	249.95	1828	1.15	Brown	No	-106.94
1245	10.0	19.32	6.79	250.13	36.45	0.51	Clear	"	-51.58
1251	30.0	19.34	6.53	249.1	15.8	0.33	"	"	-96.25
1300	30.0	19.34	6.46	250.96	9.18	0.21	"	"	-101.08

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (5 well volumes) 1.05 gallons

Maximum Turbidity Allowed 50 NTUs

Stabilization of parameters 10 %

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☐	☐	☒

If no or N/A explain below:

Signature J. Leaphart Date: 7-27-21

AECOM

Well/Piez. ID: W-4R

Well/Piezometer Development Record

Client: WESTINGHOUSE Site Location: CFFF HOPKINS SC

Project No: 60595649 Date: 7-26-21 Developer: JAMES LEAPHART

WELL/PIEZOMETER DATA

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description * TOC / + GS

Depth to Top of Screen (ft.) + 5.0

Depth to Bottom of Screen (ft.) + 15.0

Total Well Depth (ft.) * 17.10

Depth to Static Water Level (ft.) * 9.80

Geology at Screen Interval (if known)

Time of Water Level Measurement 1240

Calculate Purge Volume (gal.) 1.19

Disposal Method SITE TOTE

Wellhead PID/FID N/A

Original Well Development ☒ Redevelopment ☐ Date of Original Development

DEVELOPMENT METHOD WHALE PUMP **PURGE METHOD**

Field Testing Equipment Used:

Make	Model	Serial Number
IPSITU	TROLL 600	808958

Field Testing Calibration Documentation Found in Field Notebook # Page #

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	Other
1308	1.0	22.91	7.35	348.74	863	2.36	BROWN	NO	118.01
1317	2.0	20.84	6.79	274.36	1598	3.98	"	"	143.25
1337	6.0	20.66	6.34	214.42	3860	5.44	"	"	190.05
1432	12.0	20.64	6.21	160.64	2502	5.93	"	"	226.52
1458	15.0	19.75	6.06	156.42	839	5.49	"	"	242.68
1525	18.0	20.04	5.99	157.18	1131	5.56	"	"	258.53
1544	23.0	19.75	5.99	155.98	465	5.69	"	"	255.86
1642	30.0	19.94	6.01	144.18	360	5.21	"	"	261.29

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (5 well volumes) 5.95 gallons

Maximum Turbidity Allowed 50 NTUs

Stabilization of parameters 10 %

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A explain below:

Signature [signature] Date: 7-26-21

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 8-14-19 Date Completed (yr/mo/day) 8-14-19

Field Personnel James Leathart

Site Name Westinghouse

Job # 60595649

Well ID # W-69

____ Upgradient ____ Downgradient

Weather Conditions P. Cloudy

Air Temperature 80° °F

Total Well Depth (TWD) = 20.75 1/100 ft

Depth to Ground Water (DGW) = 8.87 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 11.88 1/100 ft

1 Casing Volume (OCV) = LWC x .163 = 1.94 gallons

5 Casing Volumes = 9.7 gallons

Method of Well Development Whale Pump

Total Volume of Water Removed 16 gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	Eh	Specific Conductivity (µmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks
8-14-19/0825	1.9	4.0	21.5	5.42	68.2	108.2	Lt. Brown	OVER RANGE	Dry @ 4 Gal
0904	1.9	8.0	21.2	5.77	~~54.9~~	98.1	"	960	RECOVERED @ 1.5
0949	1.9	12.0	21.4	5.72	65.5	96.3	"	375	Cal. After 5 min.
1020	1.9	16.0	21.3	5.68	81.3	92.3	"	361	

COMMENTS/OBSERVATIONS:

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 8-14-19 Date Completed (yr/mo/day) 8-14-19

Field Personnel James Leaphart

Site Name Westinghouse

Job # 60595649

Well ID # W-70

____ Upgradient ____ Downgradient

Weather Conditions P. Cloudy

Air Temperature 89° °F

Total Well Depth (TWD) = 51.92 1/100 ft

Depth to Ground Water (DGW) = 13.09 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 38.83 1/100 ft

1 Casing Volume (OCV) = LWC x .163 = 6.33 gallons

5 Casing Volumes = 31.65 gallons

Method of Well Development Whale Pump

Total Volume of Water Removed 50 gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	Eh	Specific Conductivity (µmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks
8-14-19/1038	~~1.7~~ 2.5	5.0	20.2	5.47	100.3	104.2	Lt Brown	over range	Surge
1040	2.5	10.0	20.2	5.07	118.9	90.8	"	"	Surge
1043	1.7	15.0	20.2	4.92	129.5	91.7	"	75.8	No Surge
1045	2.5	20.0	20.2	4.90	134.2	90.2	Clear	63.6	"
1047	2.5	25.0	20.2	4.91	135.4	86.5	"	20.7	"
1050	1.7	30.0	20.2	4.98	143.1	85.2	Lt. Brown	65.4	Surge
1052	2.5	35.0	20.2	4.77	154	85.7	Cloudy	90.1	No Surge
1055	1.7	40.0	20.2	4.78	154.8	82.9	Clear	42.6	"
1057	2.5	45.0	20.2	4.76	157	80.6	"	15.5	"
1100	1.7	50.0	20.2	4.77	158.8	81.7	"	11.1	"

COMMENTS/OBSERVATIONS:

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 10-3-19 Date Completed (yr/mo/day) 10-3-19

Field Personnel James LEPLART

Site Name WESTINGHOUSE

Job # 60595649

Well ID # W-71

____ Upgradient ____ Downgradient

Weather Conditions CLOUDY 71°

Air Temperature 71° °F

Total Well Depth (TWD) = 104.00 1/100 ft

Depth to Ground Water (DGW) = 25.54 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 78.46 1/100 ft

1 Casing Volume (OCV) = LWC x .163 = 12.79 gallons

5 Casing Volumes = 64 gallons

Method of Well Development GRUNDFOS

Total Volume of Water Removed 95 gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	Eh	Specific Conductivity (µmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks
10-3-19/0912		13	20.5	6.46	25.4	257.2	>1100 / GRAY		SURGE
0922		24	20.4	6.12	-65	189.6	444.9 "		NO SURGE
0933		39	20.6	6.02	-71.9	162.7	>1100 "		SURGE
1007		55	20.9	6.26	-73.6	141.3	277.5 "		NO SURGE
1014		70	21.0	(1) 5.90	-59.1	130.6	128.5 CLOUDY		"
1024		85	20.5	5.94	-49.6	128.5	120.6 "		"
1033		95	20.6	5.98	-47.8	127.4	115.5 "		"

COMMENTS/OBSERVATIONS:

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 8-19-19 Date Completed (yr/mo/day) 8-19-19

Field Personnel James Leaphart

Site Name Westinghouse

Job # 605956499

Well ID # W-72

____ Upgradient ____ Downgradient

Weather Conditions P. Cloudy

Air Temperature 82 °F

Total Well Depth (TWD) = 14.48 1/100 ft

Depth to Ground Water (DGW) = 8.46 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 6.02 1/100 ft

1 Casing Volume (OCV) = LWC x .163 = 0.98 gallons

5 Casing Volumes = 4.90 gallons

Method of Well Development Waste Pump

Total Volume of Water Removed 30.0 gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	Eh	Specific Conductivity (µmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks
8-19-19 1053	2.0	4.0	23.5	6.13	71.2	175.9	LT BROWN	OVER RANGE	SURGE
1101	2.0	8.0	23.4	6.09	71.1	221.6	"	"	"
1108	2.0	12.0	23.4	6.12	48.4	204.1	"	299	NO SURGE
1115	2.0	16.0	23.6	6.15	44.3	194.7	"	230	"
1121	2.0	20.0	23.4	6.07	43.0	185.9	CLOUDY	146	"
1125	2.0	25.0	23.5	6.15	40.9	181.6	"	119	"
1131	2.5	30.0	23.5	6.16	40.8	179.6		115	"

DRY @ 3.5 GAL

COMMENTS/OBSERVATIONS:

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 8-19-19 Date Completed (yr/mo/day) 8-19-19

Field Personnel James Leaphart

Site Name Westinghouse

Job # 60595649

Well ID # W-73

____ Upgradient ____ Downgradient

Weather Conditions P. Cloudy

Air Temperature 89 °F

Total Well Depth (TWD) = 15.70 1/100 ft

Depth to Ground Water (DGW) = 8.76 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 6.94 1/100 ft

1 Casing Volume (OCV) = LWC x .163 = 1.13 gallons

5 Casing Volumes = 5.66 gallons

Method of Well Development Whale Pump

Total Volume of Water Removed 12.5 gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	Eh ORP	Specific Conductivity (µmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks
8-19-19/1228	2.0	5.0	26.3	6.10	14.4	213.2	Lt. Brown	OVER RANGE	SURGE
1235	2.0	7.5	26.1	6.05	16.0	196.1	"	"	"
1255	2.5	10.0	25.9	6.21	11.8	187.6	"	"	NO SURGE
1309	2.0	12.5	26.3	6.12	28.4	163.7	"	"	"
1327	2.0	15.0	26.1	6.17	25.7	169.2	"	339	"
1348	2.5	17.5	26.6	6.23	48.0	173.1	"	362	"

DRY @ 2.25 GAL.

COMMENTS/OBSERVATIONS:

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 9-23-19 Date Completed (yr/mo/day) 9-23-19

Field Personnel JAMES LEPHART

Site Name WESTINGHOUSE

Job # 60595649

Well ID # W-74

____ Upgradient ____ Downgradient

Weather Conditions CLEAR

Air Temperature 82 °F

Total Well Depth (TWD) = 33.87 1/100 ft

Depth to Ground Water (DGW) = 13.03 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 20.84 1/100 ft

1 Casing Volume (OCV) = LWC x .163 = 3.39 gallons

5 Casing Volumes = 16.98 gallons

Method of Well Development WHALE PUMP

Total Volume of Water Removed 55 gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	Eh	Specific Conductivity (µmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks
1105	2.0	5.0	22.6	5.79	126.4	130.1	>1100 TAN		SURGE
	2.0	10.0	22.5	5.23	187.5	120.7	>1100 "		"
	2.0	15.0	22.0	5.15	202.4	117.1	>1100 "		"
	2.0	20.0	22.0	5.20	210.8	115.9	981.6 "		"
	2.0	25.0	21.9	5.13	218.3	114.5	270.4		NO SURGE
	2.0	30.0	22.2	5.07	238.6	114.0	216.5		"
	2.0	35.0	21.9	5.12	241.3	114.4	191.4		"
	2.0	40.0	21.9	5.05	244.8	113.7	186.6		"
	2.0	45.0	21.9	5.01	248.2	113.2	118.9		"
	2.0	50.0	21.9	5.00	250.2	113.5	118.1		"
	2.0	55.0	21.9	5.01	251.2	113.8	110.6		"

COMMENTS/OBSERVATIONS:

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 9-23-19 Date Completed (yr/mo/day) 9-23-19

Field Personnel Jama Leapheart

Site Name Westinghouse

Job # 60595649

Well ID # W-75

____ Upgradient ____ Downgradient

Weather Conditions Clear

Air Temperature 79° °F

Total Well Depth (TWD) = 18.60 1/100 ft

Depth to Ground Water (DGW) = 12.65 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 5.95 1/100 ft

1 Casing Volume (OCV) = LWC x .163 = 0.97 gallons

5 Casing Volumes = 4.85 gallons

Method of Well Development Whale Pump

Total Volume of Water Removed 50 gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	Eh	Specific Conductivity (µmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks
9-23-19 / 1016	2.0	5.0	25.4	5.95	107.4	144.8	>1100 TAN		Surge
1018	2.0	10.0	25.2	5.82	102.8	144.3	>1100 "		"
1021	2.0	15.0	25.3	5.82	100.2	145.0	>1100 "		"
1024	2.0	20.0	25.2	5.84	100.7	144.3	860.9		"
1026	2.0	25.0	25.1	5.85	100.0	144.9	220.9		No Surge
1028	2.0	30.0	25.3	5.86	102.6	143.9	118.6		"
1031	2.0	35.0	25.5	5.88	104.5	143.5	98.66		"
1033	2.0	40.0	25.2	5.82	103.2	140.2	77.24		"
1035	2.0	45.0	25.2	5.84	100.6	141.6	35.16		"
1038	2.0	50.0	25.2	5.84	98.8	143.3	22.51		"

COMMENTS/OBSERVATIONS:

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 8-19-19 Date Completed (yr/mo/day) 8-19-19

Field Personnel James Leaphart

Site Name Westinghouse

Job # 60585649

Well ID # W-76

____ Upgradient ____ Downgradient

Weather Conditions P. Cloudy

Air Temperature 92° °F

Total Well Depth (TWD) = 14.92 1/100 ft

Depth to Ground Water (DGW) = 9.73 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 5.19 1/100 ft

1 Casing Volume (OCV) = LWC x .163 = 0.85 gallons

5 Casing Volumes = 4.23 gallons

Method of Well Development Whale Pump

Total Volume of Water Removed 20.0 gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	Eh	Specific Conductivity (µmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks
8-19-19/1425	2.0	5.0	27.4	5.55	97.1	216.4	Gray	Over Range	Surge
1445	2.0	10.0	27.9	5.52	99.5	201.7	LT Gray	"	"
1505	2.0	15.0	28.4	5.43	103.6	203.4	Cloudy	590	No Surge
1520	2.0	20.0	28.2	5.48	98.6	206.9	"	569	"

Day 2 1.75 Gal

COMMENTS/OBSERVATIONS:

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 9-20-19 Date Completed (yr/mo/day) 9-20-19

Field Personnel JAMES LEPHART

Site Name WESTINGHOUSE

Job # 60595649

Well ID # W-77

____ Upgradient ____ Downgradient

Weather Conditions CLEAR

Air Temperature 77° °F

Total Well Depth (TWD) = 15.30 1/100 ft

Depth to Ground Water (DGW) = 9.37 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 5.93 1/100 ft

1 Casing Volume (OCV) = LWC x .163 = 0.97 gallons

5 Casing Volumes = 4.83 gallons

Method of Well Development WHALE PUMP

Total Volume of Water Removed 45 gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	Eh	Specific Conductivity (µmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks
9-20-19 / 1139	2.0	~~2.5~~ 5.0	26.2	6.68	167.2	1047	>1100 TAN		SURGE
1149	2.0	10	26.3	7.02	150.4	1242	>1100 "		"
1155	2.0	15	20.1	7.01	144.1	1215	>1100 "		"
1202	2.0	20	25.9	6.98	158.4	1225	555 CLOUDY		NO SURGE
1210	2.0	25	25.7	6.89	151.8	1234	339.8 "		"
1217	2.0	30	25.8	6.79	146.3	1231	248.3 "		"
1225	2.0	35	25.8	6.80	148.0	1224	232.7 "		"
1233	2.0	40	25.5	6.74	145.3	1232	202.5 "		"
1241	2.0	45	25.5	6.69	137.9	1230	215.7 "		"

DRY @ 5.5 GALLS

COMMENTS/OBSERVATIONS: MODERATE RECOVERY

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 9-20-19 Date Completed (yr/mo/day) 9-20-19

Field Personnel JAMES LEAHART

Site Name WESTINGHOUSE

Job # 60595649

Well ID # MW-78

____ Upgradient ____ Downgradient

Weather Conditions CLEAR

Air Temperature 82 °F

Total Well Depth (TWD) = 15.10 1/100 ft

Depth to Ground Water (DGW) = 9.50 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 5.60 1/100 ft

1 Casing Volume (OCV) = LWC x .163 = 0.91 gallons

5 Casing Volumes = 4.56 gallons

Method of Well Development WHALE PUMP

Total Volume of Water Removed 55 gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	Eh	Specific Conductivity (µmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks
9-20-19/1304	2.0 ~~1304~~	5.0	25.5	6.17	133.8	258.1	>1100/TAN		SURGE
1306	2.0	10.0	25.4	6.01	156.6	255	>1100 "		"
1308	2.0	15.0	25.4	5.93	165.1	257.4	894.8 "		"
1318	2.0	20.0	25.5	5.87	179.7	254.9	648.5 "		NO SURGE
1320	2.0	25.0	25.4	5.93	179.7	261.2	856.7		SURGE
1323	2.0	30.0	25.2	5.91	183.3	264.4	372.8		NO SURGE
1331	2.0	35.0	25.5	5.96	184.7	263.0	412.0		"
1333	2.0	40.0	25.4	5.98	185.5	266.9	232.1		"
1336	2.0	45.0	25.3	5.91	187.0	276.4	211.3		"
1346	2.0	50.0	25.3	5.95	194.6	268.4	214.2		"
1349	2.0	55.0	24.4	6.01	197.1	270.5	182.6		"

APX 19 GALS

COMMENTS/OBSERVATIONS:

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 8-19-19 Date Completed (yr/mo/day) 8-19-19

Field Personnel James Lapham

Site Name Westinghouse

Job # 60595649

Well ID # W-79

____ Upgradient ____ Downgradient

Weather Conditions P. Cloudy

Air Temperature 93- °F

Total Well Depth (TWD) = 15.32 1/100 ft

Depth to Ground Water (DGW) = 8.14 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 7.18 1/100 ft

1 Casing Volume (OCV) = LWC x .163 = 1.17 gallons

5 Casing Volumes = 5.85 gallons

Method of Well Development Whale Pump

Total Volume of Water Removed 20 gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	Eh	Specific Conductivity (µmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks
8-19-19/1546	2.0	5.0	27.1	5.89	77.9	199.8	LT BROWN	OVER RANGE	SURGE
1553	2.0	10.0	26.6	5.79	101.9	196.7	"	"	SURGE
1600	2.0	15.0	26.4	5.69	115.4	194.4	CLOUDY	66.7	NO SURGE
1615	2.0	20.0	26.2	5.48	128	191.7	"	56.4	"

DRY C 2.5 GAL

COMMENTS/OBSERVATIONS:

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 8-20-19 Date Completed (yr/mo/day) 8-20-19

Field Personnel JAMES LEAPHART

Site Name WESTINGHOUSE

Job # 605956649

Well ID # W-80

____ Upgradient ____ Downgradient

Weather Conditions P.CLOUDY

Air Temperature 77 °F

Total Well Depth (TWD) = 15.33 1/100 ft

Depth to Ground Water (DGW) = 9.88 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 5.45 1/100 ft

1 Casing Volume (OCV) = LWC x .163 = 0.89 gallons

5 Casing Volumes = 4.44 gallons

Method of Well Development WHALE PUMP

Total Volume of Water Removed 8.5 gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	Eh	Specific Conductivity (µmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks
8-20-19/0906	2.0	2.5	27.1	5.79	51.0	261.1	LT. BROWN	OVER RANGE	SURGE
0927	2.0	5.0	26.5	5.12	73.4	285.6	CLOUDY	138	NO SURGE
0941	2.0	7.0	26.4	5.33	75.5	291.2	"	83.6	"
1015	2.0	8.0	26.5	5.25	100	317.7	"	86.5	"
1025	2.0	8.5	26.3	5.28	89.4	325.6	"	84.4	"

DRY @ 1.5 GAL.

COMMENTS/OBSERVATIONS: SLOW TO RECOVER

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 8-20-19 Date Completed (yr/mo/day) 8-20-19

Field Personnel [illegible]

Site Name WESTINGHOUSE

Job # 60595649

Well ID # W-81

____ Upgradient ____ Downgradient

Weather Conditions P. CLOUDY

Air Temperature 78° °F

Total Well Depth (TWD) = 15.34 1/100 ft

Depth to Ground Water (DGW) = 11.25 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 4.09 1/100 ft

1 Casing Volume (OCV) = LWC x .163 = 0.67 gallons

5 Casing Volumes = (5 x 0.67) 3.33 gallons

Method of Well Development WHALE PUMP

Total Volume of Water Removed 3.5 gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	Eh ORP	Specific Conductivity (µmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks
8-20-19 / 0932	1.8	1.5	23.8	5.70	29.3	230.8	LT GRAY	658	SURGE
0944	1.8	2.0	23.9	5.72	38.6	232.6	CLOUDY	319	"
1003	1.8	2.5	24.1	5.77	46.6	235.5	"	190	NO SURGE
1021	1.8	3.0	23.8	5.76	51.5	230.9	"	105	"
1040	1.8	3.5	23.8	5.79	50.3	230.1	"	99.1	"

DRY @ 1.0 GAL

COMMENTS/OBSERVATIONS: SLOW TO RECOVER

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 9-23-19 Date Completed (yr/mo/day) 9-23-19

Field Personnel James LEAHART

Site Name WESTINGHOUSE

Job # 60595649

Well ID # W-82

____ Upgradient ____ Downgradient

Weather Conditions CLEAR

Air Temperature 88 °F

Total Well Depth (TWD) = 15.30 1/100 ft

Depth to Ground Water (DGW) = 12.20 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 3.10 1/100 ft

1 Casing Volume (OCV) = LWC x .163 = 0.51 gallons

5 Casing Volumes = 2.53 gallons

Method of Well Development WATER PUMP

Total Volume of Water Removed 2.50 gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	Eh	Specific Conductivity (µmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks
9-23-19/1232	2.0	0.75	26.4	5.31	162.3	117.4	>1100 TAN		SURGE
1248	2.0	1.00	26.3	5.04	182.7	108.7	>1100 TAN		NO SURGE
1319	2.0	1.50	26.5	5.29	154.7	118.2	537.6		"
1330	2.0	1.75	26.4	4.92	185.0	119.7	451.1		"
1340	2.0	2.00	26.3	5.11	176.3	122.1	386.9		"
1350	2.0	2.25	26.0	5.10	170.4	125.5	315.7		"
1401	2.0	2.50	26.4	5.10	168.0	124.5	294.0		"

DIZ C 0.5 GALLONS

COMMENTS/OBSERVATIONS: VERY SLOW TO RECOVER

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 8-20-19 Date Completed (yr/mo/day) 8-20-19

Field Personnel James Lenhart

Site Name Westinghouse

Job # 60595649

Well ID # W-83

____ Upgradient ____ Downgradient

Weather Conditions M. Cloudy

Air Temperature 86 °F

Total Well Depth (TWD) = 26.00 1/100 ft

Depth to Ground Water (DGW) = 12.55 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 13.45 1/100 ft

1 Casing Volume (OCV) = LWC x .163 = 2.19 gallons

5 Casing Volumes = 11.0 gallons

Method of Well Development Whale Pump

Total Volume of Water Removed 20 gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	Eh	Specific Conductivity (µmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks
8-20-19 / 1333	2.0	5.0	23.3	6.15	100.1	161.8	LT BROWN	OVER RANGE	SURGE
1403	2.0	10.0	22.4	6.09	68.7	108.4	"	"	"
1449	2.0	15.0	22.4	6.14	73.7	94.5	"	536	NO SURGE
1525	2.0	20.0	22.8	5.92	95.2	91.9	"	525	"

DRY @ 5.0 GAL.

COMMENTS/OBSERVATIONS:

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 8-20-19 Date Completed (yr/mo/day) 8-20-19

Field Personnel James Leopkart

Site Name Westinghouse

Job # 60595649

Well ID # W-84

____ Upgradient ____ Downgradient

Weather Conditions M. Cloudy

Air Temperature 83 °F

Total Well Depth (TWD) = 20.32 1/100 ft

Depth to Ground Water (DGW) = 7.82 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 12.5 1/100 ft

1 Casing Volume (OCV) = LWC x .163 = 2.04 gallons

5 Casing Volumes = JL ~~2.04~~ 10.19 gallons

Method of Well Development Whale Pump

Total Volume of Water Removed 15 gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	Eh	Specific Conductivity (µmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks
8-20-19/1102	2.0	5.0	24.4	6.10	52.1	213	LT BROWN	OVER RANGE	SURGE
1134	2.0	10.0	25.8	6.38	28.1	157.7	"	780	"
1214	2.0	12.0	25.5	6.05	45.2	153.3	CLOUDY	246	NO SURGE
1223	2.0	13.0	25.7	5.79	73.9	149.1	"	124	"
1232	2.0	14.0	25.9	5.73	70.7	155.1	"	95	"
1242	2.0	15.0	25.2	5.80	63.4	152.2	"	92.8	"

DRY @ 6.5 GAL.

COMMENTS/OBSERVATIONS: VERY SLOW TO RECOVER

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 8-14-19 Date Completed (yr/mo/day) 8-14-19

Field Personnel James Kephart

Site Name Westinghouse

Job # 60595649

Well ID # W-85

___ Upgradient ___ Downgradient

Weather Conditions P. Cloudy

Air Temperature 94° °F

Total Well Depth (TWD) = 47.80 1/100 ft

Depth to Ground Water (DGW) = 20.74 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 27.06 1/100 ft

1 Casing Volume (OCV) = LWC x .163 = 4.41 gallons

5 Casing Volumes = 22.05 gallons

Method of Well Development Whale Pump

Total Volume of Water Removed 30 gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	Eh	Specific Conductivity (µmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks
8-14-19/1235	~~5~~ 1.9	5.0	19.4	5.96	22.8	242.7	LT. Gray	OVER RANGE	DRY @ 6.5 GAL
1245	~~10.0~~ 1.9	10.0	19.5	6.08	15.2	233.9	"	"	
1253	1.9	15.5	19.2	6.16	16.4	208.1	Cloudy	25.9	
1303	1.9	20.5	19.3	6.30	20.8	234.9	"	91.0	
1316	1.9	25.0	19.2	6.28	30.6	228.1	Cloudy	37.7	
1328	1.9	30.5	19.2	6.31	36.5	230.5	"	15.6	

COMMENTS/OBSERVATIONS:

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 8-14-19 Date Completed (yr/mo/day) 8-14-19

Field Personnel James Kephart

Site Name Westinghouse

Job # 60595649

Well ID # W-86

____ Upgradient ____ Downgradient

Weather Conditions P. Cloudy

Air Temperature 97 °F

Total Well Depth (TWD) = 38.09 1/100 ft

Depth to Ground Water (DGW) = 19.28 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 18.81 1/100 ft

1 Casing Volume (OCV) = LWC x .163 = 3.1 gallons

5 Casing Volumes = 15.3 gallons

Method of Well Development Whale Pump

Total Volume of Water Removed 30 gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	Eh	Specific Conductivity (µmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks
8-14-19/1347	2.5	5.0	19.2	6.17	39.2	352.2	Lt Brown	over range	SURGE
1352	1.7	10.0	19.1	5.86	41.3	371.1	"	"	No SURGE
1414	1.7	15.0	19.1	5.88	37.6	354.2	"	"	SURGE
1429	1.7	20.0	19.1	5.97	35.4	336.2	"	541	No SURGE
1439	1.7	25.0	19.1	5.88	35.6	330.5	"	396	"
1449	1.7	30.0	19.1	5.85	34.2	334.4	"	380	"

DRY @ 5 GAL

COMMENTS/OBSERVATIONS:

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 8-19-19 Date Completed (yr/mo/day) 8-19-19

Field Personnel JAMES LEATHART

Site Name WESTINGHOUSE

Job # 60595649

Well ID # W-87

____ Upgradient ____ Downgradient

Weather Conditions CLOUDY

Air Temperature 78° °F

Total Well Depth (TWD) = 32.84 1/100 ft

Depth to Ground Water (DGW) = 6.65 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 26.19 1/100 ft

1 Casing Volume (OCV) = LWC x .163 = 4.27 gallons

5 Casing Volumes = 21.34 gallons

Method of Well Development WHALE PUMP

Total Volume of Water Removed 50 gallons

Date/Time	Discharge Rate (L) (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	Eh	Specific Conductivity (µmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks
8-19-19 0917	~~4.0~~	5.0	25.3	6.56	-9.7	137	LT BROWN	OVER RANGE	SURGE
0923		10.0	21.6	6.30	18.1	115.9	"	"	"
0929		15.0	21.6	5.65	44	84.4	"	"	"
0937		20.0	21.6	6.04	40.4	144.2	"	"	NO SURGE
0945		25.0	21.6	6.15	42.6	122.6	"	"	"
0953		30.0	21.6	6.23	47.7	114.2	"	"	"
0959		35.0	21.6	5.69	76.1	108.4	"	594	"
1006		40.0	21.6	5.35	79.5	72.5	"	593	"
1011		45.0	21.5	5.26	81.4	64.1	"	615	"
1014		50.0	21.6	5.56	83.6	62.5	"	582	"

COMMENTS/OBSERVATIONS:

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 8-13-19 Date Completed (yr/mo/day) 8-13-19

Field Personnel Joana Leaphart

Site Name Westinghouse

Job # 60595649

Well ID # W-88

____ Upgradient ____ Downgradient

Weather Conditions P. Cloudy

Air Temperature 95° °F

Total Well Depth (TWD) = 28.22 1/100 ft

Depth to Ground Water (DGW) = 21.44 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 6.78 1/100 ft

1 Casing Volume (OCV) = LWC x 0.163 = 1.11 gallons

5 Casing Volumes = 5.55 gallons

Method of Well Development Whale Pump

Total Volume of Water Removed 20.0 gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	Eh	Specific Conductivity (µmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks
8/13-19/1338	1.8	5.0	17.9	4.24	~~25.8~~ 173	75.8	Brown	over Range	Surge
1341	1.8	10.0	18.0	4.35	173.1	81.9	Lt Brown	600	"
1344	1.8	15.0	18.0	4.58	167.3	82.5	Cloudy	156	"
1347	1.8	20.00	18.0	4.65	161.5	81.8	Clear	6.12	No Surge

COMMENTS/OBSERVATIONS:

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 8-13-19 Date Completed (yr/mo/day) 8-13-19

Field Personnel James Leadbetter

Site Name Westinghouse

Job # 60595649

Well ID # W-89

____ Upgradient ____ Downgradient

Weather Conditions P.Cloudy

Air Temperature 95° °F

Total Well Depth (TWD) = 44.46 1/100 ft

Depth to Ground Water (DGW) = 22.82 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 21.64 1/100 ft

1 Casing Volume (OCV) = LWC x .163 = 3.53 gallons

5 Casing Volumes = 17.64 gallons

Method of Well Development Whale Pump

Total Volume of Water Removed 25.0 gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	Eh	Specific Conductivity (µmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks
8-13-19/1252	1.7	5.0	18.3	4.50		94.1	23.3/Clear		SURGE
1255	1.7	10.0	18.3	4.64	134.6	99.8	90.1/Cloudy		"
1259	1.25	15.0	18.3	4.96	127.6	99.1	10.1/Clear		NO SURGE
1302	1.7	20.0	18.3	5.00	127.6	99.4	56.2/Cloudy		SURGE
1305	1.7	25.0	18.3	5.04	128.4	104.1	8.15/Clear		NO SURGE

COMMENTS/OBSERVATIONS:

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 8-13-19 Date Completed (yr/mo/day) 8-13-19

Field Personnel James Leadbetter

Site Name Westinghouse

Job # 60595649

Well ID # iw-90

____ Upgradient ____ Downgradient

Weather Conditions P. Cloudy

Air Temperature 90- °F

Total Well Depth (TWD) = 28.30 1/100 ft

Depth to Ground Water (DGW) = 26.85 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 1.45 1/100 ft

1 Casing Volume (OCV) = LWC x .163 = 0.24 gallons

5 Casing Volumes = 1.18 gallons

Method of Well Development Whale Pump

Total Volume of Water Removed 0 gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	Eh	Specific Conductivity (µmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks
8-13-19/1525									

COMMENTS/OBSERVATIONS: Not able to develop with pump due to low volume.

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 8-13-19 Date Completed (yr/mo/day) 8-13-19

Field Personnel James Leaphart

Site Name Westinghouse

Job # 60595649

Well ID # U-91

____ Upgradient ____ Downgradient

Weather Conditions P. Cloudy

Air Temperature 96 °F

Total Well Depth (TWD) = 43.08 1/100 ft

Depth to Ground Water (DGW) = 26.91 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 16.17 1/100 ft

1 Casing Volume (OCV) = LWC x .163 = 2.64 gallons

5 Casing Volumes = 13.2 gallons

Method of Well Development Whale Pump

Total Volume of Water Removed 50 gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	Eh	Specific Conductivity (µmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks
8-13-19/1441 (JL)	~~5.0~~ 1.7	5.0	18.1	4.58	177.7	95.3	Lt. Brown	OVER RANGE	SURGE
1444	~~10.0~~ 1.7	10.0	18.3	4.70	166.0	94.5	"	"	"
1447	1.7	15.0	18.2	4.95	155.7	74.2	"	"	"
1450	1.7	20.0	18.2	5.18	147.1	81.8	"	"	NO SURGE
1453	1.7	25.0	18.2	5.25	144.5	80.8	"	"	"
1456	1.7	30.0	18.1	4.67	179.6	80.2	"	543	~~543~~ .1
1500	1.25	35.0	18.2	4.76	173.5	86.1	"	490	"
1505	1.0	40.0	18.3	4.91	164.7	89.3	"	506	"
1508	1.7	45.0	18.3	4.91	165.9	85.2	"	486	"
1512	1.25	50.0	18.3	5.11	156.4	83.7	"	528	"

COMMENTS/OBSERVATIONS:

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 8-14-19 Date Completed (yr/mo/day) 8-14-19

Field Personnel James Leaphart

Site Name Westinghouse

Job # 60595649

Well ID # W-92

____ Upgradient ____ Downgradient

Weather Conditions P. Cloudy

Air Temperature 93° °F

Total Well Depth (TWD) = 36.90 1/100 ft

Depth to Ground Water (DGW) = 16.80 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 20.10 1/100 ft

1 Casing Volume (OCV) = LWC x .163 = 3.28 gallons

5 Casing Volumes = 16.4 gallons

Method of Well Development Whale Pump

Total Volume of Water Removed 30 gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	Eh	Specific Conductivity (µmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks
8-14-19 / 1551	1.9	5.0	18.1	5.52	54.6	219.3	Lt Brown	531	Surge
1553	2.5	10.0	18.1	5.52	47.0	212.4	"	270	"
1555	2.5	15.0	18.1	5.54	42.1	222.1	Cloudy	141	"
1557	2.5	20.0	18.1	5.56	38.5	226.7	"	114	No Surge
1559	2.5	25.0	18.1	5.59	34.6	228.8	Cloudy	54.9	"
1601	2.5	30.0	18.1	5.62	31.8	222.4	"	45.2	"

COMMENTS/OBSERVATIONS:

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 9-20-19 Date Completed (yr/mo/day) 9-20-19

Field Personnel James Leaphart

Site Name Westinghouse

Job # 60595649

Well ID # W-93

____ Upgradient ____ Downgradient

Weather Conditions Clear

Air Temperature 72° °F

Total Well Depth (TWD) = 35.00 1/100 ft

Depth to Ground Water (DGW) = 10.29 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 24.71 1/100 ft

1 Casing Volume (OCV) = LWC x .163 = 4.03 gallons

5 Casing Volumes = 20.14 gallons

Method of Well Development Whale Pump

Total Volume of Water Removed 60.0 gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	Eh	Specific Conductivity (µmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks
1043	2.0	5.0	23.1	5.87	173.9	131.4	>1100 Brown		Surge
1046	2.0	10.0	22.1	5.44	197.6	118.2	>1100 "		"
1050	2.0	15.0	22.0	5.42	197.3	118.6	1096 "		"
1052	2.0	20.0	21.9	5.35	197.9	117.0	482.3 Lt Brown		No Surge
1054	2.0	25.0	21.8	5.29	198.8	116.2	223.7		"
1057	2.0	30.0	22.0	5.37	221.6	116.4	528.7		Surge
1107	2.0	35.0	22.0	5.31	213.9	115.5	180.8		No Surge
1110	2.0	40.0	21.9	5.34	212.5	115.1	80.82		"
1112	2.0	45.0	21.9	5.36	211.4	114.9	44.78		"
1114	2.0	50.0	21.9	5.33	210.2	114.9	35.14		"
1118	2.0	60.0	21.9	5.34	207.9	114.8	26.14		"

COMMENTS/OBSERVATIONS:

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 9.19.19 Date Completed (yr/mo/day) 9.19.19

Field Personnel James Leaphart

Site Name Westinghouse

Job # 60595649

Well ID # W-94

____ Upgradient ____ Downgradient

Weather Conditions P. Cloudy

Air Temperature 76° °F

Total Well Depth (TWD) = 32.17 1/100 ft

Depth to Ground Water (DGW) = 11.63 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 20.54 1/100 ft

1 Casing Volume (OCV) = LWC x .163 = 3.35 gallons

5 Casing Volumes = 16.74 gallons

Method of Well Development Whale Pump

Total Volume of Water Removed 44 gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	Eh	Specific Conductivity (µmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks
1255	2.0	3.5	18.6	6.08	17.6	130.5	>1100 / Gray		Surge
1257	2.0	7.0	18.8	5.24	54.0	138.3	>1100 "		"
1300	2.0	10.5	18.2	5.25	27.7	138.4	857.9 "		"
1308	2.0	17.5	18.0	5.32	28.6	139.5	554.5 "		No Surge
1314	2.0	21.0	18.1	5.57	29.7	139.6	907 "		Dump Purge Water
1347	2.0	26.0	18.7	5.86	26.8	142.0	814.8 "		Surge
1351	2.0	32.0	17.8	5.42	27.7	141.7	590.4 "		No Surge
1355	2.0	36.0	17.7	5.35	16.1	141.8	246.4 "		" "
1358	2.0	40.0	17.6	5.38	12.2	141.4	156.6 Clear		" "
1401	2.0	44.0	17.6	5.42	6.2	141.4	104.7		" "

COMMENTS/OBSERVATIONS:

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 9-18-19 Date Completed (yr/mo/day) 9-19-19

Field Personnel James Leonhart

Site Name Westinghouse

Job # 60585649

Well ID # W-95

____ Upgradient ____ Downgradient

Weather Conditions P.Cloudy

Air Temperature 78° °F

Total Well Depth (TWD) = 36.28 1/100 ft

Depth to Ground Water (DGW) = 10.21 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 26.07 1/100 ft

1 Casing Volume (OCV) = LWC x .163 = 4.25 gallons

5 Casing Volumes = 21.25 gallons

Method of Well Development Whale Pump

Total Volume of Water Removed 54 gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	Eh	Specific Conductivity (µmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks
9.19.19/1453	1.8	4.5	18.6	6.01	-26.-	241.1	>1100/Lt. Gray		SURGE
1456	1.7	9.5	18.1	5.75	-61.9	229.2	>1100/Brown		"
1501	1.0	14.0	18.1	5.77	-67.8	237.5	>1100 "		"
1506	1.0	19.0	18.0	5.78	-91.7	237.1	343.7 Cloudy		NO SURGE
1511	1.0	24.-	18.2	6.01	-137.6	226.1	1063 Brown		SURGE
1523	0.5	29.-	18.2	5.99	-149.2	230.9	706 "		"
1545	2.0	34.0	18.0	6.11	-84.9	235.0	382 Cloudy		NO SURGE
1548	2.0	39.0	17.9	5.85	-113	229.8	173.6 Clear		"
1551	2.0	44.-	17.9	5.83	-109.2	225.9	93.1 "		"
1553	2.0	49.0	17.9	5.83	-106.9	224.1	58.9 "		"
1555	2.0	54.0	17.9	5.81	-103.9	222.0	42.6 "		"

COMMENTS/OBSERVATIONS:

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 9-20-19 Date Completed (yr/mo/day) 9-20-19

Field Personnel James Leaphart

Site Name Westinghouse

Job # 60595649

Well ID # W-96

____ Upgradient ____ Downgradient

Weather Conditions Clear

Air Temperature 56° °F

Total Well Depth (TWD) = 32.85 1/100 ft

Depth to Ground Water (DGW) = 10.60 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 22.25 1/100 ft

1 Casing Volume (OCV) = LWC x .163 = 3.63 gallons

5 Casing Volumes = 18.13 gallons

Method of Well Development Whale Pump

Total Volume of Water Removed 50 gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	Eh	Specific Conductivity (µmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks
0833	2.0	5.0	17.8	6.60	40.1	173.9	>1100 / LT GRAY		SURGE
0835	2.0	10.0	18.1	6.14	-44.2	163.9	414 "		NO SURGE
0837	2.0	15.0	18.1	6.16	-59	167.6	278 CLOUDY		" "
0840	2.0	20.0	18.1	6.14	-59.6	168.5	>1100 GRAY		SURGE
0842	2.0	25.0	18.1	6.11	-60.1	169.2	>1100 "		"
0844	2.0	30.0	18.1	6.10	-77.1	172.6	1078 "		"
0904	2.0	35.0	18.1	5.83	25.4	176.1	229 CLOUDY		NO SURGE
0906	2.0	40.0	18.1	6.03	-15.1	180.2	93.5 CLEAR		"
0908	2.0	45.0	18.2	6.06	-19.0	182.0	45.14 "		"
0910	2.0	50.0	18.2	6.06	-20.6	184.5	41.0 "		"

COMMENTS/OBSERVATIONS:

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 9.19.19 Date Completed (yr/mo/day) 9.19.19

Field Personnel James Leatherbee

Site Name Westinghouse

Job # 60595649

Well ID # W-97

___ Upgradient ___ Downgradient

Weather Conditions P. cloudy

Air Temperature 80° °F

Total Well Depth (TWD) = 21.93 1/100 ft

Depth to Ground Water (DGW) = 6.95 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 14.98 1/100 ft

1 Casing Volume (OCV) = LWC x .163 = 2.44 gallons

5 Casing Volumes = 12.21 gallons

Method of Well Development Whale Pump

Total Volume of Water Removed 50 gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	Eh	Specific Conductivity (µmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks
1629	2.0	5.0	19.0	5.89	66.3	209	>1100 / Brown		Surge
1632	2.0	10.0	18.7	5.68	48.2	199.0	>1100 "		Surge
1634	2.0	15.0	18.6	5.46	62.4	195.2	560 "		No Surge
1636	2.0	20.0	18.5	5.46	71.6	189.8	150.1 Cloudy		"
1638	2.0	25.0	18.4	5.46	71.4	189.6	86.22 Clear		"
1641	2.0	30.0	18.5	5.43	71.1	189.2	850 Brown		Surge
1643	2.0	35.0	18.5	5.45	70.8	189.3	556 "		No Surge
1645	2.0	40.0	18.5	5.44	71.2	189.0	445 Clear		" "
1648	2.0	45.0	18.6	5.43	71.2	188.8	50.4 "		" "
1650	2.0	50.0	18.6	5.43	71.3	188.9	42.8 "		" "

COMMENTS/OBSERVATIONS:

AECOM

Well/Piez. ID: W-98

Well/Piezometer Development Record

Client: CFFF Site Location: HOPKINS, SC

Project No: 60595649 Date: 2-5-21 Developer: JAMES LEIGHTY

WELL/PIEZOMETER DATA

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description TOC

Depth to Top of Screen (ft.) 17

Depth to Bottom of Screen (ft.) 27

Total Well Depth (ft.) 29.85

Depth to Static Water Level (ft.) 23.89

Geology at Screen Interval (if known)

Time of Water Level Measurement

Calculate Purge Volume (gal.) 0.97

Disposal Method ON SITE TOTE

Wellhead PID/FID NA

Original Well Development ☒ Redevelopment ☐ Date of Original Development 2-5-21

DEVELOPMENT METHOD SURGE/RINSE **PURGE METHOD**

Field Testing Equipment Used:

Make	Model	Serial Number
YSI	PRO	19A103315
HACH	2100Q	180900C069267

Field Testing Calibration Documentation Found in Field Notebook # _____ Page # _____

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	ORP Other
0951	INITIAL	17.9	6.75	189	OVER RANGE	0.17	BROWN	NO	-24.2
1004	5	18.6	6.16	172	217	4.77	CLOUDY	"	-36.7
1013	10	18.5	5.93	165	98.3	4.29	"	"	0.3
1020	13	18.7	5.84	162	62.4	4.10	CLEAR	"	6.3
1028	15	18.7	5.78	160	62.8	3.96	"	"	12.1

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (5 well volumes) 5 gallons

Maximum Turbidity Allowed _____ NTUs

Stabilization of parameters _____%

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A explain below:

Signature _____ Date: 2-5-21

AECOM

Well/Piez. ID: W-99

Well/Piezometer Development Record

Client: CFFF Site Location: Hopkins, SC

Project No: 60595649 Date: 2-8-21 Developer: James Leighton

WELL/PIEZOMETER DATA

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description TOC

Depth to Top of Screen (ft.) 16 BGS

Depth to Bottom of Screen (ft.) 21 BGS

Total Well Depth (ft.) 23.83

Depth to Static Water Level (ft.) 11.50

Geology at Screen Interval (if known)

Time of Water Level Measurement

Calculate Purge Volume (gal.) 2.0

Disposal Method ON SITE TOTE

Wellhead PID/FID NA

Original Well Development ☒ Redevelopment ☐ Date of Original Development 2-8-21

DEVELOPMENT METHOD SURGE/PURGE **PURGE METHOD**

Field Testing Equipment Used:

	Make	Model	Serial Number
	YSI	PRO	19A103315
	HACH	2100 Q	180900069267

Field Testing Calibration Documentation Found in Field Notebook # _____ Page # _____

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	ORP Other
1032	INITIAL	19.1	7.13	780	OVER RANGE	0.19	BROWN	NO	-69.6
1056	10	19.9	6.92	515	" "	2.38	"	"	-48.2
1105	15	19.8	6.97	471	" "	1.94	"	"	-36.7
1142	20	19.9	6.92	458	282	2.13	"	"	-43.9
1210	25	19.9	6.95	442	171	2.00	CLOUDY	"	-21.6
1235	30	20.0	6.96	438	119	1.60	"	"	-19.4
1400	40	19.4	6.91	456	110	1.76	"	"	

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (5 well volumes) 10 gallons

Maximum Turbidity Allowed _____ NTUs

Stabilization of parameters _____%

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A explain below:

Signature _____ Date: 2-8-21

AECOM

Well/Piez. ID: W-100

Well/Piezometer Development Record

Client: CFFF Site Location: Hopkins, SC

Project No: 60595649 Date: 2-8-21 Developer: James Leaphart

WELL/PIEZOMETER DATA

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description TOC

Depth to Top of Screen (ft.) 7 BGS

Depth to Bottom of Screen (ft.) 12 BGS

Total Well Depth (ft.) 15.07

Depth to Static Water Level (ft.) 10.37

Geology at Screen Interval (if known)

Time of Water Level Measurement 0930

Calculate Purge Volume (gal.) 0.77

Disposal Method ON SITE TOTE

Wellhead PID/FID NA

Original Well Development ☒ Redevelopment ☐ Date of Original Development 2-8-21

DEVELOPMENT METHOD SURGE/PURGE **PURGE METHOD**

Field Testing Equipment Used:

	Make	Model	Serial Number
	YSI	Pro	19A103315
	HACH	2100Q	18090C069267

Field Testing Calibration Documentation Found in Field Notebook # _____ Page # _____

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	Other
1007	INITIAL	16.9	6.97	203	OVER RANGE	1.48	BROWN	NO	52.3
1025	1.5	17.6	6.95	261	" "	5.29	"	"	-46.7
1148	4.0	17.6	6.74	363	" "	5.35	"	"	-17.2
1226	6.0	17.8	6.88	389	663	5.71	TAN	"	15.1
1358	8.0	17.7	6.63	325	115	6.13	CLOUDY	"	18.6

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (5 well volumes) 3.8 gallons

Maximum Turbidity Allowed _____ NTUs

Stabilization of parameters _____%

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A explain below:

DRY @ 1.0 GAL

Signature J. Leaphart Date: 2-8-21

AECOM

Well/Piez. ID: G-102

Well/Piezometer Development Record

Client: CFFF Site Location: Hopkins, SC

Project No: 60595649 Date: 2-8-21 Developer: James Leaphart

WELL/PIEZOMETER DATA

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description TOC

Depth to Top of Screen (ft.)

Depth to Bottom of Screen (ft.)

Total Well Depth (ft.) 33.38

Depth to Static Water Level (ft.) 10.82

Geology at Screen Interval (if known)

Time of Water Level Measurement 1507

Calculate Purge Volume (gal.)

Disposal Method On Site Tank

Wellhead PID/FID NA

Original Well Development ☒ Redevelopment ☐ Date of Original Development 2-8-21

DEVELOPMENT METHOD Surge / Purge **PURGE METHOD**

Field Testing Equipment Used:

	Make	Model	Serial Number
	YSI	PRO	19A103315
	Hach	2100 Q	180900C06926

Field Testing Calibration Documentation Found in Field Notebook # _____ Page # _____

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	Other ORP
1512	Initial	21.8	7.34	2480	OVER RANGE	2.41	Brown	NO	107.1
1516	10	22.1	6.72	590	" "	0.50	"	"	106.2
1521	20	22.3	6.58	582	154	0.18	Cloudy	"	111.9
1526	30	22.3	6.53	553	75.5	0.11	Clear	"	114.5
1531	40	22.4	6.49	499	39.6	0.13	"	"	116.5
1535	50	22.3	6.47	479	19.7	0.14	"	"	118.1
1540	60	22.4	6.47	466	11.1	0.10	"	"	119.2

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (5 well volumes) _____gallons

Maximum Turbidity Allowed _____ NTUs

Stabilization of parameters _____%

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A explain below:

Signature _____ Date: 2-8-21

AECOM

Well/Piez. ID: W-103

Well/Piezometer Development Record

Client: CCFF Site Location: Hopkins, SC

Project No: 60595649 Date: 2-5-21 Developer: James Leaphart

WELL/PIEZOMETER DATA

Well ☑ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description TOC

Depth to Top of Screen (ft.) 34

Depth to Bottom of Screen (ft.) 39

Total Well Depth (ft.) 41.73

Depth to Static Water Level (ft.) 16.51

Geology at Screen Interval (if known)

Time of Water Level Measurement 0840

Calculate Purge Volume (gal.) 4.1

Disposal Method ON SITE TOTE

Wellhead PID/FID NA

Original Well Development ☒ Redevelopment ☐ Date of Original Development 2-5-21

DEVELOPMENT METHOD SURGE/PURGE **PURGE METHOD**

Field Testing Equipment Used:

	Make	Model	Serial Number
	YSI	PRO	19A103315
	HACH	2100 Q	180900C09267

Field Testing Calibration Documentation Found in Field Notebook # _____ Page # _____

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	ORP Other
0844	INITIAL	17.8	6.22	162	OVER RANGE	2.08	BROWN	NO	127.9
0849	10	18.6	5.71	155	51.5	1.61	CLEAR	"	149.6
0852	20	18.6	5.73	154	26.3	1.52	"	"	154.2
0858	30	18.6	5.74	150	3.06	1.57	"	"	157.5

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (5 well volumes) 21 gallons

Maximum Turbidity Allowed _____ NTUs

Stabilization of parameters _____%

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A explain below:

Signature _____ Date: 2-5-21

AECOM

Well/Piez. ID: W-104

Well/Piezometer Development Record

Client: CFFF Site Location: Hopkins, SC

Project No: ~~60644052~~ 60595649 Date: 2-3-21 (JL) 2-6-21 Developer: James Leaphart

WELL/PIEZOMETER DATA

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description TOC

Depth to Top of Screen (ft.)

Depth to Bottom of Screen (ft.)

Total Well Depth (ft.) 20.30

Depth to Static Water Level (ft.) 4.93

Geology at Screen Interval (if known)

Time of Water Level Measurement 0925

Calculate Purge Volume (gal.) 2.5

Disposal Method ON SITE TOTE

Wellhead PID/FID NA

Original Well Development ☒ Redevelopment ☐ Date of Original Development 2-3-21

DEVELOPMENT METHOD SURGE/PURGE **PURGE METHOD**

Field Testing Equipment Used:

Make	Model	Serial Number
YSI	PRO	
HACH	2100 Q	

Field Testing Calibration Documentation Found in Field Notebook # _____ Page # _____

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	ORP Other
0930	INITIAL	16.4	6.43	269	OVER RANGE	0.48	LT. BROWN	NO	11.7
0935	10	17.2	5.86	195	706	0.41	"	"	-7.0
0939	20	17.3	5.80	187	541	0.49	"	"	-9.5
0943	30	17.3	5.63	175	94.4	0.32	CLOUDY	"	36.8
0947	40	17.3	5.63	177	29.9	0.28	CLEAR	"	32.0
0951	50	17.4	5.69	180	164.0	0.24	CLOUDY	"	23.6
0955	60	17.4	5.71	181	24.8	0.20	CLEAR	"	17.5

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (5 well volumes) 12.5 gallons

Maximum Turbidity Allowed _____ NTUs

Stabilization of parameters _____%

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A explain below:

Signature J Leaphart Date: 2-3-21

AECOM

Well/Piez. ID: W-105

Well/Piezometer Development Record

Client: WESTINGHOUSE Site Location: HOPKINS, SC

Project No: 60595649 Date: 2-2-21 Developer: JAMES LEATHERWOOD

WELL/PIEZOMETER DATA

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description TOC

Depth to Top of Screen (ft.) 14

Depth to Bottom of Screen (ft.) 24

Total Well Depth (ft.) 25.80

Depth to Static Water Level (ft.) 7.55

Geology at Screen Interval (if known)

Time of Water Level Measurement

Calculate Purge Volume (gal.) 2.97

Disposal Method ON SITE TOTE

Wellhead PID/FID NA

Original Well Development ☒ Redevelopment ☐ Date of Original Development 2-2-21

DEVELOPMENT METHOD SURGE/PURGE **PURGE METHOD**

Field Testing Equipment Used:

	Make	Model	Serial Number
	451	PRO	19A103315
	HACH	2100Q	18090C069267

Field Testing Calibration Documentation Found in Field Notebook # _____ Page # _____

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	ORP Other
1039	INITIAL	17.8	6.89	266	OVER RANGE	0.18	GRAY	NO	-107.6
1045	10	18.4	6.73	262	" "	0.14	LT. TAN	NO	-112.5
1049	20	18.4	6.64	273	" "	0.19	"	NO	-104.2
1053	30	18.3	6.64	271	710	0.30	"	NO	-97.6
1057	40	18.5	6.64	270	450	0.18	"	NO	-107.2
1101	50	18.5	6.63	270	327	0.13	"	NO	-108.6
1105	60	18.5	6.63	272	321	0.15	"	NO	-110.3
1145	70	18.2	6.66	271	205	0.27	CLOUDY	NO	-93.2
1150	80	18.5	6.62	272	143	0.19	"	NO	-100.9
1154	90	18.5	6.64	272	136	0.15	"	NO	-103.9
1159	100	18.4	6.64	271	140	0.14	"	NO	-106.5

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (5 well volumes) 15 gallons

Maximum Turbidity Allowed _____ NTUs

Stabilization of parameters _____%

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A explain below:

Signature _____ Date: 2-2-21

AECOM

Well/Piez. ID: W-106

Well/Piezometer Development Record

Client: CFFF Site Location: Hopkins, SC

Project No: 60595649 Date: 2-17-21 Developer: James Leatherbury

WELL/PIEZOMETER DATA

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description TOC

Depth to Top of Screen (ft.) 25

Depth to Bottom of Screen (ft.) 30

Total Well Depth (ft.) 32.60

Depth to Static Water Level (ft.) 6.80

Geology at Screen Interval (if known)

Time of Water Level Measurement 0838

Calculate Purge Volume (gal.) 4.21

Disposal Method ON SITE TOTE

Wellhead PID/FID NA

Original Well Development ☒ Redevelopment ☐ Date of Original Development 2-17-21

DEVELOPMENT METHOD SURGE/PURGE **PURGE METHOD**

Field Testing Equipment Used:

	Make	Model	Serial Number
	451	PRO	19A103315
	HACH	2100Q	18090C069267

Field Testing Calibration Documentation Found in Field Notebook # _____ Page # _____

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	ORP Other
1032	INITIAL	16.2	6.12	255	OVER RANGE	1.14	GRAY	NO	-11.6
1037	10	17.4	6.18	282	" "	0.47	"	"	-19.0
1040	20	17.4	6.09	294	" "	0.31	"	"	-26.2
1043	30	17.3	6.08	304	" "	0.43	"	"	-22.5
1046	40	17.2	6.15	305	696	0.52	"	"	-18.6
1117	50	17.4	6.12	313	153	0.33	CLOUDY	"	-12.5
1120	60	17.4	6.09	316	107	0.23	CLEAR	"	-21.9
1124	70	17.4	6.08	318	30.0	0.20	"	"	-30.3
1129	80	17.4	6.09	318	19.5	0.22	"	"	-34.0

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (5 well volumes) 21 gallons

Maximum Turbidity Allowed _____ NTUs

Stabilization of parameters _____%

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A explain below:

Signature _____ Date: 2-17-21

AECOM

Well/Piez. ID: W. 107

Well/Piezometer Development Record

Client: CFFF 60595549 Site Location: Hopkins, SC

Project No: ~~60641050~~ 60595549 Date: 2-4-21 2-6-21 Developer: James Leghart

WELL/PIEZOMETER DATA

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description TOC

Depth to Top of Screen (ft.) 29

Depth to Bottom of Screen (ft.) 34

Total Well Depth (ft.) 37.18

Depth to Static Water Level (ft.) 5.59

Geology at Screen Interval (if known)

Time of Water Level Measurement 1050

Calculate Purge Volume (gal.) 5.17

Disposal Method ON SITE TOTE

Wellhead PID/FID NA

Original Well Development ☒ Redevelopment ☐ Date of Original Development 2-4-21

DEVELOPMENT METHOD SURGE/PURGE **PURGE METHOD**

Field Testing Equipment Used:

	Make	Model	Serial Number
	451	PZO	19A103315
	HACH	2100Q	18090C069267

Field Testing Calibration Documentation Found in Field Notebook # _____ Page # _____

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	ORP Other
1254	INITIAL	17.3	6.50	426	OVER RANGE	0.43	BROWN	NO	23.9
1258	10	17.7	6.50	302	" "	0.08	"	"	-37.3
1302	20	17.7	6.43	251	746	0.22	LT BROWN	"	-53.1
1308	30	17.7	6.39	229	106	0.11	CLOUDY	"	-62.5
1315	40	17.7	6.35	214	47.5	0.11	CLEAR	"	-63.4
1320	50	17.7	6.34	207	101	0.11	CLOUDY	"	-68.6
1325	60	17.7	6.34	203	126	0.11	"	"	-70.3
1415	70	17.3	6.41	209	86.9	0.35	"	"	-55.6
1420	80	17.6	6.36	205	54.5	0.18	CLEAR	"	-68.1
1426	90	17.7	6.36	203	26.1	0.16	"	"	-71.4

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (5 well volumes) 26 gallons

Maximum Turbidity Allowed _____ NTUs

Stabilization of parameters _____%

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A explain below:

Signature J. Leghart Date: 2-4-21

AECOM

Well/Piez. ID: W-108

Well/Piezometer Development Record

Client: CFFF Site Location: Hopkins, SC

Project No: ~~60644050~~ 60595649 (JL 2-6-21) Date: 2-3-21 Developer: James Leaphart

WELL/PIEZOMETER DATA

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description TOC

Depth to Top of Screen (ft.) 27

Depth to Bottom of Screen (ft.) 32

Total Well Depth (ft.) 35.84

Depth to Static Water Level (ft.) 5.83

Geology at Screen Interval (if known)

Time of Water Level Measurement 1104

Calculate Purge Volume (gal.) 4.89

Disposal Method ON SITE TOTE

Wellhead PID/FID NA

Original Well Development ☒ Redevelopment ☐ Date of Original Development 2-3-21

DEVELOPMENT METHOD SURGE/PURGE **PURGE METHOD**

Field Testing Equipment Used:

	Make	Model	Serial Number
	YSI	PRO	19A103315
	HACH	2100Q	18090C069267

Field Testing Calibration Documentation Found in Field Notebook # _____ Page # _____

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	Other
1110	INITIAL	17.1	6.96	197	OVER RANGE	0.02	BROWN	NO	-307.2
1115	10	17.7	6.42	160	541	0.17	"	"	-364.1
1119	20	17.7	6.40	155	183	0.26	CLOUDY	"	-360.1
1123	30	17.7	6.33	153	109	0.18	"	"	-308.2
1127	40	17.7	6.32	153	85.3	0.18	"	"	-313.2
1131	50	17.7	6.33	152	100	0.16	"	"	-318.1
1136	60	17.8	6.33	152	53.0	0.15	CLEAR	"	-313.2
1159	70	17.8	6.34	150	130	0.15	"	"	-315.6
1204	80	17.9	6.35	152	48.6	0.14	"	"	-310.1

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (5 well volumes) 25 gallons

Maximum Turbidity Allowed _____ NTUs

Stabilization of parameters _____%

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A explain below:

Signature J Leaphart Date: 2-3-21

AECOM

Well/Piez. ID: W. ~~108~~ 109

Well/Piezometer Development Record

Client: Westinghouse Site Location: Hopkins, SC

Project No: 60595649 Date: 2-2-21 Developer: James Leaphart

WELL/PIEZOMETER DATA

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description TOC

Depth to Top of Screen (ft.) 28

Depth to Bottom of Screen (ft.) 33

Total Well Depth (ft.) 34.93

Depth to Static Water Level (ft.) 6.05

Geology at Screen Interval (if known)

Time of Water Level Measurement

Calculate Purge Volume (gal.) 4.71

Disposal Method ON SITE TOTE

Wellhead PID/FID NA

Original Well Development ☒ Redevelopment ☐ Date of Original Development 2-2-21

DEVELOPMENT METHOD Surge/Purge **PURGE METHOD**

Field Testing Equipment Used:

Make	Model	Serial Number
YSI	PRO	19A103315
HACH	2100Q	180900069267

Field Testing Calibration Documentation Found in Field Notebook # _____ Page # _____

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	ORP Other
1256	INITIAL	17.5	7.20	334	OVER RANGE	0.38	BROWN	NO	-107.1
1301	10	18.4	6.43	169	" "	0.15	"	NO	-162.5
1305	20	18.4	6.34	155	" "	0.23	"	NO	-182.9
1309	30	18.4	6.32	148	896	0.30	"	NO	-204.4
1314	40	18.4	6.30	141	785	0.12	"	NO	-327.9
1318	50	18.4	6.28	140	288	0.12	CLOUDY	NO	-398.6
1322	60	18.3	6.27	136	213	0.12	"	NO	-402.6
1409	70	18.4	6.26	139	119	0.16	"	NO	-287.6
1415	80	18.4	6.23	133	76.3	0.18	"	NO	-380.9
1420	90	18.4	6.19	130	65.4	0.15	"	NO	-385.2
1425	100	18.4	6.19	128	56.8	0.13	"	NO	-392.6

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (5 well volumes) 23.5 gallons

Maximum Turbidity Allowed _____ NTUs

Stabilization of parameters _____ %

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A explain below:

Signature J Leaphart Date: 2-2-21

AECOM

Well/Piez. ID: MW-110

Well/Piezometer Development Record

Client: CCR1 Site Location: Hopkins, SC

Project No: ~~60644050~~ 60595649 Date: 2-4-21 Developer: James Leaphart

JD 2-6-21

WELL/PIEZOMETER DATA

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description TOC

Depth to Top of Screen (ft.) 29

Depth to Bottom of Screen (ft.) 34

Total Well Depth (ft.) 36.70

Depth to Static Water Level (ft.) 6.61

Geology at Screen Interval (if known)

Time of Water Level Measurement 1055

Calculate Purge Volume (gal.) 4.90

Disposal Method On Site Tote

Wellhead PID/FID NA

Original Well Development ☒ Redevelopment ☐ Date of Original Development 2.4.21

DEVELOPMENT METHOD Surge/Purge **PURGE METHOD**

Field Testing Equipment Used:

	Make	Model	Serial Number
	YSI	ARO	19A103315
	HACH	2100Q	18090C069267

Field Testing Calibration Documentation Found in Field Notebook # _____ Page # _____

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	Other
1058	INIT. PU	17.0	6.90	870	OVER RANGE	0.11	BROWN	NO	-106.4
1103	10	17.7	6.70	267	" "	0.12	LT BROWN	"	-391.5
1107	20	17.7	6.55	192	315	0.10	CLOUDY	"	-419.7
1111	30	17.7	6.45	167	119	0.14	"	"	-411.6
1115	40	17.8	6.43	163	100	0.16	"	"	-409.1
1119	50	17.8	6.37	153	49.1	0.10	CLEAR	"	-424.9
1123	60	17.8	6.34	145	48.8	0.14	"	"	-407.6

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (5 well volumes) 24.5 gallons

Maximum Turbidity Allowed _____ NTUs

Stabilization of parameters _____%

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A explain below:

Signature _____ Date: 2-4-21

AECOM

Well/Piez. ID: W-111

Well/Piezometer Development Record

Client: CFFF Site Location: HOPKINS, SC

Project No: ~~60641050~~ 60595649 Date: 2-3-21 Developer: James Leapharte

JL 2-6-21

WELL/PIEZOMETER DATA

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description: TOC

Depth to Top of Screen (ft.): 76

Depth to Bottom of Screen (ft.): 81

Total Well Depth (ft.): 84.40

Depth to Static Water Level (ft.): 3.75

Geology at Screen Interval (if known):

Time of Water Level Measurement: 1244

Calculate Purge Volume (gal.): 13.14

Disposal Method: ON SITE TOTE

Wellhead PID/FID: NA

Original Well Development ☒ Redevelopment ☐ Date of Original Development: 2-3-21

DEVELOPMENT METHOD: SURGE/PURGE **PURGE METHOD**:

Field Testing Equipment Used:

Make	Model	Serial Number
YSI	PRO	19A103315
HACH	2100Q	18090C069267

Field Testing Calibration Documentation Found in Field Notebook # _____ Page # _____

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	ORP Other
1250	INITIAL	16.7	7.15	240	OVER RANGE	0.18	GRAY	NO	-371.6
1255	10	17.7	6.68	117	" "	0.11	"	NO	-491.2
1301	20	17.8	6.34	94	" "	0.10	"	NO	-467.0
1306	30	17.7	6.23	79	240	0.16	"	NO	-406.6
1310	40	17.8	6.09	69	60.2	0.15	CLOUDY	NO	-419.1
1315	50	17.7	6.02	62	37.4	0.12	CLEAR	NO	-404.7
1320	60	17.7	5.98	60	24.0	0.11	"	NO	-391.9
1358	70	17.7	5.96	58	56.5	0.10	"	NO	-386.1
1404	80	17.8	5.94	58	50.1	0.10	"	NO	-380.1
1410	90	17.8	5.96	56	21.6	0.11	"	NO	-376.5

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (5 well volumes) 66 gallons

Maximum Turbidity Allowed _____ NTUs

Stabilization of parameters _____%

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A explain below:

Signature: [signature] Date: 2-3-21

AECOM

Well/Piez. ID: W-112

Well/Piezometer Development Record

Client: CPP 60595649 Site Location: HOPKINS, SC

Project No: ~~60644050~~ JC 2-6-21 Date: 2-4-21 Developer: JAMES LEADBETTER

WELL/PIEZOMETER DATA

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description TOC

Depth to Top of Screen (ft.) 29

Depth to Bottom of Screen (ft.) 34

Total Well Depth (ft.) 36.85

Depth to Static Water Level (ft.) 6.14

Geology at Screen Interval (if known)

Time of Water Level Measurement 0919

Calculate Purge Volume (gal.) 5.00

Disposal Method ON SITE TOTE

Wellhead PID/FID NA

Original Well Development ☒ Redevelopment ☐ Date of Original Development 2-4-21

DEVELOPMENT METHOD SURGE/PURGE **PURGE METHOD**

Field Testing Equipment Used:

Make	Model	Serial Number
YSI	PRO	19A103315
HACH	2100 Q	18090C06926

Field Testing Calibration Documentation Found in Field Notebook # _____ Page # _____

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	ORP Other
0924	INITIAL	16.8	7.02	239	OVER RANGE	0.33	GRAY	NO	-129.8
0928	10	17.8	6.57	257	" "	0.31	"	"	-315.3
0932	20	17.8	6.52	253	509	0.38	LT BROWN	"	-336.1
0935	30	17.8	6.49	249	376	0.24	CLOUDY	"	-333.1
0940	40	17.8	6.47	247	90.7	0.20	"	"	-313.5
0944	50	17.8	6.46	246	66.7	0.20	CLEAR	"	-316.7
0949	60	17.8	6.45	245	50.4	0.18	"	"	-310.8

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (5 well volumes) 25 gallons

Maximum Turbidity Allowed _____ NTUs

Stabilization of parameters _____%

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A explain below:

Signature _____ Date: 2-4-21

AECOM

Well/Piez. ID: W-113

Well/Piezometer Development Record

Client: WESTINGHOUSE Site Location: CFFF HOPKINS, SC

Project No: 60595649.14 Date: 8-2-21 Developer: JAMES LEATHART

WELL/PIEZOMETER DATA

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description *TOC / +GS

Depth to Top of Screen (ft.) + 31.0

Depth to Bottom of Screen (ft.) + 36.0

Total Well Depth (ft.) *39.05

Depth to Static Water Level (ft.) *9.85

Geology at Screen Interval (if known)

Time of Water Level Measurement 1320

Calculate Purge Volume (gal.)

Disposal Method SITE TOTE

Wellhead PID/FID NA

Original Well Development ☒ Redevelopment ☐ Date of Original Development

DEVELOPMENT METHOD WATER PUMP **PURGE METHOD**

Field Testing Equipment Used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Field Testing Calibration Documentation Found in Field Notebook # Page #

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	Other
1328	2.0	18.89	6.87	296.56	5919	1.77	BROWN	NO	80.39
1335	20.0	18.71	6.45	135.65	3429	3.95	"	"	45.25
1400	30.0	18.60	6.14	120.29	4803	5.90	"	"	81.67
1425	40.0	18.57	6.04	104.62	2934	5.76	LT "	"	91.19
1444	50.0	18.65	5.93	87.52	2389	5.31	" "	"	102.86
1505	60.0	18.67	5.87	86.69	2125	5.41	" "	"	104.31
1600	75.0	19.89	5.88	113.12	1116	4.43	" "	"	111.16
1620	90.0	19.17	5.96	118.93	740	4.36	" "	"	103.28

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (5 well volumes) _____ gallons

Maximum Turbidity Allowed 50 NTUs

Stabilization of parameters 10 %

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A explain below:

Signature _____ Date: 8-2-21

AECOM

Well/Piez. ID: W-114

Well/Piezometer Development Record

Client: WESTINGHOUSE Site Location: CFFF HOPKINS, SC

Project No: 60595649.14 Date: 7-30-21 Developer: JAMES LEAPHART

WELL/PIEZOMETER DATA

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description * TOC/TGS

Depth to Top of Screen (ft.) +

Depth to Bottom of Screen (ft.) +

Total Well Depth (ft.) * 23.55

Depth to Static Water Level (ft.) * 9.20

Geology at Screen Interval (if known)

Time of Water Level Measurement 0850

Calculate Purge Volume (gal.)

Disposal Method SITE TOTE

Wellhead PID/FID NA

Original Well Development ☒ Redevelopment ☐ Date of Original Development

DEVELOPMENT METHOD

PURGE METHOD

Field Testing Equipment Used:

Make	Model	Serial Number
INSITU	TROLL 600	868958

Field Testing Calibration Documentation Found in Field Notebook # Page #

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	Other
0920	3.0	18.84	6.04	138.08	2306	0.68	GRAY		-63
0930	11.0	18.81	5.94	112.20	5612	5.98	"		100.12
0940	20.0	19.13	5.77	86.47	4101	6.04	"		125.24
0959	30.0	19.01	5.58	84.90	3667	6.26	"		130.37
1030	40.0	18.70	5.86	95.31	4421	5.08	"		138.07
1147	60.0	19.30	5.66	74.79	886	5.22	"		170.04
1218	75.0	18.97	5.44	73.78	1242	5.59	"		176.25
1245	90.0	18.96	5.63	72.74	855	5.52	"		170.32
1255	110.0	19.04	5.60	69.12	1015	5.42	"		168.12
1315	120.0	18.90	5.55	66.15	916	5.36	"		159.26

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (5 well volumes) _____ gallons
Maximum Turbidity Allowed 50 NTUs
Stabilization of parameters 10 %

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A explain below:

Signature _____ Date: 7-30-21

AECOM

Well/Piez. ID: W-115

Well/Piezometer Development Record

Client: Westinghouse Site Location: CFFF Hopkins, SC

Project No: 60595649.14 Date: 7-28-21 Developer: James Leaphart

WELL/PIEZOMETER DATA

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description *TOC / +GS Geology at Screen Interval (if known) _____

Depth to Top of Screen (ft.) _____

Depth to Bottom of Screen (ft.) _____ Time of Water Level Measurement _____

Total Well Depth (ft.) 48.04 Calculate Purge Volume (gal.) 4.88

Depth to Static Water Level (ft.) 18.08 Disposal Method Site Tote

Wellhead PID/FID NA

Original Well Development ☒ Redevelopment ☐ Date of Original Development _____

DEVELOPMENT METHOD Whale Pump **PURGE METHOD** _____

Field Testing Equipment Used:

Make	Model	Serial Number
INSITU	Troll 600	808958

Field Testing Calibration Documentation Found in Field Notebook # _____ Page # _____

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	Other
1344	2.0	20.48	7.26	385.16	5599	2.09	Brown	No	-133.69
1356	14.0	19.24	6.59	220.37	3364	0.97	orange	"	-126.5
1402	20.0	18.87	6.39	172.21	276	1.55	cloudy	"	-96.84
1411	30.0	18.85	6.10	154.09	81.15	1.89	"	"	-127.45
1416	40.0	18.84	6.03	149.16	22.2	1.98	clear	"	-86.33

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (5 well volumes) 24 gallons

Maximum Turbidity Allowed 50 NTUs

Stabilization of parameters 10 %

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☐	☐	☒

If no or N/A explain below:

Signature J Leaphart Date: 7-28-21

AECOM

Well/Piez. ID: W-116

Well/Piezometer Development Record

Client: WESTINGHOUSE Site Location: CFFF HOPKINS, SC

Project No: 60595649.14 Date: 7-28-21 Developer: JAMES LEAPHART

WELL/PIEZOMETER DATA

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description *TOC/+GS

Depth to Top of Screen (ft.) +

Depth to Bottom of Screen (ft.) +

Total Well Depth (ft.) * 23.30

Depth to Static Water Level (ft.) * 17.50

Geology at Screen Interval (if known)

Time of Water Level Measurement

Calculate Purge Volume (gal.) 0.94

Disposal Method SITE TOTE

Wellhead PID/FID NA

Original Well Development ☒ Redevelopment ☐ Date of Original Development

DEVELOPMENT METHOD WHALE PUMP **PURGE METHOD**

Field Testing Equipment Used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Field Testing Calibration Documentation Found in Field Notebook # Page #

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	Other
1310	1.0	21.80	7.61	641.79	3276	4.01	BROWN	NO	-100.9
1420	5.0	18.52	6.61	372.15	2015	5.12	"	"	-32.15
1442	7.0	18.89	6.35	262.57	931	5.97	"	"	48.16
1455	8.0	18.90	6.18	234.75	411	5.97	LT. BROWN	"	59.05
1508	9.0	18.52	6.23	233.56	278	5.60	"	"	52.39
1511	10.0	18.56	6.08	210.47	249	6.01	"	"	15.86
1581	12.0	18.62	5.94	185.63	252	6.19	"	"	72.06
7-29 1210	14.0	18.79	6.33	207.35	156	5.46	CLOUDY	"	37.40
1224	16.0	18.84	6.27	174.87	80	6.62	"	"	69.66
1229	17.0	18.73	5.97	152.49	53	7.43	CLEAR	"	109.76

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (5 well volumes) 4.7 gallons
Maximum Turbidity Allowed 50 NTUs
Stabilization of parameters 10 %

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A explain below:

Signature [signature] Date: 7-28-21

AECOM

Well/Piez. ID: W-117

Well/Piezometer Development Record

Client: Westinghouse Site Location: CFFF Hopkins SC

Project No: 605956 49.14 Date: 7-29-21 Developer: James Leaphart

WELL/PIEZOMETER DATA

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description * TOC / GS

Depth to Top of Screen (ft.) + _____

Depth to Bottom of Screen (ft.) + _____

Total Well Depth (ft.) * 46.73

Depth to Static Water Level (ft.) * 14.81

Geology at Screen Interval (if known) _____

Time of Water Level Measurement 1255

Calculate Purge Volume (gal.) 5.19

Disposal Method SITE TOTE

Wellhead PID/FID NA

Original Well Development ☒ Redevelopment ☐ Date of Original Development _____

DEVELOPMENT METHOD Whale Pump **PURGE METHOD** _____

Field Testing Equipment Used:

Make	Model	Serial Number
INSITU	TROLL 600	B08958

Field Testing Calibration Documentation Found in Field Notebook # _____ Page # _____

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	Other
1417	3.0	20.19	8.46	177.10	5017	3.82	BROWN	NO	-176.98
1421	10.0	18.98	6.56	112.11	599	2.61	"	"	-74.03
1428	20.0	18.86	6.26	98.19	160.28	3.29	CLOUDY	"	11.98
1434	30.0	18.80	6.09	91.04	125.67	4.47	"	"	77.92
1441	40.0	18.74	6.06	87.35	55.61	4.02	CLEAR	"	96.92
1450	50.0	18.68	6.01	83.94	31.32	4.11	"	"	114.90
1457	60.0	18.63	5.99	82.53	34.96	4.15	"	"	123.62

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (5 well volumes) 26 gallons

Maximum Turbidity Allowed 50 NTUs

Stabilization of parameters 10 %

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A explain below: _____

Signature _____ Date: 7-29-21

AECOM

Well/Piez. ID: W-118

Well/Piezometer Development Record

Client: WESTINGHOUSE Site Location: CFFF HOPKINS SC

Project No: 60595649.14 Date: 7-29-21 Developer: JAMES LEAPHART

WELL/PIEZOMETER DATA

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description * TOC/+GS

Depth to Top of Screen (ft.) +

Depth to Bottom of Screen (ft.) +

Total Well Depth (ft.) * 32.42

Depth to Static Water Level (ft.) * 19.70

Geology at Screen Interval (if known)

Time of Water Level Measurement 1255

Calculate Purge Volume (gal.) 2.07

Disposal Method SITE TOTE

Wellhead PID/FID NA

Original Well Development ☒ Redevelopment ☐ Date of Original Development

DEVELOPMENT METHOD WHALE PUMP **PURGE METHOD**

Field Testing Equipment Used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Field Testing Calibration Documentation Found in Field Notebook # _____ Page # _____

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	Other
1301	1.0	19.83	9.47	253.24	6029	6.17	BROWN	NO	17.53
1310	20.0	19.11	6.45	174.21	1291	1.83	ORANGE	"	-171.93
1320	30.0	19.06	6.36	165.0	364	2.13	CLOUDY	"	-168.15
1329	40.0	19.00	6.26	152.97	79.46	1.32	"	"	-150.24
1337	50.0	18.93	6.26	147.10	34.56	1.27	CLEAR	"	-142.85
1344	60.0	19.09	6.17	145.53	25.56	2.38	"	"	-85.39

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (5 well volumes) 10.4 gallons

Maximum Turbidity Allowed 50 NTUs

Stabilization of parameters 10 %

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A explain below:

Signature [signature] Date: 7-29-21

AECOM

Well/Piez. ID: MW-119

Well/Piezometer Development Record

Client: WESTINGHOUSE Site Location: CFFF Hopkins SC

Project No: 60595649 Date: 7-28-21 Developer: James Leaphart

WELL/PIEZOMETER DATA

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description * TOC | + GS

Depth to Top of Screen (ft.) + 25.0

Depth to Bottom of Screen (ft.) + 30.0

Total Well Depth (ft.) * 33.00

Depth to Static Water Level (ft.) * 15.35

Geology at Screen Interval (if known)

Time of Water Level Measurement 0922

Calculate Purge Volume (gal.)

Disposal Method SITE TOTE

Wellhead PID/FID NA

Original Well Development ☒ Redevelopment ☐ Date of Original Development

DEVELOPMENT METHOD WATER PUMP **PURGE METHOD**

Field Testing Equipment Used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Field Testing Calibration Documentation Found in Field Notebook # Page #

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	Other
0929	1.0	19.71	4.65	219.68	5396	1.06	Brown	NO	-193.56
0934	10.0	19.02	6.47	161.64	5657	0.36	"	"	-186.29
0944	30.0	18.68	6.29	128.06	1280	0.15	"	"	-229.68
0954	40.0	18.72	5.93	120.03	911	0.23	"	"	-215.16
1000	50.0	18.72	5.87	114.08	493	0.20	"	"	-217.17
1005	60.0	18.71	5.82	110.70	317	0.21	"	"	-215.00
1047	70.0	18.62	5.90	114.28	116	0.19	Murky	"	-249.65
1057	90.0	18.70	5.65	105.03	112	0.21	"	"	-191.92
1105	110.0	18.72	5.68	102.97	91.82	0.14	Cloudy	"	-222.82
1113	120.0	18.71	5.62	101.08	67.90	0.14	"	"	-209.08
1115					53.00				

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (5 well volumes) ____ gallons

Maximum Turbidity Allowed 50 NTUs

Stabilization of parameters 10 %

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A explain below:

Signature J Leaphart Date: 7-28-21

AECOM

Well/Piez. ID: W-120

Well/Piezometer Development Record

Client: WESTINGHOUSE Site Location: CFFF HOPKINS, SC

Project No: 60595649.14 Date: 8-2-21 Developer: JAMES LEATHERS

WELL/PIEZOMETER DATA

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description * TOC / TGS

Depth to Top of Screen (ft.) + 29.0

Depth to Bottom of Screen (ft.) + 34.0

Total Well Depth (ft.) * 36.88

Depth to Static Water Level (ft.) * 13.71

Geology at Screen Interval (if known)

Time of Water Level Measurement 1055

Calculate Purge Volume (gal.) 3.78

Disposal Method SITE TOC

Wellhead PID/FID NA

Original Well Development ☒ Redevelopment ☐ Date of Original Development

DEVELOPMENT METHOD WATER PUMP **PURGE METHOD**

Field Testing Equipment Used:

Make	Model	Serial Number
ISCO	TROLL 600	808958

Field Testing Calibration Documentation Found in Field Notebook # Page #

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	Other
1058	2.0	22.08	6.87	279.96	3595	3.25	BROWN	NO	55.27
1107	15.0	20.52	5.87	335.39	449	0.74	CLOUDY	"	72.32
1119	30.0	20.46	5.53	174.49	52.09	1.55	CLEAR	"	121.39
1131	45.0	20.55	5.58	144.46	82.71	0.77	"	"	141.39
1142	60.0	20.53	5.51	133.15	26.44	0.77	"	"	144.18
1214	75.0	20.48	5.59	126.11	61.21	0.94	"	"	143.98
1222	90.0	20.40	5.52	119.26	26.46	1.33	"	"	152.72
1232	105.0	20.46	5.43	115.53	27.94	0.80	"	"	168.05
1249	120.0	20.41	5.42	112.99	26.17	0.82	"	"	158.66

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (5 well volumes) 19 gallons

Maximum Turbidity Allowed 50 NTUs

Stabilization of parameters 10 %

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A explain below:

Signature [signature] Date: 8-2-21

AECOM

Well/Piez. ID: U-121

Well/Piezometer Development Record

Client: Westinghouse Site Location: CFFF Hopkins, SC

Project No: 60595649.14 Date: 8-2-21 Developer: James Leaphart

WELL/PIEZOMETER DATA

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description *TOC / +GS

Depth to Top of Screen (ft.) + 12.0

Depth to Bottom of Screen (ft.) + 22.0

Total Well Depth (ft.) * 25.23

Depth to Static Water Level (ft.) * 13.73

Geology at Screen Interval (if known)

Time of Water Level Measurement 0830

Calculate Purge Volume (gal.) 1.87

Disposal Method SITE TOTE

Wellhead PID/FID NA

Original Well Development ☒ Redevelopment ☐ Date of Original Development

DEVELOPMENT METHOD Whale Pump **PURGE METHOD**

Field Testing Equipment Used:

Make	Model	Serial Number
INSITU	Troll 600	808958

Field Testing Calibration Documentation Found in Field Notebook # Page #

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	Other
0836	2.0	21.66	9.03	379.05	5777	1.29	ORANGE	NO	-58.41
0848	10.0	20.74	7.15	289.54	5623	4.91	"	"	0.81
0903	15.0	20.74	6.22	217.04	857	4.13	LT. ORANGE	"	27.69
0910	20.0	20.54	6.08	182.01	982	4.24	"	"	53.28
0926	30.0	20.54	5.99	153.71	391	4.01	CLOUDY	"	73.47
0941	35.0	20.68	5.70	152.14	170	3.80	"	"	87.85
0950	40.0	20.77	5.66	142.60	109	3.92	"	"	111.41
1005	50.0	20.68	5.65	131.25	90.6	4.13	"	"	110.88
1020	60.0	20.64	5.65	116.00	63.45	3.71	CLEAR	"	127.81
1026	65.0	20.75	5.47	121.45	24.86	3.61	"	"	136.41

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (5 well volumes) 9.4 gallons

Maximum Turbidity Allowed 50 NTUs

Stabilization of parameters 10 %

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A explain below:

Signature Date: 8-2-21

AECOM

Well/Piez. ID: W-122

Well/Piezometer Development Record

Client: WESTINGHOUSE Site Location: CFFF

Project No: 60595649.14 Date: 7-22-21 Developer: James Leaphart

WELL/PIEZOMETER DATA

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description * TOC/GS+ Geology at Screen Interval (if known)

Depth to Top of Screen (ft.) + 25

Depth to Bottom of Screen (ft.) + 30 Time of Water Level Measurement 0839

Total Well Depth (ft.) * 33.09 Calculate Purge Volume (gal.) 410

Depth to Static Water Level (ft.) * 7.92 Disposal Method SITE TOTE

Wellhead PID/FID NA

Original Well Development ☒ Redevelopment ☐ Date of Original Development

DEVELOPMENT METHOD WHALE PUMP **PURGE METHOD**

Field Testing Equipment Used:

Make	Model	Serial Number
YSI	PRO	19J104745
HACH	2100Q	

Field Testing Calibration Documentation Found in Field Notebook # Page #

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	ORP Other
0900	1.0	21.1	6.99	167.9	>	0.20	Brown	No	-282.3
0911	15.0	20.5	6.01	107.7	>	2.69	"	"	-124.0
0922	30.0	20.4	5.86	75.3	154	4.03	MILKY	"	-36.3
(1) 0935	~~60.0~~ 35	20.5	6.24	90.0	902	1.58	Brown	"	-230.5
(2) 0944	~~70.0~~ 40	20.5	6.07	67.8	159	4.56	MILKY	"	-32.1
1004	45	20.3	6.11	80.5	82.0	1.10	CLOUDY	"	-215.7
1010	55	20.4	6.00	62.3	75.6	1.77	"	"	-96.2
1038	65	20.5	6.29	78.4	55.3	1.06	"	"	-177.4
1047	75	20.5	6.12	59.2	41.6	4.09	CLEAR	"	-15.6
1055	82	20.6	6.13	58.7	43.2	3.83	"	"	-19.4
1102	90	20.5	6.12	57.7	31.0	3.46	"	"	-21.2

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (5 well volumes) ____gallons
Maximum Turbidity Allowed 50 NTUs
Stabilization of parameters 10 %

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A explain below:

Signature [signature] Date: 7.22.21

AECOM

Well/Piez. ID: GW-123

Well/Piezometer Development Record

Client: CFFF Site Location: ~~EECF~~ WESTINGHOUSE

Project No: Date: 7-21-21 Developer: JAMES LEADHART

WELL/PIEZOMETER DATA

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description TOC Geology at Screen Interval (if known)

Depth to Top of Screen (ft.)

Depth to Bottom of Screen (ft.) Time of Water Level Measurement 1020

Total Well Depth (ft.) 33.98 Calculate Purge Volume (gal.) 4.01

Depth to Static Water Level (ft.) 9.35 Disposal Method SITE TOTE

Wellhead PID/FID NA

Original Well Development ☒ Redevelopment ☐ Date of Original Development

DEVELOPMENT METHOD WHALE PUMP **PURGE METHOD**

Field Testing Equipment Used:

	Make	Model	Serial Number
	YSI	PRO	
	HACH	2100 Q	

Field Testing Calibration Documentation Found in Field Notebook # Page #

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	ORP Other
1055	1.0	25.3	10.98	380.1	>	2.37	BROWN	NO	-238.5
1124	~~10.0~~ 7.0	23.0	7.25	802	>	0.22	"	"	-252.0
1145	11.0	22.6	6.82	976	>	0.26	"	"	-315.2
1205	15.0	22.5	6.80	1082	442	0.56	LT. BROWN	"	-239.6
1222	20.0	22.4	6.80	1149	357	0.64	" "	"	-221.1
1302	26.0	22.5	7.01	1223	206	0.49	MILKY	"	-245.3
1324	30.0	22.6	7.02	1250	207	0.52	"	"	-213.0
1340	33.0	22.4	7.58	1274	134	0.66	CLOUDY	"	-176.4
1353	37.0	22.0	7.57	1285	79.1	0.69	"	"	-191.7
1434	60.0	22.3	7.15	1315	73.2	0.54	"	"	-165.7
1615	66.0	22.4	6.82	1337	45.3	0.68	CLEAR	"	-111.2
1630	75.0	22.5	6.95	1357	27.7	0.52	"	"	-114.1

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (5 well volumes) 20 gallons

Maximum Turbidity Allowed 50 NTUs

Stabilization of parameters 10 %

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A explain below:

Signature Date: 7-21-21

AECOM

Well/Piez. ID: W-124

Well/Piezometer Development Record

Client: WESTINGHOUSE Site Location: CFFF HOPKINS SC

Project No: 60595649 Date: 7-27-21 Developer: James Leaphart

WELL/PIEZOMETER DATA

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description * TOC / * GS

Depth to Top of Screen (ft.) + 26.0

Depth to Bottom of Screen (ft.) + 31.0

Total Well Depth (ft.) * 33.38

Depth to Static Water Level (ft.) * 10.00

Geology at Screen Interval (if known)

Time of Water Level Measurement 1315

Calculate Purge Volume (gal.) 3.81

Disposal Method SITE TOTE

Wellhead PID/FID NA

Original Well Development ☒ Redevelopment ☐ Date of Original Development

DEVELOPMENT METHOD WHALE Pump **PURGE METHOD**

Field Testing Equipment Used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Field Testing Calibration Documentation Found in Field Notebook # Page #

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	Other
1324	1.0	18.82	6.88	184.22	3233	0.40	GRAY	NO	-115.92
1334	20.0	18.19	6.77	148.37	2242	0.12	"	"	-131.03
1402	30.0	18.40	6.54	150.21	6549	0.27	"	"	-69.16
1408	40.0	18.09	6.37	141.17	2011	0.17	"	"	-72.46
1416	60.0	18.17	6.39	129.17	725	0.18	"	"	-75.30
1423	80.0	18.15	6.17	119.50	298	0.22	"	"	-55.12
1457	100.0	18.16	6.25	123.53	207	0.18	"	"	-32.08
1506	120.0	18.10	6.08	115.62	135	0.12	CLOUDY	"	-24.29
1517	140.0	18.12	5.98	114.36	78.4	0.16	CLEAR	"	-21.87
1525	150.0	18.15	5.93	113.76	70.2	0.27	"	"	-18.55

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (5 well volumes) 19 gallons

Maximum Turbidity Allowed 50 NTUs

Stabilization of parameters 10 %

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A explain below:

Signature J Leaphart Date: 7-27-21

AECOM

Well/Piez. ID: W-125

Well/Piezometer Development Record

Client: WESTINGHOUSE Site Location: CFFF

Project No: 60595649 Date: 7-22-21 Developer: JAMES LEAPHART

WELL/PIEZOMETER DATA

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description * TOC / + GS

Depth to Top of Screen (ft.) +

Depth to Bottom of Screen (ft.) +

Total Well Depth (ft.) * 47.45

Depth to Static Water Level (ft.) * 9.72

Geology at Screen Interval (if known)

Time of Water Level Measurement

Calculate Purge Volume (gal.) 6.15

Disposal Method SITE TOTE

Wellhead PID/FID NA

Original Well Development ☒ Redevelopment ☐ Date of Original Development

DEVELOPMENT METHOD WHALE PUMP **PURGE METHOD**

Field Testing Equipment Used:

Make	Model	Serial Number
YSI	PRO	
HACH	2100 Q	

Field Testing Calibration Documentation Found in Field Notebook # Page #

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	Other
1300	2.0	20.4	6.52	182.3	>	0.43	GRAY	NO	-351.6
1305	15.0	19.5	6.37	280.6	>	0.09	"	"	-468.4
1310	30.0	19.3	6.34	302.5	>	0.11	~~BROWN~~	"	-403.8
1316	40.0	19.2	6.30	308.2	>	0.10	"	"	-390.8
1323	60.0	19.1	6.27	311.8	>	0.10	"	"	-365.9
1357	70.0	19.2	6.20	315.2	>	0.11	"	"	-316.1
1405	90.0	19.1	6.23	316.9	484	0.07	LT. GRAY	"	-345.1
1411	100	19.0	6.08	320.3	105	0.12	MILKY	"	-305.0
1416	110	19.0	6.09	321.7	70.3	0.10	CLOUDY	"	-309.5
1421	120	19.2	6.12	323.3	30.0	0.07	CLEAR	"	-317.9

(1L)

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (5 well volumes) ____ gallons

Maximum Turbidity Allowed 50 NTUs

Stabilization of parameters 10 %

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A explain below:

Signature [signature] Date: 7-22-21

AECOM

Well/Piez. ID: W-126

Well/Piezometer Development Record

Client: Westinghouse Site Location: CFFF Hopkins

Project No: 60595649 Date: 7-27-21 Developer: James Leaphart

WELL/PIEZOMETER DATA

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description * TOC/+GS

Depth to Top of Screen (ft.) + 38.5

Depth to Bottom of Screen (ft.) + 43.5

Total Well Depth (ft.) * 44.84

Depth to Static Water Level (ft.) * 8.37

Geology at Screen Interval (if known)

Time of Water Level Measurement 0945

Calculate Purge Volume (gal.) 5.94 ~~0945~~ JL

Disposal Method SITE TOTE

Wellhead PID/FID NA

Original Well Development ☒ Redevelopment ☐ Date of Original Development

DEVELOPMENT METHOD WHALE PUMP **PURGE METHOD**

Field Testing Equipment Used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Field Testing Calibration Documentation Found in Field Notebook # Page #

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	Other
0950	1.0	19.70	7.38	238.71	3422	0.57	Brown	ND	-253.52
1008	10.0	18.85	6.67	298.05	6057	0.46	"	"	-125.04
1016	20.0	18.56	6.63	302.29	4114	0.31	"	"	-138.58
1027	30.0	18.57	6.50	298.84	704	0.47	LT Brown	"	-90.69
1036	40.0	18.52	6.54	300.93	936	0.21	"	"	-99.48
1043	50.0	18.64	6.43	290.64	1054	1.56	"	"	-80.37
1116	60.0	18.77	6.49	285.93	6450	0.19	"	"	-71.07
1133	90.0	18.80	6.50	279.48	303	0.17	MILKY	"	-60.96
1143	110.0	18.50	6.39	280.89	75.2	0.16	CLEAR	"	-71.75
1152	120.0	18.47	6.40	280.66	56.3	0.14	"	"	-72.33

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (5 well volumes) 29.7 gallons

Maximum Turbidity Allowed 50 NTUs

Stabilization of parameters 10 %

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A explain below:

Signature James Leaphart Date: 7-27-21

Well Redevelopment Records

AECOM

Monitoring Well Development Log

Page ____ of ____

Date Started (yr/mo/day) 4/12/19 Date Completed (yr/mo/day) 4/12/19

Field Personnel E.Harrington AECOM

Site Name Westinghouse

Job # 60595649.3

Well ID # 710-01

____ Upgradient ____ Downgradient

Weather Conditions Cloudy 70s

Air Temperature 70s °F

Total Well Depth (TWD) = 31.82 1/100 ft

Depth to Ground Water (DGW) = 8.03 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 23.79 1/100 ft

1 Casing Volume (OCV) = LWC x .656 = ~~3.8~~ 15.6 gallons

5 Casing Volumes = JRH ~~19.3~~ 78.03 gallons

Method of Well Development Surge heavily / purge

Total Volume of Water Removed 130 gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	~~ORP~~ Eh	Specific Conductivity (µmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks	DO
4/12/19 0826		0	20.89	5.78	169.0	244	>1100	Heavy sediment		
0834	Surge		21.07	4.97	167.7	102	>1100	Some less sediment some color		
0839	Surge		21.01	4.77	201.1	JRH ~~0.092~~	727.8	milky / orange		
0844	Surge		21.03	4.57	216.1	~~0~~ 71	>1100	Some		
0849	Surge	20	21.03	4.55	228.1	91	>1100	Some	DW: 8.02	
0854	Surge		21.12	4.58	245.1	90	>1100	Some	DW: 8.04	3.45
0859	Surge	JRH	21.06	4.57	250.2	91	>1100	Some	DW: 7.93	3.37
0904	Surge	~~35~~ 40	21.13	4.46	249.2	091	>1100	Some	DW: 8.68	3.46
0909		50	21.00	4.40	254.3	89	179.5	clear	DW: 8.71	3.39
0914		70	21.03	4.30	261.3	87	~~109.7~~	clear	DW: 8.71	
0919		100	21.21	4.62	247.6	90	28.09	clear	DW: 8.71	3.12

COMMENTS/OBSERVATIONS:

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 4/12/19 Date Completed (yr/mo/day) 4/12/19

Field Personnel E. Harris

Site Name Westinghouse

Job # 60595649.3

Well ID # RW-01

____ Upgradient ____ Downgradient

Weather Conditions Cloudy

Air Temperature 70s °F

Total Well Depth (TWD) = ____ 1/100 ft

Depth to Ground Water (DGW) = ____ 1/100 ft

Length of Water Column (LWC) = TWD - DGW = ____ 1/100 ft

1 Casing Volume (OCV) = LWC x ____ = ____ gallons

5 Casing Volumes = ____ gallons

Method of Well Development ____

Total Volume of Water Removed ____ gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	~~Eh~~ ORP	Specific Conductivity (µmhos/cm)	Turbidity/Color	~~Sand Content~~ (%)	Remarks
1924		120	21.31	4.57	248.9	89	16.50	pw: 8.71	clear DO 3.21
1939		130	21.40	4.71	241.3	89	32.40	Some	clear

COMMENTS/OBSERVATIONS: ____

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 12/19/18 Date Completed (yr/mo/day) 12/19/18

Field Personnel C. Suddeth

Site Name Westinghouse

Job #

Well ID # W-6

____ Upgradient ____ Downgradient

Weather Conditions

Air Temperature °F

Total Well Depth (TWD) = 24.3 1/100 ft

Depth to Ground Water (DGW) = 9.25 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 15.05 1/100 ft

1 Casing Volume (OCV) = LWC x 0.163 = 2.45 gallons

5 Casing Volumes = 12.3 gallons

Method of Well Development Surging and Pumping

Total Volume of Water Removed gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	Eh	Specific Conductivity (mmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks
1107		2.5	21.5	8.10		0.187	29.39		
1134		45 gal in tote	20.5	6.24		0.94	269.6		TD = 24.6 very cloudy
1134-1223	No development								→
1225	Pumped well at bottom to remove sediment								TD = 24.8
1249	"								TD = 24.95
1311	"								TD = 27.5
1325	"								TD = 27.3
1337	"								TD = 27.35
1356		60 gal in tote 30 from well	21.6	6.44		1.44	>1100		TD = 27.35
1406			20.7	6.44		1.71	244.5		TD = 27.35
1415			21.4	6.39		1.57	501.2		
1526			21.3	6.25		1.67	152.3		

COMMENTS/OBSERVATIONS: Used pump serial # 004132

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 12/19/18 Date Completed (yr/mo/day) _____

Field Personnel C. Sudduth

Site Name Westinghouse

Job # _____

Well ID # W-22

_____ Upgradient _____ Downgradient

Weather Conditions _____

Air Temperature _____ °F

Total Well Depth (TWD) = 14.44 1/100 ft

Depth to Ground Water (DGW) = 9.24' 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 5.2 1/100 ft

1 Casing Volume (OCV) = LWC x 0.163 = 0.85 gallons

5 Casing Volumes = 4.25 gallons

Method of Well Development Surging and Pumping

Total Volume of Water Removed _____ gallons

Date/Time	Discharge Rate (gpm)	Volume Purged (gallons)	Water Temperature (°C)	pH	Eh	Specific Conductivity mmhos/cm)	Turbidity/Color	Sand Content (%)	Remarks
1444			18.9	5.64		0.373	319.5		
1458			18.8	5.49		0.472	206.2		
1515			18.2	5.51		0.510	176.6		
1529			16.9	6.06		0.60	109.3		
1544			16.4	5.68		0.573	47.8		

COMMENTS/OBSERVATIONS: Pump Serial No. 004133

AECOM

Well/Piez. ID: W-25

Well/Piezometer Development Record

Client: CEFF Site Location: Hopkins, SC

Project No: 60595649 Date: 2-5-21 Developer: James Leaphart

WELL/PIEZOMETER DATA

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description TOC

Depth to Top of Screen (ft.)

Depth to Bottom of Screen (ft.)

Total Well Depth (ft.) 28.30

Depth to Static Water Level (ft.) 7.18

Original Well Development ☒ (JL 2-5-21) Redevelopment ☒

Geology at Screen Interval (if known)

Time of Water Level Measurement 1135

Calculate Purge Volume (gal.)

Disposal Method ON SITE TOTE

Wellhead PID/FID NA

Date of Original Development ~~2-5-21~~ (JL 2-5-21)

DEVELOPMENT METHOD SURGE/PURGE **PURGE METHOD**

Field Testing Equipment Used:

	Make	Model	Serial Number
	YSI	PRO	19A103315
	HACH	2100 Q	180800069267

Field Testing Calibration Documentation Found in Field Notebook # _____ Page # _____

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	Odor	ORP Other
1139	INITIAL	18.0	6.45	186	OVER RANGE	0.07	GRAY	SULFUR	-8.5
1145	10	18.3	6.32	129	259	0.08	CLOUDY	"	-32.7
1151	20	18.4	6.34	131	108	0.13	"	"	-40.2
1211	30	18.4	6.24	118	118	0.14	"	"	-37.5
1225	40	18.4	6.24	117	53.9	0.17	CLEAR	"	-41.9
1235	50	18.4	6.24	117	35.8	0.15	"	"	-44.1
1245	60	18.4	6.24	116	34.1	0.15	"	"	-44.6

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (3 well volumes) _____gallons

Maximum Turbidity Allowed _____ NTUs

Stabilization of parameters _____%

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A explain below:

Signature _____ Date: 2-5-21

AECOM

Well/Piez. ID: W-27

Well/Piezometer Development Record

Client: WESTINGHOUSE Site Location: HOPKINS, SC

Project No: 60695649 Date: 6-25-20 Developer: JAMES LEAP/HART

WELL/PIEZOMETER DATA

Well ☒ Piezometer ☐ Diameter 2" Material PVC

Measuring Point Description TOC

Depth to Top of Screen (ft.) *

Depth to Bottom of Screen (ft.)

Total Well Depth (ft.) * 16.65 / 18.90 **

Depth to Static Water Level (ft.) 10.24

Geology at Screen Interval (if known)

Time of Water Level Measurement 1115

Calculate Purge Volume (gal.)

Disposal Method ON SITE TOTE

Wellhead PID/FID NA

Original Well Development ☐ Redevelopment ☒ Date of Original Development

DEVELOPMENT METHOD SURGE + PURGE **PURGE METHOD** WHALE PUMP

Field Testing Equipment Used:

Make	Model	Serial Number
451	PROSS	19D101330

Field Testing Calibration Documentation Found in Field Notebook # _____ Page # _____

Time	Volume Removed (gal)	T° (C/F)	pH	Spec. Cond (umhos)	Turbidity (NTUs)	DO	Color	ORP Odor	Other
1125	INITIAL	19.90	6.18	282	1006	1.99	RUST	-45.1	
1146	3.75	19.20	6.14	298	608	4.56	"	-51.1	

ACCEPTANCE CRITERIA (from workplan)

Min. Purge Volume (5 well volumes) _____ gallons

Maximum Turbidity Allowed 10 NTUs

Stabilization of parameters 10 %

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A explain below:

0.75 GALLONS PER MIN, DRY

Signature [signature] Date: 6-25-20

Appendix J
Deviations from the Work Plans

Deviations From Work Plans

Deviations from the *Final Remedial Investigation Work Plan* (AECOM, 2019a) and *Phase II Remedial Investigation Work Plan* (AECOM, 2020) included the following:

- After the submittal of the June 2019 *Final Remedial Investigation Work Plan* (AECOM, 2019a), DHEC requested that an additional staff gage be installed within Mill Creek. This staff gage was installed within Mill Creek downstream of the Lower Sunset Lake Dike spillway as requested.
- Field parameters (e.g., dissolved oxygen, turbidity) were not collected during surface water sampling. This oversight did not affect the analytical results of these samples.
- Groundwater screening in the floodplain was not part of the *Final Remedial Investigation Work Plan* (AECOM, 2019a). This additional groundwater assessment was proposed in the *Additional Floodplain Assessment Plan* (AECOM, 2019b) submitted to DHEC on August 2, 2019, and approved by DHEC on August 7, 2019.
- Several underground electric lines were located close to the proposed locations of the monitoring well pair W-77 and W-93 and did not allow safe clearance for drilling activities. Therefore, these wells were installed approximately 50 feet southeast of their proposed locations.
- Concrete approximately 1 foot below the asphalt surface of the road paralleling the southern portion of the Chemical Area OU and the facility's power bank running down the middle of the northern lane of this road resulted in monitoring well W-78 being moved across the road. Therefore, monitoring well W-78 was installed approximately 25 feet south of its proposed location.
- Monitoring wells W-83 and W-86 were installed deeper into the surficial aquifer due to an anomalously thick clay layer at the surface. The top 26 and 23 feet, respectively, of the subsurface in the area of these two wells consisted of clay or silty clay compared to approximately 8 feet of silt or clay in other areas of the developed portion of the site. This clay deposit may represent a former oxbow lake or former stream channel that slowly filled with silt and clay overbank deposits.
- The *Phase II Remedial Investigation Work Plan* (AECOM, 2020) proposed collection of soil samples from two locations (SS-15 and SS-16) in the vicinity of the East and Sanitary Lagoons. Prior to implementation of the Phase II effort, CFFF implemented closure of the East Lagoon. Due to the closure activities, it was unsafe for AECOM personnel to access these areas.
- The *Phase II Remedial Investigation Work Plan* (AECOM, 2020) proposed the installation of a deeper well, W-101, adjacent to well W-11 to create a well cluster to further delineate vertical Tc-99 concentrations. When the boring for well W-101 was drilled, the depth of the Black Creek confining clay was shallower than anticipated and was within 5 feet of the screened interval of existing well W-11, a surficial aquifer lower zone well. AECOM personnel spoke to DHEC personnel, and the parties agreed not to install a well in the W-101 boring location because it would not provide any new data.
- During installation of the lower zone surficial aquifer monitoring well W-99, it was noted the thickness of the surficial aquifer was not sufficient to allow a 10-foot screen for upper zone surficial aquifer well W-100 per the *Final Remedial Investigation Work Plan* (AECOM, 2019a) without overlapping the screened intervals. AECOM personnel spoke to DHEC personnel and the parties agreed to install both wells with 5-foot screens.
- Upper zone of the surficial aquifer monitoring wells W-96, W-97, and W-119 were also installed with 5-foot screens, instead of 10-foot screens, to screen the same portion of the surficial aquifer where groundwater screening samples indicated impacts to groundwater.
- Due to ponding water in a surficial depression in the western portion of the site, groundwater screening locations L-53, L-56 and L-57 had to be moved from their proposed locations. Borings L-53 and L-56 were moved approximately 100 feet west and boring L-57 was moved approximately 150 feet west of their originally proposed locations.

References

AECOM, 2019a. Final Remedial Investigation Work Plan, Westinghouse Columbia Fuel Fabrication Facility, 5801 Bluff Road, Hopkins, South Carolina, June 2019.

AECOM, 2019b. Columbia Fuel Fabrication Facility, Additional Floodplain Assessment, Richland County, S.C., Consent Agreement CA-19-02-HW, File # 51377, August 2, 2019.

AECOM, 2020. Phase II Remedial Investigation Work Plan, Westinghouse Columbia Fuel Fabrication Facility, 5801 Bluff Road, Hopkins, South Carolina, September 2020.

Appendix K
Site Topographic Map



AECOM

101 Research Drive
Columbia, SC 29203
T: (803) 254-4400 F: (803) 771-6676

Site Topography Map

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY	DATE	
60633543	CCS	July 2020	FIGURE A1

Path: M:\EnvData\Viz\Westinghouse\mxd\202112_ContourSiteMap.mxd

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Appendix L
Surface Water Body Descriptions

Surface Water Body Descriptions

Surface water bodies on and within the facility property include the Gator Pond, Mill Creek which contains Upper and Lower Sunset Lakes, and stormwater ditches (**Figure 2**).

The Gator Pond is a man-made surface water body constructed within a shelf of the bluff. This water is approximately 8 feet deep at its greatest depth and is fed by both groundwater and precipitation. Based upon data collected from a pressure transducer and associated staff gage, the elevation of the pond water is consistently within a few inches of approximately 118 feet above mean sea level (AMSL).

Mill Creek is a tributary of the Congaree River. The Congaree River is located approximately 3 miles south southwest of the southern property boundary. Within the property, Mill Creek is horseshoe shaped with north-south trending arms on the west and east sides and an east-west trending section in the middle. Flow directions of Mill Creek within the property boundary are highly dynamic due to multiple variables discussed below.

There are five fully impounding to semi-impounding dikes within Mill Creek on the property. These are from west to east: Canal Dike, Entrance Dike, Upper Sunset Lake Dike (also known as the Causeway), Lower Sunset Lake Dike (also known as the Spillway) and Exit Dike. The concrete Canal Dike sits at the western end of the man-made canal that diverts most of the flow of Mill Creek along the southern property boundary. Flow into the canal is via a man-made channel connecting Mill Creek to the canal.

Surface water in Mill Creek that does not flow into the canal continues to migrate along its natural channel until it encounters the earthen Entrance Dike. A 3-feet diameter galvanized aluminum pipe allows flow through the dike. Beyond the Entrance Dike is Upper Sunset Lake, a forested lowland swamp. At the eastern end of Upper Sunset Lake is the earthen Upper Sunset Lake Dike. An open, steel reinforced, approximately 4 foot wide channel through the Upper Sunset Lake Dike allows water to flow from Upper Sunset Lake into Lower Sunset Lake.

Portions of Lower Sunset Lake are open water while other portions are forested swamp. At the eastern end of Lower Sunset Lake is the earthen Lower Sunset Lake Dike that impounds water within this surface water body. Water exits Lower Sunset Lake over a concrete spillway, flowing into the natural swamp of Mill Creek until it encounters the Exit Dike.

The Exit Dike is similar to the Entrance Dike with a pipe allowing water to flow through the dike. Due to the Exit Dike's pipe being continually submerged, the type of pipe and its diameter are unknown, but it is likely the same as the Entrance Dike. Water flowing through the Exit Dike discharges at the intersection of the man-made canal and the natural flow channel of Mill Creek.

Mill Creek meanders several more miles before discharging to the Congaree River. When the Congaree River floods, it pushes water up Mill Creek causing a reversal in Mill Creek's predominant flow direction depending on the elevation of the flood waters. If the flood waters are high enough, the Lower Sunset Lake spillway is overtopped and flood waters flow east to west within Sunset Lakes. The Canal Dike spillway is approximately 1 foot higher than the Lower Sunset Lake spillway (approximately 110 feet AMSL versus 109 feet AMSL), so flow through Sunset Lakes is the preferential flow path until flood waters fill the canal enough to overtop the Canal Dike spillway. The force of water flowing through the channel at the western end of the canal acts as an impeding force of flood waters filling the canal and the Canal Dike further impedes movement of flood water from the canal into Mill Creek in this area.

To understand the flow dynamics within Mill Creek within the property, five pressure transducers (Canal, Entrance, Upper 2, Upper and Lower) and associated staff gages were deployed within Mill Creek. The pressure transducers take water level readings once per hour which are converted to a surface water elevation based upon the referenced elevation of the staff gage. One additional staff gage was installed in Mill Creek below the Lower Sunset Lake to manually obtain surface water elevations within this portion of Mill Creek.

There are two primary and one secondary stormwater ditches on the property. The primary ditches are referred to as the Western Ditch and the Eastern Ditch, and the secondary ditch is referred to as the Middle Ditch. Associated with

the Eastern Ditches are five sluice valves (A-valve through E-valve). According to CFFF's Stormwater Pollution Prevention Plan (Westinghouse, 2021):

A complete network of storm drains and culverts cover the plant site. These storm drains empty into another network of swales, drainage ditches, and culverts that discharge into upper Sunset Lake and eventually Congaree River, approximately four miles from the site. The storm drains were constructed in four lines, designated by the letters "A," "B," "D," and "E." Each catch basin along the line is clearly marked with the line letter. A gate valve at the end of each line can be closed to contain any spills that enter that line. Each gate valve is clearly marked with the line letter. Lines "A" and "B" empty into the ditch that runs along the south side of the site. Lines "D" and "E" empty into the ditch that runs southwest from the north side of the site. The two ditches meet at the dirt road that runs along the western site boundary. On the west side of the road is the main control valve, labeled "C," which is the site's only storm water outfall.

Remote valves can be controlled from either the URRS or Conversion Control Rooms.

Valve Normal Operating Position Manual or Remote
A 50 % Open Manual
B 50 % Open Manual
C 100 % Open Remote
D 100 % Open Remote
E 100 % Open Remote

Following verification that there are no leaks/spills leading to storm drains, normally closed valves may be opened in the event of a heavy rainstorm to allow for a higher rate of flow. The valves will be returned to normal state following the conclusion of the storm event.

The Middle Ditch is a tributary of the Eastern Ditch and is typically dry except during periods of high water and precipitation. The southern portion of the Middle Ditch is more incised and receives groundwater discharge more frequently than the northern portion of the ditch. Flow near the Middle Ditch's intersection with the Eastern Ditch is common.

The Western Ditch's northern extent originates in a forested area north of the facility. This portion of the Western Ditch is man-made and is typically dry. This ditch parallels the property boundary and exits the site onto the adjacent property to the west where it connects to a natural flow channel. This channel comes back onto the site and then discharges into the western end of Upper Sunset Lake near the Entrance Dike. The southern, more incised portion of this ditch receives groundwater.

The Eastern Ditch is the primary stormwater ditch on the property. Most of this ditch is man-made and begins as two branches, the western branch and the eastern branch, along Bluff Road at the northeastern property boundary. There are ditches parallel to the southern side of Bluff Road and culverts under Bluff Road that connect to both branches of the Eastern Ditch. The culverts connect to wetlands along the northern side of Bluff Road and water is conveyed through these culverts much of the year.

The portion of the Eastern Ditch near the convergence of the Western Ditch and Eastern Ditch is dry year round except for during precipitation events. This portion of the ditch receives stormwater from both the primary and secondary parking lot, is subterranean beneath the facility's primary parking lot and shortly thereafter merges with the portion of the ditch emanating along Bluff Road. The Eastern Ditch then flows along the eastern edge of the developed portion of the property, turns west, and is piped underneath and flows parallel to the Southern Storage Area and Sanitary Lagoon.

The Middle Ditch receives stormwater from the Northern Storage Area and the western portion of the facility. This ditch merges with the Eastern Ditch southwest of the Sanitary Lagoon. The southern portion of this ditch receives groundwater discharge during periods when the water table is high.

West of the convergence with the Middle Ditch, the Eastern Ditch is deeply incised and receives groundwater discharge year round. Like the Western Ditch, the Eastern Ditch discharges to Upper Sunset Lake; however, its

discharge point is in the central portion of Upper Sunset Lake. Discharge from these ditches serves as the primary base flow of Upper Sunset Lake during dry periods with the Eastern Ditch being the primary contributor.

The property, including portions of the floodplain, was used primarily for agriculture prior to the industrial development. Dewatering ditches were excavated within the floodplain by the previous owner(s). The primary dewatering ditch in the floodplain extends from the central portion of Lower Sunset Lake to Mill Creek near the Exit Dike. Portions of this ditch parallel the bluff, other portions parallel the property boundary, and the southern portion is within a former channel of Mill Creek. The other dewatering ditch is located south of Upper Sunset Lake and extends to a former channel of Mill Creek that remains connected to the current channel.

References

Westinghouse, 2021. Storm Water Pollution Prevention Plan for Westinghouse Electric Company LLC, 5801 Bluff Road, Hopkins, South Carolina 29061, December 31, 2021.

Appendix M
CFFF Soils

CFFF Soils

Based upon information within the United States Department of Agriculture (USDA) Soil Conservation Service Soil Survey of Richland County (USDA, September 1978), there are six surficial soil types in areas above the bluff and two surficial soil types in the floodplain. Surficial soil types above the bluff consist of loam, fine sandy loam, sandy loam, loamy sand, very fine sandy loam, and the Orangeburg-Urban Land Complex. Surficial soil types below the bluff consist of loam and silty clay loam. These soil types are described in detail below.

Above the Bluff

The area above the bluff covers approximately 480 acres and includes the developed portion of the site. Loams above the bluff were classified as Cantey (Ca) and Smithboro (Sm) loams. The Cantey loam is a poorly drained, nearly level soil on flat areas and in slight depressions on terraces of the Congaree and Wateree Rivers. Similarly, the Smithboro loam is a somewhat poorly drained, nearly level soil in the valleys of the Congaree and Wateree Rivers. Permeability and runoff from these soils are slow causing water to stand on the surface during rainy periods. These soil classes account for approximately 16% of the area above the bluff.

The Coxville (Cx) fine sandy loam is a poorly drained, nearly level soil in concave elliptical depressions on broad ridges of the Coastal Plain. Permeability of this soil is moderately slow and surface water may accumulate during rainy periods in these soils. This soil class accounts for approximately 11% of the area above the bluff including portions of the developed area.

Sandy loams above the bluff were classified as Faceville (FaA) and Goldsboro (GoA) sandy loams. The Faceville sandy loam is a well-drained, nearly level soil located on broad ridgetop of the Coastal Plain. The Goldsboro sandy loam is a well-drained, nearly level soil on interstream divides of marine terraces in the Coastal Plain. Permeability of these sandy loams are moderate and runoff from these soils is slow. The Faceville and Goldsboro sandy loam soil classes account for approximately 2% and 4% of the area above the bluff, respectively with the Goldsboro sandy loam underlying part of the developed area.

Loamy sands above the bluff were classified as Orangeburg (ObA) and Vaucluse (VaC) loamy sands. The Orangeburg loamy sand is a well-drained, nearly level soil located on ridgetops and interstream divides in the Coastal Plain. The Vaucluse loamy sand is a well-drained, sloping soil located on irregular, abrupt side slopes in the Coastal Plain uplands. Permeability of these loamy sands is moderate, and runoff are slow. The Orangeburg and Vaucluse loamy sand soil classes account for approximately 11% and 1 % of the area above the bluff, respectively. Surface soils in the Denley Cemetery area are Vaucluse loamy sand.

The Persanti (Ps) very fine sandy loam is moderately well drained, nearly level soil on terraces in the valleys of the Congaree and Wateree Rivers. Permeability of this soil type is low, and runoff of this soil are slow causing water to pond on the surface during rainy periods. This soil class accounts for approximately 44% of the area above the bluff and very little of the operational area is underlain by this soil class.

The Orangeburg-Urban Land Complex (OgB) is a well-drained, nearly level soil located on broad ridgetops and interstream divides in the Coastal Plain. Permeability of this soil is moderate, and runoff is slow. The Orangeburg-Urban Land Complex accounts for approximately 11% of the area above the bluff and underlies most of the developed area of the site.

Below the Bluff

The area below the bluff covers approximately 670 acres, is a portion of the floodplain of the Congaree River, and contains Mill Creek (including Upper and Lower Sunset Lakes) and the Gator Pond (1% of the area below the bluff is water).

Loams below the bluff were classified as Congaree (Co), Chewcala (Ce) and Toccoa (To) loams. The Congaree loam is well drained to moderately well drained, nearly level soil mostly on the floodplains of the Congaree and Wateree Rivers. The Chewcala loam is a somewhat poorly drained, nearly level soil, mostly on the floodplains of the Congaree and Wateree Rivers. The Toccoa loam is well-drained, nearly level soil, mostly on the floodplains of the Broad,

Congaree, Saluda, and Wateree Rivers in both the Coastal Plain and the Piedmont. Permeability of these loams is moderate (with the exception of the Toccoa loam where permeability is moderately rapid), runoffs are slow, and they are commonly flooded for brief periods of time. These soil classes account for approximately 69% of the area below the bluff.

Silty clay loam below the bluff consists of Chastain (Cd) and Tawcaw (Tc) silty clay loams. The Chastain silty clay loam is poorly drained, nearly level soil primarily in the floodplains of the Congaree and Wateree Rivers. Permeability of this loam is moderate and areas where it is located are flooded for long periods each year. The Chastain silty clay is contained within the confines of Mill Creek and accounts for 24% of the area below the bluff. The Tawcaw silty clay loam is somewhat poorly drained, nearly level soil primarily on the broad floodplains of the Congaree and Wateree Rivers. Permeability and runoff in this silty clay loam is low, and this soil class accounts for approximately 6% of the area below the bluff.

References

Additional details such as historical soil survey reports for Richland County can be found on the USDA website. The USDA no longer publishes these reports and new data is added to the website. The last soil survey report for Richland County was published in 1978. Soil types for the Columbia Fuel Fabrication Facility remain unchanged from those published in the 1978 report. Below is a link to the USDA website where additional information can be obtained.

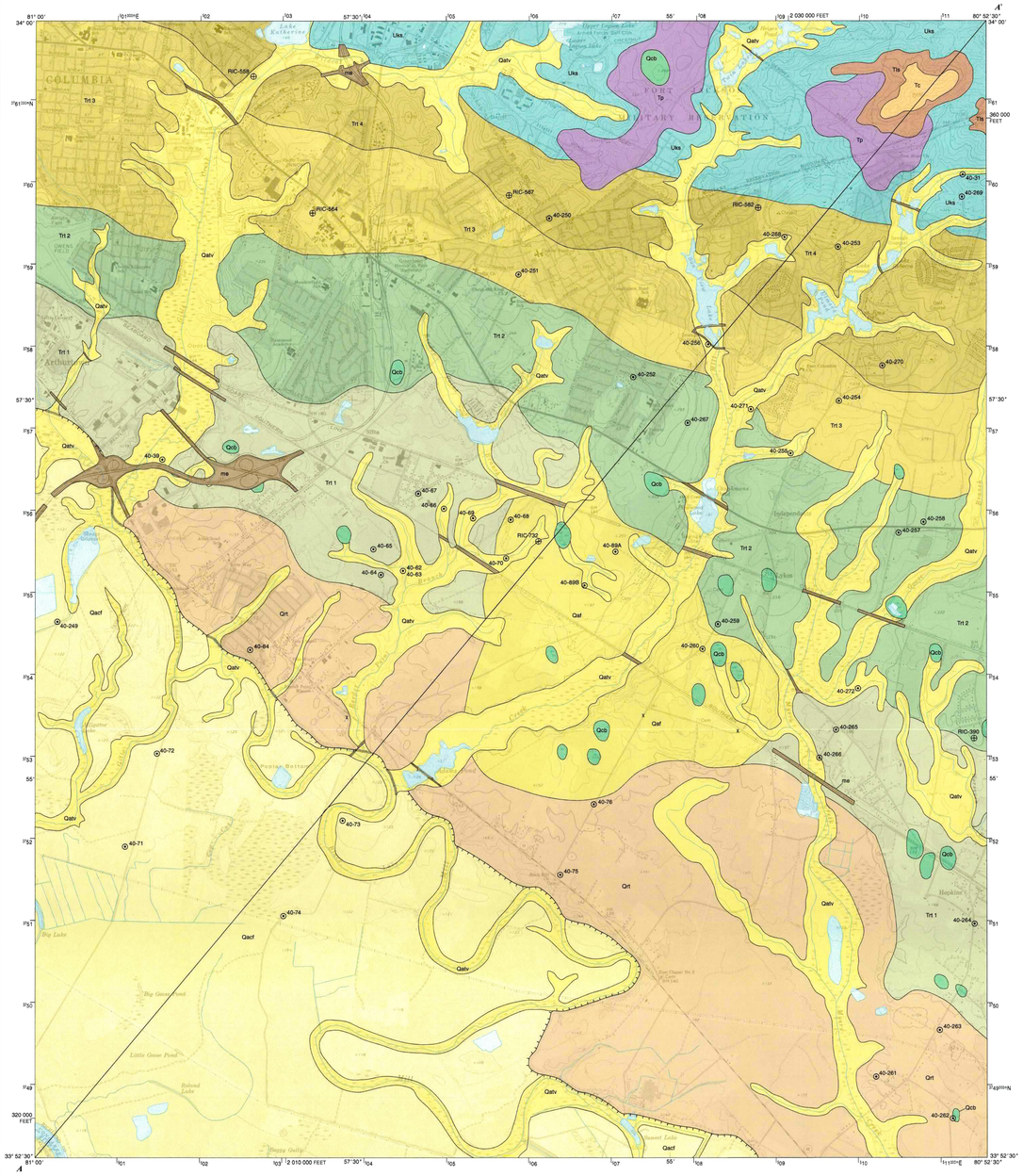
https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Appendix N
Fort Jackson South Geologic Quadrangle Map

South Carolina Department of Natural Resources
Geological Survey

Produced in Cooperation with the National Park Service

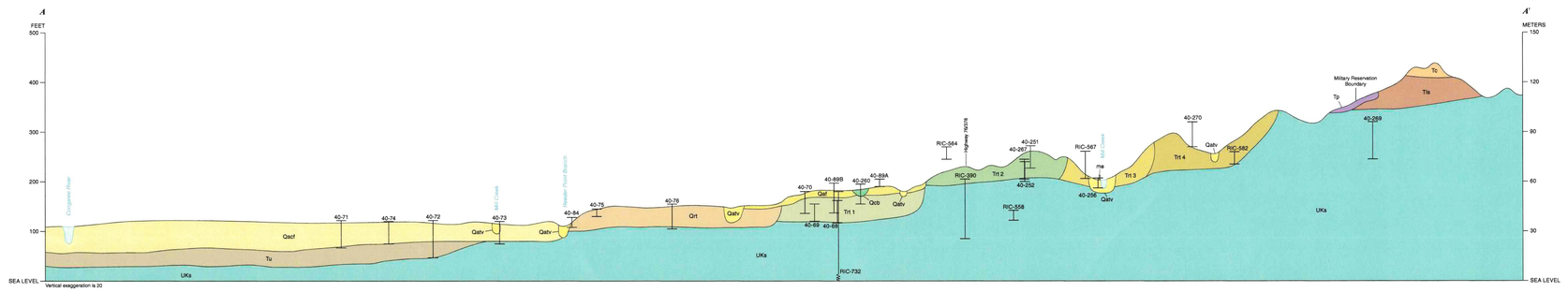
Geological Quadrangle Map
Fort Jackson South, S.C.
GQM-52



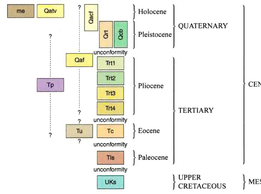
GEOLOGIC MAP OF THE FORT JACKSON SOUTH QUADRANGLE, CALHOUN AND RICHLAND COUNTIES, SOUTH CAROLINA

Kimberly M. Meitzen

2011



CORRELATION OF MAP UNITS



GEOLOGIC MAPPING

Fort Jackson South 7.5-minute quadrangle lies within the Upper Coastal Plain of South Carolina and is located near the geographic center of the State. The quadrangle includes a diverse land cover including urban, rural, agriculture, forestry, and conservation areas (Figure 1). In addition, it contains a portion of the city of Columbia and Fort Jackson Military Reservation, a United States Army basic training facility. Topographic relief within the quadrangle ranges from 30 meters along the Lower Congaree River in the southwest corner to 138 meters in the upper northeast corner (Figure 2). The geologic units in this quadrangle range from the most recent Holocene (Quaternary) alluvial deposits to Lower Paleocene (Tertiary) marine deposits. The geologic cross section illustrates the topographic relief and the stratigraphic range of units. Gills Creek, Reeder Point Branch, Mill Creek, and Myers Creek are the major tributaries flowing into the Congaree River, and each contains numerous small ponds. The Congaree River Valley extends from below the Fall Line to the headwaters of Lake Marion on the Santee River. The longitudinal profile of the valley is about 50 km with a valley slope of 0.04 percent and an average valley width of 6 km. The valley trends to the southeast and is bound on the south by Cretaceous to Eocene marine deposits and on the north by Tertiary and Quaternary Congaree River terrace deposits. Congaree River valley fluvial deposits range in thickness from 18 meters in the upper valley (Meitzen, 2010) to 6 meters in the lower valley (Shelley, 2007).

The Fort Jackson South map area is mostly covered by a series of Tertiary and Quaternary Congaree River terraces that step down in age toward the modern channel and flood plain. The terrace surfaces are altered by anthropogenic activities and various weathering, erosion, and depositional processes attributed to Carolina Bay formation, tributary dissection, and alluvial-fan accretion. A large alluvial fan deposited by Mill Creek flanks the scarp between two Tertiary terrace units. The size, extent, and morphology of this alluvial fan suggest that it was formed during multiple episodes and could have been connected to climatic changes or tectonic activity. Upper Coastal Plain sedimentary marine units are present in the northeast quadrant of the map and were deposited as bedded layers gently dipping to the southeast. The Congaree River terraces and marine deposits are underlain by undifferentiated fluvial and marine Cretaceous sediments that lie unconformably on the crystalline basement rocks.

The map area includes 26 km of a 36-km abandoned channel segment that represents a former course of the Congaree River. The abandoned channel segment persists as a major hydrologic feature in the flood plain and is occupied by tributaries draining from the eastern bluffs. Gills Creek captures the upper reach of the abandoned channel and flows along an abandoned meander to its confluence with the Congaree River in the adjacent Southwest Columbia 7.5-minute quadrangle. Reeder Point Branch and Mill Creek merge at the same confluence with the abandoned channel and flow along its lower limb where it eventually reconnects withthe Congaree River. The modern and abandoned channels are comparable in width and depth; however, the sinuosity of the abandoned channel segment is 2.5, which is nearly twice that of the modern channel which measures 1.5 over the same valley distance. The age and cause of the channel avulsion are not known, but correlations from nearby landforms suggest the avulsion occurred sometime between the Late Pleistocene and mid-Holocene. The channel avulsion includes numerous abandoned meanders, suggesting that the river occupied this course for a long enough period of time to adjust its planform geometry, which may have been anywhere in a hundred to a thousand year time frame. It is possible that reoccupation and abandonement has occurred more than once and may occur in the future. Tectonics, valley lithology, and relief are hypothesized to have caused the channel avulsion and may explain the differences in channel sinuosity between the modern and abandoned channels. The channel avulsion occurs immediately upstream of where the Aeromagnetic Augusta Fault (AAF) (Figure 3) crosses the Congaree River Valley, and the lower end of the abandoned channel segment links to the present location of the Congaree River downstream of the lower limit of the Augusta faults aeromagnetic signature. The aeromagnetic fault is discussed in greater detail below; however, it is hypothesized that Quaternary reactivation of this structure is the most probable cause for the avulsion event.

The map was developed in a Geographic Information System (GIS), using geologic field-based data and supplementary digital overlays. Subsurface geologic data were obtained from SCGS drill-hole logs and water-well logs (obtained from the SCDNR Hydrology Section). Field observations of geologic contacts along roadcuts, tributary valleys, and borrow and quarry pits yielded valuable mapping data. Secondary data sources include georeferenced 1-meter resolution 2009 aerial photos (NAIP, 2009) (Figure 1), Soil Survey Geographic (SSURGO) data, and National Wetlands Inventory (NWI) data.

FAULT RELATIONS

An overlay of the structural features map (Maybin and Clendenin, 1998) indicates several structures present in the southern portion of Fort Jackson South Quadrangle (Figure 3). In particular, the Augusta aeromagnetic fault (AAF), a large and complex structural feature that occurs on the southern margin of the Regional Eastern Piedmont fault system (Hatcher and others, 1977) that extends across the southern portion of the quadrangle and the Congaree River Valley, where it crosses the valley in an eastward direction and then curves southeasterly along the northeast side of the valley where it crosses the Wateree River Valley (Maybin and Clendenin, 1998). Two splay faults extend away from the AAF in Fort Jackson South Quadrangle. The northern structure strikes northeast diagonally across the map area, and the second strikes east-northeast at a low angle to AAF. It is interesting to note that the northeast fault position coincides with the onset of high sinuosity values in the abandoned channel segment.

To the west, in the Steedman Quadrangle, the AAF has a down-to-the-south movement thickening the upper Cretaceous sediments above crystalline basement (Doar and Howard, 2010) and indicating late Cretaceous or younger movement on the fault. To the east, in Poinsett State Park Quadrangle, Meitzen and others (2009) mapped stratigraphic offsets suggesting normal fault motion of Pliocene or younger age.

Correlating these established fault associations with geomorphic features in Fort Jackson South quadrangle, it is hypothesized that fault-related events were a significant trigger initiating the Congaree River channel avulsions and the Mill Creek alluvial fan deposition. There exists a good potential for studying paleoseismic events in this quadrangle, and this area should be a priority for future hazard studies.

DESCRIPTION OF MAP UNITS

Bodies of water (2009) – Water bodies include lakes, major streams, and riverine features. Water boundaries are delineated from 2009 digital ortho-quarter quadrangles (DOQQs) photos.

me **Moved earth** – Moved earth consists of earthen material moved out of place by humans and includes locations where materials are used to build up a site for development and locations where materials are removed by mining activities. Moved earth occurs in association with transportation features (e.g., roads, bridges, and overpasses), quarries (e.g., sand, clay, gravel, and granite) and commercial and municipal infrastructure (e.g., airports and water/sewer treatment facilities). An abundance of moved earth is present within the Fort Jackson quadrangle because of the dense urban development; however, it is mapped only for areas of major surficial impact.

Qatv **Alluvial tributary valley (Quaternary)** – Tributary stream valleys drain Tertiary Upper Coastal Plain marine deposits, Tertiary-Quaternary fluvial terraces, and Quaternary-modern flood-plain deposits. Many of the tributary valleys are affected by urban infrastructure and contain numerous ponds and other impounded water bodies. The tributary deposits range from coarser sediments including cobbles, gravel, and coarse sand, to finer-grained sand, silt, and clay. The coarse- to fine-grained variability is typical for sediments weathered from the Congaree River terraces. In the tributary valleys of Gills Creek, Mill Creek, and Myers Creek, deposits form narrow bottomland flood plains that contain seasonally flooded wetland habitats. The tributaries in this area drain onto the Congaree River flood plain and flow through abandoned channel segments before joining the main-stem river.

Qacf **Alluvial fan (Quaternary)** – Large alluvial fan deposited by Mill Creek on the Trt 1 and Qrt (map units) terrace surfaces. The alluvial fan deposit is an orange to brown poorly sorted loamy mix of silty, fine to very coarse quartz sand with scattered granules and a few heavy mineral grains. The alluvial fan is thickest near the Trt1 and Qrt contact and thins downstream. The alluvial fan is morphologically diverse and likely formed during more than one depositional episode.

Congaree River flood plain (Quaternary) – The Quaternary alluvium of the Congaree River flood plain averages about 35 feet thick. As sea level receded, valley accretion formed an extensive flood plain consisting of multiple sequences of channel-fill and overbank deposits that accreted vertically and laterally as the river migrated across the valley. The base of the Congaree River flood plain contains poorly sorted, angular to rounded, cobbles, gravel, and coarse-grained quartz sand deposited by a high-energy fluvial channel. Coarse to very coarse feldspar, calcite, epidote, garnet, biotite, mica, and dark heavy mineral grains are abundant. Wood and charcoal fragments occur throughout the poorly sorted mix of alluvial materials. The channel-bed deposits fine upward to clayey, silty, and fine- to coarse-grained fluvial sand with abundant mica flakes. In some drill cores the fining upward sequence is interrupted by channel fill sequences that are characterized by a range of textures. Some of the channel fill sequences contain cobbles and gravel and very coarse sand. In contrast, other channel-fill sequences contain very fine, clayey, dark, and dense organic peat deposits with moderately preserved chunks of woody debris, leaves, and seeds. Surface geomorphology of the Congaree River flood plain illustrates an array of fluvial features including abandoned meanders, oxbow lakes, meander scroll ridge and swale complexes, natural levee deposits, and yazoo tributary patterns.

Qrt **River terrace deposits (Quaternary)** – This is the youngest of the terrace complexes and still contains vestiges of preserved channel morphology and other fluvial landform scars. It sits just above the designated flood zone but is still vulnerable to flood hazards. The terrace sediments consist of a poorly sorted silty, fine to very coarse sand with subrounded granules and gravel.

Qcb **Carolina bays (upper Pleistocene to Holocene)** – Carolina bays consist of light-gray to black, clayey quartz sand and organic-rich peat deposits in their interiors and coarser quartz sand and granules in the eolian rims of bays. Carolina bays were formed most likely by the action of prevailing southwesterly winds that scoured blowout-like deflations on the topographic surface of the regional landscape. Carolina bays occur on the Atlantic Coastal Plain from New Jersey to Florida but are most abundant between Georgia and North Carolina (Sollar and Mills, 1991). Although the shape and orientation of Carolina bays can vary, the majority are ellipsoidal, with the long axis oriented northwest-southeast and an elevated rim of the bay along the northwest margin. The eolian-dominated process that formed Carolina bays probably occurred under various moisture regimes, whereby the Carolina bay's seasonally and annually ranged between ponded and dry conditions dependent on fluctuating ground-water levels (Kaczorowski, 1976, 1977). The wetter conditions facilitated peat formation, and the drier periods are evidenced by charcoal fragments from episodic fires. Deposition of the elevated sand rim is likely to have resulted from the combination of two processes, waves lapping against the northwest margin and eolian dune formation. The Carolina bays in the Fort Jackson South Quadrangle have been masked by agriculture and urban development, but their form is still recognizable by their topographic depression, orientation, and soil-moisture conditions. Maximum ages are estimates from regional correlations, but carbonaceous sediment in a bay in Sumter County is older than the range of reliable radiocarbon dates (older than approximately 25,000 to 30,000 years; after Brooks and others, 2001). In the Fort Jackson South Quadrangle the Carolina bays were formed on the Pliocene to Pleistocene Congaree River terraces.

Tp **Pinehurst Formation (Tertiary to Quaternary)** – The Pinehurst Formation is a widely distributed eolian sand that varies in thickness and composition throughout the Upper Coastal Plain. Within Fort Jackson South Quadrangle, the Pinehurst Formation consists of loose quartz silt and sand. The sand ranges from very fine to coarse-grained, rounded to angular, and exhibits variable sorting; however, the majority of the deposit is medium-to coarse-grained, subangular, and moderately sorted. Therefore, the mapped area for the Pinehurst Formation is a conservative coverage of its extent. The Pinehurst sand has been mined extensively in this area, and in most places it occurs only as a thin draping over hilltops and hill slopes. Most of the eolian Pinehurst sand deposits are less than 2 feet thick, lack lateral continuity, and were not mapped at 1:24,000 scale. The age of the unit is undetermined; however, correlations with other units indicate that its regional deposition spans the late-Miocene (Nystrom et al., 1991).

Trt 1 **Trt 2** **Trt 3** **Trt 4** **River terrace deposits (Tertiary)** – Tertiary river terrace deposits are fluvial sediments deposited by the Congaree River. The terrace units include channel and flood-plain deposits abandoned by valley incision. Terrace sediment complexes of the South Carolina Coastal Plain were broadly discussed by Cooke (1936) and later revised by Colquhoun (1965). Regional terrace correlations were most recently examined by Shelley (2007 a. b). Age ranges spanning the Eocene to the Pleistocene have been suggested for the terraces of the upper Congaree River valley (Colquhoun, 1965). On the basis of valley location and topographic position, the Tertiary terraces are subdivided into four units: Trt 1, Trt 2, Trt 3, and Trt 4. Terrace thicknesses range from 20 to 50 feet. Although the terrace sediments are highly variable they typically consist of fining upward sequences of moderately to poorly sorted, medium- to very coarse-grained, angular to subrounded quartz sand. The youngest terrace, Trt 1, is delineated by a basal lag of cobbles and gravel that mark former channel courses of the Congaree River. The bases of Trt 2, Trt 3, and Trt 4 contain a rounded pebble-cobble layer and they overly Upper Cretaceous sediments. The local relief of this contact is significant, and their surfaces are minimally constrained by a few drill-hole locations. Numerous tributaries drain the Tertiary terraces, and the surficial topography is complicated by alluvial, colluvial, eolian, ground-water processes, and extensive anthropogenic modifications.

Tc **Congaree Formation (Eocene)** – The Congaree Formation consists of reddish-brown to tan, loose, poorly sorted, fine- to coarse-grained quartz sand with clay coating the coarser grains. Some white kaolin laminations and kaolin balls are also abundant throughout the deposit. The kaolin is mostly found in discontinuous very thin clay beds and laminae. Fine- to medium-grained dark heavy minerals are relatively abundant through much of the formation. In the Fort Jackson South Quadrangle, it occurs in a relatively small local deposit on a high-elevation hilltop in the northeastern portion of the quadrangle.

Tls **Lang Syne Formation (Paleocene)** – The Lang Syne Formation consists of thin and laterally continuous beds of yellowish tan to brown, fine to medium coarse-grained micaceous quartz sand. Multiple fining-upward sequences are common throughout the Lang Syne and are typically in sequences 10 to 20 feet thick. A prominent layer of well-rounded pebbles 0.5 to 3 inches in diameter occurs near this basal contact. The Lang Syne unit was not drilled in the Fort Jackson map area; however, its presence was inferred from the geology of the adjacent Congaree quadrangle (Shelley, 2007).

Tu **Tertiary undifferentiated** – Sediments similar to those of the Huber Formation underlie the Quaternary Congaree River alluvial flood-plain deposits. These subsurface valley deposits consist of bedded, medium-to coarse-grained sand with minor amounts of dark, heavy minerals and subrounded granules. Variation in the bedded sand ranges from loose, moist sand to clayey, compact sand. Where present, the clay typically forms a moist matrix embedded with coarse- to very coarse-grained sand. Multiple fining upward sequences are common. These sediments are tentatively classified as an undifferentiated Tertiary deposit because they lie between the upper Quaternary alluvium of the Congaree River flood-plain deposits and the underlying Cretaceous unit. This unit is only visible in the cross-section A-A'. This unit is thickest in the upper valley and thins towards the lower valley.

UKs **Upper Cretaceous sediment** – Poorly sorted, angular to rounded, cohesive matrix of clayey, silty, micaceous, fine- to very coarse-grained, smoky and white quartz sand. Rounded to angular gravel and pebble layers occur frequently, and thin beds of off-white to gray kaolin are also common. Cretaceous sediments are mottled white, tan, yellow, orange, and purplish-pink. Texturally it consists of alternating fine- and coarse-grained cross-bedded compact layers with multiple fining-upward sequences. The Upper Cretaceous unit has variable thickness, and its basal and upper surfaces are irregular and undulating.

EXPLANATION OF MAP SYMBOLS

- Contact – Identity and existence certain, location approximate.
- Gradational contact – Identity and existence certain, location approximate.
- Fluvial scarp – Identity and existence certain, location approximate. Hachures point off the scarp in the direction of the younger unit.
- 40-71 South Carolina Department of Natural Resources Geological Survey (SCGS) drill hole locations with log identification numbers. All logs are on file at the SCGS.
- RIC-390 South Carolina Department of Natural Resources Hydrology Section (SCDNR) well log locations with log identification numbers. All logs are on file at the SCDNR.
- x Exposure

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Nystrom, P.G., Jr., Willoughby, R.H., and Price, L.K., 1991, Cretaceous and Tertiary stratigraphy of the upper Coastal Plain, South Carolina, *in* Horton, J.W.J. and Zullo, V.A., eds., The Geology of the Carolinas, Chapter 12: Carolina Geological Society Fiftieth Anniversary Volume: Knoxville, TN, University of Tennessee Press, pp 21-240.

Shelley, D.C., 2007, Geologic Map of the Congaree 7.5- minute quadrangle, Richland County, South Carolina (1:24,000): South Carolina Department of Natural Resources Geological Survey, Geologic Quadrangle Map 31.

Shelley, D.C., 2007, Geologic Map of the Wateree 7.5- minute quadrangle, Richland and Calhoun County, South Carolina (1:24,000): South Carolina Department of Natural Resources Geological Survey, Geologic Quadrangle Map 36.

Soller, D.R. and Mills, H.H., 1991, Surficial geology and geomorphology, *in* Horton, J.W.J. and Zullo, V.A., eds., The Geology of the Carolinas: Carolina Geological Society Fiftieth Anniversary Volume: Knoxville, TN, University of Tennessee Press, p. 290-308.

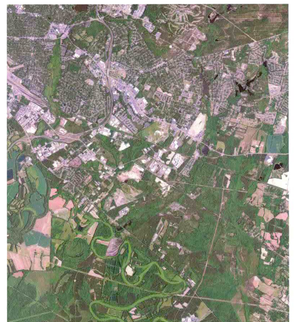


Figure 1. True-color aerial image (NAIP 2009) of the Fort Jackson South quadrangle shows the land-cover contrast between the Congaree River flood plain and the densely populated urban environment.

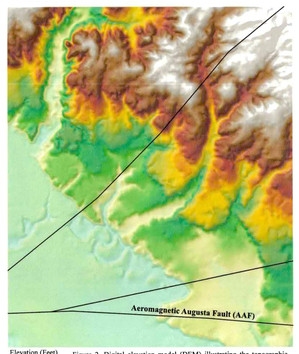


Figure 2. Digital elevation model (DEM) illustrating the topographic relief between the high-elevation sand hills and the low-elevation flood-plain valley. Position of the Aeromagnetic Augusta Fault from Maybin and others (1998).

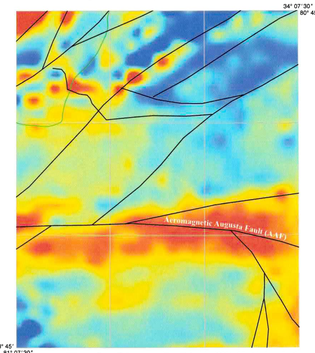


Figure 3. Aeromagnetic map (Daniels, 2005) of Fort Jackson South quadrangle positioned in the center with surrounding quadrangle area. Position of aeromagnetic Augusta fault from Maybin and others (1998). Green line represents the Fall Line.

www.dnr.sc.gov/geology

SCALE 1:24,000

0 .5 1 kilometer

0 .5 1 mile

0 1000 2000 3000 4000 5000 feet

CONTOUR INTERVAL 10 FEET

Base Map: U. S. Geological Survey
Fort Jackson South 7.5' Quadrangle, 1982
1927 North American Datum
1982 Magnetic North Declination 4° west

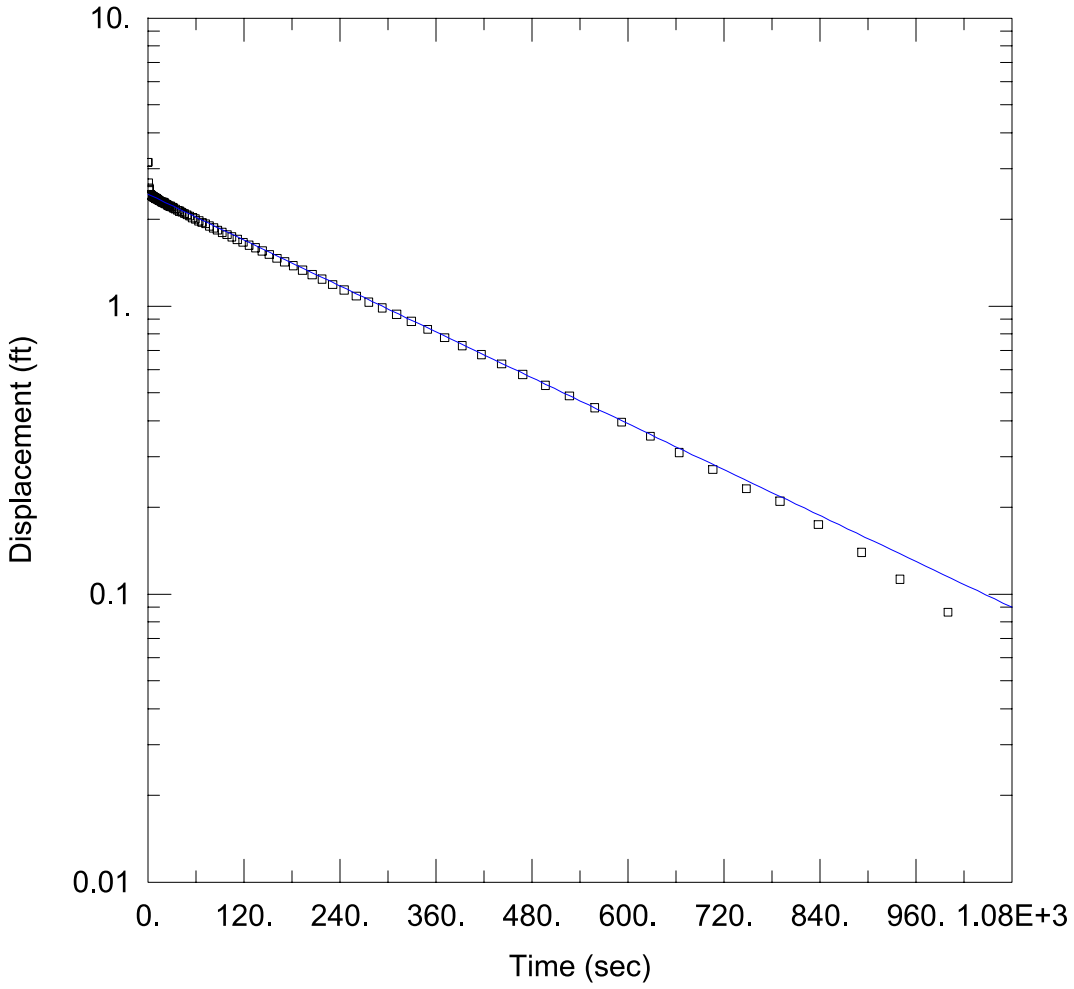
ADJOINING 7.5' QUADRANGLE NAMES

1	2	3
4		5
6	7	8

1 Columbia North
2 Columbia West
3 Wessels Pond
4 Southwest Columbia
5 Congaree
6 Gaston
7 Saylors Lake
8 Gadsden

Geology mapped 2009-2011
Digital cartography by Jennifer L. Krauser, 2011
For publications contact:
South Carolina Geological Survey
5 Geology Road, Columbia, SC 29212
(803) 896-7714

Appendix O
Hydraulic Characterization Results



W-6 FALLING HEAD

Data Set: L:\...\W-6_Falling.aqt
Date: 11/04/21 Time: 08:24:45

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-6

AQUIFER DATA

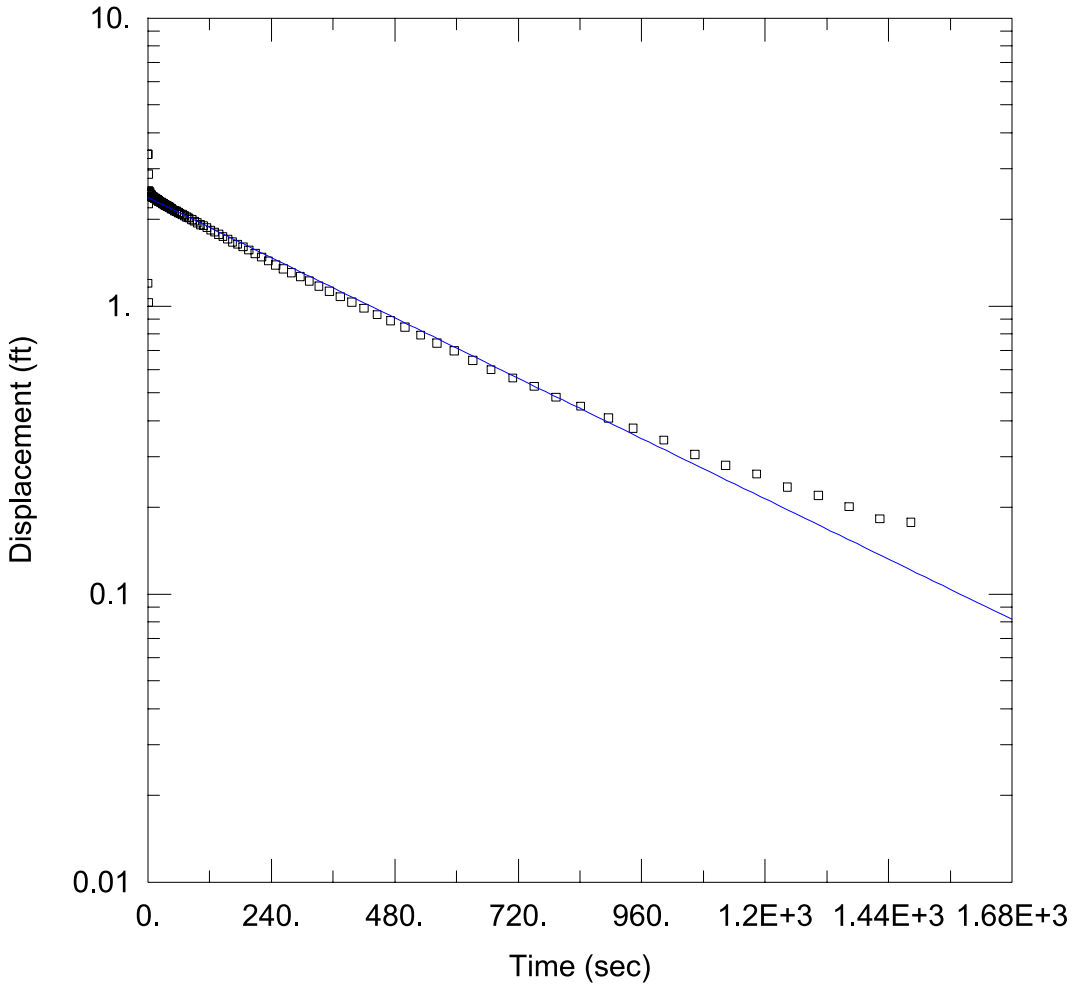
Saturated Thickness: 23.82 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W-6)

Initial Displacement: 3.156 ft
Total Well Penetration Depth: 18.16 ft
Casing Radius: 0.083 ft
Static Water Column Height: 18.16 ft
Screen Length: 5. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.6102 ft/day
y0 = 2.443 ft



W-6 RISING HEAD

Data Set: L:\...\W-6_Rising.aqt
Date: 11/04/21 Time: 08:44:35

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-6

AQUIFER DATA

Saturated Thickness: 23.82 ft Anisotropy Ratio (Kz/Kr): 1.

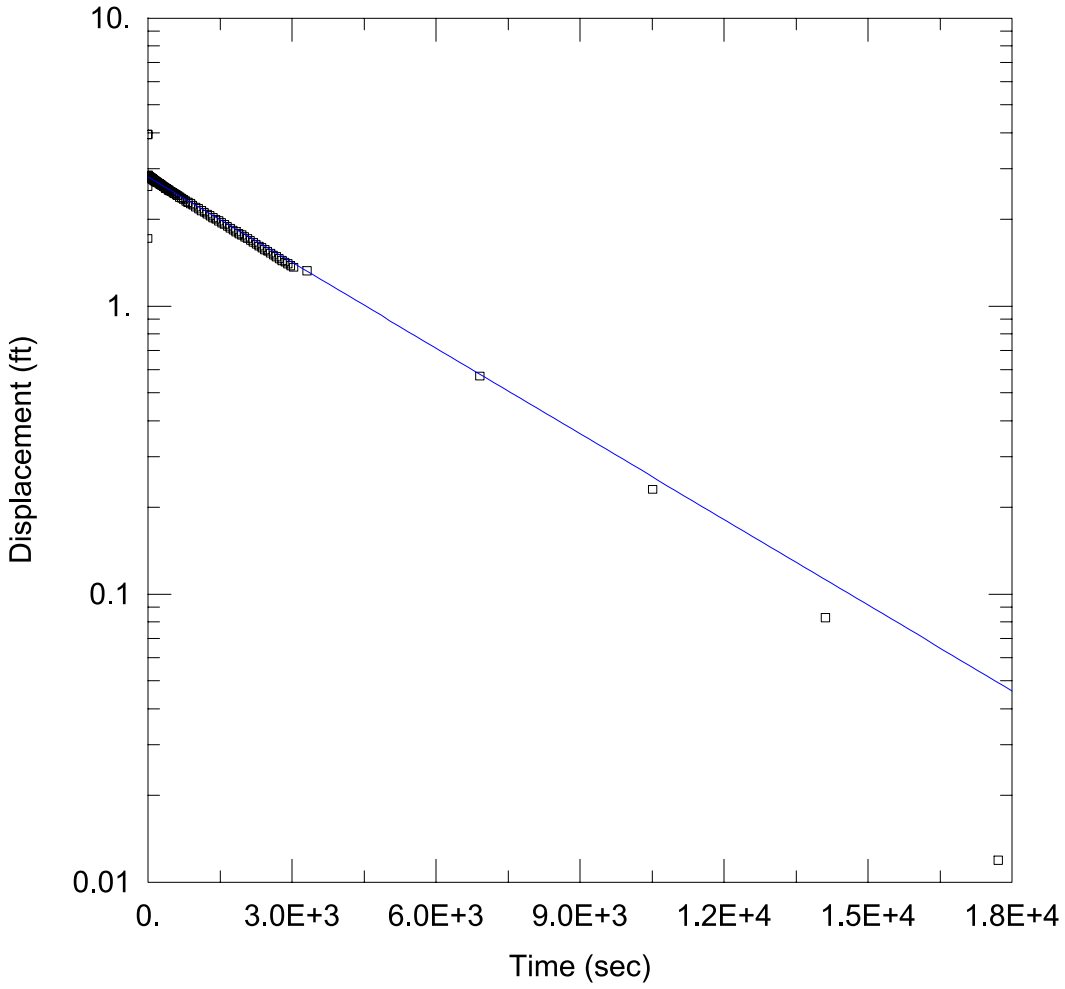
WELL DATA (W-6)

Initial Displacement: 3.365 ft
Total Well Penetration Depth: 18.16 ft
Casing Radius: 0.083 ft
Static Water Column Height: 18.16 ft
Screen Length: 5. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.4007 ft/day y0 = 2.381 ft



W-11 FALLING HEAD

Data Set: L:\...\W-11_Falling.aqt
Date: 11/04/21 Time: 08:36:43

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-11

AQUIFER DATA

Saturated Thickness: 20.61 ft Anisotropy Ratio (Kz/Kr): 1.

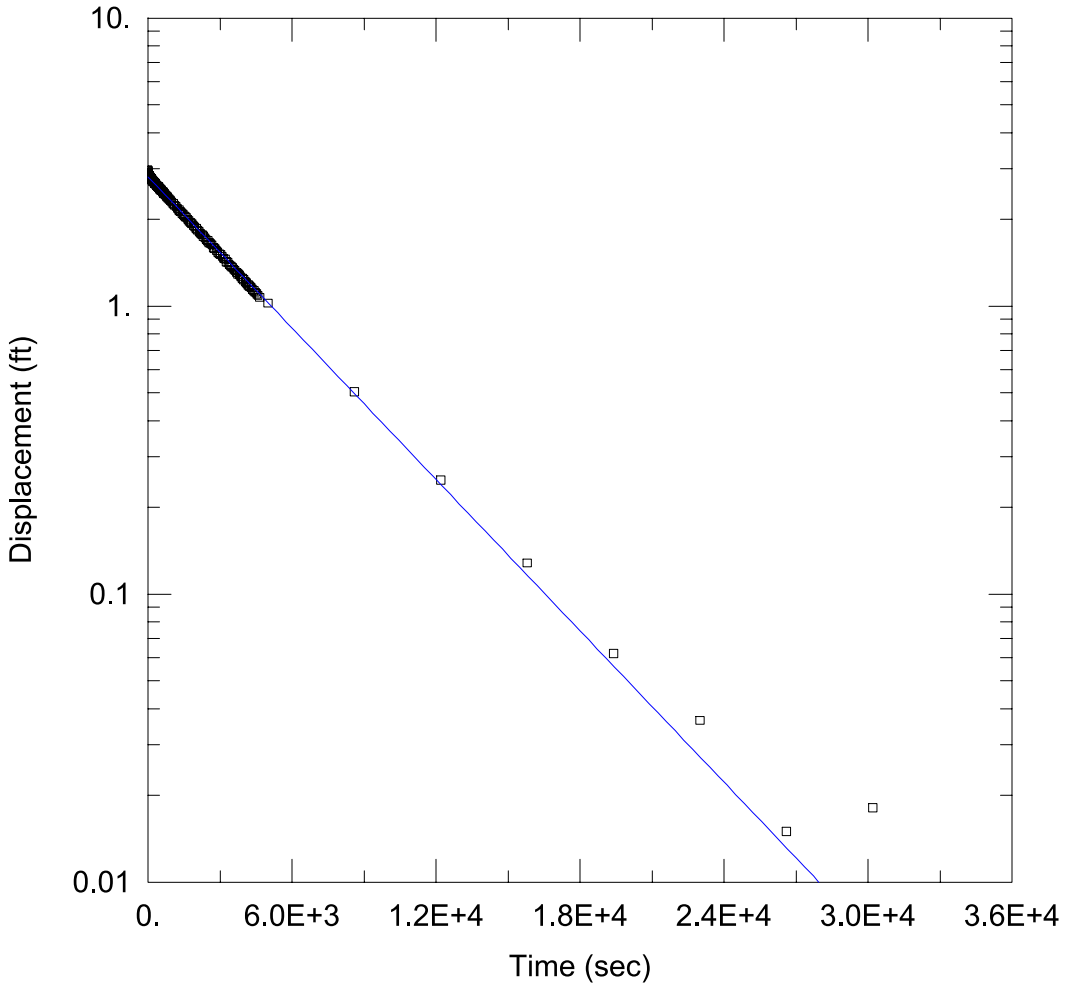
WELL DATA (W-11)

Initial Displacement: 3.937 ft
Total Well Penetration Depth: 10.08 ft
Casing Radius: 0.083 ft
Static Water Column Height: 10.08 ft
Screen Length: 3. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.06298 ft/day y0 = 2.809 ft



W-11 RISING HEAD

Data Set: L:\...\W-11_Rising.aqt
Date: 11/04/21 Time: 08:56:19

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-11

AQUIFER DATA

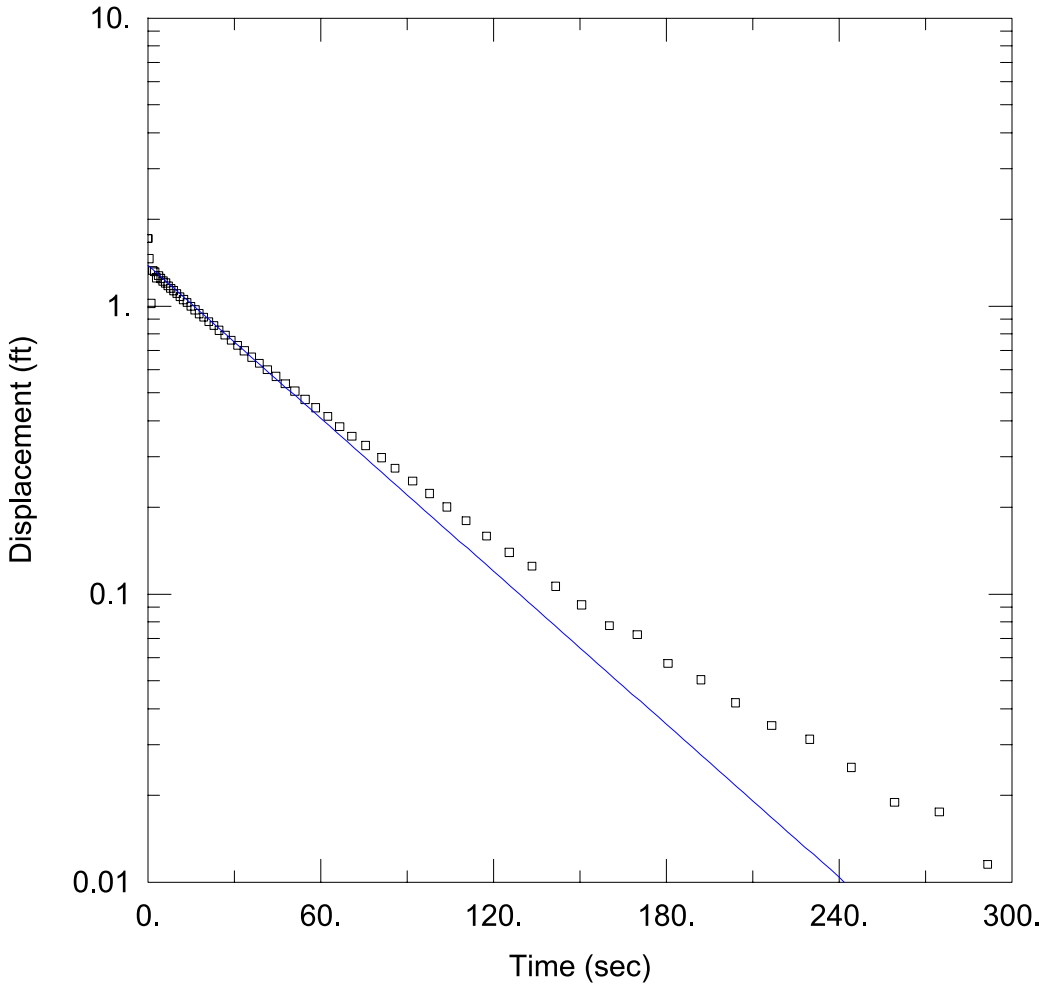
Saturated Thickness: 20.61 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W-11)

Initial Displacement: 2.959 ft
Total Well Penetration Depth: 10.08 ft
Casing Radius: 0.083 ft
Static Water Column Height: 10.08 ft
Screen Length: 3. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.05564 ft/day
y0 = 2.809 ft



W-19B FALLING HEAD

Data Set: L:\...\W-19B_Falling.aqt
Date: 11/04/21 Time: 09:01:51

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-19B

AQUIFER DATA

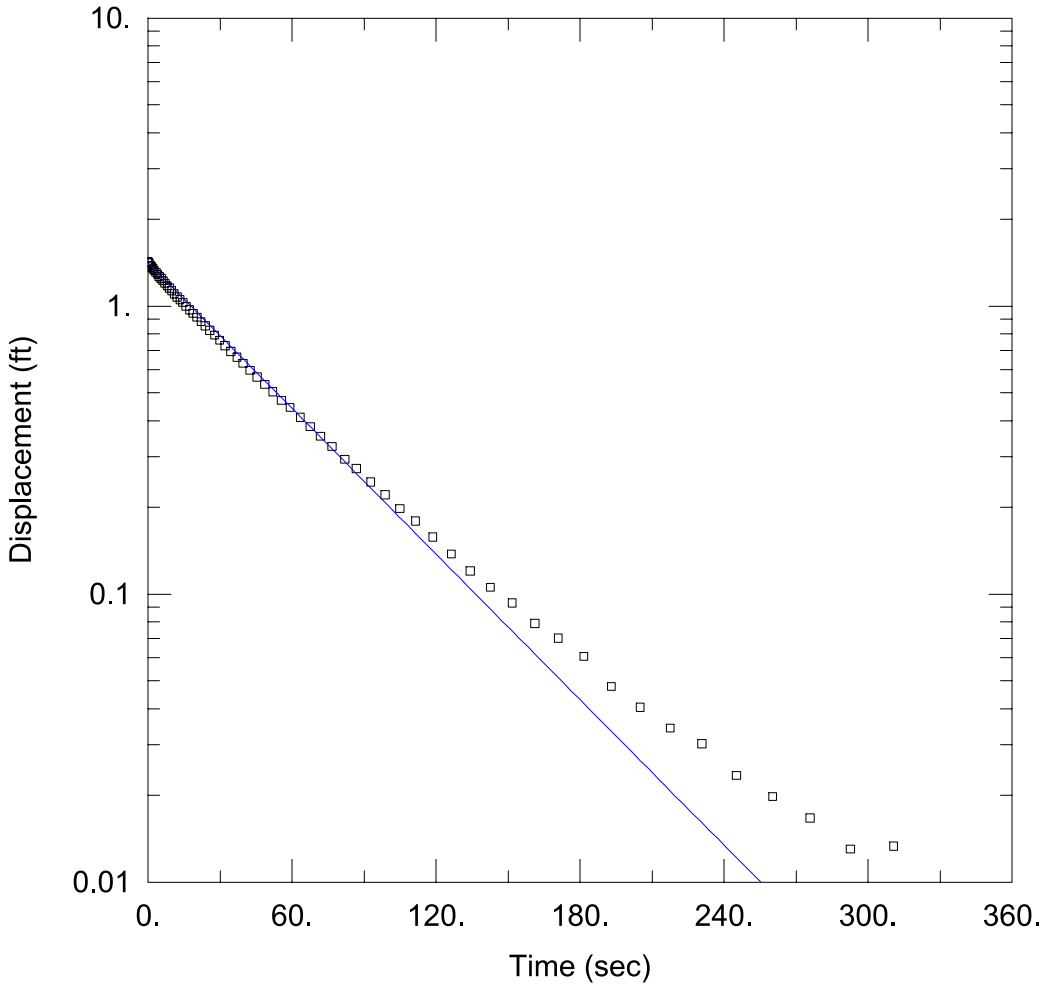
Saturated Thickness: 18.19 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W-19B)

Initial Displacement: 1.717 ft
Total Well Penetration Depth: 18.36 ft
Casing Radius: 0.167 ft
Static Water Column Height: 18.36 ft
Screen Length: 10. ft
Well Radius: 0.167 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 8.65 ft/day
y0 = 1.382 ft



W-19B RISING HEAD

Data Set: L:\...\W-19B_Rising.aqt
Date: 11/04/21 Time: 09:05:04

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-19B

AQUIFER DATA

Saturated Thickness: 18.19 ft Anisotropy Ratio (Kz/Kr): 1.

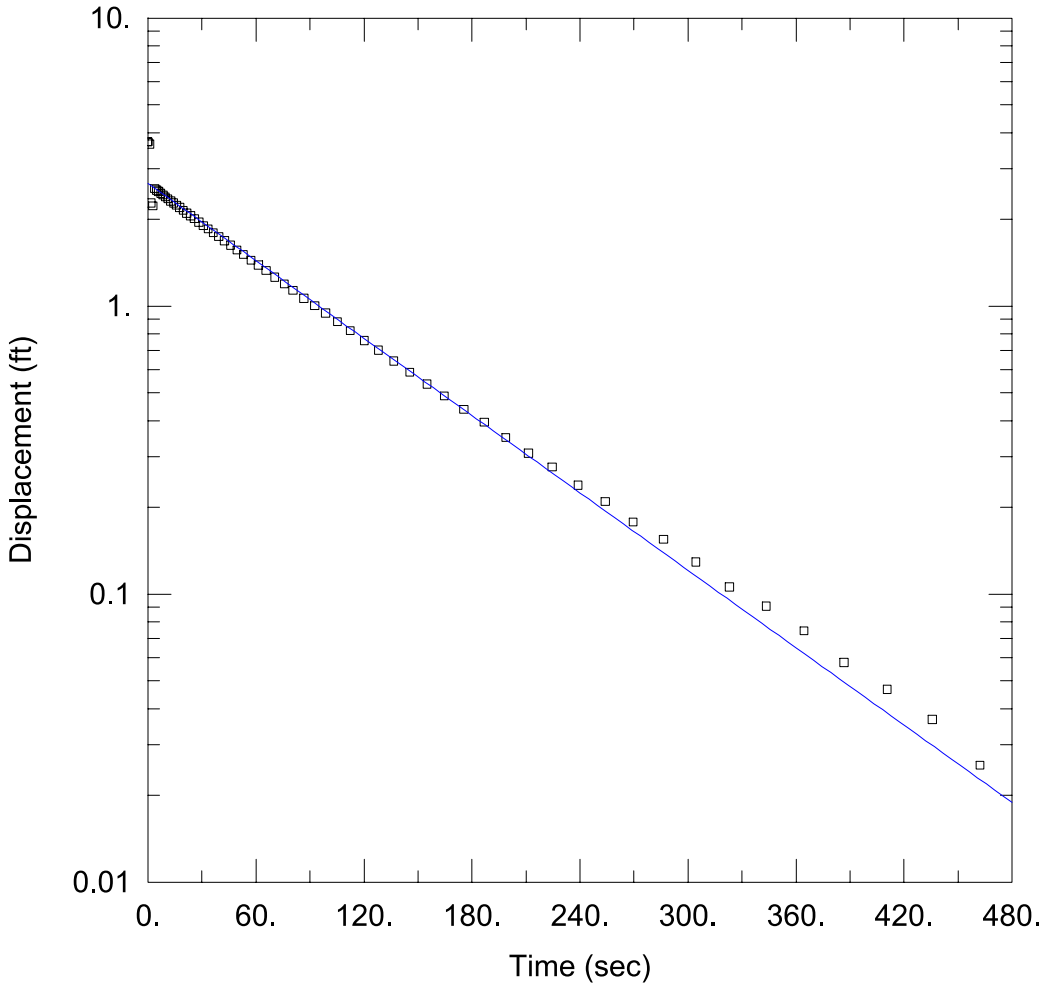
WELL DATA (W-19B)

Initial Displacement: 1.424 ft
Total Well Penetration Depth: 18.36 ft
Casing Radius: 0.167 ft
Static Water Column Height: 18.36 ft
Screen Length: 10. ft
Well Radius: 0.167 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 8.228 ft/day y0 = 1.409 ft



W-65 FALLING HEAD

Data Set: L:\...\W-65_Falling.aqt
Date: 11/04/21 Time: 09:06:26

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-65

AQUIFER DATA

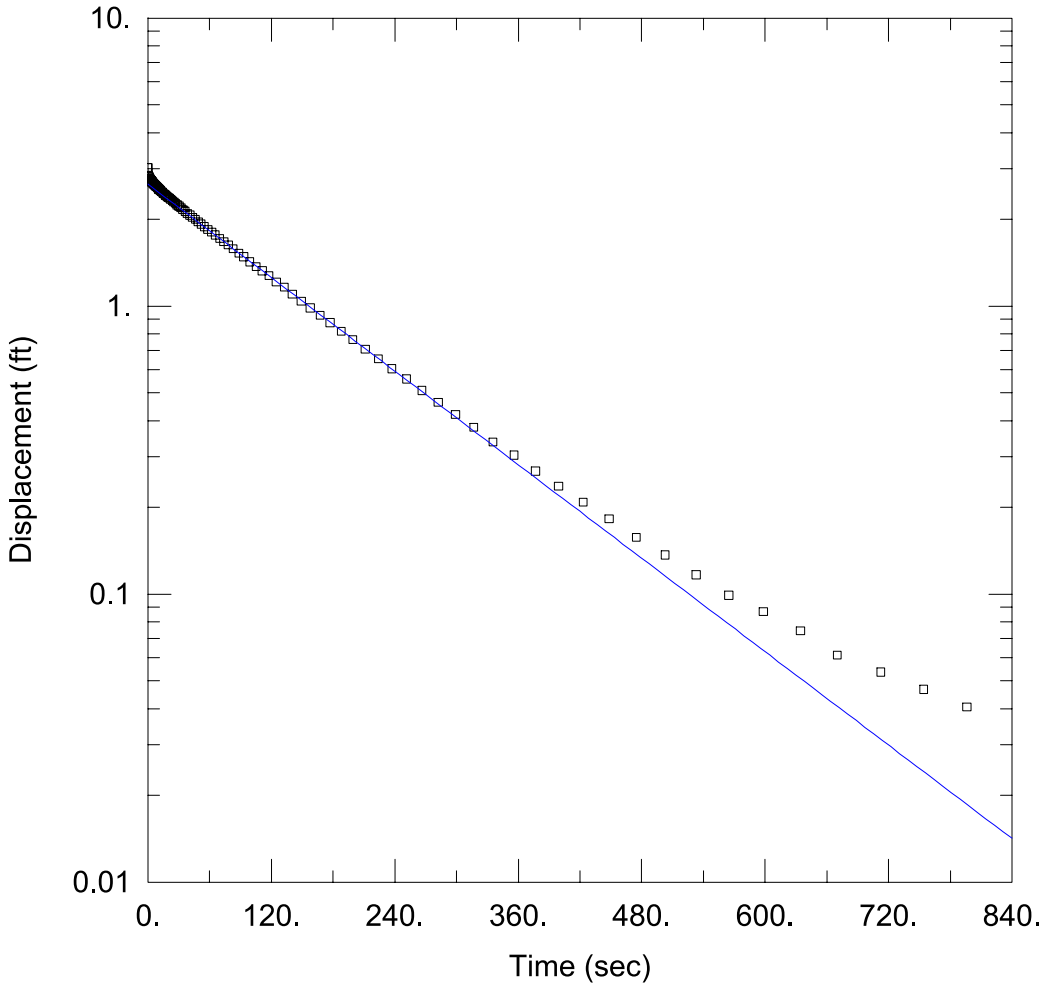
Saturated Thickness: 22.2 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W-65)

Initial Displacement: 3.716 ft
Total Well Penetration Depth: 22.39 ft
Casing Radius: 0.083 ft
Static Water Column Height: 22.39 ft
Screen Length: 5. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 2.492 ft/day
y0 = 2.66 ft



W-65 RISING HEAD

Data Set: L:\...\W-65_Rising.aqt
Date: 11/04/21 Time: 09:08:24

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-65

AQUIFER DATA

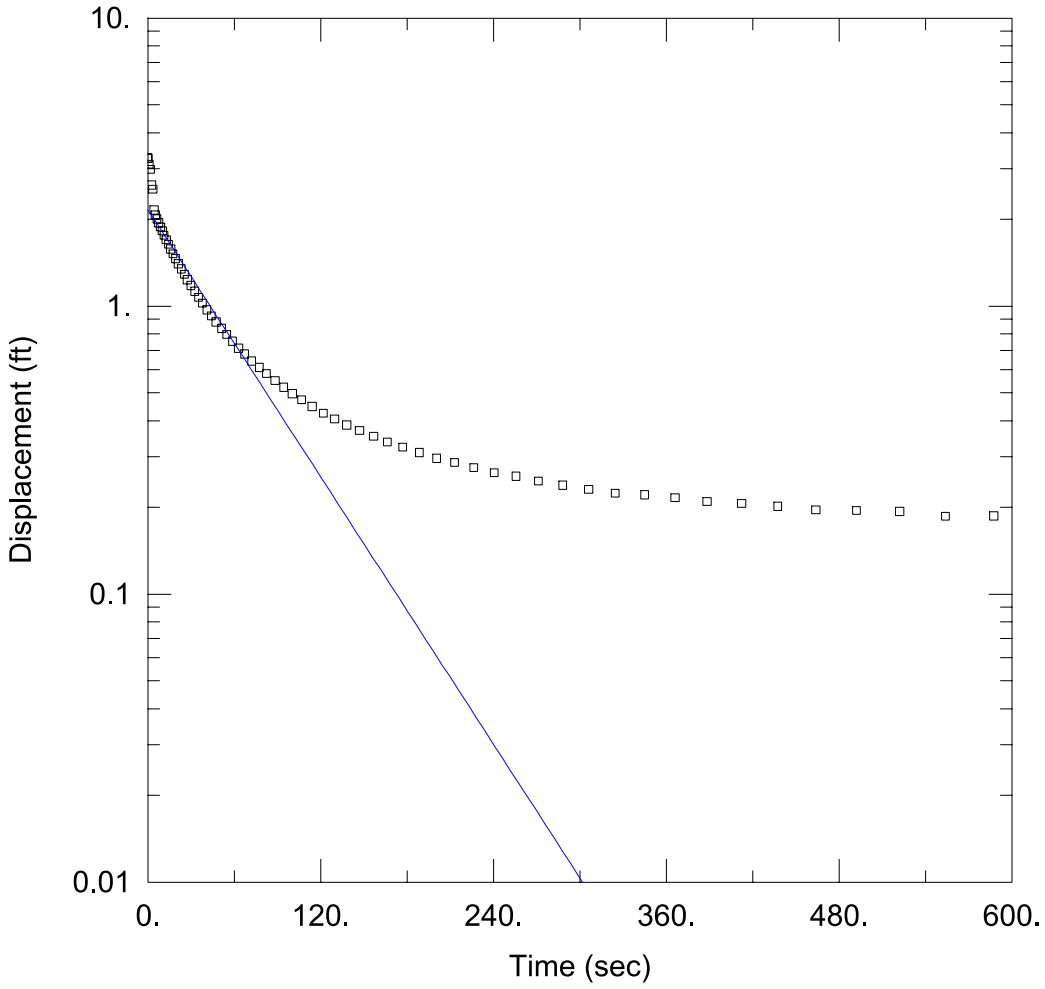
Saturated Thickness: 22.2 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W-65)

Initial Displacement: 3.014 ft
Total Well Penetration Depth: 22.39 ft
Casing Radius: 0.083 ft
Static Water Column Height: 22.39 ft
Screen Length: 5. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 1.505 ft/day
y0 = 2.646 ft



W-67 FALLING HEAD

Data Set: L:\...\W-67_Falling.aqt
Date: 11/04/21 Time: 09:11:28

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-67

AQUIFER DATA

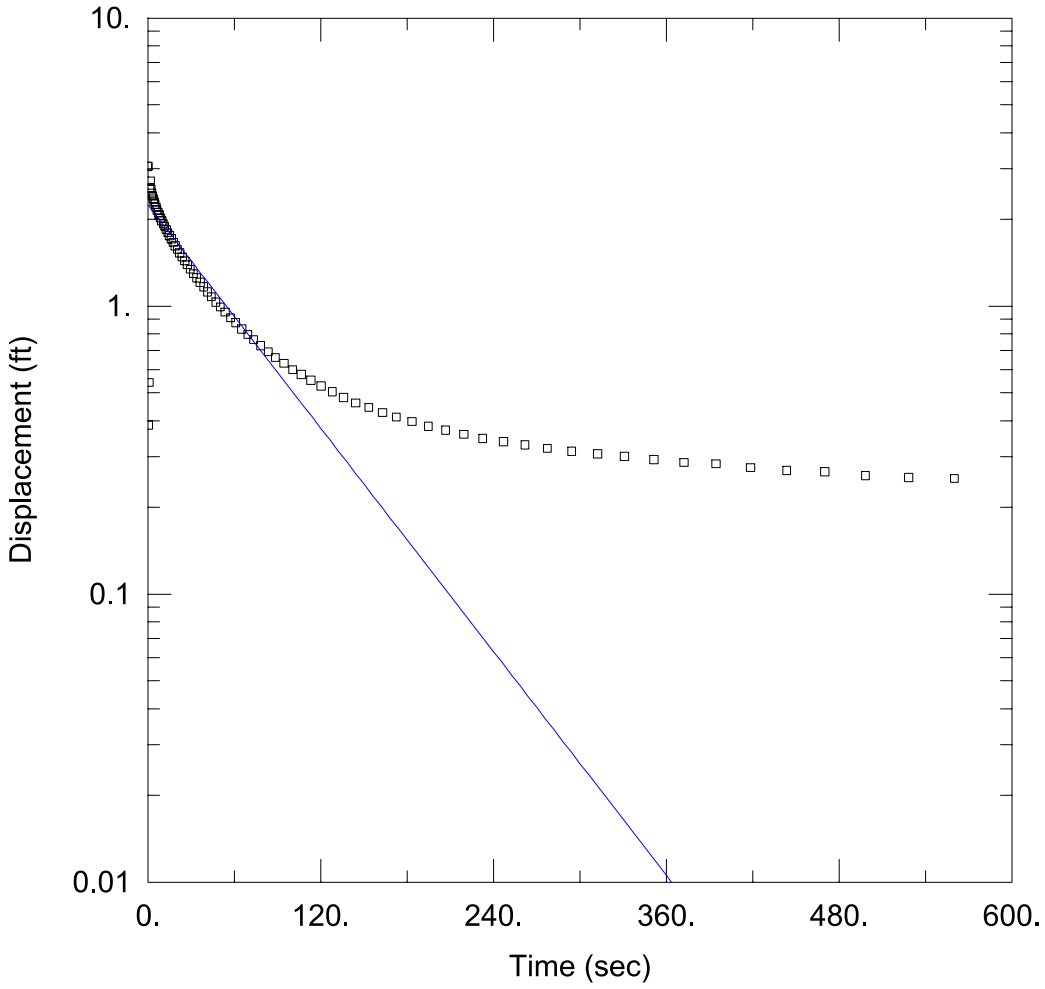
Saturated Thickness: 25.24 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W-67)

Initial Displacement: 3.253 ft
Total Well Penetration Depth: 18.05 ft
Casing Radius: 0.083 ft
Static Water Column Height: 18.05 ft
Screen Length: 10. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 1.929 ft/day
y0 = 2.153 ft



W-67 RISING HEAD

Data Set: L:\...\W-67_Rising.aqt
Date: 11/04/21 Time: 09:13:32

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-67

AQUIFER DATA

Saturated Thickness: 25.24 ft Anisotropy Ratio (Kz/Kr): 1.

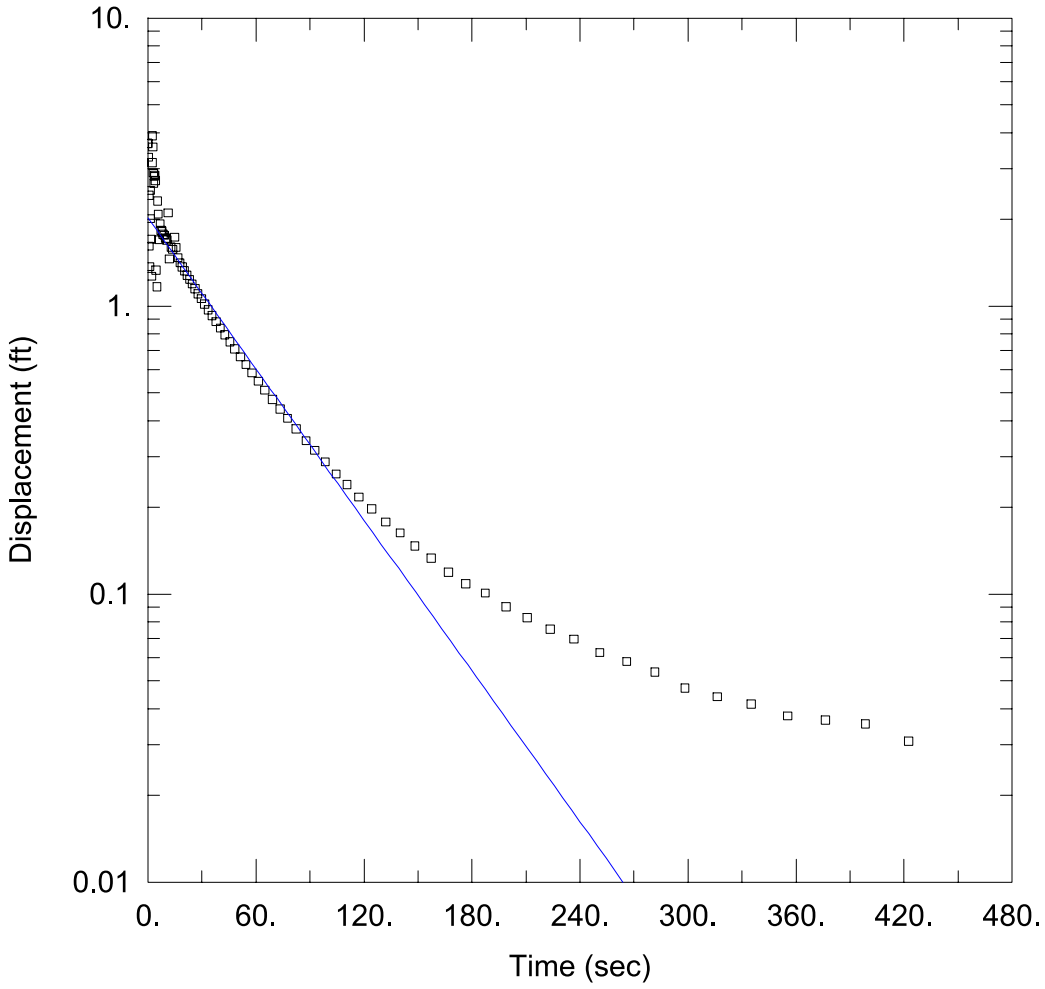
WELL DATA (W-67)

Initial Displacement: 3.051 ft
Total Well Penetration Depth: 18.05 ft
Casing Radius: 0.083 ft
Static Water Column Height: 18.05 ft
Screen Length: 10. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 1.612 ft/day y0 = 2.24 ft



W-68 FALLING HEAD

Data Set: L:\...\W-68_Falling.aqt
Date: 11/04/21 Time: 09:24:58

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-68

AQUIFER DATA

Saturated Thickness: 15.82 ft Anisotropy Ratio (Kz/Kr): 1.

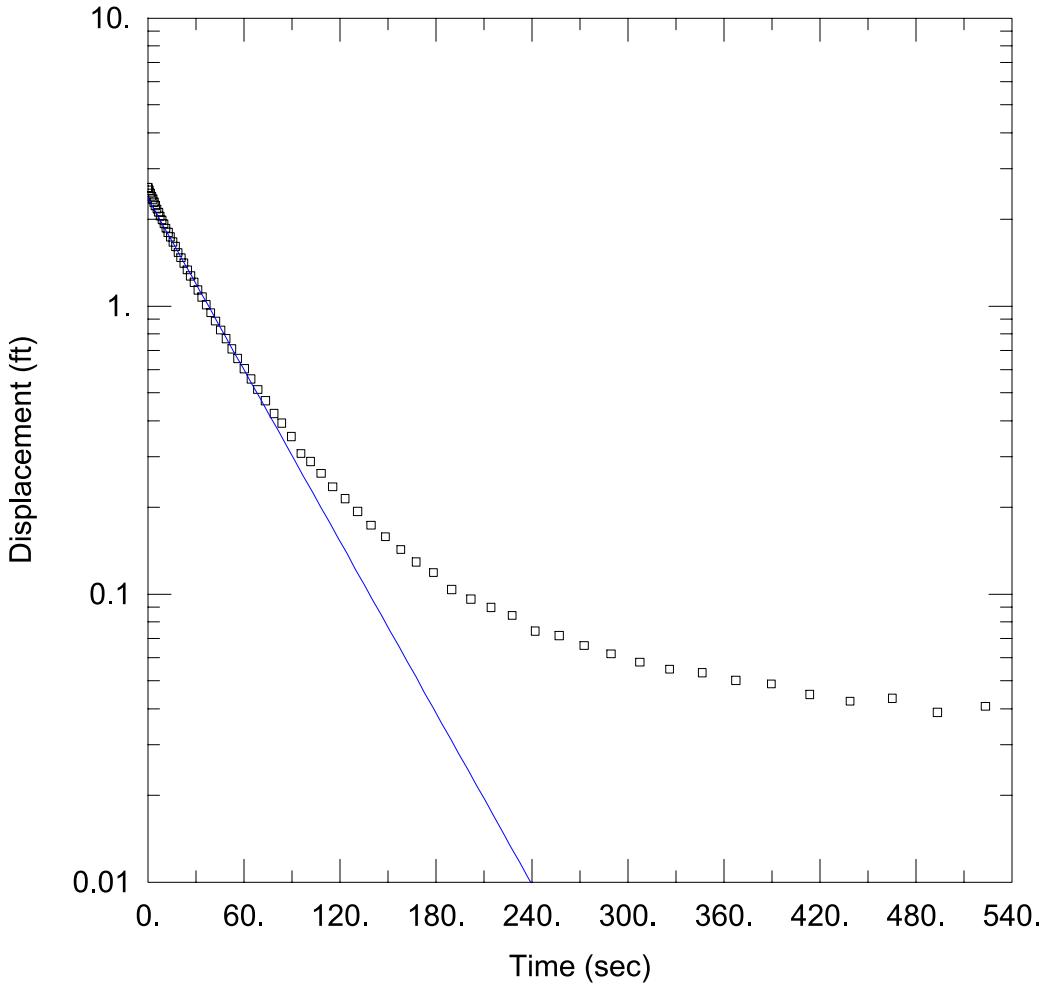
WELL DATA (W-68)

Initial Displacement: 3.668 ft
Total Well Penetration Depth: 16.46 ft
Casing Radius: 0.083 ft
Static Water Column Height: 16.46 ft
Screen Length: 5. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 4.644 ft/day y0 = 2.016 ft



W-68 RISING HEAD

Data Set: L:\...\W-68_Rising.aqt
Date: 11/04/21 Time: 09:27:20

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-68

AQUIFER DATA

Saturated Thickness: 15.82 ft Anisotropy Ratio (Kz/Kr): 1.

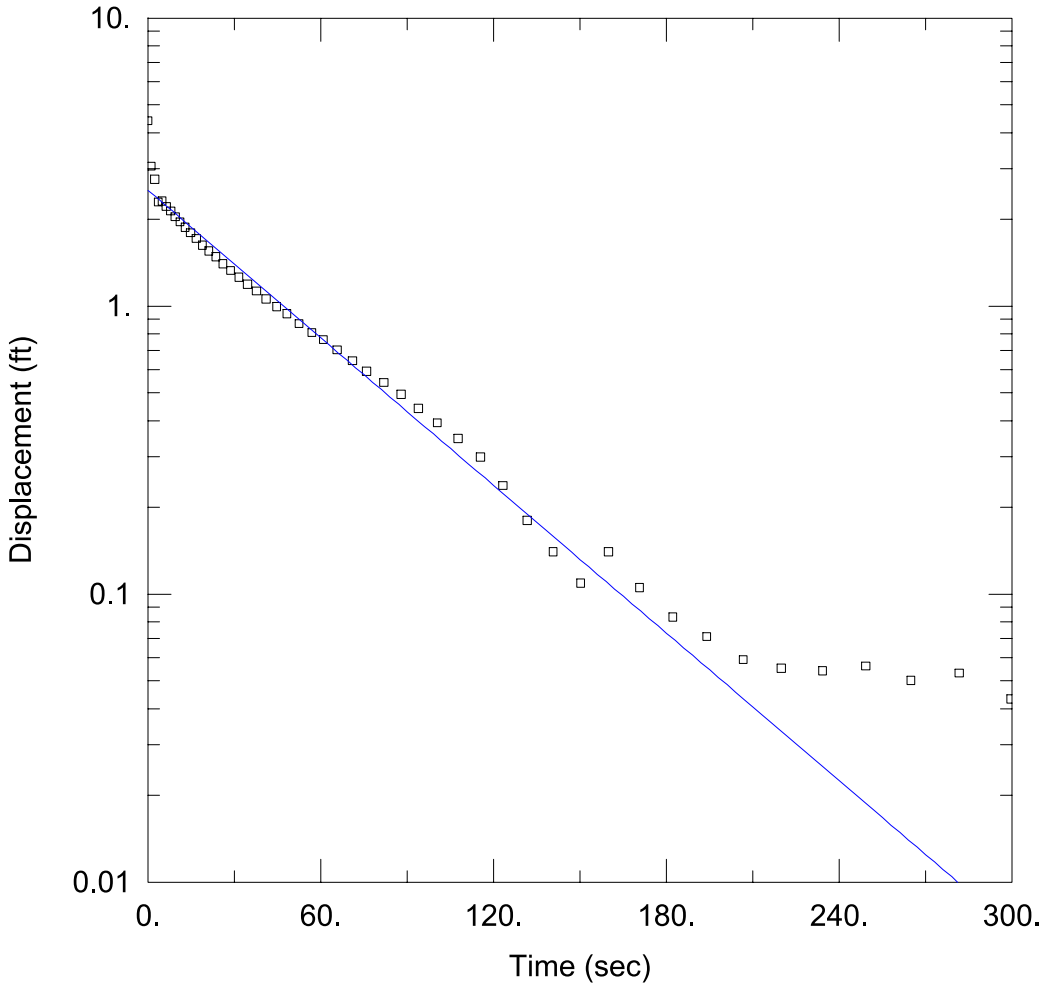
WELL DATA (W-68)

Initial Displacement: 2.576 ft
Total Well Penetration Depth: 16.46 ft
Casing Radius: 0.083 ft
Static Water Column Height: 16.46 ft
Screen Length: 5. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 5.279 ft/day y0 = 2.361 ft



W-94 FALLING HEAD

Data Set: O:\...\W-94_cks_Falling.aqt
Date: 02/14/20 Time: 10:52:19

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-94

AQUIFER DATA

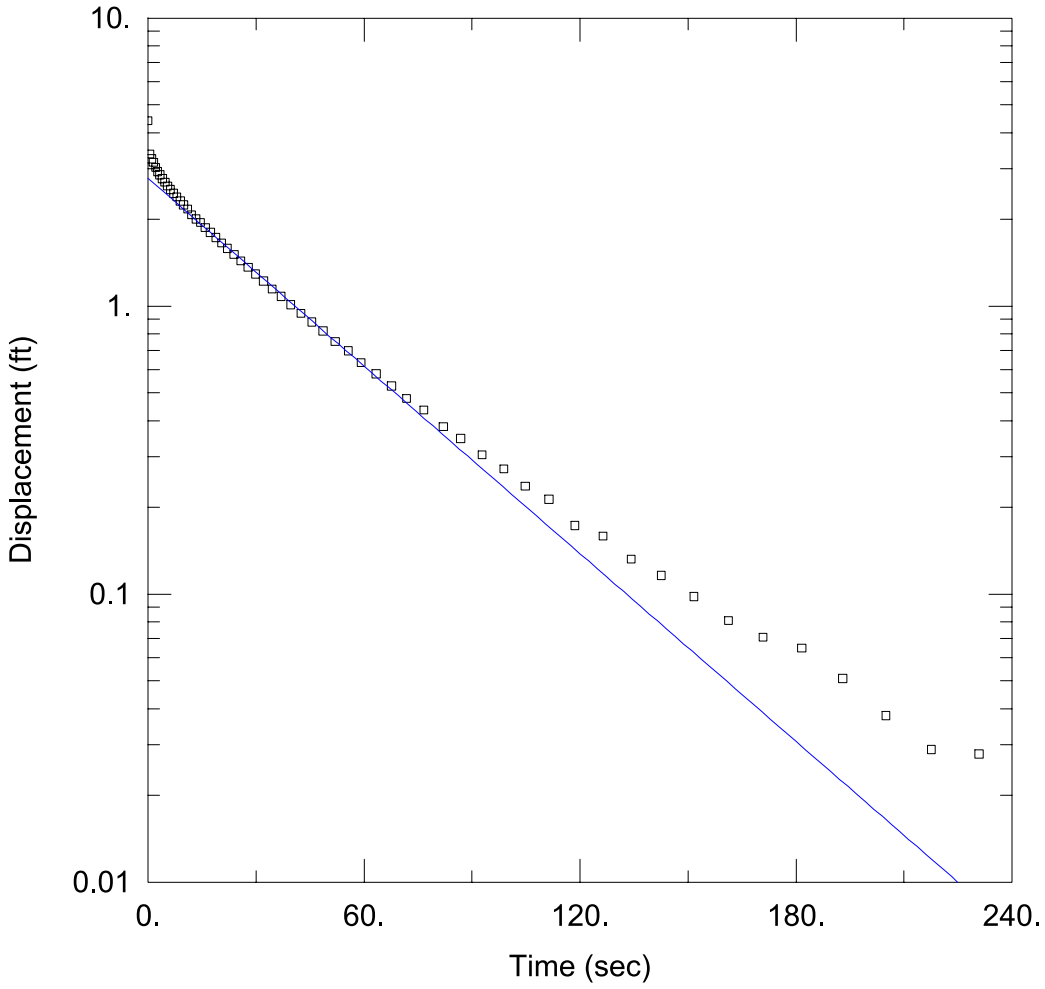
Saturated Thickness: 19.62 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W-94)

Initial Displacement: 4.4 ft
Total Well Penetration Depth: 19.77 ft
Casing Radius: 0.083 ft
Static Water Column Height: 20.02 ft
Screen Length: 5. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 4.667 ft/day
y0 = 2.516 ft



W-94 RISING HEAD

Data Set: O:\...\W-94_cks_Rising.aqt
Date: 02/14/20 Time: 10:52:37

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-94

AQUIFER DATA

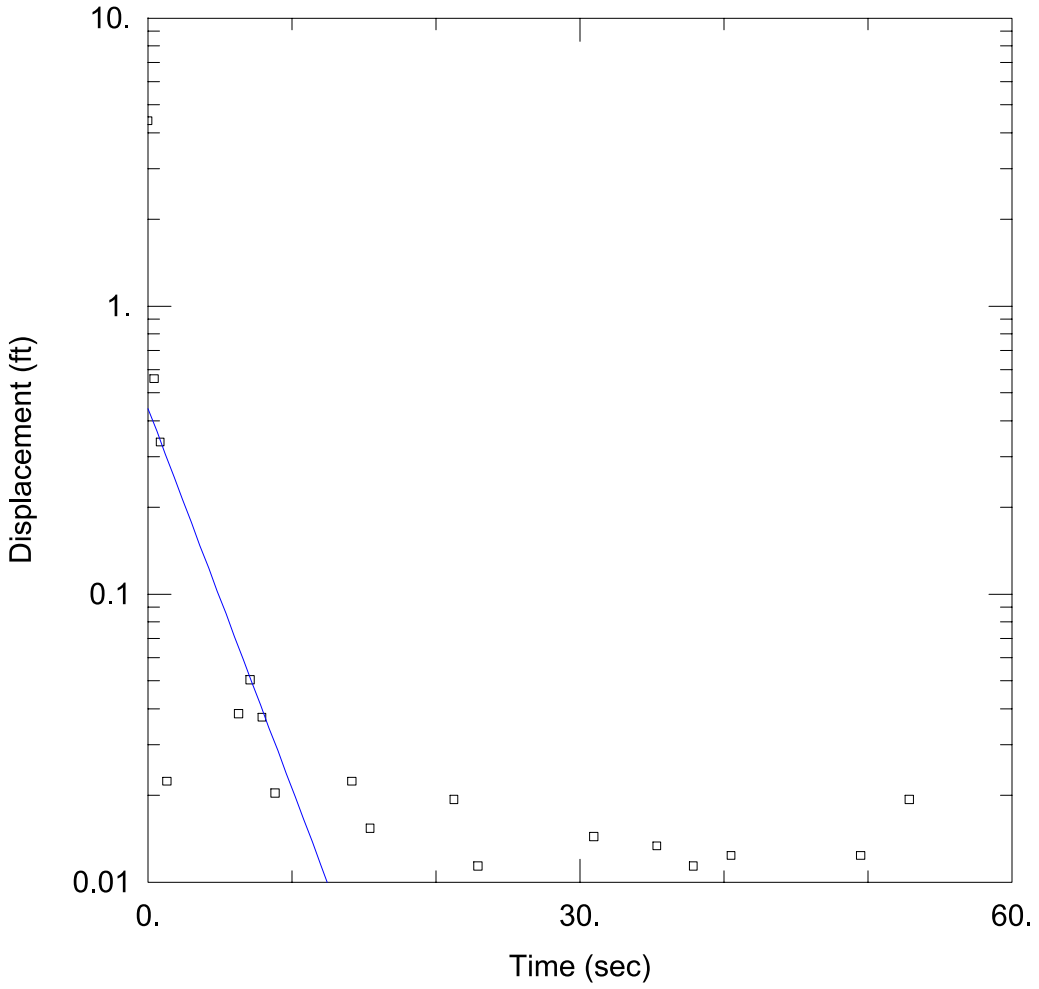
Saturated Thickness: 19.62 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W-94)

Initial Displacement: 4.4 ft
Total Well Penetration Depth: 19.77 ft
Casing Radius: 0.083 ft
Static Water Column Height: 20.02 ft
Screen Length: 5. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 5.937 ft/day
y0 = 2.773 ft



W-95 FALLING HEAD

Data Set: O:\...\W-95_cks_Falling.aqt
Date: 02/14/20 Time: 10:53:03

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-95

AQUIFER DATA

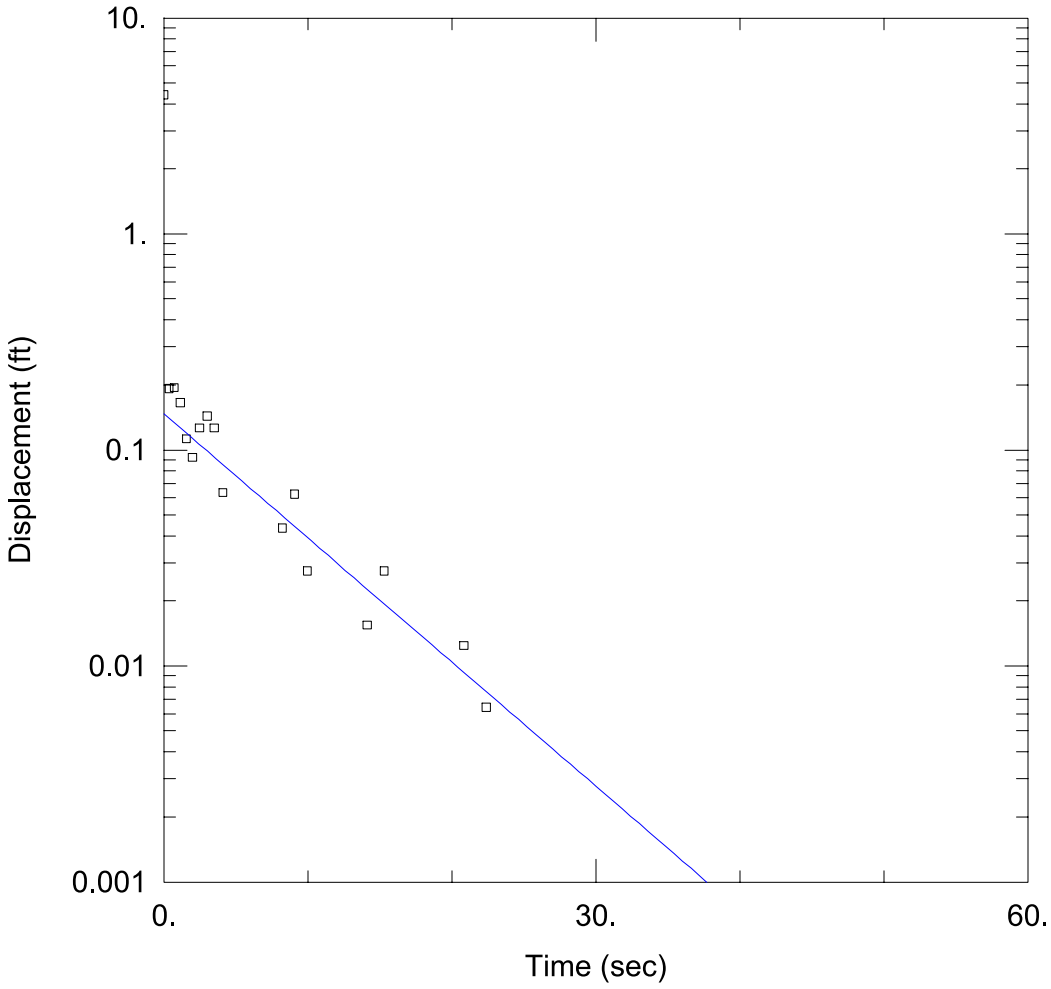
Saturated Thickness: 75.15 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W-95)

Initial Displacement: 4.4 ft
Total Well Penetration Depth: 25.24 ft
Casing Radius: 0.083 ft
Static Water Column Height: 25.49 ft
Screen Length: 5. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 59.84 ft/day
y0 = 0.4406 ft



W-95 RISING HEAD

Data Set: O:\...\W-95_cks_Rising.aqt
Date: 02/14/20 Time: 10:53:23

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-95

AQUIFER DATA

Saturated Thickness: 75.15 ft Anisotropy Ratio (Kz/Kr): 1.

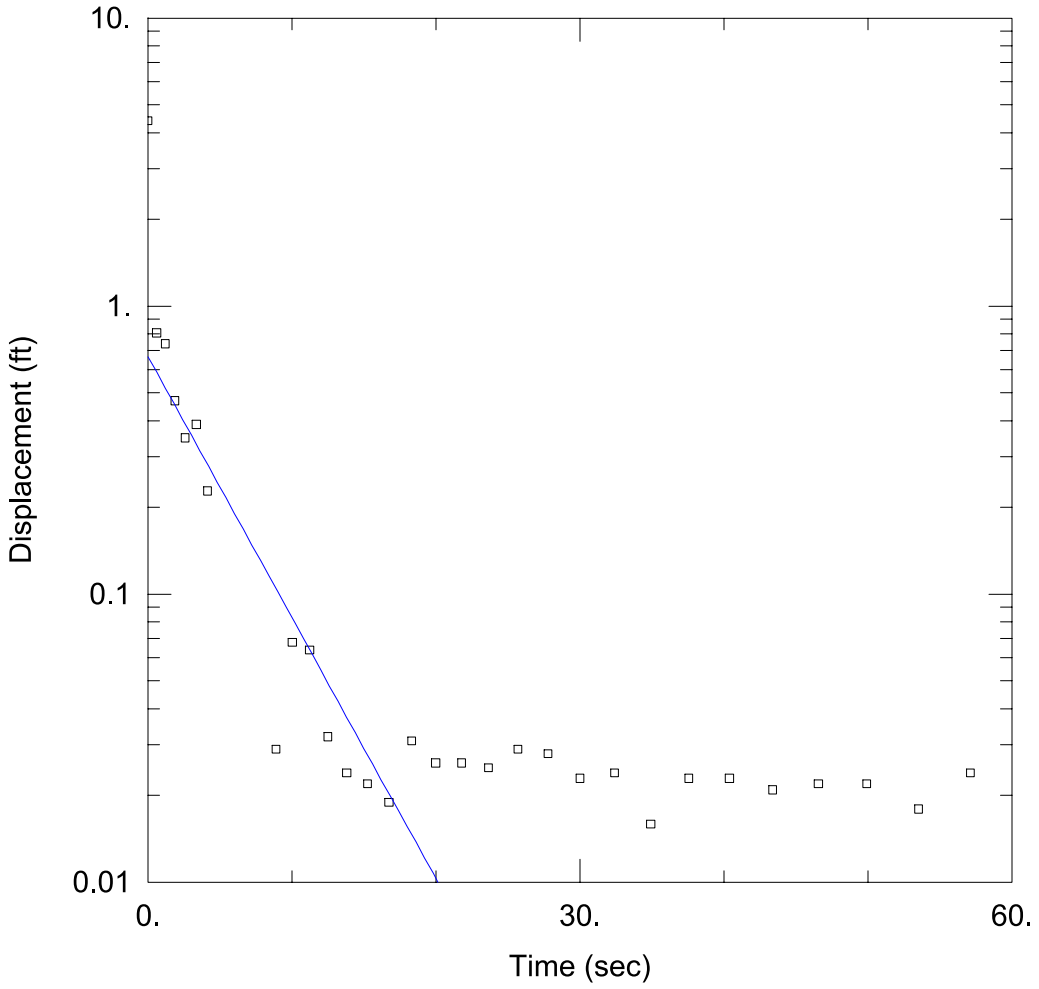
WELL DATA (W-95)

Initial Displacement: 4.4 ft
Total Well Penetration Depth: 25.24 ft
Casing Radius: 0.083 ft
Static Water Column Height: 25.49 ft
Screen Length: 5. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 26.05 ft/day y0 = 0.1468 ft



W-96 FALLING HEAD

Data Set: O:\...\W-96_cks_Falling.aqt
Date: 02/14/20 Time: 10:53:44

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-96

AQUIFER DATA

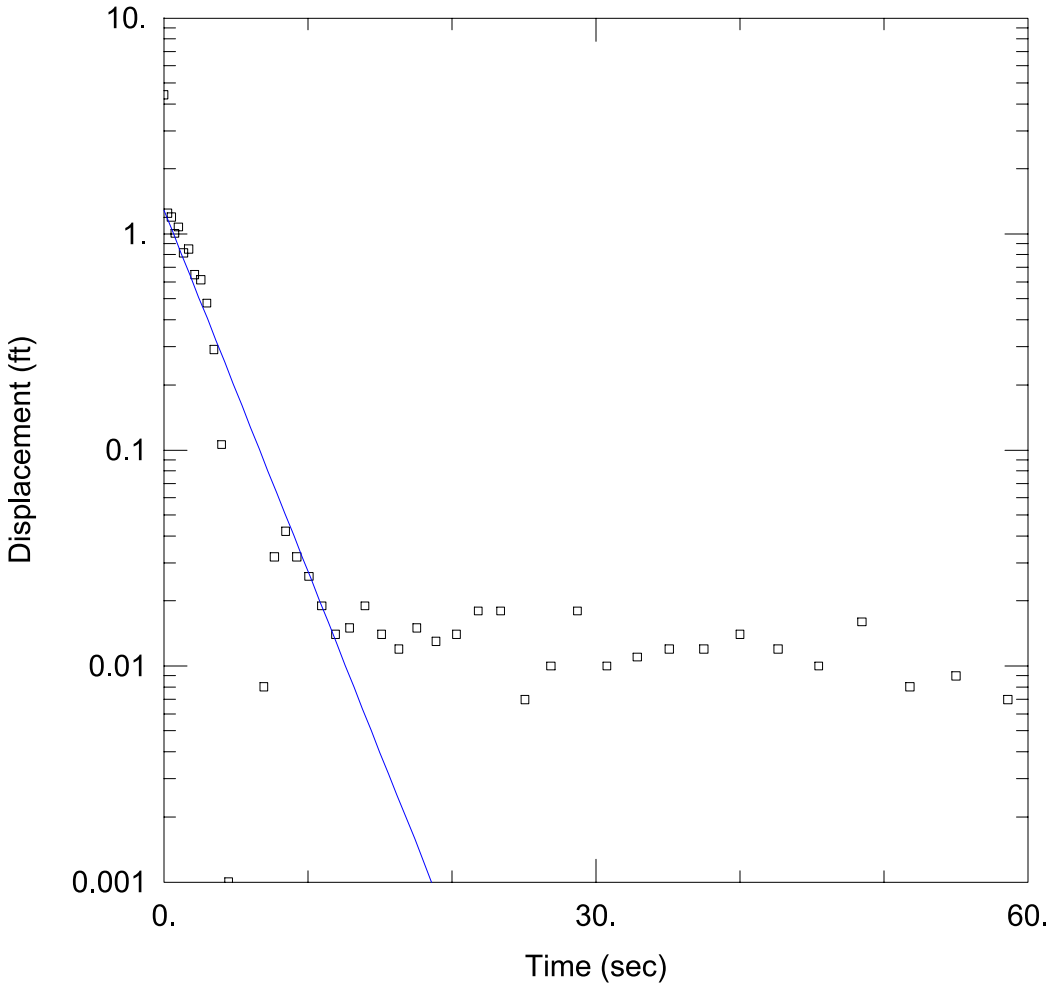
Saturated Thickness: 37.73 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W-96)

Initial Displacement: 4.4 ft
Total Well Penetration Depth: 21.45 ft
Casing Radius: 0.083 ft
Static Water Column Height: 21.7 ft
Screen Length: 5. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 41.19 ft/day
y0 = 0.666 ft



W-96 RISING HEAD

Data Set: O:\...\W-96_cks_Rising.aqt
Date: 02/14/20 Time: 10:54:02

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-96

AQUIFER DATA

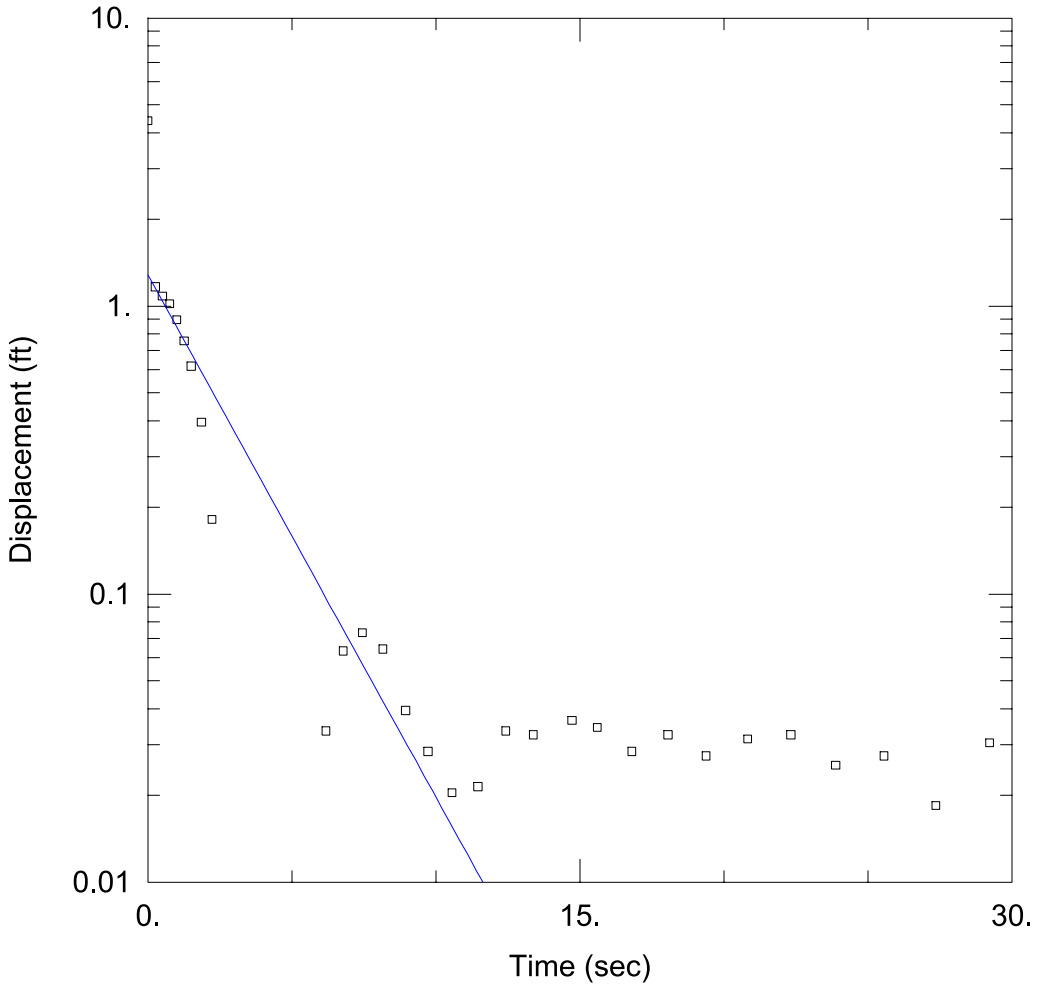
Saturated Thickness: 37.73 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W-96)

Initial Displacement: 4.4 ft
Total Well Penetration Depth: 21.45 ft
Casing Radius: 0.083 ft
Static Water Column Height: 21.7 ft
Screen Length: 5. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 75.97 ft/day
y0 = 1.283 ft



W-97 FALLING HEAD

Data Set: O:\...\W-97_cks_Falling.aqt
Date: 02/14/20 Time: 10:51:45

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-97

AQUIFER DATA

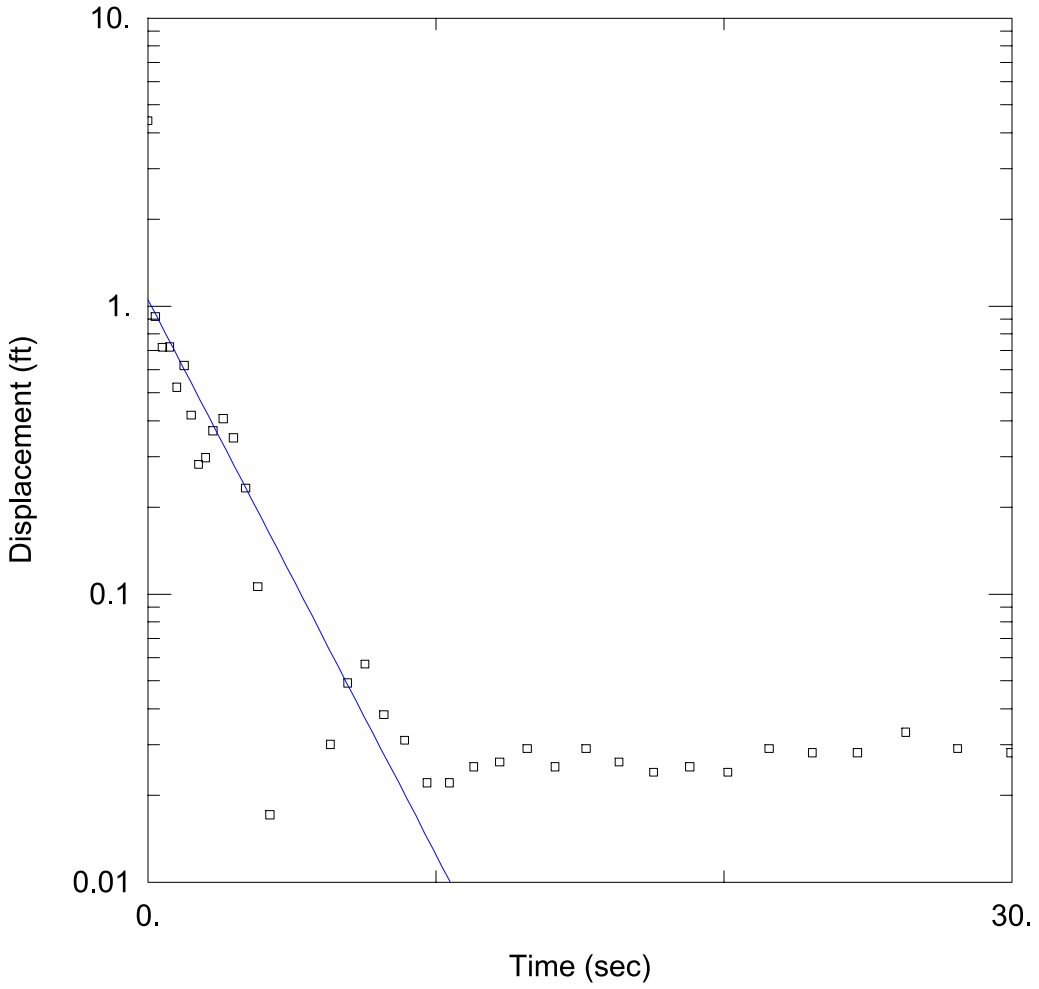
Saturated Thickness: 33.08 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W-97)

Initial Displacement: 4.4 ft
Total Well Penetration Depth: 14.21 ft
Casing Radius: 0.083 ft
Static Water Column Height: 14.46 ft
Screen Length: 5. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 78. ft/day
y0 = 1.279 ft



W-97 RISING HEAD

Data Set: O:\...\W-97_cks_Rising.aqt
Date: 02/14/20 Time: 10:50:56

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-97

AQUIFER DATA

Saturated Thickness: 33.08 ft Anisotropy Ratio (Kz/Kr): 1.

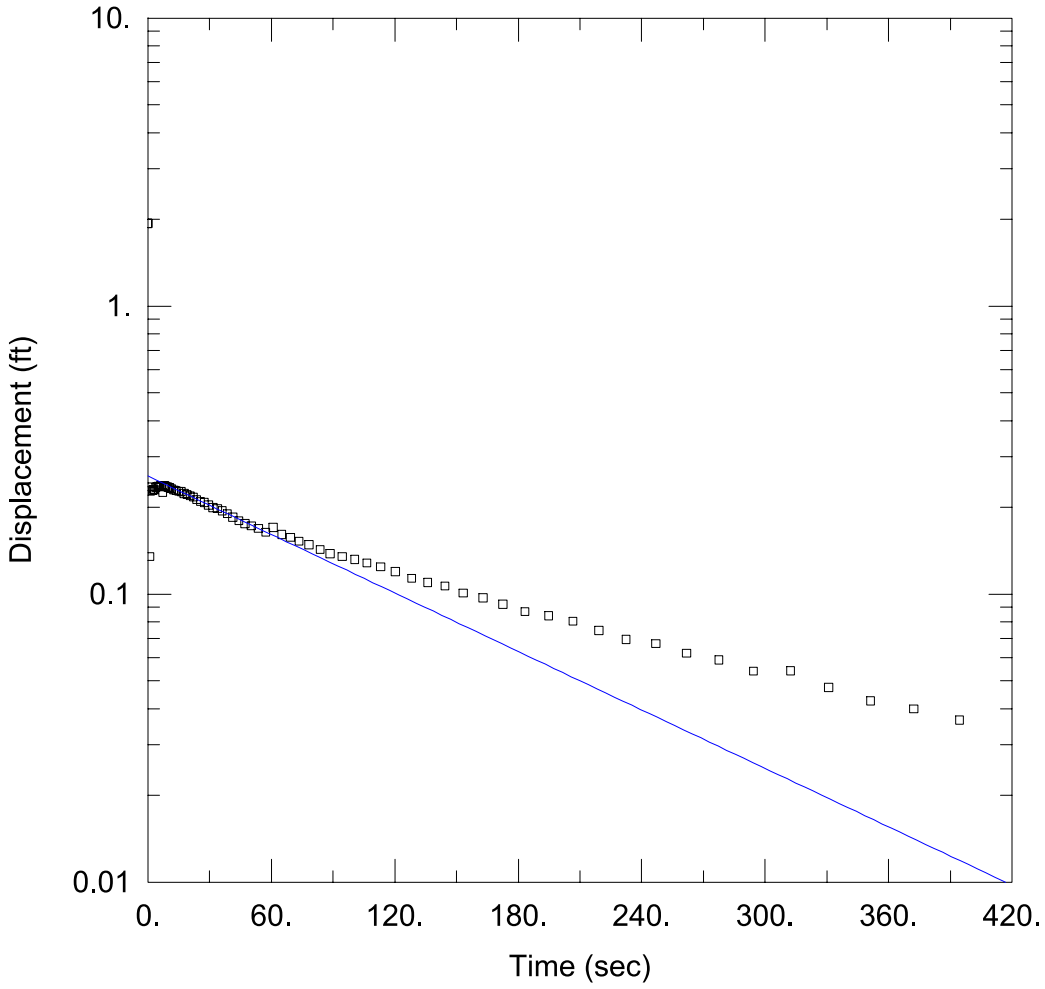
WELL DATA (W-97)

Initial Displacement: 4.4 ft
Total Well Penetration Depth: 14.21 ft
Casing Radius: 0.083 ft
Static Water Column Height: 14.46 ft
Screen Length: 5. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 82.89 ft/day y0 = 1.05 ft



W-98 FALLING HEAD

Data Set: L:\...\W-98_Falling.aqt
Date: 11/04/21 Time: 09:29:54

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-98

AQUIFER DATA

Saturated Thickness: 23.59 ft Anisotropy Ratio (Kz/Kr): 1.

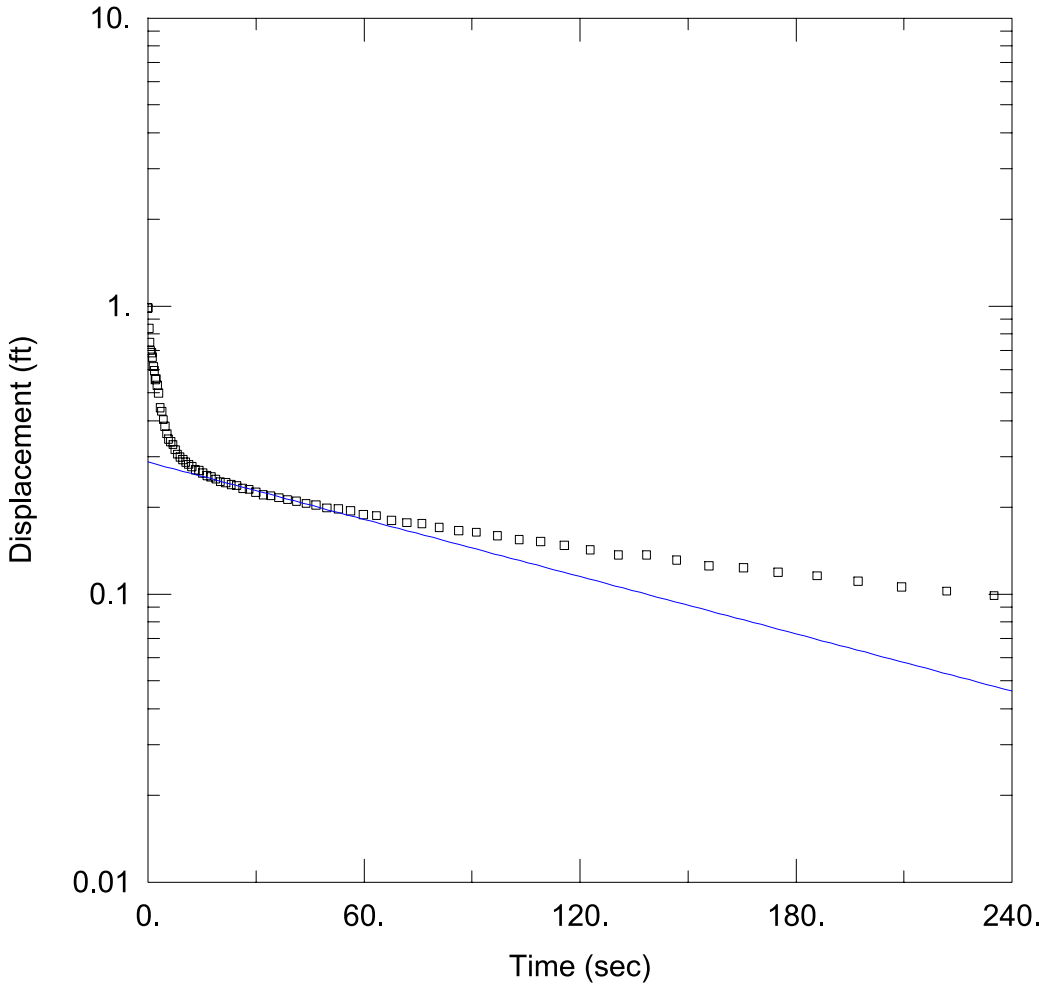
WELL DATA (W-98)

Initial Displacement: 1.932 ft
Total Well Penetration Depth: 6.31 ft
Casing Radius: 0.083 ft
Static Water Column Height: 6.31 ft
Screen Length: 6.31 ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 1.057 ft/day y0 = 0.2564 ft



W-98 RISING HEAD

Data Set: L:\...\W-98_Rising.aqt
Date: 12/14/21 Time: 16:52:07

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-98

AQUIFER DATA

Saturated Thickness: 23.59 ft Anisotropy Ratio (Kz/Kr): 1.

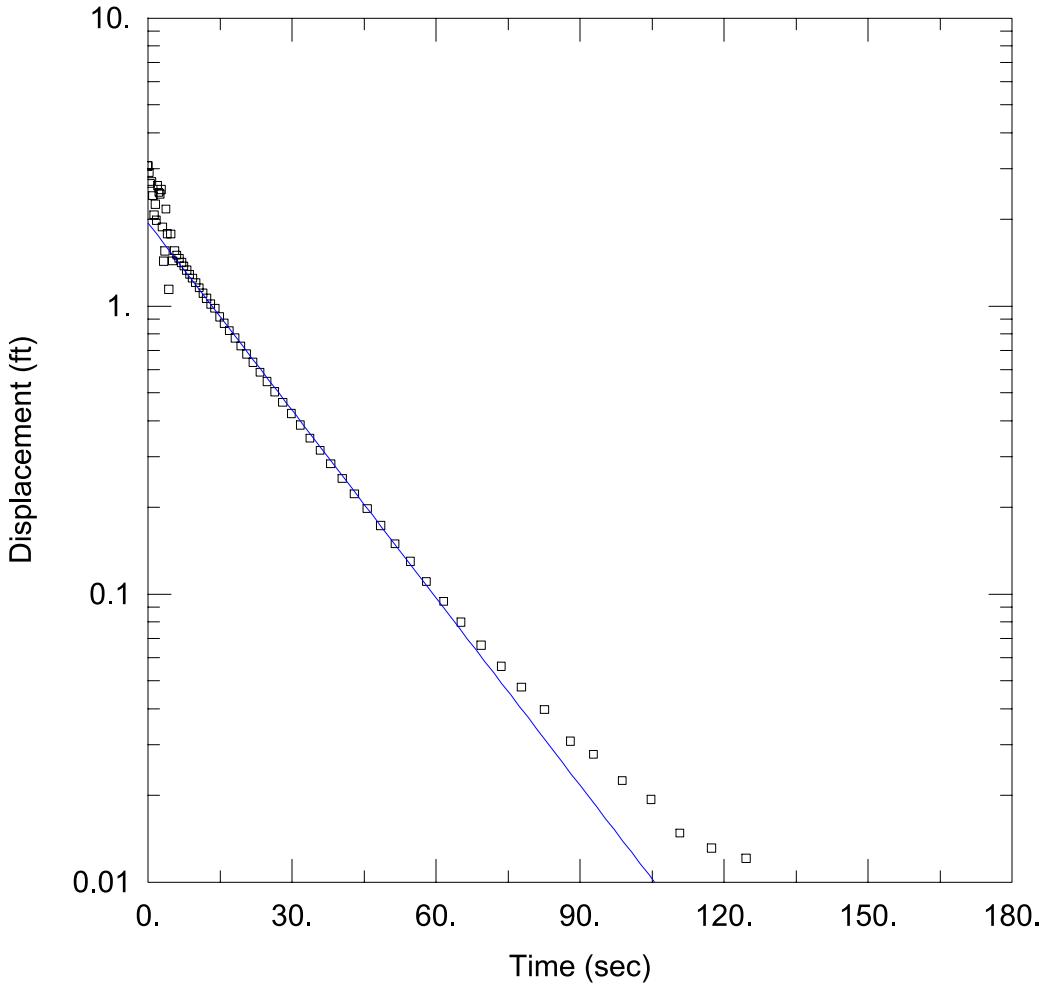
WELL DATA (W-98)

Initial Displacement: 0.984 ft
Total Well Penetration Depth: 6.31 ft
Casing Radius: 0.083 ft
Static Water Column Height: 6.31 ft
Screen Length: 6.31 ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 1.037 ft/day y0 = 0.2872 ft



W-103 FALLING HEAD

Data Set: L:\...\W-103_Falling.aqt
Date: 11/04/21 Time: 09:35:06

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-103

AQUIFER DATA

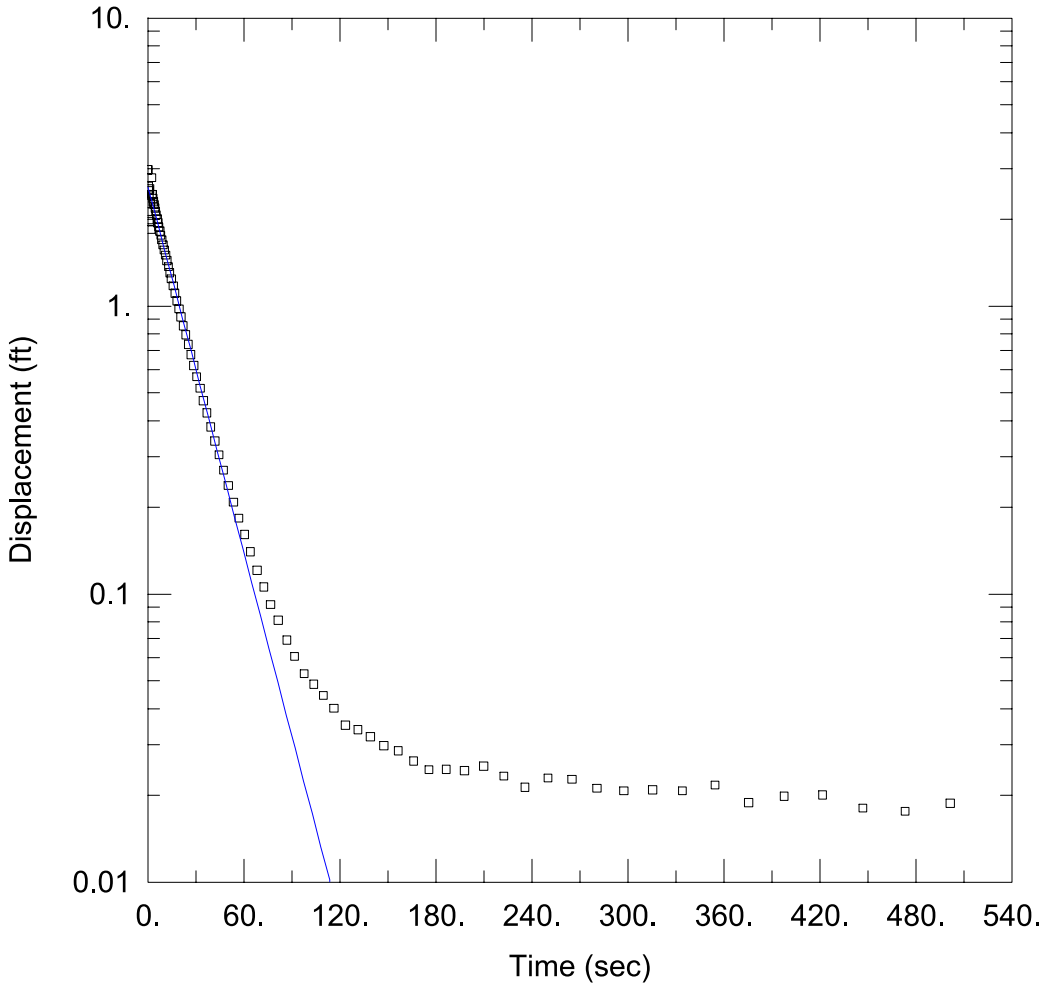
Saturated Thickness: 24.2 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W-103)

Initial Displacement: 3.066 ft
Total Well Penetration Depth: 24.62 ft
Casing Radius: 0.083 ft
Static Water Column Height: 24.62 ft
Screen Length: 5. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 12.23 ft/day
y0 = 1.938 ft



W-103 RISING HEAD

Data Set: L:\...\W-103_Rising.aqt
Date: 11/04/21 Time: 09:40:37

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-103

AQUIFER DATA

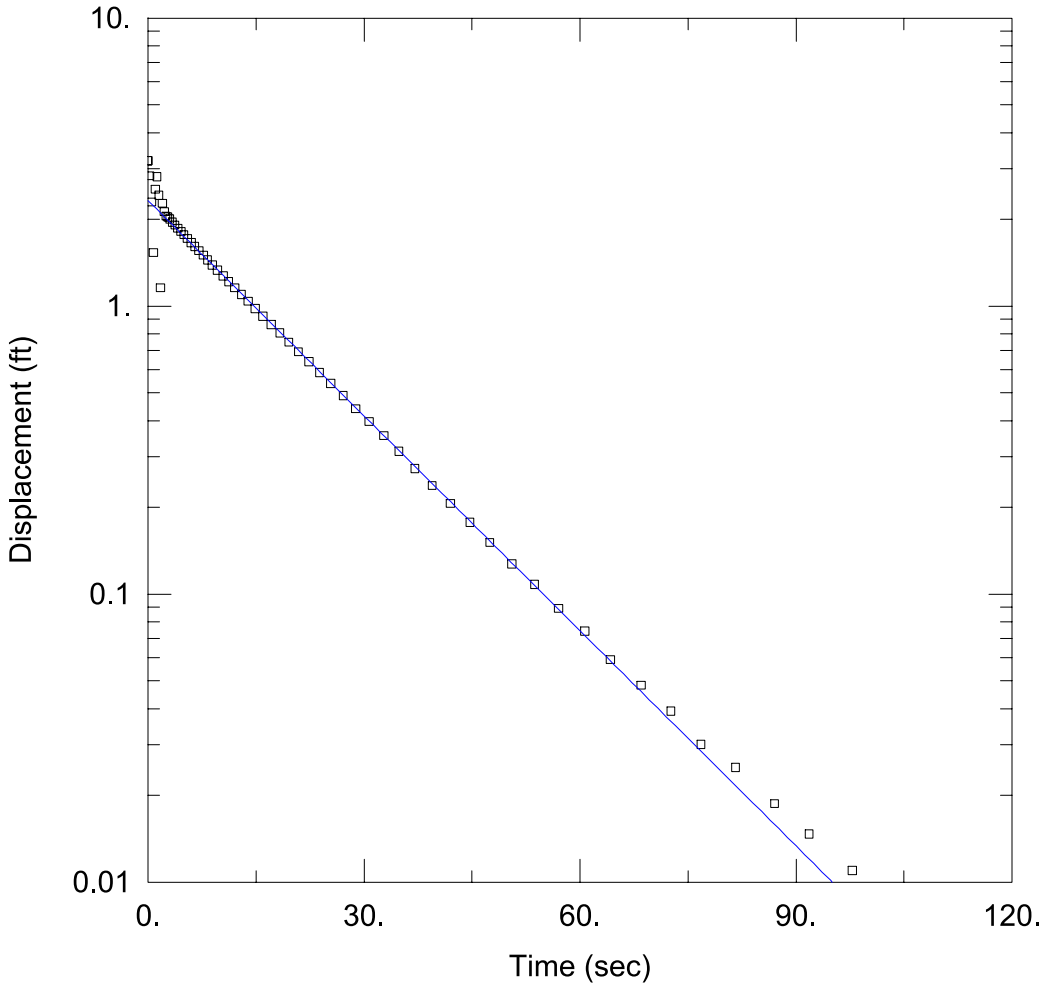
Saturated Thickness: 24.2 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W-103)

Initial Displacement: 2.977 ft
Total Well Penetration Depth: 24.62 ft
Casing Radius: 0.083 ft
Static Water Column Height: 24.62 ft
Screen Length: 5. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 11.97 ft/day
y0 = 2.584 ft



W-117 FALLING HEAD

Data Set: L:\...\W-117_Falling.aqt
Date: 11/04/21 Time: 14:35:14

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-117

AQUIFER DATA

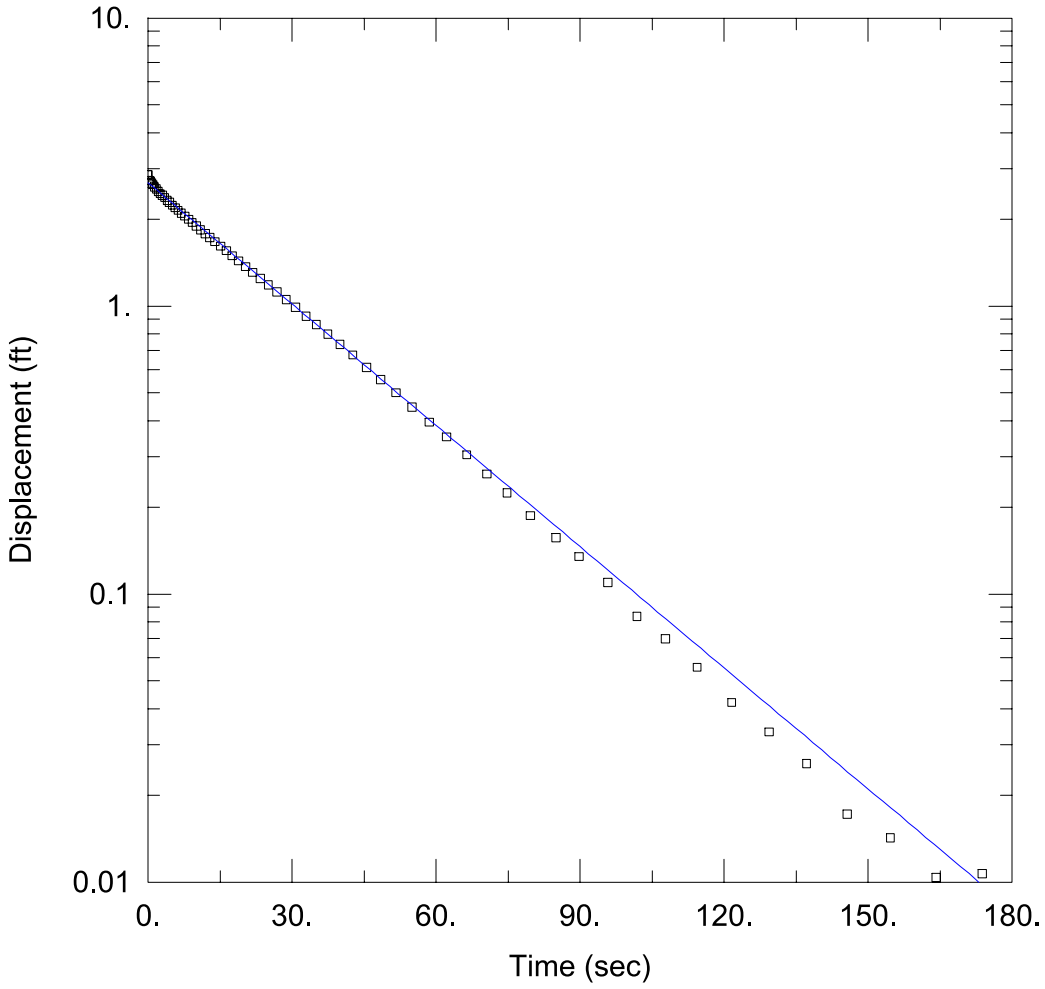
Saturated Thickness: 25.26 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W-117)

Initial Displacement: 3.198 ft
Total Well Penetration Depth: 25.05 ft
Casing Radius: 0.083 ft
Static Water Column Height: 25.05 ft
Screen Length: 5. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 13.27 ft/day
y0 = 2.321 ft



W-117 RISING HEAD

Data Set: L:\...\W-117_Rising.aqt
Date: 11/04/21 Time: 14:37:11

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-117

AQUIFER DATA

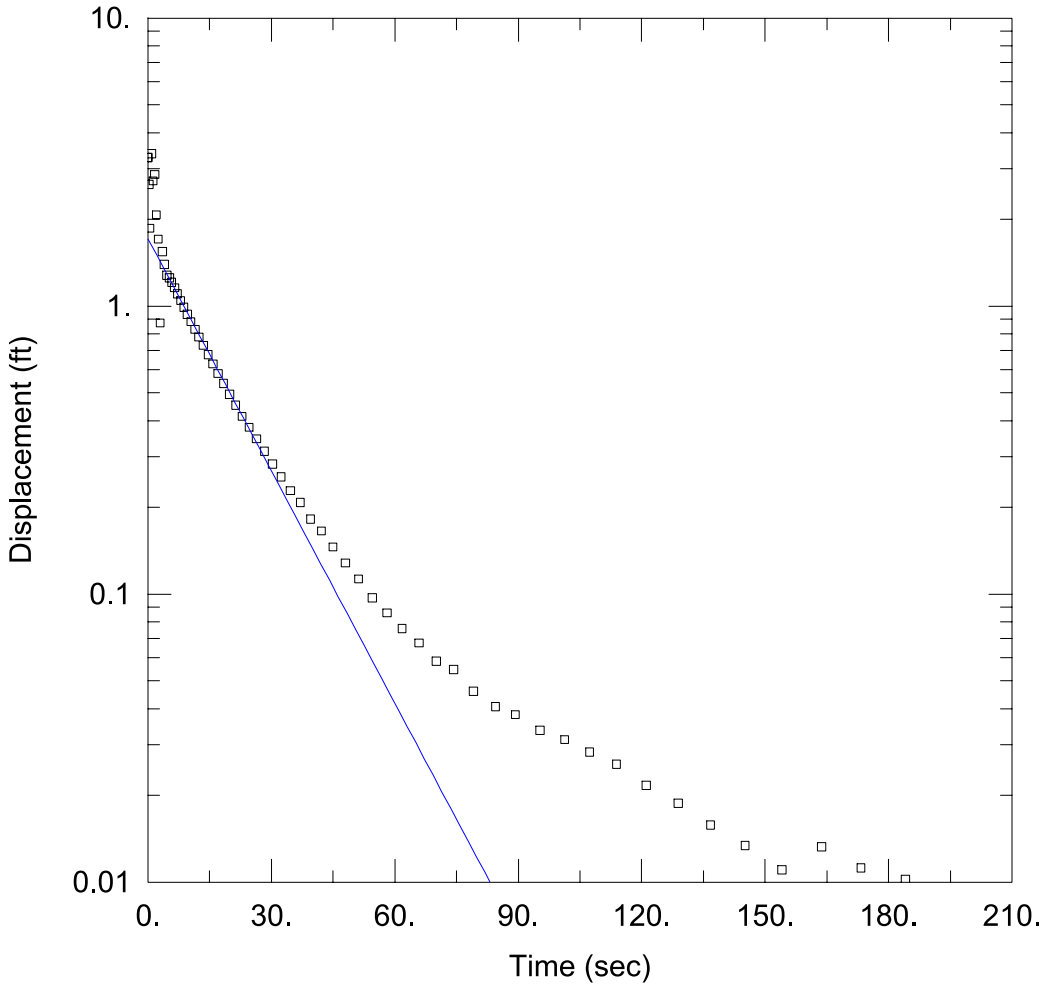
Saturated Thickness: 25.26 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W-117)

Initial Displacement: 2.851 ft
Total Well Penetration Depth: 25.05 ft
Casing Radius: 0.083 ft
Static Water Column Height: 25.05 ft
Screen Length: 5. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 7.474 ft/day
y0 = 2.672 ft



W-118 FALLING HEAD

Data Set: L:\...\W-118_Falling.aqt
Date: 11/04/21 Time: 14:39:36

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-118

AQUIFER DATA

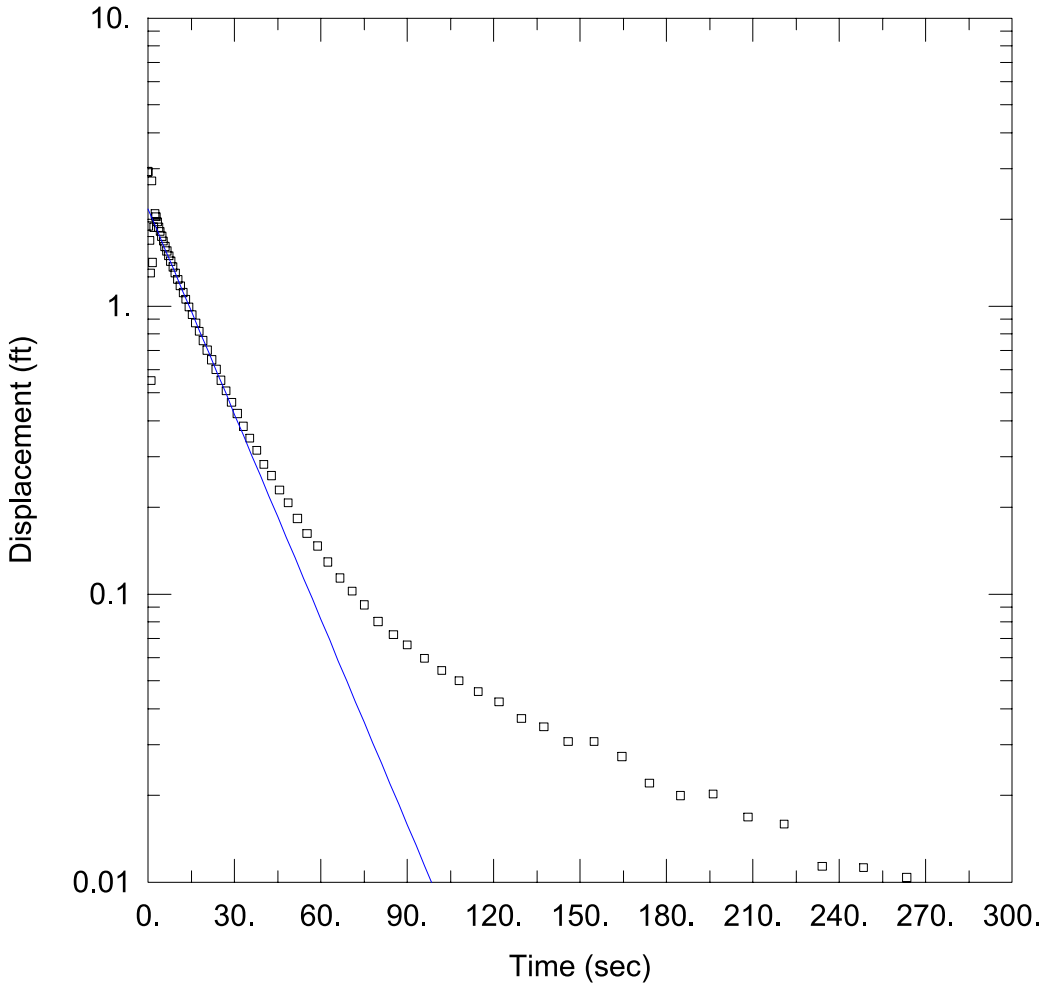
Saturated Thickness: 27.12 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W-118)

Initial Displacement: 3.277 ft
Total Well Penetration Depth: 12.61 ft
Casing Radius: 0.083 ft
Static Water Column Height: 12.61 ft
Screen Length: 10. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 6.266 ft/day
y0 = 1.708 ft



W-118 RISING HEAD

Data Set: L:\...\W-118_Rising.aqt
Date: 11/04/21 Time: 14:41:38

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-118

AQUIFER DATA

Saturated Thickness: 27.12 ft Anisotropy Ratio (Kz/Kr): 1.

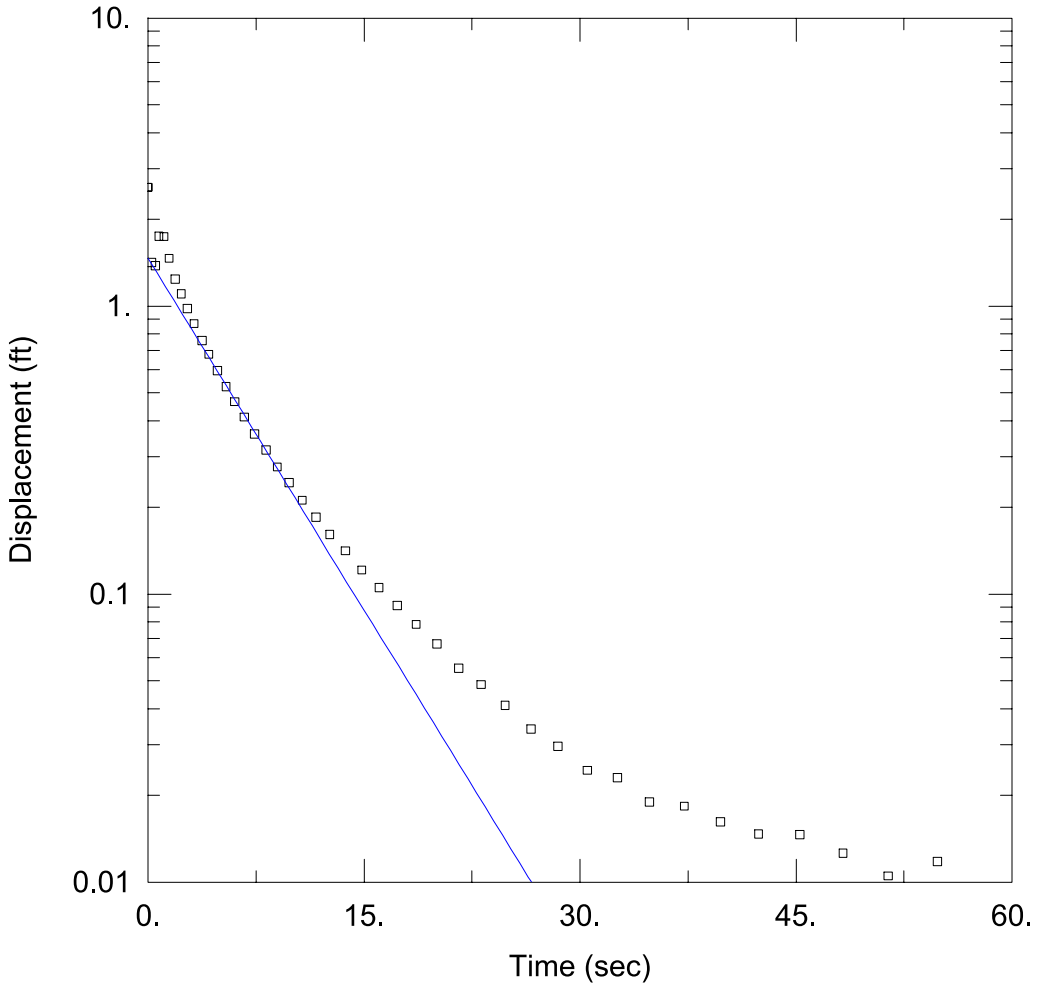
WELL DATA (W-118)

Initial Displacement: 2.926 ft
Total Well Penetration Depth: 12.61 ft
Casing Radius: 0.083 ft
Static Water Column Height: 12.61 ft
Screen Length: 10. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 5.537 ft/day y0 = 2.173 ft



W-119 FALLING HEAD

Data Set: L:\...\W-119_Falling.aqt
Date: 11/04/21 Time: 14:44:37

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-119

AQUIFER DATA

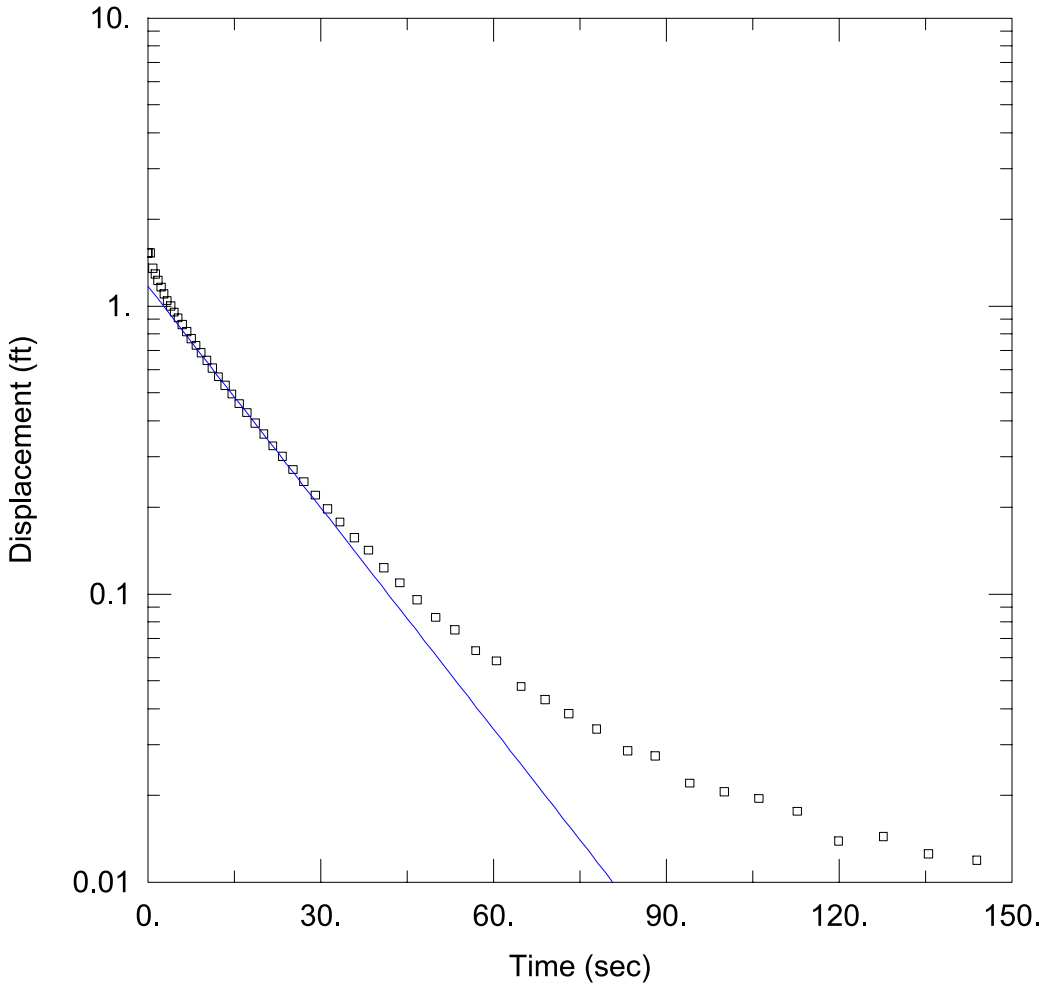
Saturated Thickness: 29.02 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W-119)

Initial Displacement: 2.578 ft
Total Well Penetration Depth: 17.76 ft
Casing Radius: 0.083 ft
Static Water Column Height: 17.76 ft
Screen Length: 5. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 36.52 ft/day
y0 = 1.46 ft



W-119 RISING HEAD

Data Set: L:\...\W-119_Rising.aqt
Date: 11/04/21 Time: 14:46:29

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-119

AQUIFER DATA

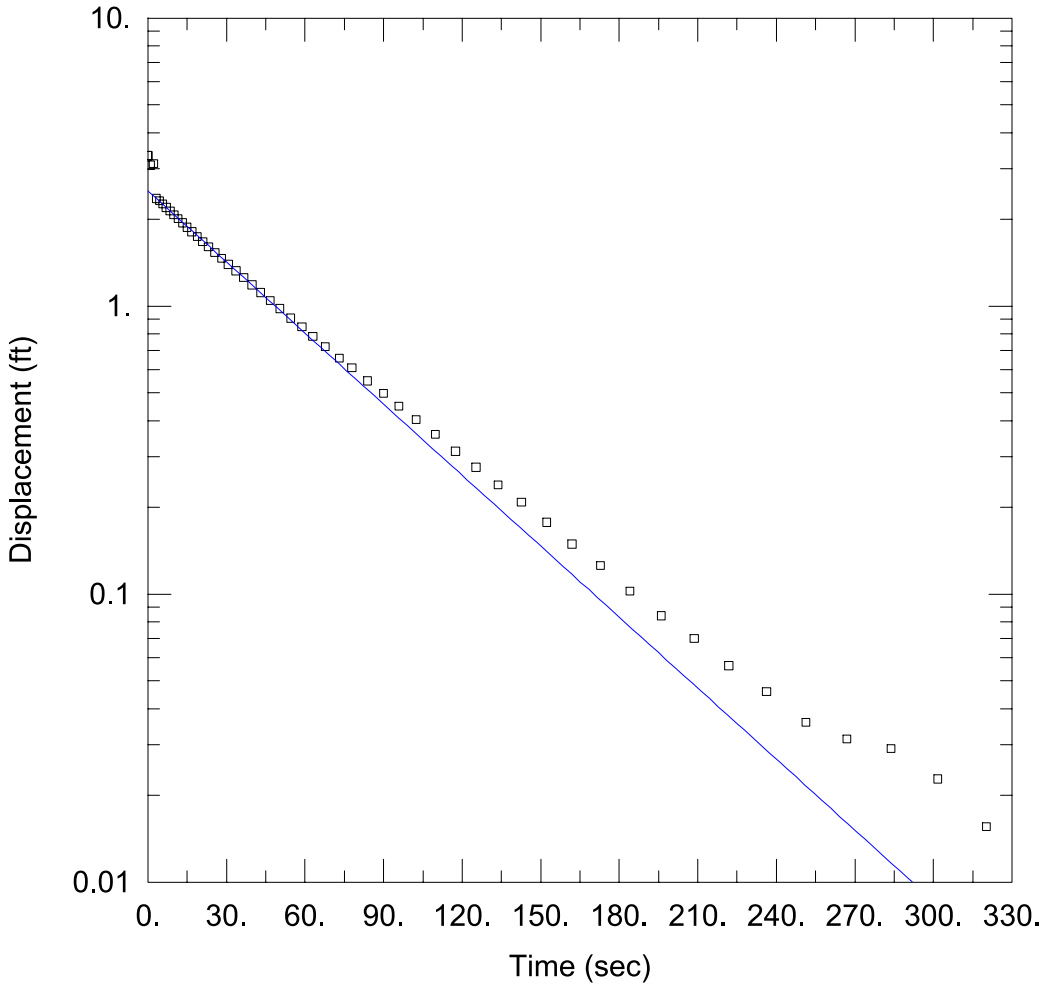
Saturated Thickness: 29.02 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W-119)

Initial Displacement: 1.529 ft
Total Well Penetration Depth: 17.76 ft
Casing Radius: 0.083 ft
Static Water Column Height: 17.76 ft
Screen Length: 5. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 11.51 ft/day
y0 = 1.168 ft



W-120 FALLING HEAD

Data Set: L:\...\W-120_Falling.aqt
Date: 11/04/21 Time: 14:53:48

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-120

AQUIFER DATA

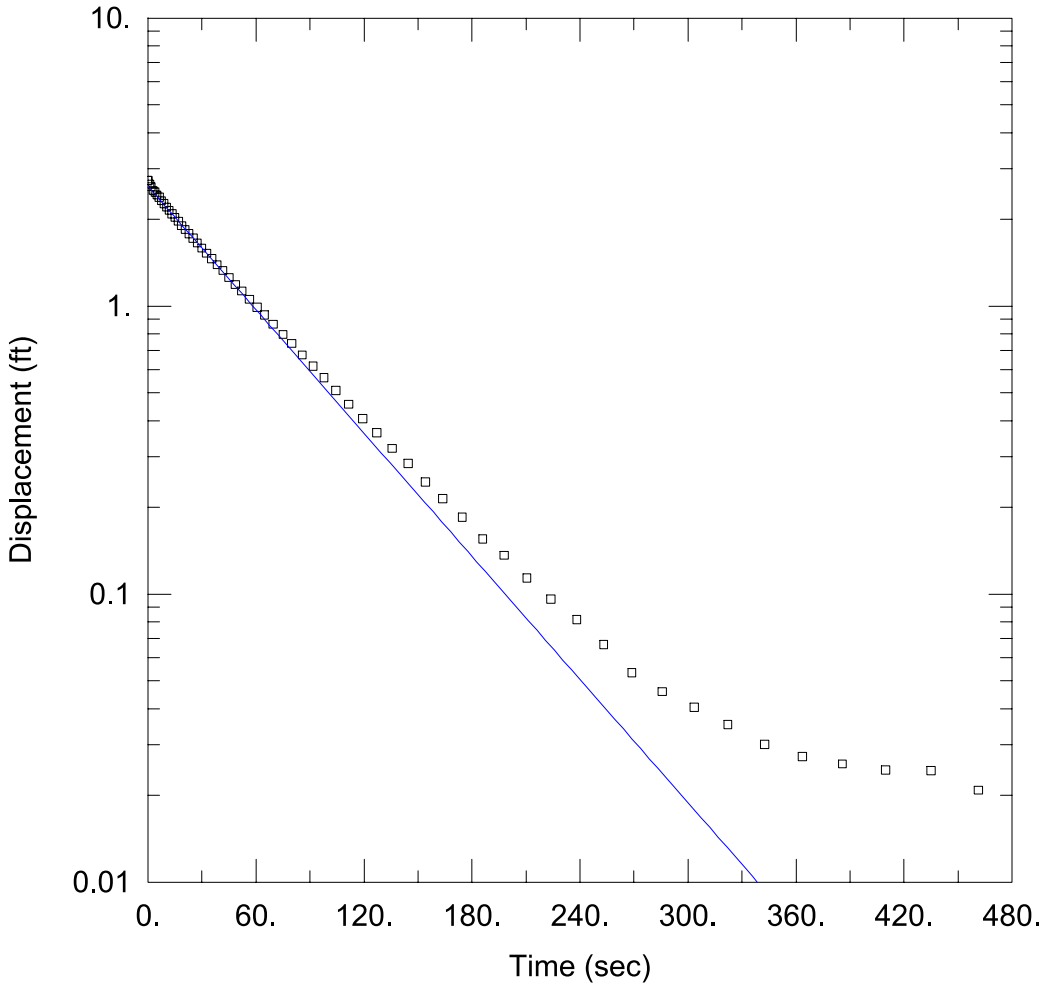
Saturated Thickness: 24.26 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W-120)

Initial Displacement: 3.327 ft
Total Well Penetration Depth: 24.06 ft
Casing Radius: 0.083 ft
Static Water Column Height: 24.06 ft
Screen Length: 5. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 4.366 ft/day
y0 = 2.504 ft



W-120 RISING HEAD

Data Set: L:\...\W-120_Rising.aqt
Date: 11/04/21 Time: 15:02:10

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-120

AQUIFER DATA

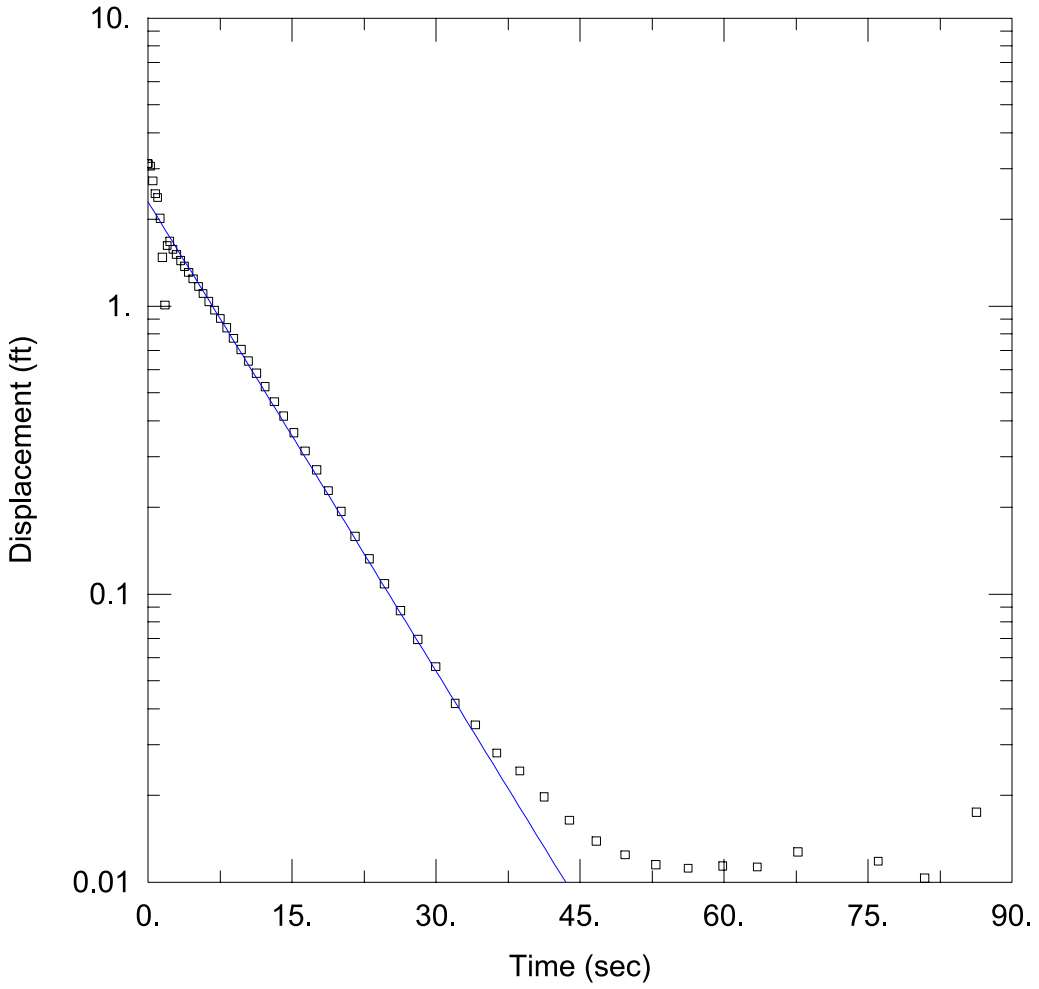
Saturated Thickness: 24.26 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W-120)

Initial Displacement: 2.725 ft
Total Well Penetration Depth: 24.06 ft
Casing Radius: 0.083 ft
Static Water Column Height: 24.06 ft
Screen Length: 5. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 3.787 ft/day
y0 = 2.594 ft



W-126 FALLING HEAD

Data Set: L:\...\W-126_Falling.aqt
Date: 11/04/21 Time: 15:27:19

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-126

AQUIFER DATA

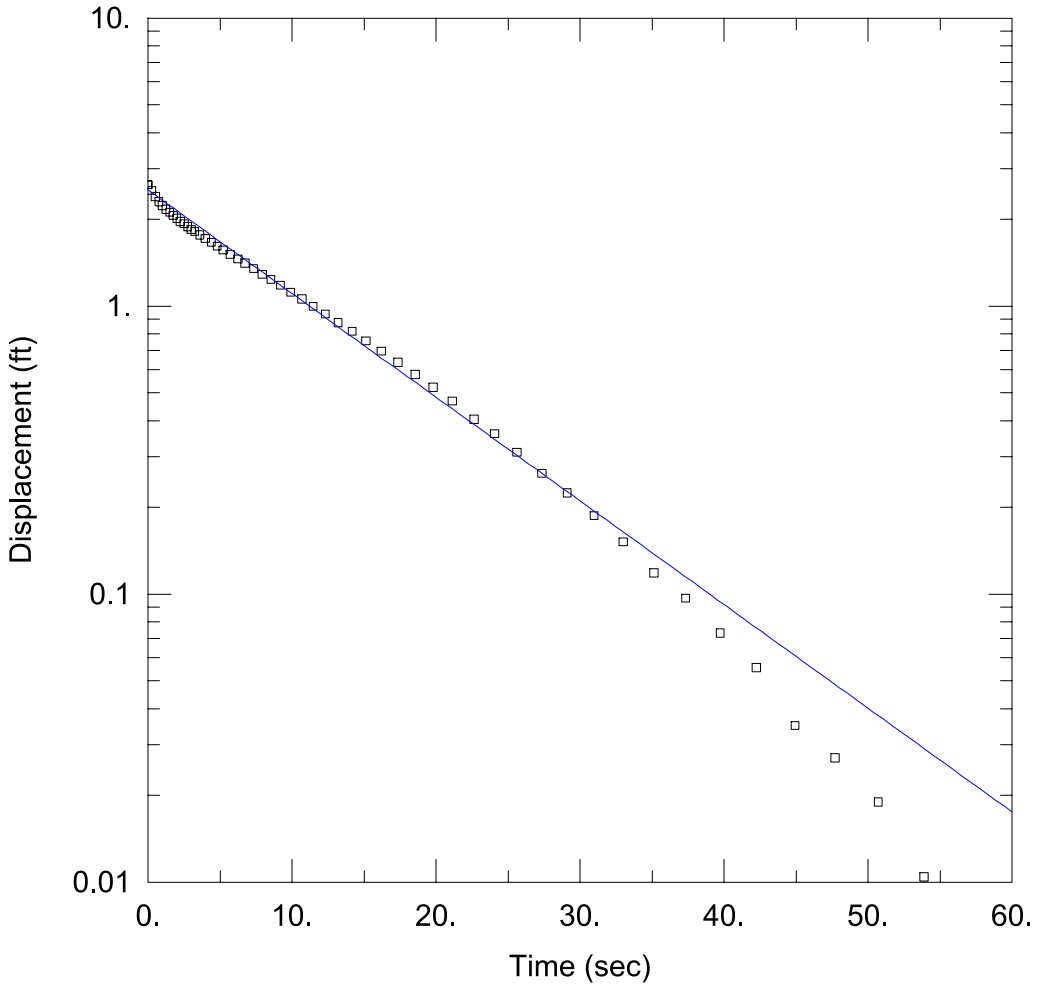
Saturated Thickness: 40.24 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W-126)

Initial Displacement: 3.12 ft
Total Well Penetration Depth: 39.22 ft
Casing Radius: 0.083 ft
Static Water Column Height: 39.22 ft
Screen Length: 5. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 28.91 ft/day
y0 = 2.302 ft



W-126 RISING HEAD

Data Set: L:\...\W-126_Rising.aqt
Date: 11/04/21 Time: 15:29:04

PROJECT INFORMATION

Company: AECOM
Client: Westinghouse
Location: Hopkins, SC
Test Well: W-126

AQUIFER DATA

Saturated Thickness: 40.24 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (W-126)

Initial Displacement: 2.634 ft
Total Well Penetration Depth: 39.22 ft
Casing Radius: 0.083 ft
Static Water Column Height: 39.22 ft
Screen Length: 5. ft
Well Radius: 0.083 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 19.18 ft/day y0 = 2.53 ft

Appendix P
Site Hydrogeology

Site Hydrogeology

Groundwater in the surficial aquifer occurs under unconfined (water table) conditions and generally flows from areas of higher topography in the vicinity of the plant building towards areas of lower topography in the floodplain of the Congaree River along Mill Creek. Although the sediment above and below the bluff were deposited during different time periods according to the Geologic Map of the Fort Jackson South Quadrangle (DNR, 2011), the sediments were both deposited by the Congaree River and are hydrogeologically connected based on data collected during the RI. Despite a change in elevation of approximately 30 feet in land surface from the area above the bluff to the floodplain below the bluff, the surficial aquifer is a single, unconfined aquifer with similar thicknesses above and below the bluff.

Groundwater monitoring wells were installed at differing depths to assess constituent of potential concern (COPC) migration within the surficial aquifer. Monitoring wells installed near the top and in the middle of the surficial aquifer are designated as surficial aquifer upper zone monitoring wells, whereas wells installed on top of or within 5 feet of the Black Creek confining clay are designated as surficial aquifer lower zone monitoring wells.

One exception to the criteria above is monitoring well W-95 located near the southern extent of Upper Sunset Lake. This well is designated as a surficial aquifer lower zone monitoring well because chlorinated volatile organic compounds (CVOCs) migrating within the lower zone of the surficial aquifer on the northern side of Upper Sunset Lake are detected in groundwater in monitoring well W-95, which is installed on top of a low permeability silt, while monitoring well W-111, installed on top of the Black Creek confining unit at this location, is not impacted by CVOCs. The low permeability silt on which monitoring well W-95 is installed acts as a local confining unit that inhibits CVOC migration deeper into the incised portion of the surficial aquifer where W-111 is screened. The surficial aquifer is anomalously thick at this location.

Discharge of groundwater to the deeply incised portions of the ditches appears to influence groundwater flow and COPC migration within the upper zone of the surficial aquifer. The Gator Pond appears to influence COPC migration as evidenced by COPC impacts in surficial aquifer groundwater migrating in a more easterly or westerly direction in the vicinity of the Gator Pond. Lower Sunset Lake may also deflect groundwater migration in areas with low hydraulic gradients. Groundwater flow in the Black Creek Aquifer is inferred to the southwest based upon groundwater elevations from the four monitoring wells that are screened within this aquifer.

Hydraulic Characteristics

Prior to the RI, slug tests were conducted in ten monitoring wells (W-13R, W-15, W-26, W-33, W-35, W-39, W-41R, W-48, W-60 and W-61) and pump tests were conducted in two monitoring wells (W-RW1 and W-RW2) during previous scopes of work. Hydraulic conductivity tests (slug tests) were performed in 17 monitoring wells (W-6, W-11, W-19B, W-65, W-67, W-68, W-94 through W-98, W-103, W-117 through W-120, and W-126) during the RI **(Appendix O)**. Historical and RI hydraulic characterization results are as displayed in **Table 6.** These tests were conducted to provide estimates of the hydraulic conductivity in the portion of the surficial aquifer immediately surrounding the screened interval of each tested well. Slug tests during the RI and in monitoring wells W-13R, W-15, W-39, W-48, W-60 and W-61 were conducted by two methods: falling head test (slug in) and rising head test (slug out). The remaining slug tests from older scopes of work were falling head tests only. The hydraulic conductivity values determined by historical and recent slug tests ranged from 0.06 to 125.20 feet per day (ft/day). Based on these values the average hydraulic conductivity calculated for the site is 16.44 ft/day.

Because wells are screened at different depths (upper zone and lower zone of the surficial aquifer) and in different areas of the site (above the bluff, near the bluff, and below the bluff), average hydraulic conductivities were also calculated based on these factors to assist in evaluating horizontal groundwater flow velocities throughout the property. Monitoring wells were not able to be installed on the steep slopes of the bluff, so evaluation of hydraulic conductivities near the bluff were used to estimate the conductivity of bluff sediments. Based upon the depth and location criteria for the monitoring wells in which slug tests or pump tests were conducted, the following average hydraulic conductivities were calculated:

Average Hydraulic Conductivities (Calculated):

- Above the bluff, upper zone of the surficial aquifer = 7.57 ft/day
- Above the bluff, lower zone of the surficial aquifer = 14.77 ft/day
- Near the bluff, upper zone of the surficial aquifer = 3.94 ft/day
- Near the bluff, lower zone of the surficial aquifer = 5.87 ft/day
- Below the bluff, upper zone of the surficial aquifer = 69.51 ft/day
- Below the bluff, lower zone of the surficial aquifer = 17.87 ft/day

The monitoring wells screened in the upper zone of the surficial aquifer near the bluff that were used to generate the values listed above include W-13R, W-15, W-26, W-67 and W-98. The wells screened in the lower zone of the surficial aquifer near the bluff used to generate the above calculations include W-48, W-68 and W-103.

Hydraulic Gradient

Hydraulic gradient is the change in total head (water elevation) over distance in a given direction (Fetter, 1994). Gradients exists horizontally and vertically within an aquifer. Water table elevations roughly mirror topography with steeper gradients in areas with steeper changes in elevation (e.g., the bluff at the site). Generally, the site gently slopes from the north to the south except for the bluff and the erosional features caused by the stormwater ditches, particularly within the stormwater ditch's natural flow channels.

As discussed above, groundwater in the surficial aquifer flows predominantly to the southwest with components of flow to the west and south. The groundwater elevations and flow maps were used to calculate average horizontal gradients across the site. To obtain accurate distances between well locations, the ArcMap tool within Esri's ArcGIS program was used to measure distances between each well used to calculate a horizontal hydraulic gradient. Based on the groundwater elevations from the October 2021 synoptic water level gauging event, the average horizontal hydraulic gradients for each location/zone are as follows:

Average Horizontal Hydraulic Gradients (October 2021):

- Above the bluff, upper zone of the surficial aquifer = 0.00637 feet per foot (ft/ft)
- Above the bluff, lower zone of the surficial aquifer = 0.00472 ft/ft
- Bluff, upper zone of the surficial aquifer = 0.0329 ft/ft
- Bluff, lower zone of the surficial aquifer = 0.0276 ft/ ft
- Below the bluff, upper zone of the surficial aquifer = 0.000488 ft/ ft
- Below the bluff, lower zone of the surficial aquifer = 0.000297 ft/ ft

Vertical Hydraulic Gradients (October 2019-October 2021):

Vertical gradients are a measure of pressure head over a change in depth and provide an indication of whether COPCs have the potential to migrate vertically from shallower groundwater zones to deeper zones or vice versa. Vertical hydraulic gradients were also calculated for semi-annual synoptic water level gauging events from October 2019 through October 2021 for paired upper and lower zones of surficial aquifer well pairs across the site and for upper zone of the surficial aquifer to the Black Creek Aquifer (**Table 7**).

The following formula was used to calculate vertical hydraulic gradients at each well pair:

$$\frac{(\mathrm{GWUW}-\mathrm{GWLW})}{(\mathrm{UW}-\mathrm{LW})} = \text{Vertical Gradient (ft/ft)}$$

Where:

GW UW = groundwater elevation of upper zone of the surficial aquifer well (ft)

GW LW = groundwater elevation of lower zone of the surficial aquifer well (ft)
SW = elevation of top of the mid-point of the upper zone of the surficial aquifer well screen (ft)
DW = elevation of the top of the mid-point of lower zone of the surficial aquifer well screen (ft)

The potential for flow between the surficial aquifer and the Black Creek Aquifer was assessed to be generally downward at vertical hydraulic gradients ranging between 0.018 and 0.190 ft/ft. These values are similar to previously calculated downward gradients of 0.04 and 0.1 ft/ft (Rust, 1995 and AECOM, 2015). There was an upward gradient calculated for the W-4R/W-3A well pair which is also due to the steep topography in this area. However, low moisture content and vertical hydraulic conductivities of less than 10^{-7} centimeters per second (S&ME, 1982) throughout the 39 to 83 foot thickness of the Black Creek confining clay preclude migration of groundwater between the surficial aquifer and the Black Creek Aquifer which in turn precludes potential migration to the deeper Middendorf Aquifer.

Groundwater Flow Velocity

The hydrogeologic data (hydraulic conductivity and gradient) collected at the site were used to calculate groundwater flow rates for each location/zone using Darcy's Law as follows:

$$V = \frac{i \times K}{n}$$

Where:

V = Average Groundwater Flow Velocity

i = Groundwater Gradient

K = Hydraulic Conductivity

n = Effective Porosity

Based upon the hydraulic conductivities above, the hydraulic gradients above, and an estimated effective porosity of 0.30, the average groundwater flow velocity calculated for each location/zone is as follows:

Average Groundwater Flow Velocity (Calculated):

- Above the bluff, upper zone of the surficial aquifer = 0.161 ft/day or 58.71 ft/year
- Above the bluff, lower zone of the surficial aquifer = 0.232 ft/day or 84.85 ft/year
- Bluff, upper zone of the surficial aquifer = 0.431 ft/day or 157.58 ft/year
- Bluff, lower zone of the surficial aquifer = 0.541 ft/day or 197.55 ft/year
- Below the bluff, upper zone of the surficial aquifer = 0.113 ft/day or 41.32 ft/year
- Below the bluff, lower zone of the surficial aquifer = 0.018 ft/day or 6.46 ft/year

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Appendix Q
Soil Analytical Results (on DVD)

Appendix R
Grain Size Analytical Results (on DVD)

Appendix S
Groundwater Analytical Results (on DVD)

Appendix T
RI Analytical Results Tables

Table T1 - Groundwater Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

				Well	W-RW1	W-RW2	W-3A	W-4R	W-6	W-7A	W-10	W-11	W-13R	W-14	W-15	W-16	W-17	W-18R	W-19B
				Date	10/14/2021	10/21/2021	10/25/21	10/25/21	10/8/21	10/5/21	10/5/21	10/5/21	10/5/21	10/18/21	10/19/21	10/19/21	10/12/21	10/8/21	10/20/21
				Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Group	Analyte	MCL	note	Units															
Radiological	Alpha particles	15	*	pCi/L	2.13 #	0.577 #	2.10 #	0.170 #	13.5	8.14	0.131 #	0.816 #	0 ##	3.06 #	1.06 #	2.42 #	1.36 #	20.9	2.63
Radiological	Beta particles	50	*	pCi/L	2.32 #	5.46	5.86	0.278 #	1290	105	60.0	627	70.7	9.79	114	16.9	514	49.3	0 ##
Radiological	Technetium-99	900		pCi/L	0.0163 #	6.40	0 ##	0.442 #	2500	193	98.2	1230	126	0.299 #	221	7.37	719	143	1.70 #
Radiological	Uranium-233/234			pCi/L	0.246 #	0.134 #	0 ##	0 ##	0.255	0.277	0.291	0.0982 #	0.195 #	0 ##	0 ##	0 ##	0.222 #	1.37	0.0812 #
Radiological	Uranium-235/236			pCi/L	0.135 #	0.0295 #	0 ##	0.0179 #	0.152 #	0.0105 #	0.0763 #	0.0430 #	0.151	0 ##	0.0538 #	0.0276 #	0.105 #	0 ##	0.0699 #
Radiological	Uranium-238			pCi/L	0.0601 #	0.582	0.0616 #	0 ##	0.167	0.101 #	0.0777 #	0.0347 #	0.122	0.00371 #	0 ##	0.00235 #	0.117 #	1.15	0.0976 #
Radiological	Uranium-234			ug/L	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500
Radiological	Uranium-235			ug/L	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	0.0240 J	< 0.0700
Radiological	Uranium-238			ug/L	< 0.200	0.0739 J	0.0700 J	< 0.200	0.321	0.558	0.138 J	0.0947 J	0.158 J	0.221	< 0.200	0.0770 J	0.122 J	2.70	< 0.200
Radiological	Total Uranium Isotopes	30		ug/L	< 0.200	0.0739 J	0.0700 J	< 0.200	0.321	0.558	0.138 J	0.0947 J	0.158 J	0.221	< 0.200	0.0770 J	0.122 J	2.72	< 0.200
Chemical	Fluoride	4		mg/L	0.037 J	0.125	0.015 J	0.154	0.233	7.18	4.09	0.037 J	10.8	0.067 J	2.12	7.35	1.9	6.76	0.015 J
Chemical	Nitrate as N	10		mg/L	2.0	16	< 0.020	< 0.020	210	320	22	23	18	0.39	39	2.0	17	550	3.7
Chemical	Ammonia as N			mg/L	0.0197 J	0.0207 J	0.0193 J	0.0196 J	105	66.5	7.51	2.26	38.9	4.17	0.487	15	7.84	77.5	0.0131 J
VOCs	Acetone			ug/L	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
VOCs	Benzene	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Bromodichloromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Bromoform			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Bromomethane			ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
VOCs	2-Butanone			ug/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
VOCs	Carbon disulfide			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Carbon tetrachloride	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Chlorobenzene	100		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Chloroethane			ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
VOCs	Chloroform			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Chloromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Cyclohexane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dibromo-3-chloropropane	0.2		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Dibromochloromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dibromoethane	0.05		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dichlorobenzene	600		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,3-Dichlorobenzene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,4-Dichlorobenzene	75		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1-Dichloroethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Dichlorodifluoromethane			ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
VOCs	1,2-Dichloroethane	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1-Dichloroethene	7		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	cis-1,2-Dichloroethene	70		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	3.0	< 1.0	< 1.0	2.1	< 1.0	< 1.0	1.1	< 1.0	1.2	< 1.0	< 1.0
VOCs	trans-1,2-Dichloroethene	100		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dichloropropane	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	cis-1,3-Dichloropropene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	trans-1,3-Dichloropropene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Ethylbenzene	700		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	2-Hexanone			ug/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
VOCs	(1-Methylethyl)-Benzene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Methyl acetate			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Methyl tert-butyl ether			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	4-Methyl-2-pentanone			ug/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
VOCs	Methylcyclohexane			ug/L	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
VOCs	Methylene chloride	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Styrene	100		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,2,2-Tetrachloroethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Tetrachloroethene	5		ug/L	2.3	150	< 1.0	< 1.0	18	1.3	< 1.0	15	27	2.8	10	3.1	6.1	1.9	89
VOCs	Toluene	1000		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,2-Trichlor-1,2,2-trifluoroethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2,4-Trichlorobenzene	70		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,1-Trichloroethane	200		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,2-Trichloroethane	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Trichloroethene	5		ug/L	< 1.0	9.5	< 1.0	< 1.0	2.8	< 1.0	< 1.0	2.4	2.5	1.1	1.9	1.1	1.3	< 1.0	1.6
VOCs	Trichlorofluoromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Vinyl chloride	2		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Xylenes, Total	10000		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Table T1 - Groundwater Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

				Well	W-20	W-22	W-23R	W-24	W-25	W-26	W-27	W-28	W-29	W-30	W-32	W-33	W-35	W-36	W-37
				Date	10/26/21	10/8/21	10/18/21	10/21/21	10/26/21	10/19/21	10/22/21	10/6/21	10/8/21	10/8/21	10/5/21	10/14/21	10/14/21	10/13/21	10/11/21
				Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Group	Analyte	MCL	note	Units															
Radiological	Alpha particles	15	*	pCi/L	0.485 #	8.55	0.635 #	2.51 #	0.419 #	0.933 #	0 ##	7.01	3.21 #	6.37	5.72	5.46	0.639 #	4.51	0.502 #
Radiological	Beta particles	50	*	pCi/L	0 ##	24.5	0.988 #	12.2	0.964 #	7.26	5.28	7.16	6.80	19.9	77.2	84.0	3.23 #	8.06	1.58 #
Radiological	Technetium-99	900		pCi/L	0 ##	31.1	0 ##	0 ##	0 ##	5.60	3.49 #	2.14 #	8.95	48.9	231	3.64 #	0.125 #	0 ##	0.0860 #
Radiological	Uranium-233/234			pCi/L	0 ##	0.727	0 ##	0 ##	0 ##	0.0743 #	0.0360 #	1.89	0.314 #	10.3	0.240 #	0.0523 #	0.0107 #	0 ##	0 ##
Radiological	Uranium-235/236			pCi/L	0 ##	0.220 #	0.0323 #	0 ##	0 ##	0.0622 #	0.0765 #	0.0987 #	0.0950 #	0.446	0.0384 #	0 ##	0.0607 #	0.132 #	0.0737 #
Radiological	Uranium-238			pCi/L	0 ##	0.302	0.0357 #	0.0168 #	0.0224 #	0.137 #	0.0631 #	0.472	0.329	2.54	0.0186 #	0.0512 #	0 ##	0 ##	0 ##
Radiological	Uranium-234			ug/L	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500
Radiological	Uranium-235			ug/L	< 0.0700	0.0144 J	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	0.0411 J	0.0145 J	0.209	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700
Radiological	Uranium-238			ug/L	< 0.200	0.793	< 0.200	< 0.200	< 0.200	< 0.200	0.0985 J	2.04	1.04	8.82	0.153 J	< 0.200	< 0.200	< 0.200	< 0.200
Radiological	Total Uranium Isotopes	30		ug/L	< 0.200	0.807	< 0.200	< 0.200	< 0.200	< 0.200	0.0985 J	2.08	1.05	9.03	0.153 J	< 0.200	< 0.200	< 0.200	< 0.200
Chemical	Fluoride	4		mg/L	0.042 J	5.61	0.029 J	0.025 J	0.091 J	1.44	2.52	8.11	4.57	14.3	5.01	0.084 J	0.026 J	0.014 J	0.038 J
Chemical	Nitrate as N	10		mg/L	0.042	72	0.67	< 0.020	0.10	2.4	< 0.020	5.9	10	57	94	18	4.2	0.35	3.3
Chemical	Ammonia as N			mg/L	0.0427 J	45.9	0.0495 J	0.0398 J	0.249	2.19	5.15	0.277	11.7	1.38	38.9	0.0153 J	0.0248 J	0.0245 J	0.0162 J
VOCs	Acetone			ug/L	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
VOCs	Benzene	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Bromodichloromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Bromoform			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Bromomethane			ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
VOCs	2-Butanone			ug/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
VOCs	Carbon disulfide			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Carbon tetrachloride	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Chlorobenzene	100		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Chloroethane			ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
VOCs	Chloroform			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Chloromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Cyclohexane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dibromo-3-chloropropane	0.2		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Dibromochloromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dibromoethane	0.05		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dichlorobenzene	600		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,3-Dichlorobenzene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,4-Dichlorobenzene	75		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1-Dichloroethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Dichlorodifluoromethane			ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
VOCs	1,2-Dichloroethane	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1-Dichloroethene	7		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	cis-1,2-Dichloroethene	70		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	5.0	< 1.0	< 1.0	< 1.0
VOCs	trans-1,2-Dichloroethene	100		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dichloropropane	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	cis-1,3-Dichloropropene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	trans-1,3-Dichloropropene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Ethylbenzene	700		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	2-Hexanone			ug/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
VOCs	(1-Methylethyl)-Benzene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Methyl acetate			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Methyl tert-butyl ether			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	4-Methyl-2-pentanone			ug/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
VOCs	Methylcyclohexane			ug/L	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
VOCs	Methylene chloride	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Styrene	100		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,2,2-Tetrachloroethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Tetrachloroethene	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.8	< 1.0	340	1.9	< 1.0	< 1.0
VOCs	Toluene	1000		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,2-Trichlor-1,2,2-trifluoroethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2,4-Trichlorobenzene	70		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,1-Trichloroethane	200		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,2-Trichloroethane	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Trichloroethene	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.5	< 1.0	36	< 1.0	< 1.0	< 1.0
VOCs	Trichlorofluoromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Vinyl chloride	2		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Xylenes, Total	10000		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Table T1 - Groundwater Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

				Well	W-38	W-39	W-40	W-41R	W-42	W-43	W-44	W-45	W-46	W-47	W-48	W-49	W-50	W-51	W-52
				Date	10/7/21	10/18/21	10/12/21	10/21/21	10/20/21	10/18/21	10/18/21	10/14/21	10/21/21	10/19/21	10/19/21	10/20/21	10/12/21	10/13/21	10/13/21
				Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Group	Analyte	MCL	note	Units															
Radiological	Alpha particles	15	*	pCi/L	2.12 #	0.360 #	0 ##	0.858 #	0 ##	0 ##	0.557 #	2.49 #	1.25 #	0 ##	0 ##	2.23 #	0.966 #	1.28 #	1.20 #
Radiological	Beta particles	50	*	pCi/L	4.58	10.4	1.86 #	10.2	3.47 #	0 ##	3.38 #	2.22 #	37.5	51.3	13.7	0 ##	4.28	3.90 #	1.65 #
Radiological	Technetium-99	900		pCi/L	1.04 #	10.4	0.0523 #	13.5	2.31 #	39.9	0.648 #	1.47 #	51.3	37.9	14.9	0 ##	0.173 #	0 ##	0 ##
Radiological	Uranium-233/234			pCi/L	0.295	0.0183 #	0 ##	0 ##	0.0236 #	0 ##	0 ##	0.782	0 ##	0.00116 #	0 ##	0 ##	0 ##	0 ##	0.0358 #
Radiological	Uranium-235/236			pCi/L	0.0217 #	0 ##	0.105 #	0.0101 #	0 ##	0 ##	0.0451 #	0 ##	0 ##	0 ##	0 ##	0 ##	0.0722 #	0 ##	0 ##
Radiological	Uranium-238			pCi/L	0.0851 #	0.0841 #	0 ##	0.00350 #	0 ##	0.0793 #	0.0630 #	0.225	0 ##	0 ##	0.0103 #	0.0110 #	0.0400 #	0 ##	0 ##
Radiological	Uranium-234			ug/L	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500
Radiological	Uranium-235			ug/L	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	0.0112 J	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700
Radiological	Uranium-238			ug/L	0.120 J	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	0.462	< 0.200	0.0704 J	< 0.200	0.0826 J	0.180 J	< 0.200	0.0922 J
Radiological	Total Uranium Isotopes	30		ug/L	0.120 J	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	0.473	< 0.200	0.0704 J	< 0.200	0.0826 J	0.180 J	< 0.200	0.0922 J
Chemical	Fluoride	4		mg/L	0.501	0.027 J	0.141	0.017 J	1.27	0.023 J	0.015 J	0.386	0.03 J	3.97	0.31	0.01 J	0.016 J	0.224	1.54
Chemical	Nitrate as N	10		mg/L	2.6	57	4.1	46	1.6	7.4	1.7	0.24	7.7	33	5.5	< 0.020	< 0.020	0.11	0.68
Chemical	Ammonia as N			mg/L	0.0464 J	0.0327 J	0.342	0.0484 J	0.156	0.0248 J	0.0175 J	0.904	0.1	13.9	0.0348 J	0.0537 J	0.0252 J	0.166	0.0301 J
VOCs	Acetone			ug/L	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
VOCs	Benzene	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Bromodichloromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Bromoform			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Bromomethane			ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
VOCs	2-Butanone			ug/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
VOCs	Carbon disulfide			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Carbon tetrachloride	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Chlorobenzene	100		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Chloroethane			ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
VOCs	Chloroform			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Chloromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Cyclohexane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dibromo-3-chloropropane	0.2		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Dibromochloromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dibromoethane	0.05		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dichlorobenzene	600		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,3-Dichlorobenzene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,4-Dichlorobenzene	75		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1-Dichloroethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Dichlorodifluoromethane			ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
VOCs	1,2-Dichloroethane	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1-Dichloroethene	7		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	cis-1,2-Dichloroethene	70		ug/L	< 1.0	8.5	< 1.0	4.2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	2.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	trans-1,2-Dichloroethene	100		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dichloropropane	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	cis-1,3-Dichloropropene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	trans-1,3-Dichloropropene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Ethylbenzene	700		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.3	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	2-Hexanone			ug/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
VOCs	(1-Methylethyl)-Benzene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Methyl acetate			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Methyl tert-butyl ether			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	4-Methyl-2-pentanone			ug/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
VOCs	Methylcyclohexane			ug/L	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
VOCs	Methylene chloride	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Styrene	100		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,2,2-Tetrachloroethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Tetrachloroethene	5		ug/L	< 1.0	250	< 1.0	160	< 1.0	< 1.0	< 1.0	< 1.0	2.9	1.3	16	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Toluene	1000		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,2-Trichlor-1,2,2-trifluoroethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2,4-Trichlorobenzene	70		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,1-Trichloroethane	200		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,2-Trichloroethane	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Trichloroethene	5		ug/L	4.0	3.7	< 1.0	8.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	4.8	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Trichlorofluoromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Vinyl chloride	2		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Xylenes, Total	10000		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Table T1 - Groundwater Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

				Well	W-53	W-54	W-55	W-56	W-57	W-58	W-59	W-60	W-61	W-62	W-63	W-64	W-65	W-66	W-66
				Date	10/12/21	10/12/21	10/11/21	10/11/21	10/7/21	10/11/21	10/11/21	10/15/21	10/15/21	10/19/21	10/19/21	10/19/21	10/18/21	10/18/21	10/18/21
				Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	FD
Group	Analyte	MCL	note	Units															
Radiological	Alpha particles	15	*	pCi/L	2.12 #	0 ##	276	309	0.771 #	4.22	17.7	0.303 #	2.43 #	1.08 #	2.07 #	5.14	0 ##	0.899 #	0.560 #
Radiological	Beta particles	50	*	pCi/L	1.55 #	2.06 #	61.1	72.3	1.93 #	2.33 #	10.3	2.00 #	4.11 #	0.941 #	14.2	48.8	0.229 #	2.95 #	2.22 #
Radiological	Technetium-99	900		pCi/L	0 ##	0 ##	0.449 #	0.222 #	15.0	0.985 #	7.63	1.43 #	0 ##	0 ##	13.6	72.9	0.363 #	1.10 #	0 ##
Radiological	Uranium-233/234			pCi/L	0 ##	0.199 #	182	231	0.180 #	1.40	13.0	0.0239 #	0 ##	0 ##	0.573	0.0842 #	0 ##	0 ##	0.0119 #
Radiological	Uranium-235/236			pCi/L	0 ##	0.0718 #	9.38	12.2	0.0640 #	0.121 #	0.590	0.0858 #	0 #	0 ##	0.0151 #	0 ##	0.0175 #	0.0386 #	0.0264 #
Radiological	Uranium-238			pCi/L	0 ##	0.0172 #	34.0	49.0	0.0235 #	0.128 #	2.67	0 ##	0.0180 #	0 ##	0.578	0.0914 #	0 ##	0 ##	0.0230 #
Radiological	Uranium-234			ug/L	< 0.0500	< 0.0500	0.0340 J	0.0410 J	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500
Radiological	Uranium-235			ug/L	< 0.0700	< 0.0700	3.87	4.44	< 0.0700	0.0319 J	0.286	< 0.0700	< 0.0700	< 0.0700	0.0101 J	< 0.0700	< 0.0700	< 0.0700	< 0.0700
Radiological	Uranium-238			ug/L	< 0.200	< 0.200	117	139	0.0988 J	0.966	9.66	< 0.200	< 0.200	< 0.200	1.54	0.0877 J	< 0.200	< 0.200	< 0.200
Radiological	Total Uranium Isotopes	30		ug/L	< 0.200	< 0.200	121	143	0.0988 J	0.998	9.95	< 0.200	< 0.200	< 0.200	1.55	0.0877 J	< 0.200	< 0.200	< 0.200
Chemical	Fluoride	4		mg/L	0.063 J	0.137	0.048 J	0.297	0.107	0.083 J	2.9	0.027 J	0.024 J	0.019 J	0.071 J	3.64	0.138	0.031 J	0.033 J
Chemical	Nitrate as N	10		mg/L	0.33	2.0	1.8	3.0	2.5	2.2	20	0.055	3.3	4.1	4.1	35	1.6	1.3	1.3
Chemical	Ammonia as N			mg/L	0.0245 J	0.0214 J	0.0148 J	0.0763 J	0.0298 J	3.51	7.1	0.0307 J	0.0193 J	0.0185 J	0.0192 J	12.1	0.0192 J	0.0188 J	0.0277 J
VOCs	Acetone			ug/L	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 100	< 20	< 20
VOCs	Benzene	5		ug/L	1.1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	Bromodichloromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	Bromoform			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	Bromomethane			ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 10	< 2.0	< 2.0
VOCs	2-Butanone			ug/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 50	< 10	< 10
VOCs	Carbon disulfide			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	Carbon tetrachloride	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	Chlorobenzene	100		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	Chloroethane			ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 10	< 2.0	< 2.0
VOCs	Chloroform			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	Chloromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	Cyclohexane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	1,2-Dibromo-3-chloropropane	0.2		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	Dibromochloromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	1,2-Dibromoethane	0.05		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	1,2-Dichlorobenzene	600		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	1,3-Dichlorobenzene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	1,4-Dichlorobenzene	75		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	1,1-Dichloroethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	Dichlorodifluoromethane			ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 10	< 2.0	< 2.0
VOCs	1,2-Dichloroethane	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	1,1-Dichloroethene	7		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	cis-1,2-Dichloroethene	70		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	13	8.6	8.0
VOCs	trans-1,2-Dichloroethene	100		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	1,2-Dichloropropane	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	cis-1,3-Dichloropropene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	trans-1,3-Dichloropropene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	Ethylbenzene	700		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	2-Hexanone			ug/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 50	< 10	< 10
VOCs	(1-Methylethyl)-Benzene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	Methyl acetate			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	Methyl tert-butyl ether			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	4-Methyl-2-pentanone			ug/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 50	< 10	< 10
VOCs	Methylcyclohexane			ug/L	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 5.0	< 5.0
VOCs	Methylene chloride	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	33	< 1.0	< 1.0
VOCs	Styrene	100		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	1,1,2,2-Tetrachloroethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	Tetrachloroethene	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	28	1.8	1.1	340	270	270
VOCs	Toluene	1000		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	1,1,2-Trichlor-1,2,2-trifluoroethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	1,2,4-Trichlorobenzene	70		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	1,1,1-Trichloroethane	200		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	1,1,2-Trichloroethane	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	Trichloroethene	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.4	< 1.0	41	4.9	4.7
VOCs	Trichlorofluoromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	Vinyl chloride	2		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
VOCs	Xylenes, Total	10000		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0

Table T1 - Groundwater Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

				Well	W-67	W-68	W-69	W-70	W-71	W-71	W-72	W-73	W-74	W-74	W-75	W-76	W-77	W-78	W-79
				Date	10/18/21	10/19/21	10/21/21	10/21/21	10/21/21	10/21/21	10/12/21	10/8/21	10/12/21	10/12/21	10/12/21	10/7/21	10/6/21	10/6/21	10/6/21
				Type	N	N	N	N	N	FD	N	N	N	FD	N	N	N	N	N
Group	Analyte	MCL	note	Units															
Radiological	Alpha particles	15	*	pCi/L	2.06 #	0.0923 #	0 ##	1.37 #	0.418 #	2.98 #	0 ##	0 ##	0.306 #	2.77 #	0 ##	8.71	221	0 ##	0.864 #
Radiological	Beta particles	50	*	pCi/L	33.4	2.61 #	0 ##	0 ##	2.35 #	2.04 #	3.80 #	1.84 #	0 ##	0.744 #	1.17 #	6.19	36.4	0 ##	2.28 #
Radiological	Technetium-99	900		pCi/L	69.8	0.0281 #	0 ##	0.570 #	0.0199 #	0.395 #	0 ##	2.26 #	0.0903 #	0 ##	0.236 #	0.0261 #	2.50 #	0 ##	0 ##
Radiological	Uranium-233/234			pCi/L	0 ##	0 ##	0 ##	0.0582 #	0 ##	0 ##	0.276	0.153 #	0 ##	0.0432 #	0.0458 #	5.03	268	0.195	0.0283 #
Radiological	Uranium-235/236			pCi/L	0 ##	0 ##	0.0618 #	0.0330 #	0.101 #	0.0591 #	0.0107 #	0.0189 #	0.0333 #	0 ##	0.0187 #	0.162 #	17.0	0.138	0 ##
Radiological	Uranium-238			pCi/L	0 ##	0 ##	0 ##	0 ##	0.0757 #	0 ##	0.117 #	0.0894 #	0.0199 #	0 ##	0.0442 #	1.27	44.4	0.0143 #	0.0340 #
Radiological	Uranium-234			ug/L	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	0.0470 J	< 0.0500	< 0.0500
Radiological	Uranium-235			ug/L	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	0.104	5.52	< 0.0700	< 0.0700
Radiological	Uranium-238			ug/L	< 0.200	< 0.200	< 0.200	< 0.200	0.0939 J	0.0898 J	0.266	0.133 J	< 0.200	< 0.200	< 0.200	3.12	128	0.186 J	< 0.200
Radiological	Total Uranium Isotopes	30		ug/L	< 0.200	< 0.200	< 0.200	< 0.200	0.0939 J	0.0898 J	0.266	0.133 J	< 0.200	< 0.200	< 0.200	3.23	133	0.186 J	< 0.200
Chemical	Fluoride	4		mg/L	0.023 J	0.027 J	0.075 J	0.017 J	0.031 J	0.086 J	0.406	0.056 J	0.017 J	0.021 J	0.116	2.66	14.8	13.6	0.978
Chemical	Nitrate as N	10		mg/L	14	2.8	0.35	1.6	< 0.020	< 0.020	2.4	1.3	5.5	5.5	0.21	13	4.9	3.8	3.9
Chemical	Ammonia as N			mg/L	1.74	0.255	0.0228 J	0.0186 J	0.0212 J	0.0194 J	0.0262 J	0.0208 J	0.0214 J	0.0386 J	0.258	0.0283 J	3.66	0.0219 J	0.0166 J
VOCs	Acetone			ug/L	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
VOCs	Benzene	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Bromodichloromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Bromoform			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Bromomethane			ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
VOCs	2-Butanone			ug/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
VOCs	Carbon disulfide			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Carbon tetrachloride	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Chlorobenzene	100		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Chloroethane			ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
VOCs	Chloroform			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	4.1	< 1.0	< 1.0
VOCs	Chloromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Cyclohexane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dibromo-3-chloropropane	0.2		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Dibromochloromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dibromoethane	0.05		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dichlorobenzene	600		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,3-Dichlorobenzene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,4-Dichlorobenzene	75		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1-Dichloroethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Dichlorodifluoromethane			ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
VOCs	1,2-Dichloroethane	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1-Dichloroethene	7		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	cis-1,2-Dichloroethene	70		ug/L	1.3	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.3	1.3	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	trans-1,2-Dichloroethene	100		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dichloropropane	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	cis-1,3-Dichloropropene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	trans-1,3-Dichloropropene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Ethylbenzene	700		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	2-Hexanone			ug/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
VOCs	(1-Methylethyl)-Benzene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Methyl acetate			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Methyl tert-butyl ether			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	4-Methyl-2-pentanone			ug/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
VOCs	Methylcyclohexane			ug/L	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
VOCs	Methylene chloride	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Styrene	100		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,2,2-Tetrachloroethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Tetrachloroethene	5		ug/L	41	55	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	11	12	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Toluene	1000		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,2-Trichlor-1,2,2-trifluoroethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2,4-Trichlorobenzene	70		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,1-Trichloroethane	200		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,2-Trichloroethane	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Trichloroethene	5		ug/L	7.4	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	3.2	3.1	< 1.0	26	< 1.0	< 1.0	< 1.0
VOCs	Trichlorofluoromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Vinyl chloride	2		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Xylenes, Total	10000		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Table T1 - Groundwater Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

				Well	W-80	W-81	W-81	W-82	W-83	W-84	W-85	W-86	W-87	W-88	W-89	W-90	W-91	W-92
				Date	10/7/21	10/7/21	10/7/21	10/7/21	10/7/21	10/7/21	10/22/21	10/22/21	10/13/21	10/21/21	10/21/21	10/20/21	10/20/21	10/22/21
				Type	N	N	FD	N	N	N	N	N	N	N	N	N	N	N
Group	Analyte	MCL	note	Units														
Radiological	Alpha particles	15	*	pCi/L	0 ##	0.133 #	0 ##	1.76 #	1.50 #	0 ##	2.78 #	0 ##	2.81	0.593 #	0.991 #	0.419 #	0 ##	3.35
Radiological	Beta particles	50	*	pCi/L	5.69	5.84	5.85	1.51 #	0.822 #	0.282 #	1.85 #	0.663 #	9.79	0.117 #	2.99 #	2.13 #	0 ##	0.885 #
Radiological	Technetium-99	900		pCi/L	1.17 #	0.279 #	1.20 #	1.72 #	1.28 #	1.48 #	0 ##	0 ##	1.05 #	1.74 #	0.544 #	0.185 #	0.352 #	2.76 #
Radiological	Uranium-233/234			pCi/L	0.142 #	0.874	0.910	0 ##	0 ##	0 ##	0 ##	0 ##	0.0823 #	0 ##	0.107 #	0 ##	0 ##	0.0378 #
Radiological	Uranium-235/236			pCi/L	0 ##	0.0533 #	0.123 #	0.0551 #	0.0143 #	0.0486 #	0 ##	0 ##	0.0296 #	0.0772 #	0 ##	0 ##	0 ##	0 ##
Radiological	Uranium-238			pCi/L	0.0345 #	0.477	0.231 #	0 ##	0.00330 #	0.0434 #	0 ##	0.147 #	0.0689 #	0 ##	0.0119 #	0 ##	0 ##	0 ##
Radiological	Uranium-234			ug/L	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500
Radiological	Uranium-235			ug/L	< 0.0700	0.0159 J	0.0166 J	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700
Radiological	Uranium-238			ug/L	0.106 J	1.41	1.35	< 0.200	< 0.200	< 0.200	0.0781 J	< 0.200	0.445	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
Radiological	Total Uranium Isotopes	30		ug/L	0.106 J	1.42	1.36	< 0.200	< 0.200	< 0.200	0.0781 J	< 0.200	0.445	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
Chemical	Fluoride	4		mg/L	0.282	0.056 J	0.053 J	0.064 J	0.115	0.092 J	0.152	0.377	0.117	0.034 J	0.067 J	0.013 J	0.014 J	0.12
Chemical	Nitrate as N	10		mg/L	9.2	3.8	4.1	1.8	0.85	0.091	< 0.020	< 0.020	0.19	3.5	2.2	2.8	1.2	< 0.020
Chemical	Ammonia as N			mg/L	0.0378 J	0.0352 J	0.0268 J	0.0221 J	0.0243 J	0.0236 J	0.127	0.0166 J	0.027 J	0.0194 J	0.019 J	0.0165 J	0.0174 J	4.39
VOCs	Acetone			ug/L	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
VOCs	Benzene	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Bromodichloromethane			ug/L	1.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Bromoform			ug/L	58	6.2	6.3	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Bromomethane			ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
VOCs	2-Butanone			ug/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
VOCs	Carbon disulfide			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Carbon tetrachloride	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Chlorobenzene	100		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Chloroethane			ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
VOCs	Chloroform			ug/L	4.6	2.7	2.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Chloromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Cyclohexane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dibromo-3-chloropropane	0.2		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Dibromochloromethane			ug/L	4.1	1.5	1.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dibromoethane	0.05		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dichlorobenzene	600		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,3-Dichlorobenzene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,4-Dichlorobenzene	75		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1-Dichloroethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Dichlorodifluoromethane			ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
VOCs	1,2-Dichloroethane	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1-Dichloroethene	7		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	cis-1,2-Dichloroethene	70		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	trans-1,2-Dichloroethene	100		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dichloropropane	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	cis-1,3-Dichloropropene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	trans-1,3-Dichloropropene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Ethylbenzene	700		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	2-Hexanone			ug/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
VOCs	(1-Methylethyl)-Benzene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Methyl acetate			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Methyl tert-butyl ether			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	4-Methyl-2-pentanone			ug/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
VOCs	Methylcyclohexane			ug/L	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
VOCs	Methylene chloride	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Styrene	100		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,2,2-Tetrachloroethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Tetrachloroethene	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	34	2.4	1.2	< 1.0	< 1.0	< 1.0
VOCs	Toluene	1000		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,2-Trichlor-1,2,2-trifluoroethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2,4-Trichlorobenzene	70		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,1-Trichloroethane	200		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,2-Trichloroethane	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Trichloroethene	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	6.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Trichlorofluoromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Vinyl chloride	2		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Xylenes, Total	10000		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Table T1 - Groundwater Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

				Well	W-93	W-94	W-95	W-96	W-97	W-97	W-98	W-99	W-100	W-102	W-103	W-104	W-105	W-106	W-107
				Date	10/6/21	10/26/21	10/26/21	10/25/21	10/25/21	10/25/21	10/19/21	10/15/21	10/15/21	10/8/21	10/18/21	10/25/21	10/25/21	10/18/21	10/26/21
				Type	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N
Group	Analyte	MCL	note	Units															
Radiological	Alpha particles	15	*	pCi/L	2.17 #	3.82 #	2.57 #	0.893 #	1.69 #	0.808 #	2.36 #	1.01 #	2.75 #	6.57	0 ##	0.457 #	0.634 #	1.44 #	1.64 #
Radiological	Beta particles	50	*	pCi/L	3.21 #	5.78	3.99	2.22 #	10.3	12.9	16.3	40.6	23.9	80.6	7.53	4.20 #	2.20 #	0.500 #	3.52 #
Radiological	Technetium-99	900		pCi/L	0 ##	0 ##	0 ##	0 ##	14.7	15.9	6.30	57.7	18.0	119	40.2	1.71 #	0.544 #	2.54 #	0 ##
Radiological	Uranium-233/234			pCi/L	0.264	0 ##	0 ##	0.0564 #	0 ##	0.0789 #	0 ##	0.314 #	0.0196 #	1.81	0 ##	0.111 #	0 ##	0.195 #	0 ##
Radiological	Uranium-235/236			pCi/L	0.101 #	0 ##	0 ##	0.0586 #	0.0222 #	0 ##	0.0516 #	0.0255 #	0.0619 #	0.136	0 ##	0.0696 #	0 ##	0.103 #	0.125 #
Radiological	Uranium-238			pCi/L	0.0520 #	0 ##	0 ##	0 ##	0 ##	0 ##	0 ##	0.130 #	0 ##	0.396	0 ##	0.0806 #	0.0794 #	0.122 #	0.0573 #
Radiological	Uranium-234			ug/L	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500
Radiological	Uranium-235			ug/L	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	0.0312 J	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700
Radiological	Uranium-238			ug/L	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	0.243	0.180 J	1.78	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
Radiological	Total Uranium Isotopes	30		ug/L	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	0.243	0.180 J	1.81	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
Chemical	Fluoride	4		mg/L	0.036 J	0.049 J	0.233	0.092 J	0.481	0.451	0.019 J	2.96	1.91	3.74	0.032 J	0.064 J	0.376	0.154	0.082 J
Chemical	Nitrate as N	10		mg/L	4.9	0.089	0.076	< 0.020	4.5	4.2	11	7.8	7.6	95	10	6.4	0.089	0.084	0.089
Chemical	Ammonia as N			mg/L	0.0174 J	0.275	0.203	0.241	7.35	6.65	0.356	3.25	8.27	35.1	0.387	1.45	0.721	1.58	0.334
VOCs	Acetone			ug/L	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
VOCs	Benzene	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Bromodichloromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Bromoform			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Bromomethane			ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
VOCs	2-Butanone			ug/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
VOCs	Carbon disulfide			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Carbon tetrachloride	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Chlorobenzene	100		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Chloroethane			ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
VOCs	Chloroform			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Chloromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Cyclohexane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dibromo-3-chloropropane	0.2		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Dibromochloromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dibromoethane	0.05		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dichlorobenzene	600		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,3-Dichlorobenzene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,4-Dichlorobenzene	75		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1-Dichloroethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Dichlorodifluoromethane			ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
VOCs	1,2-Dichloroethane	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1-Dichloroethene	7		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	cis-1,2-Dichloroethene	70		ug/L	< 1.0	5.8	2.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	5.1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	trans-1,2-Dichloroethene	100		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dichloropropane	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	cis-1,3-Dichloropropene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	trans-1,3-Dichloropropene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Ethylbenzene	700		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	2-Hexanone			ug/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
VOCs	(1-Methylethyl)-Benzene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Methyl acetate			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Methyl tert-butyl ether			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	4-Methyl-2-pentanone			ug/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
VOCs	Methylcyclohexane			ug/L	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
VOCs	Methylene chloride	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Styrene	100		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,2,2-Tetrachloroethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Tetrachloroethene	5		ug/L	32	< 1.0	< 1.0	1.3	5.6	5.9	< 1.0	< 1.0	< 1.0	48	24	3.1	< 1.0	< 1.0	< 1.0
VOCs	Toluene	1000		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,2-Trichlor-1,2,2-trifluoroethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2,4-Trichlorobenzene	70		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,1-Trichloroethane	200		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,2-Trichloroethane	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Trichloroethene	5		ug/L	4.0	< 1.0	< 1.0	2.0	1.7	1.7	< 1.0	< 1.0	< 1.0	6.4	5.2	1.9	< 1.0	< 1.0	< 1.0
VOCs	Trichlorofluoromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Vinyl chloride	2		ug/L	< 1.0	< 1.0	4.2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	3.7
VOCs	Xylenes, Total	10000		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Table T1 - Groundwater Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

				Well	W-108	W-108	W-109	W-110	W-111	W-112	W-113	W-114	W-115	W-116	W-117	W-118	W-119	W-120	W-121
				Date	10/25/21	10/25/21	10/26/21	10/26/21	10/26/21	10/26/21	10/15/21	10/15/21	10/14/21	10/14/21	10/14/21	10/14/21	10/18/21	10/15/21	10/15/21
				Type	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N
Group	Analyte	MCL	note	Units															
Radiological	Alpha particles	15	*	pCi/L	1.96 #	0 ##	1.47 #	2.35	0.989 #	0 ##	0.642 #	0.602 #	0 ##	1.24 #	0.596 #	1.08 #	2.25 #	1.26 #	0 ##
Radiological	Beta particles	50	*	pCi/L	2.55 #	1.92 #	0 ##	0.581 #	1.15 #	0 ##	1.04 #	2.37 #	0.991 #	0 ##	0.859 #	0 ##	2.00 #	3.56 #	5.06
Radiological	Technetium-99	900		pCi/L	0 ##	0 ##	0 ##	0 ##	0 ##	0 ##	1.01 #	0.900 #	0.0562 #	0.927 #	0 ##	1.61 #	0 ##	1.01 #	1.62 #
Radiological	Uranium-233/234			pCi/L	0.00115 #	0.142 #	0.125 #	0.185 #	0.0169 #	0 ##	0 ##	0.0697 #	0.0547 #	0 ##	0 ##	0.0332 #	0 ##	0.393	0.0102 #
Radiological	Uranium-235/236			pCi/L	0 #	0.0368 #	0.0839 #	0 ##	0.0932 #	0.0195 #	0 ##	0.0380 #	0.0935 #	0.108 #	0 ##	0.0386 #	0.0153 #	0 ##	0.0118 #
Radiological	Uranium-238			pCi/L	0 ##	0 ##	0.0414 #	0.170 #	0.0769 #	0.00122 #	0.118 #	0 ##	0.0575 #	0 ##	0 ##	0.0325 #	0 ##	0.278 #	0 ##
Radiological	Uranium-234			ug/L	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500
Radiological	Uranium-235			ug/L	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700	< 0.0700
Radiological	Uranium-238			ug/L	< 0.200	< 0.200	< 0.200	0.0693 J	0.136 J	0.137 J	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	0.623	< 0.200
Radiological	Total Uranium Isotopes	30		ug/L	< 0.200	< 0.200	< 0.200	0.0693 J	0.136 J	0.137 J	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	0.623	< 0.200
Chemical	Fluoride	4		mg/L	0.098 J	0.087 J	0.051 J	0.032 J	0.012 J	0.076 J	0.181	0.247	0.026 J	0.025 J	0.029 J	0.047 J	0.016 J	0.083 J	0.057 J
Chemical	Nitrate as N	10		mg/L	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	0.077	2.2	1.1	3.4	5.9	2.4	3.9	1.5	4.5	2.5
Chemical	Ammonia as N			mg/L	0.158	0.148	0.0756 J	0.032 J	0.031 J	0.809	0.025 J	0.0237 J	0.0148 J	0.0159 J	0.0207 J	0.0138 J	0.0635 J	0.0228 J	0.0484 J
VOCs	Acetone			ug/L	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
VOCs	Benzene	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Bromodichloromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Bromoform			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Bromomethane			ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
VOCs	2-Butanone			ug/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
VOCs	Carbon disulfide			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Carbon tetrachloride	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Chlorobenzene	100		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Chloroethane			ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
VOCs	Chloroform			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Chloromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Cyclohexane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dibromo-3-chloropropane	0.2		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Dibromochloromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dibromoethane	0.05		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dichlorobenzene	600		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,3-Dichlorobenzene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,4-Dichlorobenzene	75		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1-Dichloroethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Dichlorodifluoromethane			ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
VOCs	1,2-Dichloroethane	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1-Dichloroethene	7		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	cis-1,2-Dichloroethene	70		ug/L	1.5	1.6	1.5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.3	< 1.0
VOCs	trans-1,2-Dichloroethene	100		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dichloropropane	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	cis-1,3-Dichloropropene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	trans-1,3-Dichloropropene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Ethylbenzene	700		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	2-Hexanone			ug/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
VOCs	(1-Methylethyl)-Benzene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Methyl acetate			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Methyl tert-butyl ether			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	4-Methyl-2-pentanone			ug/L	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
VOCs	Methylcyclohexane			ug/L	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
VOCs	Methylene chloride	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Styrene	100		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,2,2-Tetrachloroethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Tetrachloroethene	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	2.2	85	74	340	82
VOCs	Toluene	1000		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,2-Trichlor-1,2,2-trifluoroethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2,4-Trichlorobenzene	70		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,1-Trichloroethane	200		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,2-Trichloroethane	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Trichloroethene	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	2.1	2.3	17	2.4
VOCs	Trichlorofluoromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Vinyl chloride	2		ug/L	< 1.0	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Xylenes, Total	10000		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Table T1 - Groundwater Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

				Well	W-122	W-123	W-124	W-125	W-126
				Date	10/13/21	10/5/21	10/25/21	10/25/21	10/25/21
				Type	N	N	N	N	N
Group	Analyte	MCL	note	Units					
Radiological	Alpha particles	15	*	pCi/L	3.49	5.31	0 ##	2.74 #	4.23
Radiological	Beta particles	50	*	pCi/L	1.45 #	239	1.59 #	6.77	4.02
Radiological	Technetium-99	900		pCi/L	0.494 #	424	0 ##	1.15 #	0 ##
Radiological	Uranium-233/234			pCi/L	0 ##	0.333	0 ##	0.0880 #	0 ##
Radiological	Uranium-235/236			pCi/L	0 ##	0.0432 #	0.0128 #	0.0279 #	0 ##
Radiological	Uranium-238			pCi/L	0 ##	0.421	0.0297 #	0.0250 #	0 ##
Radiological	Uranium-234			ug/L	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500
Radiological	Uranium-235			ug/L	< 0.0700	0.0118 J	< 0.0700	< 0.0700	< 0.0700
Radiological	Uranium-238			ug/L	< 0.200	1.60	< 0.200	< 0.200	< 0.200
Radiological	Total Uranium Isotopes	30		ug/L	< 0.200	1.61	< 0.200	< 0.200	< 0.200
Chemical	Fluoride	4		mg/L	0.056 J	8.13	0.056 J	0.257	0.251
Chemical	Nitrate as N	10		mg/L	< 0.020	120	< 0.020	0.073	0.060
Chemical	Ammonia as N			mg/L	0.0248 J	95	0.173	5.42	2.9
VOCs	Acetone			ug/L	< 20	< 20	< 20	< 20	< 20
VOCs	Benzene	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Bromodichloromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Bromoform			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Bromomethane			ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
VOCs	2-Butanone			ug/L	< 10	< 10	< 10	< 10	< 10
VOCs	Carbon disulfide			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Carbon tetrachloride	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Chlorobenzene	100		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Chloroethane			ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
VOCs	Chloroform			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Chloromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Cyclohexane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dibromo-3-chloropropane	0.2		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Dibromochloromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dibromoethane	0.05		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dichlorobenzene	600		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,3-Dichlorobenzene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,4-Dichlorobenzene	75		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1-Dichloroethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Dichlorodifluoromethane			ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
VOCs	1,2-Dichloroethane	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1-Dichloroethene	7		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	cis-1,2-Dichloroethene	70		ug/L	< 1.0	1.9	< 1.0	< 1.0	< 1.0
VOCs	trans-1,2-Dichloroethene	100		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dichloropropane	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	cis-1,3-Dichloropropene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	trans-1,3-Dichloropropene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Ethylbenzene	700		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	2-Hexanone			ug/L	< 10	< 10	< 10	< 10	< 10
VOCs	(1-Methylethyl)-Benzene			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Methyl acetate			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Methyl tert-butyl ether			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	4-Methyl-2-pentanone			ug/L	< 10	< 10	< 10	< 10	< 10
VOCs	Methylcyclohexane			ug/L	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
VOCs	Methylene chloride	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Styrene	100		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,2,2-Tetrachloroethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Tetrachloroethene	5		ug/L	< 1.0	23	< 1.0	< 1.0	< 1.0
VOCs	Toluene	1000		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,2-Trichlor-1,2,2-trifluoroethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2,4-Trichlorobenzene	70		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,1-Trichloroethane	200		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,2-Trichloroethane	5		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Trichloroethene	5		ug/L	< 1.0	7.7	< 1.0	< 1.0	< 1.0
VOCs	Trichlorofluoromethane			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Vinyl chloride	2		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Xylenes, Total	10000		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Notes:
MCL - Maximum Contaminant Level
* - site-specific action level
Concentrations in orange shaded cells exceed their MCL
pCi/L - picocuries per liter
ug/L - micrograms per liter
mg/L - milligrams per liter
N - Normal sample
FD - Field duplicate sample
Bold concentrations indicate detections
J - Result below reporting limit
- value is below minimum detectable concentration
- value shown as zero reported by analytical laboratory as a negative number
VOCs - volatile organic compounds

Table T2 - Field Groundwater Stabilization Parameters
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

	Field Parameter	Dissolved Oxygen	Oxidation Reduction Potential	pH	Specific Conductivity	Temperature	Turbidity
	Unit	mg/L	mv	SU	us/cm	degrees C	NTU
Location ID	Date						
W-RW1	10/14/2021	4.94	20.01	5.57	99	23.88	0.17
W-RW2	10/21/2021	0.8	295.1	5.13	199	20.16	0
W-3A	10/25/2021	0.18	133.07	4.87	24	19.04	0
W-4R	10/25/2021	0.24	78.48	5.69	162	20.58	4.01
W-6	10/8/2021	0.3	156.03	6.34	2318	23.11	5.16
W-7A	10/5/2021	0.3	-26.64	7.05	3164	23.73	10.79
W-10	10/5/2021	0.27	115.75	6.22	528	24.4	0.87
W-11	10/5/2021	0.33	-11.45	5.75	272	23.09	5.84
W-13R	10/5/2021	0.6	123.73	6.33	765	24.43	23.44
W-14	10/18/2021	0.28	-76.11	6.23	551	21.59	0.94
W-15	10/19/2021	0.28	182.22	5.99	556	21.35	0
W-16	10/19/2021	0.22	9.6	6.16	380	21.3	3.53
W-17	10/12/2021	0.28	-82.63	6.48	438	22.57	4.29
W-18R	10/8/2021	0.3	104.23	7.43	4704	23.18	0.28
W-19B	10/20/2021	4.38	272.09	5.35	80	19.65	0
W-20	10/26/2021	0.3	-36.9	5.6	136	19.54	0
W-22	10/8/2021	0.27	225.01	5.61	1317	24.59	2.39
W-23R	10/18/2021	4.15	284.23	4.92	56	18.63	0
W-24	10/21/2021	0.18	-122.52	5.57	58	23.13	8.67
W-25	10/26/2021	0.19	-246.16	6.7	150	18.48	10.26
W-26	10/19/2021	0.61	60.72	6.08	227	19.1	0
W-27	10/22/2021	0.29	-102.87	6.23	358	20.73	0.16
W-28	10/6/2021	0.84	440.38	6.02	810	25.26	17.54
W-29	10/8/2021	0.27	-15.49	7.27	412	24.32	0.04
W-30	10/8/2021	0.19	4.65	5.89	849	25.35	0.25
W-32	10/5/2021	0.33	-19.6	7.11	1259	23.64	7.94
W-33	10/14/2021	0.81	13.47	5.96	239	21.91	0.13
W-35	10/14/2021	4.49	5.41	6.08	151	24.01	1.39
W-36	10/13/2021	0.23	196.53	5.16	41	22.6	3.12
W-37	10/11/2021	3.66	234.44	5.64	137	23.91	0.73
W-38	10/7/2021	3.16	63.68	5.45	174	25.21	1.28
W-39	10/18/2021	2.32	48.62	5.72	617	24.2	0.16
W-40	10/12/2021	0.53	-115.25	6.25	92	23.79	6.43
W-41R	10/21/2021	3.72	107.39	5.63	534	19.46	0
W-42	10/20/2021	0.63	330.66	4.8	61	18.69	0
W-43	10/18/2021	3.27	61.78	5.46	110	23.33	0.87
W-44	10/18/2021	3.53	68.22	5.5	92	20	0
W-45	10/14/2021	0.35	-209.91	6.34	155	24.57	1.07
W-46	10/21/2021	0.28	259.21	5.46	196	19.37	1.62
W-47	10/19/2021	0.31	200.47	5.9	542	18.27	0
W-48	10/19/2021	2.38	81.07	5.65	126	19.5	0.92
W-49	10/20/2021	0.45	126.16	4.84	31	20.27	3.38
W-50	10/12/2021	0.44	-108.88	5.15	28	22.88	44.73
W-51	10/13/2021	0.14	-198.98	6.74	234	26.12	2.21
W-52	10/13/2021	0.33	70.65	5.78	156	26.24	1.16
W-53	10/12/2021	0.21	-93.42	6.12	220	25.63	1.92
W-54	10/12/2021	3.03	76.3	5.83	142	24.78	6.38
W-55	10/11/2021	4.25	216.56	5.71	136	24.7	1.55
W-56	10/11/2021	3.19	224.17	5.7	135	25.93	9.36
W-57	10/7/2021	2.86	219.53	5.58	139	26.78	3.46
W-58	10/11/2021	0.19	187.19	5.96	192	26.19	0.68
W-59	10/11/2021	0.58	231.09	6.34	409	26.37	3.81
W-60	10/15/2021	0.55	-130.94	6.14	111	19.87	32.49
W-61	10/15/2021	4.15	85.67	5.55	125	20.97	3.84
W-62	10/19/2021	3.57	121.02	4.89	87	17.89	0
W-63	10/19/2021	0.54	60.25	6.65	393	21.97	8.83
W-64	10/19/2021	0.3	228.03	5.64	509	18.46	0
W-65	10/18/2021	0.45	-12.94	6.15	119.99	20.4	0
W-66	10/18/2021	0.65	37.48	5.59	85	22.19	4.38
W-67	10/18/2021	0.28	217.14	5.46	210	18.94	0
W-68	10/19/2021	4.95	102.25	4.98	88	18.23	0
W-69	10/21/2021	0.26	119.67	5.37	73	23.69	5.26
W-70	10/21/2021	5.78	321.22	4.86	56	21.3	2.41
W-71	10/21/2021	0.3	42.11	5.43	33	21.79	5.47
W-72	10/12/2021	1.37	195.68	5.89	183	23.77	3.71
W-73	10/8/2021	2.59	250.9	5.6	132	25.35	3.51
W-74	10/12/2021	1.48	272.47	5.12	128	22.69	0.15
W-75	10/12/2021	0.18	20.77	5.67	140	24.43	0.19
W-76	10/7/2021	2.07	74.55	4.98	196	26.82	0.38
W-77	10/6/2021	1.45	-115.26	11.52	5786	26.3	0.71
W-78	10/6/2021	4.12	216.98	6.02	210	26.13	1.11
W-79	10/6/2021	4.43	222.83	5.87	180	27.06	2.78
W-80	10/7/2021	3.28	225.84	5.6	427	27.29	7.62
W-81	10/7/2021	0.58	4.93	6.54	488	23.27	0.05
W-82	10/7/2021	0.93	230.76	4.95	174	23.76	4.05
W-83	10/7/2021	1.08	-21.93	6.04	184	23.6	1.62
W-84	10/7/2021	0.35	-155.67	6.14	224	25.84	16.5
W-85	10/22/2021	0.46	-231.56	6.76	275	21.28	0.09
W-86	10/22/2021	0.31	-76.82	5.99	278	19.93	12.95
W-87	10/13/2021	0.24	-66.32	6.34	108	24.25	56.93
W-88	10/21/2021	6.51	91.02	5.63	76	19.32	0.19
W-89	10/21/2021	6.08	101.09	5.5	65	20.46	0.25
W-90	10/20/2021	5.92	265.02	5.15	74	19.8	2.47
W-91	10/20/2021	5.37	269.62	5.14	60	20.59	0.59
W-92	10/22/2021	0.2	-74.97	5.98	253	19.16	0
W-93	10/6/2021	1.4	255.85	5.35	122	23.29	1.98
W-94	10/26/2021	0.21	-46.79	6	164	17.69	0.11
W-95	10/26/2021	0.19	-86.9	6.23	233	18.16	2.9
W-96	10/25/2021	0.21	-209.23	6.36	276	19.21	0.68
W-97	10/25/2021	0.35	-93.73	6.31	250	19.67	0
W-98	10/19/2021	0.58	261.54	5.15	168	20.58	1.25
W-99	10/15/2021	0.36	53.99	6.62	561	23.65	1.55
W-100	10/15/2021	0.9	-17.5	6.32	511	24.55	1.17
W-102	10/8/2021	0.26	-8.37	6.97	1278	23.48	4.92
W-103	10/18/2021	1.4	260.71	5.34	167	19.11	0
W-104	10/25/2021	0.16	-4.87	5.6	216	21.41	0.83
W-105	10/25/2021	0.2	-116.79	6.41	362	19.25	0.42
W-106	10/18/2021	0.16	-83.91	5.99	374	19.39	1.89
W-107	10/26/2021	0.21	-66.46	6.07	173	18.6	4.55
W-108	10/25/2021	0.19	-73.77	6.18	178	19.43	2.16
W-109	10/26/2021	0.27	-196.81	6.36	104	18.42	9.59
W-110	10/26/2021	0.14	-112.35	5.77	45	18.89	4.62
W-111	10/26/2021	0.2	126.88	5.03	26	18.37	0

Table T2 - Field Groundwater Stabilization Parameters
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

	Field Parameter	Dissolved Oxygen	Oxidation Reduction Potential	pH	Specific Conductivity	Temperature	Turbidity
	Unit	mg/L	mv	SU	us/cm	degrees C	NTU
Location ID	Date						
W-112	10/26/2021	0.23	-104.18	6.29	268	17.92	0.86
W-113	10/15/2021	0.43	30.33	5.98	158	19.58	1.06
W-114	10/15/2021	1.26	65.19	5.41	94	21.64	2.73
W-115	10/14/2021	3.17	242.57	5.35	98	18.84	4.52
W-116	10/14/2021	5.12	118.8	5.22	123	19.73	0
W-117	10/14/2021	2.98	112.03	5.73	97	19.77	4.96
W-118	10/14/2021	2.48	262.4	5.16	94	19.49	0.55
W-119	10/18/2021	0.28	174.88	4.91	81	18.04	0
W-120	10/15/2021	0.75	-48.47	6.11	161	22.01	2.11
W-121	10/15/2021	0.52	-14.11	5.61	119	23.53	0.25
W-122	10/13/2021	0.25	-68.64	5.67	49	22.61	6.9
W-123	10/5/2021	0.3	39.99	7.64	1642	23.43	3.07
W-124	10/25/2021	0.41	-173.28	6.07	145	19.72	0.32
W-125	10/25/2021	0.2	-122.72	6.15	396	19.14	6.42
W-126	10/25/2021	0.27	-228.74	6.46	336	19.35	12.26

Notes:
mg/L - milligrams per liter
mv - millivolts
SU - standard units
us/cm - microsiemens per centimeter
C - Centirgade
NTU - Nephelometric Turbidity Unit

Table T3 - Surface Water Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

			Location	SW-11	SW-12	SW-13	SW-14	SW-16	SW-17	SW-17	SW-18
			Type	N	N	N	N	N	N	FD	N
			Date	7/17/2019	7/17/2019	7/17/2019	7/17/2019	7/17/2019	7/18/2019	7/18/2019	7/16/2019
Group	Analyte	Unit	MCL								
Chemical	Ammonia	mg/L		0.546	0.228	0.249	0.233	4.35	0.290	0.290	0.208
Chemical	Fluoride	mg/L	4	0.146	0.296	0.226	0.234	1.69	0.460	0.471	0.309
Chemical	Nitrate as N	mg/L	10	< 0.020	< 0.020	< 0.020	0.63	0.48	3.8	3.8	5.7
Metals	Aluminum	ug/L		634	118 J	212	91.3 J	155 J	144 J	141 J	721
Metals	Antimony	ug/L	6	< 20.0	< 20.0	< 20.0	< 20.0	< 20.0	< 20.0	< 20.0	< 20.0
Metals	Arsenic	ug/L	10	< 30.0	< 30.0	< 30.0	< 30.0	< 30.0	< 30.0	< 30.0	< 30.0
Metals	Barium	ug/L	2000	113	52.2	101	66	12.3	85.3	81.8	91.8
Metals	Beryllium	ug/L	4	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00
Metals	Cadmium	ug/L	5	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00
Metals	Calcium	ug/L		3380	6540	7900	6570	4690	10000	9770	8150
Metals	Chromium	ug/L	100	1.47 J	< 10.0	1.25 J	< 10.0	2.64 J	< 10.0	< 10.0	1.19 J
Metals	Cobalt	ug/L		3.96 J	1.01 J	2.35 J	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00
Metals	Copper	ug/L	1300	3.37 J	< 20.0	< 20.0	< 20.0	< 20.0	< 20.0	< 20.0	< 20.0
Metals	Iron	ug/L		2410	1110	3820	1180	614	715	682	1260
Metals	Lead	ug/L	15	< 20.0	< 20.0	< 20.0	< 20.0	< 20.0	< 20.0	< 20.0	< 20.0
Metals	Magnesium	ug/L		1030	1340	1490	1240	326	2280	2130	2140
Metals	Manganese	ug/L		944	1320	1860	275	26.8	86.5	82.9	41
Metals	Mercury	ug/L	2	0.081 J	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
Metals	Nickel	ug/L		1.82 J	< 5.00	< 5.00	< 5.00	3.5 J	33.4	31.4	14.8
Metals	Potassium	ug/L		1920	1690	1850	1620	816	2710	2640	2280
Metals	Selenium	ug/L	50	< 30.0	< 30.0	< 30.0	< 30.0	< 30.0	< 30.0	< 30.0	< 30.0
Metals	Silver	ug/L		< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00
Metals	Sodium	ug/L		1980	4860	3780	4530	1090	11300	11200	9550
Metals	Thallium	ug/L	2	< 20.0	< 20.0	< 20.0	< 20.0	< 20.0	< 20.0	< 20.0	< 20.0
Metals	Vanadium	ug/L		4.62 J	< 5.00	1.79 J	< 5.00	< 5.00	< 5.00	< 5.00	1.84 J
Metals	Zinc	ug/L		15.2 J	5.55 J	11.4 J	13 J	44.6	15.6 J	14.7 J	15.3 J
Radiological	Technetium-99	pCi/L	900	0 ##	0 ##	0 ##	3.73 #	0 ##	0 ##	0 ##	1.29 #
Radiological	Uranium-233/234	pCi/L		0.296	0.0491 #	0.0159 #	0.575	3.34	0.145 #	0.204 #	0.285 #
Radiological	Uranium-235/236	pCi/L		0.0959 #	0.00914 #	0 #	0.101 #	0.145	0 ##	0 #	0.0501 #
Radiological	Uranium-238	pCi/L		0.105 #	0.101 #	0 ##	0.0793 #	0.710	0.150 #	0.0925 #	0.159 #
Radiological	Uranium-234	ug/L		< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Radiological	Uranium-235	ug/L		< 0.070	< 0.070	< 0.070	< 0.070	0.0682 J	< 0.070	< 0.070	< 0.070
Radiological	Uranium-238	ug/L		0.365	< 0.200	0.134 J	0.297	1.71	0.246	0.229	0.304
Radiological	Total Uranium	ug/L	30	0.365	< 0.2	0.134	0.297	1.78	0.246	0.229	0.304
SVOCs	1,1'-Biphenyl	ug/L		< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	2,4,5-Trichlorophenol	ug/L		< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	2,4,6-Trichlorophenol	ug/L		< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	2,4-Dichlorophenol	ug/L		< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
SVOCs	2,4-Dimethylphenol	ug/L		< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	2,4-Dinitrophenol	ug/L		< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
SVOCs	2,4-Dinitrotoluene	ug/L		< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
SVOCs	2,6-Dinitrotoluene	ug/L		< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
SVOCs	2-Chloronaphthalene	ug/L		< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	2-Chlorophenol	ug/L		< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	2-Methylnaphthalene	ug/L		< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	2-Methylphenol	ug/L		< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	2-Nitroaniline	ug/L		< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
SVOCs	2-Nitrophenol	ug/L		< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	3,3'-Dichlorobenzidine	ug/L		< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	3-Nitroaniline	ug/L		< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
SVOCs	4,6-Dinitro-2-methylphe	ug/L		< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
SVOCs	4-Bromophenyl phenyl e	ug/L		< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	4-Chloro-3-methylpheno	ug/L		< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	4-Chloroaniline	ug/L		< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
SVOCs	4-Chlorophenyl phenyl e	ug/L		< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	4-Methylphenol	ug/L		< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0

Table T3 - Surface Water Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

				Location Type	SW-11 N	SW-12 N	SW-13 N	SW-14 N	SW-16 N	SW-17 N	SW-17 FD	SW-18 N
				Date	7/17/2019	7/17/2019	7/17/2019	7/17/2019	7/17/2019	7/18/2019	7/18/2019	7/16/2019
SVOCs	4-Nitroaniline	ug/L			< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
SVOCs	4-Nitrophenol	ug/L			< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
SVOCs	Acenaphthene	ug/L			< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Acenaphthylene	ug/L			< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Acetophenone	ug/L			< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Anthracene	ug/L			< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Atrazine	ug/L	3		< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Benz(a)anthracene	ug/L			< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Benzaldehyde	ug/L			< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
SVOCs	Benzo(a)pyrene	ug/L	0.2		< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Benzo(b)fluoranthene	ug/L			< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Benzo(g,h,i)perylene	ug/L			< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Benzo(k)fluoranthene	ug/L			< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Bis(2-chloroethoxy)meth	ug/L			< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Bis(2-chloroethyl)ether	ug/L			< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Bis(2-chloroisopropyl)eth	ug/L			< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Bis(2-ethylhexyl)phthala	ug/L	6		< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Butyl benzyl phthalate	ug/L			< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Caprolactam	ug/L			< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
SVOCs	Carbazole	ug/L			< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Chrysene	ug/L			< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Dibenz(a,h)anthracene	ug/L			< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Dibenzofuran	ug/L			< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Diethyl phthalate	ug/L			< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Dimethyl phthalate	ug/L			< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Di-n-butyl phthalate	ug/L			< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Di-n-octyl phthalate	ug/L			< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Fluoranthene	ug/L			< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Fluorene	ug/L			< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Hexachlorobenzene	ug/L	1		< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Hexachlorobutadiene	ug/L			< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Hexachlorocyclopentadie	ug/L	50		< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
SVOCs	Hexachloroethane	ug/L			< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Indeno(1,2,3-cd)pyrene	ug/L			< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Isophorone	ug/L			< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Naphthalene	ug/L			< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Nitrobenzene	ug/L			< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	N-Nitrosodi-n-propylami	ug/L			< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	N-Nitrosodiphenylamine	ug/L			< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Pentachlorophenol	ug/L	1		< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
SVOCs	Phenanthrene	ug/L			< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80
SVOCs	Phenol	ug/L			< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
SVOCs	Pyrene	ug/L			< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80
VOCs	(1-Methylethyl)-Benzene	ug/L			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,1-Trichloroethane	ug/L	200		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,2,2-Tetrachloroethan	ug/L			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,2-Trichlor-1,2,2-triflu	ug/L			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1,2-Trichloroethane	ug/L	5		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1-Dichloroethane	ug/L			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,1-Dichloroethene	ug/L	7		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2,4-Trichlorobenzene	ug/L	70		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dibromo-3-chloropro	ug/L	0.2		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dibromoethane	ug/L	0.05		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dichlorobenzene	ug/L	600		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dichloroethane	ug/L	5		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,2-Dichloropropane	ug/L	5		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	1,3-Dichlorobenzene	ug/L			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Table T3 - Surface Water Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

				Location	SW-11	SW-12	SW-13	SW-14	SW-16	SW-17	SW-17	SW-18
				Type	N	N	N	N	N	N	FD	N
				Date	7/17/2019	7/17/2019	7/17/2019	7/17/2019	7/17/2019	7/18/2019	7/18/2019	7/16/2019
VOCs	1,4-Dichlorobenzene	ug/L	75		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	2-Butanone	ug/L			< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
VOCs	2-Hexanone	ug/L			< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
VOCs	4-Methyl-2-pentanone	ug/L			< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
VOCs	Acetone	ug/L			< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
VOCs	Benzene	ug/L	5		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Bromodichloromethane	ug/L			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Bromoform	ug/L			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Bromomethane	ug/L			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
VOCs	Carbon disulfide	ug/L			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Carbon tetrachloride	ug/L	5		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Chlorobenzene	ug/L	100		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Chloroethane	ug/L			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
VOCs	Chloroform	ug/L			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Chloromethane	ug/L			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	cis-1,2-Dichloroethene	ug/L	70		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	cis-1,3-Dichloropropene	ug/L			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Cyclohexane	ug/L			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Dibromochloromethane	ug/L			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Dichlorodifluoromethane	ug/L			< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
VOCs	Ethylbenzene	ug/L	700		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Methyl acetate	ug/L			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Methyl tert-butyl ether	ug/L			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Methylcyclohexane	ug/L			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
VOCs	Methylene chloride	ug/L	5		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Styrene	ug/L	100		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Tetrachloroethene	ug/L	5		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	16	16	14
VOCs	Toluene	ug/L	1000		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	trans-1,2-Dichloroethene	ug/L	100		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	trans-1,3-Dichloropropen	ug/L			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Trichloroethene	ug/L	5		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.0	1.0	< 1.0
VOCs	Trichlorofluoromethane	ug/L			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Vinyl chloride	ug/L	2		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
VOCs	Xylenes, Total	ug/L	10000		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Table T3 - Surface Water Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

			Location	SW-19	SW-20	SW-21	SW-21	SW-22	SW-22	SW-23
			Type	N	N	N	N	N	N	N
			Date	7/17/2019	7/16/2019	7/15/2019	7/17/2019	7/15/2019	7/17/2019	7/16/2019
Group	Analyte	Unit	MCL							
Chemical	Ammonia	mg/L		0.376	0.640	0.244	NA	0.187	NA	0.459
Chemical	Fluoride	mg/L	4	0.154	0.494	0.433	NA	0.432	NA	4.94
Chemical	Nitrate as N	mg/L	10	< 0.020	< 0.020	< 0.02	NA	< 0.02	NA	7.3
Metals	Aluminum	ug/L		337	234	116 J	NA	102 J	NA	203
Metals	Antimony	ug/L	6	< 20.0	< 20.0	< 20.0	NA	< 20.0	NA	< 20.0
Metals	Arsenic	ug/L	10	< 30.0	< 30.0	< 30.0	NA	< 30.0	NA	< 30.0
Metals	Barium	ug/L	2000	67.1	66.3	28.3	NA	34.5	NA	84.4
Metals	Beryllium	ug/L	4	< 5.00	< 5.00	< 5.00	NA	< 5.00	NA	< 5.00
Metals	Cadmium	ug/L	5	< 5.00	< 5.00	< 5.00	NA	< 5.00	NA	< 5.00
Metals	Calcium	ug/L		4010	7450	3480	NA	3760	NA	16400
Metals	Chromium	ug/L	100	< 10.0	< 10.0	< 10.0	NA	< 10.0	NA	< 10.0
Metals	Cobalt	ug/L		5.38	2.24 J	< 5.00	NA	< 5.00	NA	< 5.00
Metals	Copper	ug/L	1300	< 20.0	< 20.0	< 20.0	NA	< 20.0	NA	< 20.0
Metals	Iron	ug/L		3890	4710	612	NA	844	NA	69.7 J
Metals	Lead	ug/L	15	< 20.0	< 20.0	< 20.0	NA	< 20.0	NA	< 20.0
Metals	Magnesium	ug/L		1270	1720	1020	NA	1110	NA	4800
Metals	Manganese	ug/L		528	642	107	NA	189	NA	73.3
Metals	Mercury	ug/L	2	< 0.200	< 0.200	< 0.200	NA	< 0.200	NA	< 0.200
Metals	Nickel	ug/L		3.17 J	1.7 J	1.86 J	NA	1.83 J	NA	1.68 J
Metals	Potassium	ug/L		3010	3780	1310	NA	1420	NA	6320
Metals	Selenium	ug/L	50	< 30.0	< 30.0	< 30.0	NA	< 30.0	NA	< 30.0
Metals	Silver	ug/L		< 5.00	< 5.00	< 5.00	NA	< 5.00	NA	< 5.00
Metals	Sodium	ug/L		918	4200	3590	NA	3810	NA	48900
Metals	Thallium	ug/L	2	< 20.0	< 20.0	< 20.0	NA	< 20.0	NA	< 20.0
Metals	Vanadium	ug/L		2.25 J	1.57 J	< 5.00	NA	< 5.00	NA	1.03 J
Metals	Zinc	ug/L		8.82 J	7.65 J	5.61 J	NA	6.12 J	NA	4.54 J
Radiological	Technetium-99	pCi/L	900	0 ##	0 ##	NA	0 ##	NA	0 ##	13.6 #
Radiological	Uranium-233/234	pCi/L		0.587	2.35	0.0905 #	NA	0.187 #	NA	0.0557 #
Radiological	Uranium-235/236	pCi/L		0.0192 #	0.123	0.0804 #	NA	0 #	NA	0 ##
Radiological	Uranium-238	pCi/L		0.168 #	0.626	0.0508 #	NA	0.0611 #	NA	0.103 #
Radiological	Uranium-234	ug/L		< 0.050	< 0.050	< 0.050	NA	< 0.050	NA	< 0.050
Radiological	Uranium-235	ug/L		0.0174 J	0.0274 J	< 0.070	NA	< 0.070	NA	< 0.070
Radiological	Uranium-238	ug/L		0.507	1.11	0.16 J	NA	0.199 J	NA	0.0673 J
Radiological	Total Uranium	ug/L	30	0.524	1.14	0.160	NA	0.199	NA	0.0673
SVOCs	1,1'-Biphenyl	ug/L		< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	2,4,5-Trichlorophenol	ug/L		< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	2,4,6-Trichlorophenol	ug/L		< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	2,4-Dichlorophenol	ug/L		< 8.0	< 8.0	< 8	NA	< 8	NA	< 8.0
SVOCs	2,4-Dimethylphenol	ug/L		< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	2,4-Dinitrophenol	ug/L		< 20	< 20	< 20	NA	< 20	NA	< 20
SVOCs	2,4-Dinitrotoluene	ug/L		< 8.0	< 8.0	< 8	NA	< 8	NA	< 8.0
SVOCs	2,6-Dinitrotoluene	ug/L		< 8.0	< 8.0	< 8	NA	< 8	NA	< 8.0
SVOCs	2-Chloronaphthalene	ug/L		< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	2-Chlorophenol	ug/L		< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	2-Methylnaphthalene	ug/L		< 0.80	< 0.80	< 0.8	NA	< 0.8	NA	< 0.80
SVOCs	2-Methylphenol	ug/L		< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	2-Nitroaniline	ug/L		< 8.0	< 8.0	< 8	NA	< 8	NA	< 8.0
SVOCs	2-Nitrophenol	ug/L		< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	3,3'-Dichlorobenzidine	ug/L		< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	3-Nitroaniline	ug/L		< 8.0	< 8.0	< 8	NA	< 8	NA	< 8.0
SVOCs	4,6-Dinitro-2-methylphe	ug/L		< 20	< 20	< 20	NA	< 20	NA	< 20
SVOCs	4-Bromophenyl phenyl e	ug/L		< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	4-Chloro-3-methylpheno	ug/L		< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	4-Chloroaniline	ug/L		< 8.0	< 8.0	< 8	NA	< 8	NA	< 8.0
SVOCs	4-Chlorophenyl phenyl e	ug/L		< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	4-Methylphenol	ug/L		< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0

Table T3 - Surface Water Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

				Location Type	SW-19 N	SW-20 N	SW-21 N	SW-21 N	SW-22 N	SW-22 N	SW-23 N
				Date	7/17/2019	7/16/2019	7/15/2019	7/17/2019	7/15/2019	7/17/2019	7/16/2019
SVOCs	4-Nitroaniline	ug/L			< 8.0	< 8.0	< 8	NA	< 8	NA	< 8.0
SVOCs	4-Nitrophenol	ug/L			< 20	< 20	< 20	NA	< 20	NA	< 20
SVOCs	Acenaphthene	ug/L			< 0.80	< 0.80	< 0.8	NA	< 0.8	NA	< 0.80
SVOCs	Acenaphthylene	ug/L			< 0.80	< 0.80	< 0.8	NA	< 0.8	NA	< 0.80
SVOCs	Acetophenone	ug/L			< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	Anthracene	ug/L			< 0.80	< 0.80	< 0.8	NA	< 0.8	NA	< 0.80
SVOCs	Atrazine	ug/L	3		< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	Benz(a)anthracene	ug/L			< 0.80	< 0.80	< 0.8	NA	< 0.8	NA	< 0.80
SVOCs	Benzaldehyde	ug/L			< 8.0	< 8.0	< 8	NA	< 8	NA	< 8.0
SVOCs	Benzo(a)pyrene	ug/L	0.2		< 0.80	< 0.80	< 0.8	NA	< 0.8	NA	< 0.80
SVOCs	Benzo(b)fluoranthene	ug/L			< 0.80	< 0.80	< 0.8	NA	< 0.8	NA	< 0.80
SVOCs	Benzo(g,h,i)perylene	ug/L			< 0.80	< 0.80	< 0.8	NA	< 0.8	NA	< 0.80
SVOCs	Benzo(k)fluoranthene	ug/L			< 0.80	< 0.80	< 0.8	NA	< 0.8	NA	< 0.80
SVOCs	Bis(2-chloroethoxy)meth	ug/L			< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	Bis(2-chloroethyl)ether	ug/L			< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	Bis(2-chloroisopropyl)eth	ug/L			< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	Bis(2-ethylhexyl)phthala	ug/L	6		< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	Butyl benzyl phthalate	ug/L			< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	Caprolactam	ug/L			< 8.0	< 8.0	< 8	NA	< 8	NA	< 8.0
SVOCs	Carbazole	ug/L			< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	Chrysene	ug/L			< 0.80	< 0.80	< 0.8	NA	< 0.8	NA	< 0.80
SVOCs	Dibenz(a,h)anthracene	ug/L			< 0.80	< 0.80	< 0.8	NA	< 0.8	NA	< 0.80
SVOCs	Dibenzofuran	ug/L			< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	Diethyl phthalate	ug/L			< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	Dimethyl phthalate	ug/L			< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	Di-n-butyl phthalate	ug/L			< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	Di-n-octyl phthalate	ug/L			< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	Fluoranthene	ug/L			< 0.80	< 0.80	< 0.8	NA	< 0.8	NA	< 0.80
SVOCs	Fluorene	ug/L			< 0.80	< 0.80	< 0.8	NA	< 0.8	NA	< 0.80
SVOCs	Hexachlorobenzene	ug/L	1		< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	Hexachlorobutadiene	ug/L			< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	Hexachlorocyclopentadie	ug/L	50		< 20	< 20	< 20	NA	< 20	NA	< 20
SVOCs	Hexachloroethane	ug/L			< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	Indeno(1,2,3-cd)pyrene	ug/L			< 0.80	< 0.80	< 0.8	NA	< 0.8	NA	< 0.80
SVOCs	Isophorone	ug/L			< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	Naphthalene	ug/L			< 0.80	< 0.80	< 0.8	NA	< 0.8	NA	< 0.80
SVOCs	Nitrobenzene	ug/L			< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	N-Nitrosodi-n-propylami	ug/L			< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	N-Nitrosodiphenylamine	ug/L			< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	Pentachlorophenol	ug/L	1		< 20	< 20	< 20	NA	< 20	NA	< 20
SVOCs	Phenanthrene	ug/L			< 0.80	< 0.80	< 0.8	NA	< 0.8	NA	< 0.80
SVOCs	Phenol	ug/L			< 4.0	< 4.0	< 4	NA	< 4	NA	< 4.0
SVOCs	Pyrene	ug/L			< 0.80	< 0.80	< 0.8	NA	< 0.8	NA	< 0.80
VOCs	(1-Methylethyl)-Benzene	ug/L			< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	1,1,1-Trichloroethane	ug/L	200		< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	1,1,2,2-Tetrachloroethan	ug/L			< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	1,1,2-Trichlor-1,2,2-triflu	ug/L			< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	1,1,2-Trichloroethane	ug/L	5		< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	1,1-Dichloroethane	ug/L			< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	1,1-Dichloroethene	ug/L	7		< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	1,2,4-Trichlorobenzene	ug/L	70		< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	1,2-Dibromo-3-chloropro	ug/L	0.2		< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	1,2-Dibromoethane	ug/L	0.05		< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	1,2-Dichlorobenzene	ug/L	600		< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	1,2-Dichloroethane	ug/L	5		< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	1,2-Dichloropropane	ug/L	5		< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	1,3-Dichlorobenzene	ug/L			< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0

Table T3 - Surface Water Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

				Location	SW-19	SW-20	SW-21	SW-21	SW-22	SW-22	SW-23
				Type	N	N	N	N	N	N	N
				Date	7/17/2019	7/16/2019	7/15/2019	7/17/2019	7/15/2019	7/17/2019	7/16/2019
VOCs	1,4-Dichlorobenzene	ug/L	75		< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	2-Butanone	ug/L			< 10	< 10	< 10	NA	< 10	NA	< 10
VOCs	2-Hexanone	ug/L			< 10	< 10	< 10	NA	< 10	NA	< 10
VOCs	4-Methyl-2-pentanone	ug/L			< 10	< 10	< 10	NA	< 10	NA	< 10
VOCs	Acetone	ug/L			< 20	< 20	< 20	NA	< 20	NA	< 20
VOCs	Benzene	ug/L	5		< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	Bromodichloromethane	ug/L			< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	Bromoform	ug/L			< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	Bromomethane	ug/L			< 2.0	< 2.0	< 2	NA	< 2	NA	< 2.0
VOCs	Carbon disulfide	ug/L			< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	Carbon tetrachloride	ug/L	5		< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	Chlorobenzene	ug/L	100		< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	Chloroethane	ug/L			< 2.0	< 2.0	< 2	NA	< 2	NA	< 2.0
VOCs	Chloroform	ug/L			< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	Chloromethane	ug/L			< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	cis-1,2-Dichloroethene	ug/L	70		< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	cis-1,3-Dichloropropene	ug/L			< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	Cyclohexane	ug/L			< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	Dibromochloromethane	ug/L			< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	Dichlorodifluoromethane	ug/L			< 2.0	< 2.0	< 2	NA	< 2	NA	< 2.0
VOCs	Ethylbenzene	ug/L	700		< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	Methyl acetate	ug/L			< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	Methyl tert-butyl ether	ug/L			< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	Methylcyclohexane	ug/L			< 5.0	< 5.0	< 5	NA	< 5	NA	< 5.0
VOCs	Methylene chloride	ug/L	5		< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	Styrene	ug/L	100		< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	Tetrachloroethene	ug/L	5		< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	Toluene	ug/L	1000		< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	trans-1,2-Dichloroethene	ug/L	100		< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	trans-1,3-Dichloropropen	ug/L			< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	Trichloroethene	ug/L	5		< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	Trichlorofluoromethane	ug/L			< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	Vinyl chloride	ug/L	2		< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0
VOCs	Xylenes, Total	ug/L	10000		< 1.0	< 1.0	< 1	NA	< 1	NA	< 1.0

Notes:
MCL - Maximum Contaminant Level
Concentrations in orange shaded cells exceed their MCL
pCi/L - picocuries per liter
ug/L - micrograms per liter
mg/L - milligrams per liter
N - Normal sample
FD - Field duplicate sample
Bold concentrations indicate detections
J - Result below reporting limit
- value is below minimum detectable concentration
- value shown as zero reported by analytical laboratory as a negative number
SVOCs - semivolatile organic compounds
VOCs - volatile organic compounds
NA - not analyzed

Table T4 - Sediment Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

					Location	SED-11	SED-12	SED-13	SED-14	SED-15	SED-16	SED-16	SED-16	SED-16	SED-17	SED-17	SED-18	SED-19	SED-19	SED-19	SED-19	SED-19	SED-20	SED-20	SED-20	SED-20	SED-20	SED-21	SED-21	SED-21	SED-21
					Depth	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	12 - 24 in	6 - 12 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	12 - 18 in	12 - 18 in	6 - 12 in	0 - 6 in	0 - 6 in	12 - 24 in	24 - 36 in	6 - 12 in	0 - 6 in	12 - 24 in	24 - 36 in
					Type	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N
					Date	7/17/2019	7/17/2019	7/17/2019	7/17/2019	7/16/2019	7/17/2019	11/18/2020	11/18/2020	11/18/2020	7/18/2019	7/18/2019	7/16/2019	7/17/2019	12/2/2020	12/2/2020	12/2/2020	12/2/2020	7/16/2019	11/19/2020	11/19/2020	11/19/2020	11/19/2020	7/15/2019	11/10/2020	11/10/2020	11/10/2020
Group	Analyte	Unit	RUSL	IUSL																										
Chemical	Ammonia	mg/kg				723	560	98.5	6.43	49.0	13.5	91.8	8.90	39.4	4.15	3.66	3.48	401	761	277		1100	1600	113	70.8	54.7	79.9	532	476	282	180
Chemical	Nitrate as N	mg/kg				0.33	0.24	0.2	< 0.2	< 0.20	2.7	1	< 0.24	0.38	2.1	0.95	< 0.20	1.2	4.2	2.1	1.8	3.7	< 0.20	0.56	0.45	0.34	0.41	< 0.2	3.7	1.1	< 0.6
Chemical	Fluoride	mg/kg				1.35 J	2.26 J	1.45 J	< 1.21	2.09	8.73	15.5	3.78	10.3	0.908 J	0.814 J	< 1.22	3.51	59.7	3.98		28.5	15.7	6.63	4.01	8.50	4.93	2.17 J	13.2	4.73	4.45
Metals	Aluminum	mg/kg				10400	10300	8230	502	3510	682	NA	NA	NA	459	340	401	3600	NA	NA	NA	NA	11000	NA	NA	NA	NA	31200	NA	NA	NA
Metals	Antimony	mg/kg				< 5.29	< 4.93	< 3	0.511 J	< 2.42	0.447 J	NA	NA	NA	0.482 J	0.512 J	< 2.53	< 3.75	NA	NA	NA	NA	< 11.7	NA	NA	NA	NA	< 6	NA	NA	NA
Metals	Arsenic	mg/kg				< 7.94	< 7.39	2.14 J	< 3.61	< 3.63	< 3.69	NA	NA	NA	< 3.46	< 3.35	< 3.8	< 5.63	NA	NA	NA	NA	4.21 J	NA	NA	NA	NA	6.38 J	NA	NA	NA
Metals	Barium	mg/kg				126	118	131	5.16	15.9	5.1	NA	NA	NA	4.92	4.61	4.9	50.2	NA	NA	NA	NA	140	NA	NA	NA	NA	250	NA	NA	NA
Metals	Beryllium	mg/kg				0.718 J	1.13 J	1.02	< 0.601	0.258 J	< 0.614	NA	NA	NA	< 0.577	< 0.558	< 0.634	0.361 J	NA	NA	NA	NA	1.14 J	NA	NA	NA	NA	2.39	NA	NA	NA
Metals	Cadmium	mg/kg				< 1.32	< 1.23	< 0.751	< 0.601	0.14 J	< 0.614	NA	NA	NA	< 0.577	< 0.558	< 0.634	< 0.939	NA	NA	NA	NA	< 2.92	NA	NA	NA	NA	< 1.5	NA	NA	NA
Metals	Calcium	mg/kg				1110	1020	620	142	452	117	NA	NA	NA	48.5	32.9	21.7 J	375	NA	NA	NA	NA	3550	NA	NA	NA	NA	484	NA	NA	NA
Metals	Chromium	mg/kg				9.99	8.34	18.4	1.24	6.91	1.77	NA	NA	NA	1.02 J	0.576 J	0.606 J	5.32	NA	NA	NA	NA	13.6	NA	NA	NA	NA	40	NA	NA	NA
Metals	Cobalt	mg/kg				4.34	2.97	11.6	0.269 J	1.52	< 0.614	NA	NA	NA	0.175 J	0.326 J	< 0.634	3.92	NA	NA	NA	NA	6.31	NA	NA	NA	NA	18.9	NA	NA	NA
Metals	Copper	mg/kg				7.14	5.39	8.83	0.386 J	2.75	1 J	NA	NA	NA	< 2.31	< 2.23	< 2.53	5.33	NA	NA	NA	NA	19.5	NA	NA	NA	NA	29.8	NA	NA	NA
Metals	Iron	mg/kg				7610	4320	15000	581	4630	1070	NA	NA	NA	257	217	217	3770	NA	NA	NA	NA	10200	NA	NA	NA	NA	25900	NA	NA	NA
Metals	Lead	mg/kg				24	28	13.9	0.865 J	3.74	1.26 J	NA	NA	NA	0.439 J	0.42 J	0.476 J	8.3	NA	NA	NA	NA	25.5	NA	NA	NA	NA	25	NA	NA	NA
Metals	Magnesium	mg/kg				481	279	1240	91.5	194	22.3 J	NA	NA	NA	35.7	14.4 J	15 J	238	NA	NA	NA	NA	751	NA	NA	NA	NA	3320	NA	NA	NA
Metals	Manganese	mg/kg				230	150	332	15.6	54.8	3.72	NA	NA	NA	18	11.9	12.3	123	NA	NA	NA	NA	246	NA	NA	NA	NA	345	NA	NA	NA
Metals	Mercury	ug/kg				62.3	56.8	15.7 J	< 12.7	5.46 J	< 14.9	NA	NA	NA	< 14.2	< 13.3	< 13.1	34.6	NA	NA	NA	NA	121	NA	NA	NA	NA	75.8	NA	NA	NA
Metals	Nickel	mg/kg				4.13	3.51	7.33	0.341 J	2.21	0.568 J	NA	NA	NA	0.773	0.442 J	0.492 J	8.68	NA	NA	NA	NA	15.5	NA	NA	NA	NA	18.7	NA	NA	NA
Metals	Potassium	mg/kg				300	263	538	84.4	200	139	NA	NA	NA	87.4	95.4	90.7	205	NA	NA	NA	NA	664	NA	NA	NA	NA	1890	NA	NA	NA
Metals	Selenium	mg/kg				2.38 J	< 7.39	< 4.51	< 3.61	< 3.63	< 3.69	NA	NA	NA	< 3.46	< 3.35	< 3.8	< 5.63	NA	NA	NA	NA	< 17.5	NA	NA	NA	NA	1.51 J	NA	NA	NA
Metals	Silver	mg/kg				< 1.32	< 1.23	< 0.751	< 0.601	< 0.606	< 0.614	NA	NA	NA	< 0.577	< 0.558	< 0.634	< 0.939	NA	NA	NA	NA	< 2.92	NA	NA	NA	NA	< 1.5	NA	NA	NA
Metals	Sodium	mg/kg				34.8 J	42 J	32.5 J	18.8 J	41.4	12.9 J	NA	NA	NA	14.1 J	17.1 J	13.5 J	19.9 J	NA	NA	NA	NA	109 J	NA	NA	NA	NA	119	NA	NA	NA
Metals	Thallium	mg/kg				< 5.29	< 4.93	< 30	< 2.4	< 2.42	< 2.46	NA	NA	NA	< 2.31	< 2.23	< 2.53	< 3.75	NA	NA	NA	NA	< 11.7	NA	NA	NA	NA	< 60	NA	NA	NA
Metals	Vanadium	mg/kg				25.9	21.6	36.5	1.74	10.5	2.81	NA	NA	NA	1.18	1.43	1.6	13.3	NA	NA	NA	NA	41	NA	NA	NA	NA	100	NA	NA	NA
Metals	Zinc	mg/kg				38.2	23	33.8	5.64	50.8	6.09	NA	NA	NA	2.42	1.24 J	1 J	32.4	NA	NA	NA	NA	63.8	NA	NA	NA	NA	73.1	NA	NA	NA
Radiological	Technetium-99	pCi/g	19	89400		0 ##	0 ##	0 ##	0.0243 #	5.62 #	4.94 #	0.614 #	3.71	2.62	7.50 #	0 ##	0 ##	6.28 #	0.208 #	0 ##	NA	1.12	0 ##	0.638 #	0.208 #	0.700 #	0.265 #	4.12 #	1.17	0.225 #	0.0586 #
Radiological	Uranium-233/234	pCi/g	13	3310		1.14	0.925	1.67	1.42	2.58	14.9	67.2	6.03	63.7	0.658	1.07	0.219	32.5	19.1	2.05	NA	27.0	62.5	1.72	1.43	1.49	2.13	1.86	13.2	1.56	1.75
Radiological	Uranium-235/236	pCi/g	8	39		0.00159 #	0.0647 #	0.156 #	0.0250 #	0.181	0.678	3.31	0.480	3.18	0.0235 #	0.104 #	0.0173 #	2.30	1.02	0.0675 #	NA	1.22	3.12	0.0212 #	0.145	0.0841 #	0.0940 #	0.104 #	0.393	0.0344 #	0 ##
Radiological	Uranium-238	pCi/g	14	179		0.742	1.17	1.33	0.389	2.05	2.77	12.1	1.99	11.8	0.302	0.354	0.298	8.18	5.15	1.51	NA	6.42	14.9	1.67	1.89	1.40	1.50	1.96	3.79	1.07	0.970
Radiological	Uranium-234	ug/kg				< 25.7	< 25.6	< 15.4	< 12.1	< 12.4	< 12.0	NA	NA	NA	< 11.0	< 11.8	< 12.0	4.27 J	NA	NA	NA	NA	12.7 J	NA	NA	NA	NA	< 30.8	NA	NA	NA
Radiological	Uranium-235	ug/kg				11.5 J	16 J	13.8 J	5.32 J	51.2	114	NA	NA	NA	6.57 J	2.9 J	5 J	451	NA	NA	NA	NA	1310	NA	NA	NA	NA	27.8 J	NA	NA	NA
Radiological	Uranium-238	ug/kg				1320	1700	1360	260	5790	3310	NA	NA	NA	401	140	265	16200	NA	NA	NA	NA	49700	NA	NA	NA	NA	2840	NA	NA	NA
Radiological	Total Uranium Isotopes	ug/kg				1330	1720	1370	265	5840	3420	NA	NA	NA	408	143	270	16700	NA	NA	NA	NA	51000	NA	NA	NA	NA	2870	NA	NA	NA
SVOCs	1,1'-Biphenyl	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	2,4,5-Trichlorophenol	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	2,4,6-Trichlorophenol	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	2,4-Dichlorophenol	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	2,4-Dimethylphenol	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	2,4-Dinitrophenol	ug/kg				< 320	< 330	< 320	< 310	< 330	< 320	NA	NA	NA	< 330	< 320	< 320	< 330	NA	NA	NA	NA	< 320	NA	NA	NA	NA	< 330	NA	NA	NA
SVOCs	2,4-Dinitrotoluene	ug/kg				< 130	< 130	< 130	< 120	< 130	< 130	NA	NA	NA	< 130	< 130	< 130	< 130	NA	NA	NA	NA	< 130	NA	NA	NA	NA	< 130	NA	NA	NA
SVOCs	2,6-Dinitrotoluene	ug/kg				< 130	< 130	< 130	< 120	< 130	< 130	NA	NA	NA	< 130	< 130	< 130	< 130	NA	NA	NA	NA	< 130	NA	NA	NA	NA	< 130	NA	NA	NA
SVOCs	2-Chloronaphthalene	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	2-Chlorophenol	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	2-Methylnaphthalene	ug/kg				< 13	< 13	< 13	< 13	< 13	< 13	NA	NA	NA	< 13	< 13	< 13	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA
SVOCs	2-Methylphenol	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	2-Nitroaniline	ug/kg				< 130	< 130	< 130	< 120	< 130	< 130	NA	NA	NA	< 130	< 130	< 130	< 130	NA	NA	NA	NA	< 130	NA	NA	NA	NA	< 130	NA	NA	NA
SVOCs	2-Nitrophenol	ug/kg				< 130	< 130	< 130	< 120	< 130	< 130	NA	NA	NA	< 130	< 130	< 130	< 130	NA	NA	NA	NA	< 130	NA	NA	NA	NA	< 130	NA	NA	NA
SVOCs	3,3'-Dichlorobenzidine	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	3-Nitroaniline	ug/kg				< 130	< 130	< 130	< 120	< 130	< 130	NA	NA	NA	< 130	< 130	< 130	< 130	NA	NA	NA	NA	< 130	NA	NA	NA	NA	< 130	NA	NA	NA
SVOCs	4,6-Dinitro-2-methylphenol	ug/kg				< 320	< 330	< 320	< 310	< 330	< 320	NA	NA	NA	< 330	< 320	< 320	< 330	NA	NA	NA	NA	< 320	NA	NA	NA	NA	< 330	NA	NA	NA
SVOCs	4-Bromophenyl phenyl ether	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	4-Chloro-3-methylphenol	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	4-Chloroaniline	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	4-Chlorophenyl phenyl ether	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	4-Methylphenol	ug/kg				< 130	< 130	< 130	< 120	< 130	< 130	NA	NA	NA	< 130	< 130	< 130	< 130	NA	NA	NA	NA	< 130	NA	NA	NA	NA	< 130	NA	NA	NA
SVOCs	4-Nitroaniline	ug/kg				< 130	< 130	< 130	< 120	< 130	< 130	NA	NA	NA	< 130	< 130	< 130	< 130	NA	NA	NA	NA	< 130	NA	NA	NA	NA	< 130	NA	NA	NA
SVOCs	4-Nitrophenol	ug/kg				< 320	< 330	< 320	< 310	< 330	< 320	NA	NA	NA	< 330	< 320	< 320	< 330	NA	NA	NA	NA	< 320	NA	NA	NA	NA	< 330	NA	NA	NA
SVOCs	Acenaphthene	ug/kg				< 13	< 13	< 13	< 13	< 13	< 13	NA	NA	NA	< 13	< 13	< 13	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA
SVOCs	Acenaphthylene	ug/kg				< 13	< 13	< 13	< 13	< 13	< 13	NA	NA	NA	< 13	< 13	< 13	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA
SVOCs	Acetophenone	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	Anthracene	ug/kg				< 13	< 13	14	< 13	< 13	< 13	NA	NA	NA	< 13	< 13	< 13	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA
SVOCs	Atrazine	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	Benz(a)anthracene	ug/kg				< 13	< 13	170	13	< 13	< 13	NA	NA	NA	< 13	< 13	< 13	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA
SVOCs	Benzaldehyde	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	Benzo(a)pyrene	ug/kg				< 13	< 13	290	20	< 13	< 13	NA	NA	NA	< 13	< 13	< 13	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA
SVOCs	Benzo(b)fluoranthene	ug/kg				< 13	< 13	630	37	< 13	< 13	NA	NA	NA	< 13	< 13	< 13	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA
SVOCs	Benzo(g,h,i)perylene	ug/kg				< 13	< 13	190	18	< 13	< 13	NA	NA	NA	< 13	< 13	< 13	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA
SVOCs	Benzo(k)fluoranthene	ug/kg				< 13	< 13	200	16	< 13	< 13	NA	NA	NA	< 13	< 13	< 13	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA

Table T4 - Sediment Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

					Location	SED-11	SED-12	SED-13	SED-14	SED-15	SED-16	SED-16	SED-16	SED-16	SED-17	SED-17	SED-18	SED-19	SED-19	SED-19	SED-19	SED-19	SED-20	SED-20	SED-20	SED-20	SED-20	SED-21	SED-21	SED-21	SED-21
					Depth	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	12 - 24 in	6 - 12 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	12 - 18 in	12 - 18 in	6 - 12 in	0 - 6 in	0 - 6 in	12 - 24 in	24 - 36 in	6 - 12 in	0 - 6 in	0 - 6 in	12 - 24 in	24 - 36 in
					Type	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N
					Date	7/17/2019	7/17/2019	7/17/2019	7/17/2019	7/16/2019	7/17/2019	11/18/2020	11/18/2020	11/18/2020	7/18/2019	7/18/2019	7/16/2019	7/17/2019	12/2/2020	12/2/2020	12/2/2020	12/2/2020	7/16/2019	11/19/2020	11/19/2020	11/19/2020	11/19/2020	7/15/2019	11/10/2020	11/10/2020	11/10/2020
Group	Analyte	Unit	RUSL	IUSL																										
SVOCs	Bis(2-chloroethoxy)methane	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	Bis(2-chloroethyl)ether	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	Bis(2-chloroisopropyl)ether	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	Bis(2-ethylhexyl)phthalate	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	Butyl benzyl phthalate	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	Caprolactam	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	Carbazole	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	Chrysene	ug/kg				< 13	< 13	310	21	< 13	< 13	NA	NA	NA	< 13	< 13	< 13	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA
SVOCs	Dibenz(a,h)anthracene	ug/kg				< 13	< 13	< 13	< 13	< 13	< 13	NA	NA	NA	< 13	< 13	< 13	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA
SVOCs	Dibenzofuran	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	Diethyl phthalate	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	Dimethyl phthalate	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	Di-n-butyl phthalate	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	Di-n-octyl phthalate	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	Fluoranthene	ug/kg				< 13	< 13	570	36	< 13	< 13	NA	NA	NA	< 13	< 13	< 13	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA
SVOCs	Fluorene	ug/kg				< 13	< 13	< 13	< 13	< 13	< 13	NA	NA	NA	< 13	< 13	< 13	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA
SVOCs	Hexachlorobenzene	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	Hexachlorobutadiene	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	Hexachlorocyclopentadiene	ug/kg				< 320	< 330	< 320	< 310	< 330	< 320	NA	NA	NA	< 330	< 320	< 320	< 330	NA	NA	NA	NA	< 320	NA	NA	NA	NA	< 330	NA	NA	NA
SVOCs	Hexachloroethane	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	Indeno(1,2,3-cd)pyrene	ug/kg				< 13	< 13	170	15	< 13	< 13	NA	NA	NA	< 13	< 13	< 13	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA
SVOCs	Isophorone	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	Naphthalene	ug/kg				< 13	< 13	< 13	< 13	< 13	< 13	NA	NA	NA	< 13	< 13	< 13	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA
SVOCs	Nitrobenzene	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	N-Nitrosodi-n-propylamine	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	N-Nitrosodiphenylamine	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	Pentachlorophenol	ug/kg				< 320	< 330	< 320	< 310	< 330	< 320	NA	NA	NA	< 330	< 320	< 320	< 330	NA	NA	NA	NA	< 320	NA	NA	NA	NA	< 330	NA	NA	NA
SVOCs	Phenanthrene	ug/kg				< 13	< 13	130	< 13	< 13	< 13	NA	NA	NA	< 13	< 13	< 13	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA
SVOCs	Phenol	ug/kg				< 66	< 67	< 64	< 64	< 67	< 65	NA	NA	NA	< 67	< 64	< 66	< 67	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA
SVOCs	Pyrene	ug/kg				< 13	< 13	450	28	< 13	< 13	NA	NA	NA	< 13	< 13	< 13	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA
VOCs	(1-Methylethyl)-Benzene	ug/kg				< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	1,1,1-Trichloroethane	ug/kg				< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	1,1,2,2-Tetrachloroethane	ug/kg				< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	1,1,2-Trichlor-1,2,2-trifluoroethane	ug/kg				< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	1,1,2-Trichloroethane	ug/kg				< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	1,1-Dichloroethane	ug/kg				< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	1,1-Dichloroethene	ug/kg				< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	< 5.3	< 4.9	< 5	< 4.8	< 4.8	< 4.5	< 5.2	< 74	< 26	< 24	< 60	< 6.5	< 8.2	< 7	< 6.4	< 7.4	< 6.2	< 54	< 8.9	< 15
VOCs	1,2,4-Trichlorobenzene	ug/kg				< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	1,2-Dibromo-3-chloropropane	ug/kg				< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	1,2-Dibromoethane	ug/kg				< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	1,2-Dichlorobenzene	ug/kg				< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	1,2-Dichloroethane	ug/kg				< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	< 5.3	< 4.9	< 5	< 4.8	< 4.8	< 4.5	< 5.2	< 74	< 26	< 24	< 60	< 6.5	< 8.2	< 7	< 6.4	< 7.4	< 6.2	< 54	< 8.9	< 15
VOCs	1,2-Dichloropropane	ug/kg				< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	1,3-Dichlorobenzene	ug/kg				< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	1,4-Dichlorobenzene	ug/kg				< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	2-Butanone	ug/kg				< 25	180	< 24	< 17	< 15	< 16	NA	NA	NA	< 19	< 19	< 18	45	NA	NA	NA	NA	45	NA	NA	NA	NA	< 25	NA	NA	NA
VOCs	2-Hexanone	ug/kg				< 13	< 11	< 12	< 8.7	< 7.6	< 8.2	NA	NA	NA	< 9.6	< 9.5	< 8.9	< 10	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 12	NA	NA	NA
VOCs	4-Methyl-2-pentanone	ug/kg				< 13	< 11	< 12	< 8.7	< 7.6	< 8.2	NA	NA	NA	< 9.6	< 9.5	< 8.9	< 10	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 12	NA	NA	NA
VOCs	Acetone	ug/kg				32	110	30	28	< 15	< 16	NA	NA	NA	< 19	< 19	< 18	48	NA	NA	NA	NA	110	NA	NA	NA	NA	67	NA	NA	NA
VOCs	Benzene	ug/kg				< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	Bromodichloromethane	ug/kg				< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	Bromoform	ug/kg				< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	Bromomethane	ug/kg				< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	Carbon disulfide	ug/kg				< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	Carbon tetrachloride	ug/kg				< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	Chlorobenzene	ug/kg				< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	Chloroethane	ug/kg				< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	Chloroform	ug/kg				< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	Chloromethane	ug/kg				< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	cis-1,2-Dichloroethene	ug/kg				< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	< 5.3	< 4.9	< 5	< 4.8	< 4.8	< 4.5	< 5.2	< 74	< 26	< 24	< 60	< 6.5	< 8.2	< 7	< 6.4	< 7.4	< 6.2	< 54	< 8.9	< 15
VOCs	cis-1,3-Dichloropropene	ug/kg				< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	Cyclohexane	ug/kg				< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	Dibromochloromethane	ug/kg				< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	Dichlorodifluoromethane	ug/kg				< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	Ethylbenzene	ug/kg				< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA

Table T4 - Sediment Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

					Location	SED-11	SED-12	SED-13	SED-14	SED-15	SED-16	SED-16	SED-16	SED-16	SED-17	SED-17	SED-18	SED-19	SED-19	SED-19	SED-19	SED-19	SED-20	SED-20	SED-20	SED-20	SED-20	SED-21	SED-21	SED-21	SED-21
					Depth	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	12 - 24 in	6 - 12 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	12 - 18 in	12 - 18 in	6 - 12 in	0 - 6 in	0 - 6 in	12 - 24 in	24 - 36 in	6 - 12 in	0 - 6 in	0 - 6 in	12 - 24 in	24 - 36 in
					Type	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N
					Date	7/17/2019	7/17/2019	7/17/2019	7/17/2019	7/16/2019	7/17/2019	11/18/2020	11/18/2020	11/18/2020	7/18/2019	7/18/2019	7/16/2019	7/17/2019	12/2/2020	12/2/2020	12/2/2020	12/2/2020	7/16/2019	11/19/2020	11/19/2020	11/19/2020	11/19/2020	11/19/2020	7/15/2019	11/10/2020	11/10/2020	11/10/2020
Group	Analyte	Unit	RUSL	IUSL																										
VOCs	Methyl acetate	ug/kg			< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	Methyl tert-butyl ether	ug/kg			< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	Methylcyclohexane	ug/kg			< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	Methylene chloride	ug/kg			< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	Styrene	ug/kg			< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	Tetrachloroethene	ug/kg			< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	< 5.3	< 4.9	< 5	5.5	< 4.8	< 4.5	< 5.2	< 74	< 26	< 24	< 60	< 6.5	< 8.2	< 7	< 6.4	< 7.4	< 6.2	< 54	< 8.9	< 15
VOCs	Toluene	ug/kg			< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	trans-1,2-Dichloroethene	ug/kg			< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	< 5.3	< 4.9	< 5	< 4.8	< 4.8	< 4.5	< 5.2	< 74	< 26	< 24	< 60	< 6.5	< 8.2	< 7	< 6.4	< 7.4	< 6.2	< 54	< 8.9	< 15
VOCs	trans-1,3-Dichloropropene	ug/kg			< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	Trichloroethene	ug/kg			< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	< 5.3	< 4.9	< 5	< 4.8	< 4.8	< 4.5	< 5.2	< 74	< 26	< 24	< 60	< 6.5	< 8.2	< 7	< 6.4	< 7.4	< 6.2	< 54	< 8.9	< 15
VOCs	Trichlorofluoromethane	ug/kg			< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	NA	NA	NA	< 4.8	< 4.8	< 4.5	< 5.2	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.2	NA	NA	NA
VOCs	Vinyl chloride	ug/kg			< 6.3	< 5.6	< 6.1	< 4.4	< 3.8	< 4.1	< 5.3	< 4.9	< 5	< 4.8	< 4.8	< 4.5	< 5.2	< 74	< 26	< 24	< 60	< 6.5	< 8.2	< 7	< 6.4	< 7.4	< 6.2	< 54	< 8.9	< 15
VOCs	Xylenes, Total	ug/kg			< 13	< 11	< 12	< 8.7	< 7.6	< 8.2	NA	NA	NA	< 9.6	< 9.5	< 8.9	< 10	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 12	NA	NA	NA

Table T4 - Sediment Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

					Location	SED-21	SED-22	SED-22	SED-22	SED-22	SED-22	SED-23	SED-23	SED-23	SED-23	SED-23	SED-24	SED-24	SED-24	SED-24	SED-25*	SED-26*	SED-27**	SED-28**	SED-29	SED-29	SED-29	SED-30	SED-30	SED-31	SED-31
					Depth	6 - 12 in	0 - 6 in	0 - 6 in	12 - 24 in	24 - 36 in	6 - 12 in	0 - 6 in	0 - 6 in	12 - 24 in	24 - 36 in	6 - 12 in	0 - 6 in	0 - 6 in	12 - 18 in	6 - 12 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	12 - 16 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in
					Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
					Date	11/10/2020	7/15/2019	11/9/2020	11/9/2020	11/9/2020	11/9/2020	7/16/2019	11/16/2020	11/16/2020	11/16/2020	11/16/2020	7/16/2019	11/16/2020	11/16/2020	11/16/2020	7/18/2019	7/18/2019	7/18/2019	7/18/2019	11/20/2019	11/20/2019	11/20/2019	11/21/2019	11/21/2019	11/21/2019	11/21/2019
Group	Analyte	Unit	RUSL	IUSL																											
Chemical	Ammonia	mg/kg			474	978	531	137	75.9	386	214	680	200	291	288	70.5	1080	322	1170	2270	167	395	1560	455	230	287	394	392	286	118
Chemical	Nitrate as N	mg/kg			1.1	< 0.2	0.6	< 0.28	< 0.27	< 0.48	< 0.20	1.6	< 0.26	< 0.26	< 0.42	0.20	4.8	< 0.36	6.3	0.27	1.4	0.30	< 0.20	< 0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chemical	Fluoride	mg/kg			8.86	4.64	9.90	1.79	3.02	6.95	38.1	89.6	41.6	48.5	55.3	49.2	152	62.7	135	53.3	4.61	171	39.3	1.14 J	2.61	2.56	2.26	3.43	3.13	3.07
Metals	Aluminum	mg/kg			NA	25800	NA	NA	NA	NA	19800	NA	NA	NA	NA	10500	NA	NA	NA	6570	5540	1860	5790	25900	17000	19800	24000	21700	20400	15500
Metals	Antimony	mg/kg			NA	< 6.26	NA	NA	NA	NA	< 2.87	NA	NA	NA	NA	< 2.94	NA	NA	NA	5.01 J	1.22 J	4.79 J	6.81 J	< 4.85	< 2.97	< 3.53	< 4.08	< 4.41	< 28.4	< 25.6
Metals	Arsenic	mg/kg			NA	4.62 J	NA	NA	NA	NA	3.36 J	NA	NA	NA	NA	< 4.4	NA	NA	NA	< 26.7	0.795 J	< 15.4	< 19.7	4.24 J	2.45 J	2.31 J	3.6 J	2.49 J	4.51	2.85 J
Metals	Barium	mg/kg			NA	209	NA	NA	NA	NA	127	NA	NA	NA	NA	76.8	NA	NA	NA	103	56	723	1220	207	147	157	174	140	213	239
Metals	Beryllium	mg/kg			NA	2.02	NA	NA	NA	NA	2.09	NA	NA	NA	NA	0.896	NA	NA	NA	< 4.44	0.253 J	< 2.57	< 3.28	1.83	2.13	1.86	1.99	2.32	1.69	1.67
Metals	Cadmium	mg/kg			NA	0.374 J	NA	NA	NA	NA	0.209 J	NA	NA	NA	NA	< 0.734	NA	NA	NA	2 J	0.61 J	< 2.57	< 3.28	< 1.21	< 0.743	< 0.884	< 1.02	< 1.1	< 0.709	< 0.641
Metals	Calcium	mg/kg			NA	872	NA	NA	NA	NA	770	NA	NA	NA	NA	606	NA	NA	NA	10500	3950	253000	284000	809	272	441	424	448	796	679
Metals	Chromium	mg/kg			NA	35.1	NA	NA	NA	NA	29.3	NA	NA	NA	NA	15.2	NA	NA	NA	35.7	49.6	78.9	75.3	33.8	25.3	28.3	32.3	28.3	26.4	22.8
Metals	Cobalt	mg/kg			NA	16.6	NA	NA	NA	NA	11.8	NA	NA	NA	NA	5	NA	NA	NA	8.69	2.95	2 J	2.91 J	8.36	3.7	5.92	8.26	4.64	14.3	16.4
Metals	Copper	mg/kg			NA	33.1	NA	NA	NA	NA	18.5	NA	NA	NA	NA	7.79	NA	NA	NA	418	116	20.9	36.4	27.9	13.1	17.6	24.1	17	20.5	17.3
Metals	Iron	mg/kg			NA	32500	NA	NA	NA	NA	29500	NA	NA	NA	NA	10100	NA	NA	NA	12300	2840	4310	29100	17600	9170	12400	15100	10000	28600	30000
Metals	Lead	mg/kg			NA	37.4	NA	NA	NA	NA	14.4	NA	NA	NA	NA	8.69	NA	NA	NA	45.9	29.3	18.5	91.7	28.2	11.3	15.2	41.8	13.4	22.9	14.1
Metals	Magnesium	mg/kg			NA	2180	NA	NA	NA	NA	2980	NA	NA	NA	NA	1220	NA	NA	NA	1180	679	17200	16500	2800	971	2180	3240	1400	3080	3110
Metals	Manganese	mg/kg			NA	389	NA	NA	NA	NA	268	NA	NA	NA	NA	123	NA	NA	NA	97.2	23	102	149	223	66.2	128	207	122	788	1090
Metals	Mercury	ug/kg			NA	113	NA	NA	NA	NA	40.3	NA	NA	NA	NA	25.8	NA	NA	NA	407	576	287	526	NA	NA	NA	NA	NA	NA	NA
Metals	Nickel	mg/kg			NA	43.3	NA	NA	NA	NA	11.5	NA	NA	NA	NA	5.45	NA	NA	NA	86.7	75.1	255	143	15.2	8.4	10.8	13.4	9.48	12.2	10.7
Metals	Potassium	mg/kg			NA	1410	NA	NA	NA	NA	2010	NA	NA	NA	NA	846	NA	NA	NA	798	170	308	3650	1400	297	1060	1580	509	1760	1610
Metals	Selenium	mg/kg			NA	3.29 J	NA	NA	NA	NA	< 4.31	NA	NA	NA	NA	0.885 J	NA	NA	NA	4.72 J	0.72 J	2.58 J	3.69 J	< 7.27	< 4.46	< 5.3	< 6.12	< 6.61	< 4.26	< 3.84
Metals	Silver	mg/kg			NA	< 1.56	NA	NA	NA	NA	< 0.718	NA	NA	NA	NA	< 0.734	NA	NA	NA	323	544	10.5	27.6	< 12.1	< 7.43	< 8.84	< 10.2	< 11	< 7.09	< 6.41
Metals	Sodium	mg/kg			NA	69.7 J	NA	NA	NA	NA	130	NA	NA	NA	NA	94.7	NA	NA	NA	919	90.4	6330	7260	125	77.7	97.1	95.9	110	52.7	52.6
Metals	Thallium	mg/kg			NA	< 62.6	NA	NA	NA	NA	< 28.7	NA	NA	NA	NA	< 29.4	NA	NA	NA	< 17.8	< 2.6	< 10.3	< 13.1	< 48.5	< 29.7	< 35.3	< 40.8	< 44.1	< 28.4	< 25.6
Metals	Vanadium	mg/kg			NA	73.7	NA	NA	NA	NA	70.5	NA	NA	NA	NA	33.5	NA	NA	NA	22.2	7.25	5.71	5.67	85.6	40.3	58.6	71.9	51.2	73.4	61.9
Metals	Zinc	mg/kg			NA	138	NA	NA	NA	NA	46	NA	NA	NA	NA	22.8	NA	NA	NA	9070	229	523	403	69.1	29.8	43.5	68.8	31.5	56.2	45.9
Radiological	Technetium-99	pCi/g	19	89400	0.528 #	0 ##	0.304 #	0 ##	0 ##	0.0333 #	50.8	144	1.40	0.785	30.6	35.8	118	33.3	158	8.55 #	1.68 #	0 ##	5.75 #	0 ##	0 ##	0 ##	2.43 #	0 ##	0.959 #	0 ##
Radiological	Uranium-233/234	pCi/g	13	3310	2.19	117	6.21	1.09	1.81	1.97	1.35	1.36	1.06	1.11	1.19	1.14	3.12	1.57	2.63	907	222	225	254	6.23	1.23	1.81	5.71	1.41	2.81	2.96
Radiological	Uranium-235/236	pCi/g	8	39	0.131 #	4.98	0.257	0.0350 #	0.225 #	0.192 #	0.00261 #	0.0994 #	0.0187 #	0.0379 #	0.0658 #	0.0608 #	0.160 #	0.217	0.153 #	41.1	11.0	11.9	12.4	0.313	0.175	0.208	0.191	0.0337 #	0.0669 #	0.110 #
Radiological	Uranium-238	pCi/g	14	179	1.51	28.0	2.24	0.838	1.08	0.971	1.69	1.36	1.19	0.736	1.29	0.944	2.13	1.47	1.67	149	46.9	37.4	44.6	2.51	1.16	1.55	2.51	1.28	1.75	1.69
Radiological	Uranium-234	ug/kg			NA	22 J	NA	NA	NA	NA	< 14.4	NA	NA	NA	NA	< 15.9	NA	NA	NA	225	129	38.9 J	57.2 J	< 24.3	< 15.1	< 18.4	< 20.4	< 21.1	< 14.5	< 12.4
Radiological	Uranium-235	ug/kg			NA	2230	NA	NA	NA	NA	18.3 J	NA	NA	NA	NA	15.9 J	NA	NA	NA	27100	14200	3970	6770	86.4	17.6 J	21.4 J	85.9	21 J	45.6	18.1
Radiological	Uranium-238	ug/kg			NA	80700	NA	NA	NA	NA	2250	NA	NA	NA	NA	1680	NA	NA	NA	646000	487000	90900	161000	6030	2490	2490	5410	2690	3400	2220
Radiological	Total Uranium Isotopes	ug/kg			NA	83000	NA	NA	NA	NA	2270	NA	NA	NA	NA	1700	NA	NA	NA	673000	501000	94900	168000	6120	2510	2510	5500	2710	3450	2240
SVOCs	1,1'-Biphenyl	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	2,4,5-Trichlorophenol	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	2,4,6-Trichlorophenol	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	2,4-Dichlorophenol	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	2,4-Dimethylphenol	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	2,4-Dinitrophenol	ug/kg			NA	< 330	NA	NA	NA	NA	< 320	NA	NA	NA	NA	< 310	NA	NA	NA	< 320	< 1600	< 320	< 320	< 1600	NA	< 320	< 1600	< 1600	< 320	< 310
SVOCs	2,4-Dinitrotoluene	ug/kg			NA	< 130	NA	NA	NA	NA	< 130	NA	NA	NA	NA	< 120	NA	NA	NA	< 120	< 630	< 130	< 130	< 640	NA	< 130	< 620	< 620	< 130	< 120
SVOCs	2,6-Dinitrotoluene	ug/kg			NA	< 130	NA	NA	NA	NA	< 130	NA	NA	NA	NA	< 120	NA	NA	NA	< 120	< 630	< 130	< 130	< 640	NA	< 130	< 620	< 620	< 130	< 120
SVOCs	2-Chloronaphthalene	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	2-Chlorophenol	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	2-Methylnaphthalene	ug/kg			NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	< 13	< 64	< 13	< 13	< 65	NA	< 13	< 63	< 64	< 13	< 13
SVOCs	2-Methylphenol	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	2-Nitroaniline	ug/kg			NA	< 130	NA	NA	NA	NA	< 130	NA	NA	NA	NA	< 120	NA	NA	NA	< 120	< 630	< 130	< 130	< 640	NA	< 130	< 620	< 620	< 130	< 120
SVOCs	2-Nitrophenol	ug/kg			NA	< 130	NA	NA	NA	NA	< 130	NA	NA	NA	NA	< 120	NA	NA	NA	< 120	< 630	< 130	< 130	< 640	NA	< 130	< 620	< 620	< 130	< 120
SVOCs	3,3'-Dichlorobenzidine	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	3-Nitroaniline	ug/kg			NA	< 130	NA	NA	NA	NA	< 130	NA	NA	NA	NA	< 120	NA	NA	NA	< 120	< 630	< 130	< 130	< 640	NA	< 130	< 620	< 620	< 130	< 120
SVOCs	4,6-Dinitro-2-methylphenol	ug/kg			NA	< 330	NA	NA	NA	NA	< 320	NA	NA	NA	NA	< 310	NA	NA	NA	< 320	< 1600	< 320	< 320	< 1600	NA	< 320	< 1600	< 1600	< 320	< 310
SVOCs	4-Bromophenyl phenyl ether	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	4-Chloro-3-methylphenol	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	4-Chloroaniline	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	4-Chlorophenyl phenyl ether	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	4-Methylphenol	ug/kg			NA	< 130	NA	NA	NA	NA	< 130	NA	NA	NA	NA	< 120	NA	NA	NA	< 120	< 630	< 130	< 130	< 640	NA	< 130	< 620	< 620	< 130	< 120
SVOCs	4-Nitroaniline	ug/kg			NA	< 130	NA	NA	NA	NA	< 130	NA	NA	NA	NA	< 120	NA	NA	NA	< 120	< 630	< 130	< 130	< 640	NA	< 130	< 620	< 620	< 130	< 120
SVOCs	4-Nitrophenol	ug/kg			NA	< 330	NA	NA	NA	NA	< 320	NA	NA	NA	NA	< 310	NA	NA	NA	< 320	< 1600	< 320	< 320	< 1600	NA	< 320	< 1600	< 1600	< 320	< 310
SVOCs	Acenaphthene	ug/kg			NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	< 13	< 64	< 13	< 13	< 65	NA	< 13	< 63	< 64	< 13	< 13
SVOCs	Acenaphthylene	ug/kg			NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	< 13	< 64	< 13	< 13	< 65	NA	< 13	< 63	< 64	< 13	< 13
SVOCs	Acetophenone	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	Anthracene	ug/kg			NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	< 13	< 64	< 13	110	< 65	NA	< 13	< 63	< 64	< 13	< 13
SVOCs	Atrazine	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	Benz(a)anthracene	ug/kg			NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	< 13	< 64	< 13	3400	< 65	NA	< 13	< 63	< 64	< 13	< 13
SVOCs	Benzaldehyde	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	Benzo(a)pyrene	ug/kg			NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	< 13	79	< 13	3000	< 65	NA	< 13	< 63	< 64	< 13	< 13
SVOCs	Benzo(b)fluoranthene	ug/kg			NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	< 13	150	< 13	4600	< 65	NA	< 13	< 63	< 64	< 13	< 13
SVOCs	Benzo(g,h,i)perylene	ug/kg			NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	< 13	< 64	< 13	1800	< 65	NA	< 13	< 63	< 64	< 13	< 13
SVOCs	Benzo(k)fluoranthene	ug/kg			NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	< 13	< 64	< 13	1900	< 65	NA	< 13	< 63	< 64	< 13	< 13

Table T4 - Sediment Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

					Location	SED-21	SED-22	SED-22	SED-22	SED-22	SED-22	SED-23	SED-23	SED-23	SED-23	SED-23	SED-24	SED-24	SED-24	SED-24	SED-25*	SED-26*	SED-27**	SED-28**	SED-29	SED-29	SED-29	SED-30	SED-30	SED-31	SED-31
					Depth	6 - 12 in	0 - 6 in	0 - 6 in	12 - 24 in	24 - 36 in	6 - 12 in	0 - 6 in	0 - 6 in	12 - 24 in	24 - 36 in	6 - 12 in	0 - 6 in	0 - 6 in	12 - 18 in	6 - 12 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	12 - 16 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in
					Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
					Date	11/10/2020	7/15/2019	11/9/2020	11/9/2020	11/9/2020	11/9/2020	7/16/2019	11/16/2020	11/16/2020	11/16/2020	11/16/2020	7/16/2019	11/16/2020	11/16/2020	11/16/2020	7/18/2019	7/18/2019	7/18/2019	7/18/2019	11/20/2019	11/20/2019	11/20/2019	11/21/2019	11/21/2019	11/21/2019	11/21/2019
Group	Analyte	Unit	RUSL	IUSL																											
SVOCs	Bis(2-chloroethoxy)methane	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	Bis(2-chloroethyl)ether	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	Bis(2-chloroisopropyl)ether	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	Bis(2-ethylhexyl)phthalate	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	91	270	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	Butyl benzyl phthalate	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	Caprolactam	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	Carbazole	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	Chrysene	ug/kg			NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	< 13	< 64	< 13	3200	< 65	NA	< 13	< 63	< 64	< 13	< 13
SVOCs	Dibenz(a,h)anthracene	ug/kg			NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	< 13	< 64	< 13	< 13	< 65	NA	< 13	< 63	< 64	< 13	< 13
SVOCs	Dibenzofuran	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	Diethyl phthalate	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	Dimethyl phthalate	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	Di-n-butyl phthalate	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	Di-n-octyl phthalate	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	Fluoranthene	ug/kg			NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	< 13	81	< 13	7100	< 65	NA	< 13	< 63	< 64	< 13	< 13
SVOCs	Fluorene	ug/kg			NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	< 13	< 64	< 13	< 13	< 65	NA	< 13	< 63	< 64	< 13	< 13
SVOCs	Hexachlorobenzene	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	Hexachlorobutadiene	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	Hexachlorocyclopentadiene	ug/kg			NA	< 330	NA	NA	NA	NA	< 320	NA	NA	NA	NA	< 310	NA	NA	NA	< 320	< 1600	< 320	< 320	< 1600	NA	< 320	< 1600	< 1600	< 320	< 310
SVOCs	Hexachloroethane	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	Indeno(1,2,3-cd)pyrene	ug/kg			NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	< 13	< 64	< 13	1600	< 65	NA	< 13	< 63	< 64	< 13	< 13
SVOCs	Isophorone	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	Naphthalene	ug/kg			NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	< 13	< 64	< 13	< 13	< 65	NA	< 13	< 63	< 64	< 13	< 13
SVOCs	Nitrobenzene	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	N-Nitrosodi-n-propylamine	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	N-Nitrosodiphenylamine	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	Pentachlorophenol	ug/kg			NA	< 330	NA	NA	NA	NA	< 320	NA	NA	NA	NA	< 310	NA	NA	NA	< 320	< 1600	< 320	< 320	< 1600	NA	< 320	< 1600	< 1600	< 320	< 310
SVOCs	Phenanthrene	ug/kg			NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	< 13	< 64	< 13	440	< 65	NA	< 13	< 63	< 64	< 13	< 13
SVOCs	Phenol	ug/kg			NA	< 66	NA	NA	NA	NA	< 65	NA	NA	NA	NA	< 64	NA	NA	NA	< 64	< 320	< 64	< 65	< 330	NA	< 65	< 320	< 320	< 66	< 63
SVOCs	Pyrene	ug/kg			NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	< 13	82	< 13	5600	< 65	NA	< 13	< 63	< 64	< 13	< 13
VOCs	(1-Methylethyl)-Benzene	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	1,1,1-Trichloroethane	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	1,1,2,2-Tetrachloroethane	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	1,1,2-Trichlor-1,2,2-trifluoroethane	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	1,1,2-Trichloroethane	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	1,1-Dichloroethane	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	1,1-Dichloroethene	ug/kg			< 19	< 6.1	< 34	< 5.6	< 7	< 15	< 7.1	< 25	< 5.3	< 5.2	< 9.9	< 4.2	< 58	< 9.9	< 6.5	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	1,2,4-Trichlorobenzene	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	1,2-Dibromo-3-chloropropane	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	1,2-Dibromoethane	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	1,2-Dichlorobenzene	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	1,2-Dichloroethane	ug/kg			< 19	< 6.1	< 34	< 5.6	< 7	< 15	< 7.1	< 25	< 5.3	< 5.2	< 9.9	< 4.2	< 58	< 9.9	< 6.5	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	1,2-Dichloropropane	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	1,3-Dichlorobenzene	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	1,4-Dichlorobenzene	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	2-Butanone	ug/kg			NA	32	NA	NA	NA	NA	< 28	NA	NA	NA	NA	< 17	NA	NA	NA	NA	NA	NA	NA	< 21	< 24	< 18	26	25	< 16	< 17
VOCs	2-Hexanone	ug/kg			NA	< 12	NA	NA	NA	NA	< 14	NA	NA	NA	NA	< 8.3	NA	NA	NA	NA	NA	NA	NA	< 10	< 12	< 8.9	< 11	< 12	< 8.0	< 8.3
VOCs	4-Methyl-2-pentanone	ug/kg			NA	< 12	NA	NA	NA	NA	< 14	NA	NA	NA	NA	< 8.3	NA	NA	NA	NA	NA	NA	NA	< 10	< 12	< 8.9	< 11	< 12	< 8.0	< 8.3
VOCs	Acetone	ug/kg			NA	88	NA	NA	NA	NA	91	NA	NA	NA	NA	25	NA	NA	NA	NA	NA	NA	NA	410	370	420	380	530	410	440
VOCs	Benzene	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	Bromodichloromethane	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	Bromoform	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	Bromomethane	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	Carbon disulfide	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	Carbon tetrachloride	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	Chlorobenzene	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	Chloroethane	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	Chloroform	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	Chloromethane	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	cis-1,2-Dichloroethene	ug/kg			< 19	< 6.1	< 34	< 5.6	< 7	< 15	< 7.1	< 25	< 5.3	< 5.2	< 9.9	< 4.2	< 58	< 9.9	< 6.5	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	cis-1,3-Dichloropropene	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	Cyclohexane	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	Dibromochloromethane	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	Dichlorodifluoromethane	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	Ethylbenzene	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2

Table T4 - Sediment Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

					Location	SED-21	SED-22	SED-22	SED-22	SED-22	SED-22	SED-23	SED-23	SED-23	SED-23	SED-23	SED-24	SED-24	SED-24	SED-24	SED-25*	SED-26*	SED-27**	SED-28**	SED-29	SED-29	SED-29	SED-30	SED-30	SED-31	SED-31
					Depth	6 - 12 in	0 - 6 in	0 - 6 in	12 - 24 in	24 - 36 in	6 - 12 in	0 - 6 in	0 - 6 in	12 - 24 in	24 - 36 in	6 - 12 in	0 - 6 in	0 - 6 in	12 - 18 in	6 - 12 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	0 - 6 in	12 - 16 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in
					Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
					Date	11/10/2020	7/15/2019	11/9/2020	11/9/2020	11/9/2020	11/9/2020	7/16/2019	11/16/2020	11/16/2020	11/16/2020	11/16/2020	7/16/2019	11/16/2020	11/16/2020	11/16/2020	7/18/2019	7/18/2019	7/18/2019	7/18/2019	11/20/2019	11/20/2019	11/20/2019	11/21/2019	11/21/2019	11/21/2019	11/21/2019
Group	Analyte	Unit	RUSL	IUSL																											
VOCs	Methyl acetate	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	Methyl tert-butyl ether	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	Methylcyclohexane	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	Methylene chloride	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	Styrene	ug/kg			NA	< 6.1	NA	NA	NA	NA	< 7.1	NA	NA	NA	NA	< 4.2	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	Tetrachloroethene	ug/kg			< 19	< 6.1	< 34	< 5.6	< 7	< 15	< 7.1	< 25	< 5.3	< 5.2	< 9.9	< 4.2	< 58	< 9.9	< 6.5	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	Toluene	ug/kg			NA	< 6.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	trans-1,2-Dichloroethene	ug/kg			< 19	< 6.1	< 34	< 5.6	< 7	< 15	< 7.1	< 25	< 5.3	< 5.2	< 9.9	< 4.2	< 58	< 9.9	< 6.5	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	trans-1,3-Dichloropropene	ug/kg			NA	< 6.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	Trichloroethene	ug/kg			< 19	< 6.1	< 34	< 5.6	< 7	< 15	< 7.1	< 25	< 5.3	< 5.2	< 9.9	< 4.2	< 58	< 9.9	< 6.5	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	Trichlorofluoromethane	ug/kg			NA	< 6.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	Vinyl chloride	ug/kg			< 19	< 6.1	< 34	< 5.6	< 7	< 15	< 7.1	< 25	< 5.3	< 5.2	< 9.9	< 4.2	< 58	< 9.9	< 6.5	NA	NA	NA	NA	< 5.1	< 6.0	< 4.5	< 5.3	< 6.1	< 4.0	< 4.2
VOCs	Xylenes, Total	ug/kg			NA	< 12	NA	NA	NA	NA	< 14	NA	NA	NA	NA	< 8.3	NA	NA	NA	NA	NA	NA	NA	< 10	< 12	< 8.9	< 11	< 12	< 8.0	< 8.3

Table T4 - Sediment Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

					Location	SED-32	SED-32	SED-33	SED-33	SED-33	SED-34	SED-34	SED-35	SED-35	SED-36	SED-36	SED-37	SED-37	SED-37	SED-38	SED-38	SED-38	SED-38	SED-38	SED-38	SED-39	SED-39	SED-39	SED-39	SED-39
					Depth	0 - 6 in	6 - 12 in	0 - 6 in	12 - 16 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	6 - 12 in	0 - 6 in	0 - 6 in	12 - 24 in	24 - 36 in	24 - 36 in	6 - 12 in	0 - 6 in	0 - 6 in	12 - 24 in	24 - 36 in	6 - 12 in
					Type	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	FD	N	N	N	N	N	N
					Date	11/21/2019	11/21/2019	11/21/2019	11/21/2019	11/21/2019	11/21/2019	11/21/2019	11/22/2019	11/22/2019	11/22/2019	11/22/2019	11/22/2019	11/22/2019	11/22/2019	11/22/2019	11/10/2020	11/10/2020	11/10/2020	11/10/2020	11/10/2020	11/22/2019	11/19/2020	11/19/2020	11/19/2020	11/19/2020
Group	Analyte	Unit	RUSL	IUSL																										
Chemical	Ammonia	mg/kg			480	576	248	67.3	117	397	336	158	80.1	153	99.1	451	127	178	576	581	596	306	393	491	222	329	72.7	56.9	274
Chemical	Nitrate as N	mg/kg			1.1	< 0.50	< 0.50	NA	< 0.50	0.62	< 0.50	< 0.50	< 0.50	< 0.50	0.55	< 0.50	< 0.50	< 0.50	0.66	0.95	< 0.57	< 0.33	< 0.37	< 0.68	< 0.5	< 0.36	0.44	< 0.3	< 0.35
Chemical	Fluoride	mg/kg			3.88	4.21	1.57 J	6.63	1.56	2.20	4.26	2.09	4.29	< 1.44	< 1.32	1.35 J	1.60	0.858 J	5.17	5.56	4.27 J	3.55	3.90	5.91	1.90	2.60	< 1.43	3.75	2.41 J
Metals	Aluminum	mg/kg			15200	17600	23200	15500	18200	23600	24200	24800	22100	15300	16100	14800	18700	19000	23200	NA	NA	NA	NA	NA	30400	NA	NA	NA	NA
Metals	Antimony	mg/kg			< 4.15	< 3.44	< 35.6	< 2.73	< 30.3	< 3.59	< 32.8	< 29.9	< 28	< 2.89	< 26.9	< 3.27	< 28.3	< 30	< 6.96	NA	NA	NA	NA	NA	< 3.32	NA	NA	NA	NA
Metals	Arsenic	mg/kg			2.47 J	3.35 J	5.43	3.14 J	3.27 J	4.41 J	4.44 J	3.07 J	3.65 J	2.9 J	3.85 J	3.34 J	3.7 J	3.88 J	4.3 J	NA	NA	NA	NA	NA	4.05 J	NA	NA	NA	NA
Metals	Barium	mg/kg			168	203	167	135	163	174	170	203	178	106	123	122	134	142	206	NA	NA	NA	NA	NA	167	NA	NA	NA	NA
Metals	Beryllium	mg/kg			1.35	1.53	1.83	1.63	2.07	1.96	2.7	2.05	2.38	1.08	1.43	1.06	1.38	1.5	2.39	NA	NA	NA	NA	NA	3	NA	NA	NA	NA
Metals	Cadmium	mg/kg			< 1.04	< 0.86	< 0.89	< 0.682	< 0.756	< 0.898	< 0.82	< 0.747	< 0.701	< 0.723	< 0.673	< 0.817	< 0.706	< 0.749	< 1.74	NA	NA	NA	NA	NA	< 0.83	NA	NA	NA	NA
Metals	Calcium	mg/kg			1140	742	292	150	182	843	762	490	542	256	158	394	346	335	914	NA	NA	NA	NA	NA	297	NA	NA	NA	NA
Metals	Chromium	mg/kg			22.6	25.9	28.3	23.4	25.6	28.7	32.7	33.5	27.3	19.3	19.7	18.5	22.6	23	24.9	NA	NA	NA	NA	NA	35.4	NA	NA	NA	NA
Metals	Cobalt	mg/kg			9.95	10	11.4	6.84	13.8	15.9	17.5	17.4	19.1	9.08	11.7	6.86	8.53	8.88	14.3	NA	NA	NA	NA	NA	13	NA	NA	NA	NA
Metals	Copper	mg/kg			19.6	22.3	21.9	12.9	19.3	26.3	24.8	23.2	24.3	14.9	17.1	14.7	18.2	19.4	22.1	NA	NA	NA	NA	NA	24.6	NA	NA	NA	NA
Metals	Iron	mg/kg			18600	21300	29300	16700	29100	32800	32200	30300	35600	22000	30400	20500	25700	26800	18400	NA	NA	NA	NA	NA	19900	NA	NA	NA	NA
Metals	Lead	mg/kg			24.1	40	20.1	11.8	11.7	31.3	22.3	12.2	13.6	17.5	20.5	30.1	20.7	22	13.6	NA	NA	NA	NA	NA	21.1	NA	NA	NA	NA
Metals	Magnesium	mg/kg			2440	2570	3060	1370	3590	3110	4000	4450	4410	2320	2840	2010	2560	2640	2260	NA	NA	NA	NA	NA	3330	NA	NA	NA	NA
Metals	Manganese	mg/kg			410	323	295	176	281	906	1020	461	819	260	322	215	219	230	498	NA	NA	NA	NA	NA	210	NA	NA	NA	NA
Metals	Mercury	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	56.8 J	NA	NA	NA	NA
Metals	Nickel	mg/kg			11.2	13.9	12.9	7.21	12.1	13.2	14.2	14.7	13.7	8.87	9.48	8.54	10	10.2	13.9	NA	NA	NA	NA	NA	16.9	NA	NA	NA	NA
Metals	Potassium	mg/kg			1090	1090	1460	443	1700	1320	1290	2130	2050	1200	1400	1050	1130	1160	1210	NA	NA	NA	NA	NA	1400	NA	NA	NA	NA
Metals	Selenium	mg/kg			1.17 J	0.904 J	< 5.34	< 4.09	< 4.54	1.05 J	1.23 J	< 4.48	< 4.2	< 4.34	< 4.04	0.899 J	< 4.24	< 4.5	< 10.4	NA	NA	NA	NA	NA	< 4.98	NA	NA	NA	NA
Metals	Silver	mg/kg			< 10.4	< 8.6	< 8.9	< 6.82	< 7.56	< 8.98	< 8.2	< 7.47	< 7.01	< 7.23	< 6.73	< 8.17	< 7.06	< 7.49	< 17.4	NA	NA	NA	NA	NA	< 8.3	NA	NA	NA	NA
Metals	Sodium	mg/kg			68.2	89.1	85.7	48.8	59.7	64.9	62.5	59.2	58.9	50.9	57.9	47	51	60.2	83.1 J	NA	NA	NA	NA	NA	59.9	NA	NA	NA	NA
Metals	Thallium	mg/kg			< 41.5	< 34.4	< 35.6	< 27.3	< 30.3	< 35.9	< 32.8	< 29.9	< 28	< 28.9	< 26.9	< 32.7	< 28.3	< 30	< 69.6	NA	NA	NA	NA	NA	< 33.2	NA	NA	NA	NA
Metals	Vanadium	mg/kg			53.5	64.3	81.1	56.4	74.4	86.1	89.1	74.1	82.1	50.3	60.2	48.5	67.2	67.9	54.3	NA	NA	NA	NA	NA	71.2	NA	NA	NA	NA
Metals	Zinc	mg/kg			62.4	60.7	56.8	27.6	52.6	56.5	60.9	53.1	51.3	39	40.7	37.2	41.1	42	54.5	NA	NA	NA	NA	NA	72.1	NA	NA	NA	NA
Radiological	Technetium-99	pCi/g	19	89400	5.06 #	0 ##	0 ##	0 ##	0 ##	0 ##	0 ##	0 ##	0 ##	0 ##	0 ##	0 ##	0 ##	0 ##	16.5 #	2.13	0.174 #	0.128 #	0.144 #	0.116 #	0 ##	0.626 #	0.536 #	0.281 #	0.732 #
Radiological	Uranium-233/234	pCi/g	13	3310	3.71	10.0	5.06	1.06	1.27	3.13	2.93	2.26	1.59	4.40	1.50	4.88	2.04	2.33	3.26	60.9	3.01	1.74	1.66	4.19	1.86	2.22	1.58	1.86	2.37
Radiological	Uranium-235/236	pCi/g	8	39	0.0970 #	0.469	0.394	0.0461 #	0.0959 #	0.131 #	0.0487 #	0.179	0.0433 #	0.210	0.0881	0.254	0.149	0.0456 #	0.204	3.12	0.188	0.0835 #	0.0261 #	0.276	0.0122 #	0.0959	0.243	0.181	0.0929 #
Radiological	Uranium-238	pCi/g	14	179	2.00	3.28	2.52	1.09	1.56	1.81	1.73	1.59	1.66	2.38	1.05	1.78	1.62	1.38	1.68	17.0	1.71	1.60	1.25	2.52	1.70	1.81	1.63	1.96	1.85
Radiological	Uranium-234	ug/kg			< 19.9	< 18.4	< 16.5	< 14.1	< 14.7	< 17.6	< 16.3	< 14.0	< 13.2	< 14.2	< 13.5	< 15.9	< 14.5	< 15.0	< 34.6	NA	NA	NA	NA	NA	< 15.9	NA	NA	NA	NA
Radiological	Uranium-235	ug/kg			72.9	195	305	16.5 J	21.8	44.9	36.3	36.8	28.9	70.2	19.1	102	67.4	31.7	31.8 J	NA	NA	NA	NA	NA	26.4	NA	NA	NA	NA
Radiological	Uranium-238	ug/kg			4280	8370	14200	2230	2750	3650	3770	3920	3630	3970	1990	4850	3930	2910	3380	NA	NA	NA	NA	NA	3040	NA	NA	NA	NA
Radiological	Total Uranium Isotopes	ug/kg			4350	8570	14500	2250	2770	3690	3810	3960	3660	4040	2010	4950	4000	2940	3410	NA	NA	NA	NA	NA	3070	NA	NA	NA	NA
SVOCs	1,1'-Biphenyl	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	2,4,5-Trichlorophenol	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	2,4,6-Trichlorophenol	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	2,4-Dichlorophenol	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	2,4-Dimethylphenol	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	2,4-Dinitrophenol	ug/kg			< 1600	< 1600	< 320	NA	< 320	< 1600	< 310	< 320	< 320	< 320	< 320	< 320	< 320	< 310	< 1600	NA	NA	NA	NA	NA	< 330	NA	NA	NA	NA
SVOCs	2,4-Dinitrotoluene	ug/kg			< 640	< 620	< 130	NA	< 130	< 630	< 120	< 130	< 130	< 120	< 130	< 130	< 130	< 120	< 640	NA	NA	NA	NA	NA	< 130	NA	NA	NA	NA
SVOCs	2,6-Dinitrotoluene	ug/kg			< 640	< 620	< 130	NA	< 130	< 630	< 120	< 130	< 130	< 120	< 130	< 130	< 130	< 120	< 640	NA	NA	NA	NA	NA	< 130	NA	NA	NA	NA
SVOCs	2-Chloronaphthalene	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	2-Chlorophenol	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	2-Methylnaphthalene	ug/kg			< 65	< 63	< 13	NA	< 13	< 65	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 65	NA	NA	NA	NA	NA	< 13	NA	NA	NA	NA
SVOCs	2-Methylphenol	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	2-Nitroaniline	ug/kg			< 640	< 620	< 130	NA	< 130	< 630	< 120	< 130	< 130	< 120	< 130	< 130	< 130	< 120	< 640	NA	NA	NA	NA	NA	< 130	NA	NA	NA	NA
SVOCs	2-Nitrophenol	ug/kg			< 640	< 620	< 130	NA	< 130	< 630	< 120	< 130	< 130	< 120	< 130	< 130	< 130	< 120	< 640	NA	NA	NA	NA	NA	< 130	NA	NA	NA	NA
SVOCs	3,3'-Dichlorobenzidine	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	3-Nitroaniline	ug/kg			< 640	< 620	< 130	NA	< 130	< 630	< 120	< 130	< 130	< 120	< 130	< 130	< 130	< 120	< 640	NA	NA	NA	NA	NA	< 130	NA	NA	NA	NA
SVOCs	4,6-Dinitro-2-methylphenol	ug/kg			< 1600	< 1600	< 320	NA	< 320	< 1600	< 310	< 320	< 320	< 320	< 320	< 320	< 320	< 310	< 1600	NA	NA	NA	NA	NA	< 330	NA	NA	NA	NA
SVOCs	4-Bromophenyl phenyl ether	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	4-Chloro-3-methylphenol	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	4-Chloroaniline	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	4-Chlorophenyl phenyl ether	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	4-Methylphenol	ug/kg			< 640	< 620	< 130	NA	< 130	< 630	< 120	< 130	< 130	< 120	< 130	< 130	< 130	< 120	< 640	NA	NA	NA	NA	NA	< 130	NA	NA	NA	NA
SVOCs	4-Nitroaniline	ug/kg			< 640	< 620	< 130	NA	< 130	< 630	< 120	< 130	< 130	< 120	< 130	< 130	< 130	< 120	< 640	NA	NA	NA	NA	NA	< 130	NA	NA	NA	NA
SVOCs	4-Nitrophenol	ug/kg			< 1600	< 1600	< 320	NA	< 320	< 1600	< 310	< 320	< 320	< 320	< 320	< 320	< 320	< 310	< 1600	NA	NA	NA	NA	NA	< 330	NA	NA	NA	NA
SVOCs	Acenaphthene	ug/kg			< 65	< 63	< 13	NA	< 13	< 65	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 65	NA	NA	NA	NA	NA	< 13	NA	NA	NA	NA
SVOCs	Acenaphthylene	ug/kg			< 65	< 63	< 13	NA	< 13	< 65	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 65	NA	NA	NA	NA	NA	< 13	NA	NA	NA	NA
SVOCs	Acetophenone	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	Anthracene	ug/kg			< 65	< 63	< 13	NA	< 13	< 65	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 65	NA	NA	NA	NA	NA	< 13	NA	NA	NA	NA
SVOCs	Atrazine	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	Benz(a)anthracene	ug/kg			< 65	< 63	< 13	NA	< 13	< 65	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 65	NA	NA	NA	NA	NA	< 13	NA	NA	NA	NA
SVOCs	Benzaldehyde	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	Benzo(a)pyrene	ug/kg			< 65	< 63	< 13	NA	< 13	< 65	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 65	NA	NA	NA	NA	NA	< 13	NA	NA	NA	NA
SVOCs	Benzo(b)fluoranthene	ug/kg			< 65	< 63	< 13	NA	< 13	< 65	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 65	NA	NA	NA	NA	NA	< 13	NA	NA	NA	NA
SVOCs	Benzo(g,h,i)perylene	ug/kg			< 65	< 63	< 13	NA	< 13	< 65	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 65	NA	NA	NA	NA	NA	< 13	NA	NA	NA	NA
SVOCs	Benzo(k)fluoranthene	ug/kg			< 65	< 63	< 13	NA	< 13	< 65	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 65	NA	NA	NA	NA	NA	< 13	NA	NA	NA	NA

Table T4 - Sediment Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

					Location	SED-32	SED-32	SED-33	SED-33	SED-33	SED-34	SED-34	SED-35	SED-35	SED-36	SED-36	SED-37	SED-37	SED-37	SED-38	SED-38	SED-38	SED-38	SED-38	SED-38	SED-39	SED-39	SED-39	SED-39	SED-39
					Depth	0 - 6 in	6 - 12 in	0 - 6 in	12 - 16 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	0 - 6 in	12 - 24 in	24 - 36 in	24 - 36 in	6 - 12 in	0 - 6 in	0 - 6 in	12 - 24 in	24 - 36 in	6 - 12 in
					Type	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	FD	N	N	N	N	N	N
					Date	11/21/2019	11/21/2019	11/21/2019	11/21/2019	11/21/2019	11/21/2019	11/21/2019	11/22/2019	11/22/2019	11/22/2019	11/22/2019	11/22/2019	11/22/2019	11/22/2019	11/22/2019	11/10/2020	11/10/2020	11/10/2020	11/10/2020	11/10/2020	11/22/2019	11/19/2020	11/19/2020	11/19/2020	11/19/2020	11/19/2020
Group	Analyte	Unit	RUSL	IUSL																										
SVOCs	Bis(2-chloroethoxy)methane	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	Bis(2-chloroethyl)ether	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	Bis(2-chloroisopropyl)ether	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	Bis(2-ethylhexyl)phthalate	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	Butyl benzyl phthalate	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	Caprolactam	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	Carbazole	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	Chrysene	ug/kg			< 65	< 63	< 13	NA	< 13	< 65	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 65	NA	NA	NA	NA	NA	< 13	NA	NA	NA	NA
SVOCs	Dibenz(a,h)anthracene	ug/kg			< 65	< 63	< 13	NA	< 13	< 65	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 65	NA	NA	NA	NA	NA	< 13	NA	NA	NA	NA
SVOCs	Dibenzofuran	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	Diethyl phthalate	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	Dimethyl phthalate	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	Di-n-butyl phthalate	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	Di-n-octyl phthalate	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	Fluoranthene	ug/kg			< 65	< 63	< 13	NA	< 13	< 65	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 65	NA	NA	NA	NA	NA	< 13	NA	NA	NA	NA
SVOCs	Fluorene	ug/kg			< 65	< 63	< 13	NA	< 13	< 65	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 65	NA	NA	NA	NA	NA	< 13	NA	NA	NA	NA
SVOCs	Hexachlorobenzene	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	Hexachlorobutadiene	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	Hexachlorocyclopentadiene	ug/kg			< 1600	< 1600	< 320	NA	< 320	< 1600	< 310	< 320	< 320	< 320	< 320	< 320	< 320	< 310	< 1600	NA	NA	NA	NA	NA	< 330	NA	NA	NA	NA
SVOCs	Hexachloroethane	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	Indeno(1,2,3-cd)pyrene	ug/kg			< 65	< 63	< 13	NA	< 13	< 65	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 65	NA	NA	NA	NA	NA	< 13	NA	NA	NA	NA
SVOCs	Isophorone	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	Naphthalene	ug/kg			< 65	< 63	< 13	NA	< 13	< 65	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 65	NA	NA	NA	NA	NA	< 13	NA	NA	NA	NA
SVOCs	Nitrobenzene	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	N-Nitrosodi-n-propylamine	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	N-Nitrosodiphenylamine	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	Pentachlorophenol	ug/kg			< 1600	< 1600	< 320	NA	< 320	< 1600	< 310	< 320	< 320	< 320	< 320	< 320	< 320	< 310	< 1600	NA	NA	NA	NA	NA	< 330	NA	NA	NA	NA
SVOCs	Phenanthrene	ug/kg			< 65	< 63	< 13	NA	< 13	< 65	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 65	NA	NA	NA	NA	NA	< 13	NA	NA	NA	NA
SVOCs	Phenol	ug/kg			< 330	< 320	< 66	NA	< 65	< 330	< 64	< 65	< 65	< 64	< 66	< 65	< 65	< 64	< 330	NA	NA	NA	NA	NA	< 66	NA	NA	NA	NA
SVOCs	Pyrene	ug/kg			< 65	< 63	< 13	NA	< 13	< 65	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 13	< 65	NA	NA	NA	NA	NA	< 13	NA	NA	NA	NA
VOCs	(1-Methylethyl)-Benzene	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	1,1,1-Trichloroethane	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	1,1,2,2-Tetrachloroethane	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	1,1,2-Trichlor-1,2,2-trifluoroethane	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	1,1,2-Trichloroethane	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	1,1-Dichloroethane	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	1,1-Dichloroethene	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	< 18	< 41	< 8.6	< 9.8	< 22	< 4.9	< 8.7	< 7.1	< 6.2	< 10
VOCs	1,2,4-Trichlorobenzene	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	1,2-Dibromo-3-chloropropane	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	1,2-Dibromoethane	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	1,2-Dichlorobenzene	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	1,2-Dichloroethane	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	< 18	< 41	< 8.6	< 9.8	< 22	< 4.9	< 8.7	< 7.1	< 6.2	< 10
VOCs	1,2-Dichloropropane	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	1,3-Dichlorobenzene	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	1,4-Dichlorobenzene	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	2-Butanone	ug/kg			38	76	< 20	NA	45	28	28	< 18	< 17	< 18	< 20	< 20	< 18	< 18	< 24	NA	NA	NA	NA	NA	< 19	NA	NA	NA	NA
VOCs	2-Hexanone	ug/kg			< 12	< 11	< 10	NA	< 11	< 12	< 10	< 8.9	< 8.5	< 8.8	< 10	< 9.8	< 8.9	< 8.9	< 12	NA	NA	NA	NA	NA	< 9.7	NA	NA	NA	NA
VOCs	4-Methyl-2-pentanone	ug/kg			< 12	< 11	< 10	NA	< 11	< 12	< 10	< 8.9	< 8.5	< 8.8	< 10	< 9.8	< 8.9	< 8.9	< 12	NA	NA	NA	NA	NA	< 9.7	NA	NA	NA	NA
VOCs	Acetone	ug/kg			450	440	490	NA	400	200	180	390	310	370	350	300	350	360	400	NA	NA	NA	NA	NA	< 19	NA	NA	NA	NA
VOCs	Benzene	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	Bromodichloromethane	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	Bromoform	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	Bromomethane	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	Carbon disulfide	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	Carbon tetrachloride	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	Chlorobenzene	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	Chloroethane	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	Chloroform	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	Chloromethane	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	cis-1,2-Dichloroethene	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	< 18	< 41	< 8.6	< 9.8	< 22	< 4.9	< 8.7	< 7.1	< 6.2	< 10
VOCs	cis-1,3-Dichloropropene	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	Cyclohexane	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	Dibromochloromethane	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	Dichlorodifluoromethane	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	Ethylbenzene	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA

Table T4 - Sediment Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

					Location	SED-32	SED-32	SED-33	SED-33	SED-33	SED-34	SED-34	SED-35	SED-35	SED-36	SED-36	SED-37	SED-37	SED-37	SED-38	SED-38	SED-38	SED-38	SED-38	SED-38	SED-39	SED-39	SED-39	SED-39	SED-39
					Depth	0 - 6 in	6 - 12 in	0 - 6 in	12 - 16 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	0 - 6 in	12 - 24 in	24 - 36 in	24 - 36 in	6 - 12 in	0 - 6 in	0 - 6 in	12 - 24 in	24 - 36 in	6 - 12 in
					Type	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	FD	N	N	N	N	N	N	N
					Date	11/21/2019	11/21/2019	11/21/2019	11/21/2019	11/21/2019	11/21/2019	11/21/2019	11/22/2019	11/22/2019	11/22/2019	11/22/2019	11/22/2019	11/22/2019	11/22/2019	11/22/2019	11/22/2019	11/10/2020	11/10/2020	11/10/2020	11/10/2020	11/10/2020	11/10/2020	11/22/2019	11/19/2020	11/19/2020	11/19/2020	11/19/2020
Group	Analyte	Unit	RUSL	IUSL																										
VOCs	Methyl acetate	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	Methyl tert-butyl ether	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	Methylcyclohexane	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	Methylene chloride	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	Styrene	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	Tetrachloroethene	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	< 18	< 41	< 8.6	< 9.8	< 22	< 4.9	< 8.7	< 7.1	< 6.2	< 10
VOCs	Toluene	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	trans-1,2-Dichloroethene	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	< 18	< 41	< 8.6	< 9.8	< 22	< 4.9	< 8.7	< 7.1	< 6.2	< 10
VOCs	trans-1,3-Dichloropropene	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	Trichloroethene	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	< 18	< 41	< 8.6	< 9.8	< 22	< 4.9	< 8.7	< 7.1	< 6.2	< 10
VOCs	Trichlorofluoromethane	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA
VOCs	Vinyl chloride	ug/kg			< 5.9	< 5.4	< 5.0	NA	< 5.6	< 5.9	< 5.2	< 4.4	< 4.3	< 4.4	< 5.0	< 4.9	< 4.5	< 4.4	< 6	< 18	< 41	< 8.6	< 9.8	< 22	< 4.9	< 8.7	< 7.1	< 6.2	< 10
VOCs	Xylenes, Total	ug/kg			< 12	< 11	< 10	NA	< 11	< 12	< 10	< 8.9	< 8.5	< 8.8	< 10	< 9.8	< 8.9	< 8.9	< 12	NA	NA	NA	NA	NA	< 9.7	NA	NA	NA	NA

Table T4 - Sediment Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

					Location	SED-40	SED-40	SED-40	SED-40	SED-40	SED-41	SED-41	SED-41	SED-41	SED-41	SED-42	SED-42	SED-42	SED-42	SED-42	SED-43	SED-43	SED-43	SED-44	SED-44	SED-44	SED-44	SED-45	SED-45	SED-45
					Depth	0 - 6 in	0 - 6 in	12 - 24 in	24 - 36 in	6 - 12 in	0 - 6 in	0 - 6 in	12 - 24 in	24 - 36 in	6 - 12 in	0 - 6 in	0 - 6 in	12 - 24 in	24 - 36 in	6 - 12 in	0 - 6 in	0 - 6 in	6 - 12 in	0 - 6 in	0 - 6 in	12 - 18 in	6 - 12 in	0 - 6 in	0 - 6 in	6 - 12 in
					Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
					Date	11/22/2019	11/19/2020	11/19/2020	11/19/2020	11/19/2020	11/25/2019	11/10/2020	11/10/2020	11/10/2020	11/10/2020	11/25/2019	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/25/2019	12/1/2020	12/1/2020	11/25/2019	12/1/2020	12/1/2020	12/1/2020	11/25/2019	12/2/2020	12/2/2020
Group	Analyte	Unit	RUSL	IUSL																										
Chemical	Ammonia	mg/kg			242	1110	140	37.2	122	466	897	555	896	367	928	2110	593	807	1040	774	312	499	389	1070	299	580	586	1520	240	
Chemical	Nitrate as N	mg/kg			< 0.50	0.71	< 0.29	< 0.26	0.3	0.63	3.4	0.55	1	1.6	0.83	3	< 0.63	< 0.72	3.3	0.50	1.9	4.9	< 0.50	4.6	< 0.72	2.1	0.82	2.7	1.4	
Chemical	Fluoride	mg/kg			1.65 J	3.95	2.09	1.42	0.668 J	2.68 J	14.6	2.10 J	5.77	5.18	5.15 J	26.5	2.21 J	2.03 J	7.98	14.9	2.67 J	9.10	3.04 J	32.3	15.3	19.3	7.90	103	< 3.96	
Metals	Aluminum	mg/kg			20800	NA	NA	NA	NA	27100	NA	NA	NA	NA	27500	NA	NA	NA	NA	15200	NA	NA	27000	NA	NA	NA	19500	NA	NA	
Metals	Antimony	mg/kg			< 3.48	NA	NA	NA	NA	< 5.62	NA	NA	NA	NA	< 10.3	NA	NA	NA	NA	< 11.5	NA	NA	< 7.06	NA	NA	NA	< 6.5	NA	NA	
Metals	Arsenic	mg/kg			3.47 J	NA	NA	NA	NA	4.25 J	NA	NA	NA	NA	6.15 J	NA	NA	NA	NA	3.57 J	NA	NA	4.38 J	NA	NA	NA	2.38 J	NA	NA	
Metals	Barium	mg/kg			137	NA	NA	NA	NA	214	NA	NA	NA	NA	220	NA	NA	NA	NA	105	NA	NA	207	NA	NA	NA	150	NA	NA	
Metals	Beryllium	mg/kg			1.47	NA	NA	NA	NA	2.01	NA	NA	NA	NA	1.67 J	NA	NA	NA	NA	0.858 J	NA	NA	2.32	NA	NA	NA	1.32 J	NA	NA	
Metals	Cadmium	mg/kg			< 0.87	NA	NA	NA	NA	< 1.4	NA	NA	NA	NA	< 2.58	NA	NA	NA	NA	< 2.87	NA	NA	< 1.76	NA	NA	NA	< 1.62	NA	NA	
Metals	Calcium	mg/kg			429	NA	NA	NA	NA	754	NA	NA	NA	NA	1520	NA	NA	NA	NA	813	NA	NA	679	NA	NA	NA	1170	NA	NA	
Metals	Chromium	mg/kg			26.5	NA	NA	NA	NA	29.4	NA	NA	NA	NA	31.4	NA	NA	NA	NA	15.6	NA	NA	29.5	NA	NA	NA	23.6	NA	NA	
Metals	Cobalt	mg/kg			10	NA	NA	NA	NA	26.7	NA	NA	NA	NA	17.8	NA	NA	NA	NA	4.78	NA	NA	10.2	NA	NA	NA	7.42	NA	NA	
Metals	Copper	mg/kg			19.6	NA	NA	NA	NA	25.8	NA	NA	NA	NA	30.9	NA	NA	NA	NA	16.7	NA	NA	21.7	NA	NA	NA	18.9	NA	NA	
Metals	Iron	mg/kg			16100	NA	NA	NA	NA	24300	NA	NA	NA	NA	25100	NA	NA	NA	NA	8080	NA	NA	17100	NA	NA	NA	11900	NA	NA	
Metals	Lead	mg/kg			20.4	NA	NA	NA	NA	21.9	NA	NA	NA	NA	105	NA	NA	NA	NA	16	NA	NA	18.8	NA	NA	NA	40.4	NA	NA	
Metals	Magnesium	mg/kg			2700	NA	NA	NA	NA	2610	NA	NA	NA	NA	1910	NA	NA	NA	NA	1200	NA	NA	2080	NA	NA	NA	2030	NA	NA	
Metals	Manganese	mg/kg			250	NA	NA	NA	NA	395	NA	NA	NA	NA	463	NA	NA	NA	NA	131	NA	NA	254	NA	NA	NA	224	NA	NA	
Metals	Mercury	ug/kg			55.5 J	NA	NA	NA	NA	72.4 J	NA	NA	NA	NA	119 J	NA	NA	NA	NA	< 273	NA	NA	69.9 J	NA	NA	NA	107 J	NA	NA	
Metals	Nickel	mg/kg			11.3	NA	NA	NA	NA	16.9	NA	NA	NA	NA	16.8	NA	NA	NA	NA	10.2	NA	NA	17.5	NA	NA	NA	11.8	NA	NA	
Metals	Potassium	mg/kg			1420	NA	NA	NA	NA	1580	NA	NA	NA	NA	1150	NA	NA	NA	NA	684	NA	NA	1230	NA	NA	NA	1010	NA	NA	
Metals	Selenium	mg/kg			< 5.22	NA	NA	NA	NA	< 8.43	NA	NA	NA	NA	< 15.5	NA	NA	NA	NA	< 17.2	NA	NA	< 10.6	NA	NA	NA	< 9.74	NA	NA	
Metals	Silver	mg/kg			< 8.7	NA	NA	NA	NA	< 14	NA	NA	NA	NA	< 25.8	NA	NA	NA	NA	< 2.87	NA	NA	< 17.6	NA	NA	NA	< 16.2	NA	NA	
Metals	Sodium	mg/kg			48.5	NA	NA	NA	NA	69 J	NA	NA	NA	NA	88.6 J	NA	NA	NA	NA	83.9 J	NA	NA	80.7 J	NA	NA	NA	126	NA	NA	
Metals	Thallium	mg/kg			< 34.8	NA	NA	NA	NA	< 56.2	NA	NA	NA	NA	< 103	NA	NA	NA	NA	< 11.5	NA	NA	< 70.6	NA	NA	NA	< 65	NA	NA	
Metals	Vanadium	mg/kg			62.7	NA	NA	NA	NA	85.8	NA	NA	NA	NA	95.1	NA	NA	NA	NA	36.5	NA	NA	68.8	NA	NA	NA	49.9	NA	NA	
Metals	Zinc	mg/kg			49.2	NA	NA	NA	NA	68.9	NA	NA	NA	NA	81	NA	NA	NA	NA	53	NA	NA	56.1	NA	NA	NA	49.1	NA	NA	
Radiological	Technetium-99	pCi/g	19	89400	0 ##	0.400 #	0.0850 #	0.137 #	0.199 #	0.995 #	1.12	0.216 #	0.185 #	0.0380 #	5.94 #	1.21	0.0327 #	0 ##	0.137 #	0 ##	0.226 #	0.00633 #	6.23 #	9.42	0 ##	4.33	2.83 #	0 ##	0 ##	
Radiological	Uranium-233/234	pCi/g	13	3310	1.90	4.69	1.17	1.36	1.34	1.72	17.0	2.14	0.806	1.84	6.12	31.1	3.19	1.57	4.34	47.5	5.13	16.0	8.86	435	3.34	34.0	5.86	6.00	2.95	
Radiological	Uranium-235/236	pCi/g	8	39	0.131	0.362	0 ##	0.0645 #	0.0449 #	0.0394 #	0.789	0 ##	0.0600 #	0.0733 #	0.285	1.18	0.135 #	0.0342 #	0.248 #	2.32	0.211 #	0.873	0.377	24.3	0.0293 #	1.57	0.268	0.325	0.0545 #	
Radiological	Uranium-238	pCi/g	14	179	1.24	2.29	1.09	1.23	1.43	1.41	3.38	1.87	0.925	1.29	2.23	7.57	1.50	1.58	1.68	12.1	1.87	4.50	2.62	98.7	2.70	8.74	2.20	1.92	1.48	
Radiological	Uranium-234	ug/kg			< 17.4	NA	NA	NA	NA	< 26.9	NA	NA	NA	NA	< 52.5	NA	NA	NA	NA	< 55.9	NA	NA	< 32.5	NA	NA	NA	< 34.5	NA	NA	
Radiological	Uranium-235	ug/kg			28.4	NA	NA	NA	NA	17.8 J	NA	NA	NA	NA	156	NA	NA	NA	NA	862	NA	NA	238	NA	NA	NA	100	NA	NA	
Radiological	Uranium-238	ug/kg			3020	NA	NA	NA	NA	2390	NA	NA	NA	NA	7220	NA	NA	NA	NA	31300	NA	NA	9690	NA	NA	NA	4920	NA	NA	
Radiological	Total Uranium Isotopes	ug/kg			3050	NA	NA	NA	NA	2410	NA	NA	NA	NA	7380	NA	NA	NA	NA	32200	NA	NA	9930	NA	NA	NA	5020	NA	NA	
SVOCs	1,1'-Biphenyl	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA	
SVOCs	2,4,5-Trichlorophenol	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA	
SVOCs	2,4,6-Trichlorophenol	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA	
SVOCs	2,4-Dichlorophenol	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA	
SVOCs	2,4-Dimethylphenol	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA	
SVOCs	2,4-Dinitrophenol	ug/kg			< 1600	NA	NA	NA	NA	< 330	NA	NA	NA	NA	< 320	NA	NA	NA	NA	< 310	NA	NA	< 320	NA	NA	NA	< 320	NA	NA	
SVOCs	2,4-Dinitrotoluene	ug/kg			< 630	NA	NA	NA	NA	< 130	NA	NA	NA	NA	< 130	NA	NA	NA	NA	< 120	NA	NA	< 130	NA	NA	NA	< 130	NA	NA	
SVOCs	2,6-Dinitrotoluene	ug/kg			< 630	NA	NA	NA	NA	< 130	NA	NA	NA	NA	< 130	NA	NA	NA	NA	< 120	NA	NA	< 130	NA	NA	NA	< 130	NA	NA	
SVOCs	2-Chloronaphthalene	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA	
SVOCs	2-Chlorophenol	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA	
SVOCs	2-Methylnaphthalene	ug/kg			< 64	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	< 13	NA	NA	NA	< 13	NA	NA	
SVOCs	2-Methylphenol	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA	
SVOCs	2-Nitroaniline	ug/kg			< 630	NA	NA	NA	NA	< 130	NA	NA	NA	NA	< 130	NA	NA	NA	NA	< 120	NA	NA	< 130	NA	NA	NA	< 130	NA	NA	
SVOCs	2-Nitrophenol	ug/kg			< 630	NA	NA	NA	NA	< 130	NA	NA	NA	NA	< 130	NA	NA	NA	NA	< 120	NA	NA	< 130	NA	NA	NA	< 130	NA	NA	
SVOCs	3,3'-Dichlorobenzidine	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA	
SVOCs	3-Nitroaniline	ug/kg			< 630	NA	NA	NA	NA	< 130	NA	NA	NA	NA	< 130	NA	NA	NA	NA	< 120	NA	NA	< 130	NA	NA	NA	< 130	NA	NA	
SVOCs	4,6-Dinitro-2-methylphenol	ug/kg			< 1600	NA	NA	NA	NA	< 330	NA	NA	NA	NA	< 320	NA	NA	NA	NA	< 310	NA	NA	< 320	NA	NA	NA	< 320	NA	NA	
SVOCs	4-Bromophenyl phenyl ether	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA	
SVOCs	4-Chloro-3-methylphenol	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA	
SVOCs	4-Chloroaniline	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA	
SVOCs	4-Chlorophenyl phenyl ether	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA	
SVOCs	4-Methylphenol	ug/kg			< 630	NA	NA	NA	NA	< 130	NA	NA	NA	NA	< 130	NA	NA	NA	NA	< 120	NA	NA	< 130	NA	NA	NA	< 130	NA	NA	
SVOCs	4-Nitroaniline	ug/kg			< 630	NA	NA	NA	NA	< 130	NA	NA	NA	NA	< 130	NA	NA	NA	NA	< 120	NA	NA	< 130	NA	NA	NA	< 130	NA	NA	
SVOCs	4-Nitrophenol	ug/kg			< 1600	NA	NA	NA	NA	< 330	NA	NA	NA	NA	< 320	NA	NA	NA	NA	< 310	NA	NA	< 320	NA	NA	NA	< 320	NA	NA	
SVOCs	Acenaphthene	ug/kg			< 64	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	< 13	NA	NA	NA	< 13	NA	NA	
SVOCs	Acenaphthylene	ug/kg			< 64	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	< 13	NA	NA	NA	< 13	NA	NA	
SVOCs	Acetophenone	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA	
SVOCs	Anthracene	ug/kg			< 64	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	< 13	NA	NA	NA	< 13	NA	NA	
SVOCs	Atrazine	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA	
SVOCs	Benz(a)anthracene	ug/kg			< 64	NA	NA	NA	NA	19	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	< 13	NA	NA	NA	< 13	NA	NA	
SVOCs	Benzaldehyde	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	76	NA	NA	
SVOCs	Benzo(a)pyrene	ug/kg			< 64	NA	NA	NA	NA	21	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	< 13	NA	NA	NA	< 13	NA	NA	
SVOCs	Benzo(b)fluoranthene	ug/kg			< 64	NA	NA	NA	NA	28	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	< 13	NA	NA	NA	< 13	NA	NA	
SVOCs	Benzo(g,h,i)perylene	ug/kg			< 64	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	< 13	NA	NA	NA	< 13	NA	NA	
SVOCs	Benzo(k)fluoranthene	ug/kg			< 64	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	< 13	NA	NA	NA	< 13	NA	NA	

Table T4 - Sediment Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

					Location	SED-40	SED-40	SED-40	SED-40	SED-40	SED-41	SED-41	SED-41	SED-41	SED-41	SED-42	SED-42	SED-42	SED-42	SED-42	SED-43	SED-43	SED-43	SED-44	SED-44	SED-44	SED-44	SED-45	SED-45	SED-45
					Depth	0 - 6 in	0 - 6 in	12 - 24 in	24 - 36 in	6 - 12 in	0 - 6 in	0 - 6 in	12 - 24 in	24 - 36 in	6 - 12 in	0 - 6 in	0 - 6 in	12 - 24 in	24 - 36 in	6 - 12 in	0 - 6 in	0 - 6 in	6 - 12 in	0 - 6 in	0 - 6 in	0 - 6 in	12 - 18 in	6 - 12 in	0 - 6 in	0 - 6 in	6 - 12 in
					Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
					Date	11/22/2019	11/19/2020	11/19/2020	11/19/2020	11/19/2020	11/25/2019	11/10/2020	11/10/2020	11/10/2020	11/10/2020	11/25/2019	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/25/2019	12/1/2020	12/1/2020	11/25/2019	12/1/2020	12/1/2020	12/1/2020	11/25/2019	12/2/2020	12/2/2020
Group	Analyte	Unit	RUSL	IUSL																										
SVOCs	Bis(2-chloroethoxy)methane	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA
SVOCs	Bis(2-chloroethyl)ether	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA
SVOCs	Bis(2-chloroisopropyl)ether	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA
SVOCs	Bis(2-ethylhexyl)phthalate	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA
SVOCs	Butyl benzyl phthalate	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA
SVOCs	Caprolactam	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA
SVOCs	Carbazole	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA
SVOCs	Chrysene	ug/kg			< 64	NA	NA	NA	NA	17	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	< 13	NA	NA	NA	< 13	NA	NA
SVOCs	Dibenz(a,h)anthracene	ug/kg			< 64	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	< 13	NA	NA	NA	< 13	NA	NA
SVOCs	Dibenzofuran	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA
SVOCs	Diethyl phthalate	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA
SVOCs	Dimethyl phthalate	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA
SVOCs	Di-n-butyl phthalate	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA
SVOCs	Di-n-octyl phthalate	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA
SVOCs	Fluoranthene	ug/kg			< 64	NA	NA	NA	NA	28	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	< 13	NA	NA	NA	< 13	NA	NA
SVOCs	Fluorene	ug/kg			< 64	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	< 13	NA	NA	NA	< 13	NA	NA
SVOCs	Hexachlorobenzene	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA
SVOCs	Hexachlorobutadiene	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA
SVOCs	Hexachlorocyclopentadiene	ug/kg			< 1600	NA	NA	NA	NA	< 330	NA	NA	NA	NA	< 320	NA	NA	NA	NA	< 310	NA	NA	< 320	NA	NA	NA	< 320	NA	NA
SVOCs	Hexachloroethane	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA
SVOCs	Indeno(1,2,3-cd)pyrene	ug/kg			< 64	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	< 13	NA	NA	NA	< 13	NA	NA
SVOCs	Isophorone	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA
SVOCs	Naphthalene	ug/kg			< 64	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	< 13	NA	NA	NA	< 13	NA	NA
SVOCs	Nitrobenzene	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA
SVOCs	N-Nitrosodi-n-propylamine	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA
SVOCs	N-Nitrosodiphenylamine	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA
SVOCs	Pentachlorophenol	ug/kg			< 1600	NA	NA	NA	NA	< 330	NA	NA	NA	NA	< 320	NA	NA	NA	NA	< 310	NA	NA	< 320	NA	NA	NA	< 320	NA	NA
SVOCs	Phenanthrene	ug/kg			< 64	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	< 13	NA	NA	NA	< 13	NA	NA
SVOCs	Phenol	ug/kg			< 320	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 66	NA	NA	NA	NA	< 63	NA	NA	< 66	NA	NA	NA	< 65	NA	NA
SVOCs	Pyrene	ug/kg			< 64	NA	NA	NA	NA	27	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 13	NA	NA	< 13	NA	NA	NA	< 13	NA	NA
VOCs	(1-Methylethyl)-Benzene	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	1,1,1-Trichloroethane	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	1,1,2,2-Tetrachloroethane	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	1,1,2-Trichlor-1,2,2-trifluoroethane	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	1,1,2-Trichloroethane	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	1,1-Dichloroethane	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	1,1-Dichloroethene	ug/kg			< 5.3	< 19	< 6.6	< 5.5	< 7.3	< 6.5	< 74	< 12	< 22	< 30	< 6.8	< 61	< 21	< 23	< 49	< 7.2	< 41	< 56	< 7.2	< 100	< 6.2	< 47	< 6.1	< 49	< 28
VOCs	1,2,4-Trichlorobenzene	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	1,2-Dibromo-3-chloropropane	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	1,2-Dibromoethane	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	1,2-Dichlorobenzene	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	1,2-Dichloroethane	ug/kg			< 5.3	< 19	< 6.6	< 5.5	< 7.3	< 6.5	< 74	< 12	< 22	< 30	< 6.8	< 61	< 21	< 23	< 49	< 7.2	< 41	< 56	< 7.2	< 100	< 6.2	< 47	< 6.1	< 49	< 28
VOCs	1,2-Dichloropropane	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	1,3-Dichlorobenzene	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	1,4-Dichlorobenzene	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	2-Butanone	ug/kg			< 21	NA	NA	NA	NA	< 26	NA	NA	NA	NA	< 27	NA	NA	NA	NA	< 29	NA	NA	< 29	NA	NA	NA	29	NA	NA
VOCs	2-Hexanone	ug/kg			< 11	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 14	NA	NA	NA	NA	< 14	NA	NA	< 14	NA	NA	NA	< 12	NA	NA
VOCs	4-Methyl-2-pentanone	ug/kg			< 11	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 14	NA	NA	NA	NA	< 14	NA	NA	< 14	NA	NA	NA	< 12	NA	NA
VOCs	Acetone	ug/kg			260	NA	NA	NA	NA	96	NA	NA	NA	NA	59	NA	NA	NA	NA	79	NA	NA	57	NA	NA	NA	130	NA	NA
VOCs	Benzene	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	Bromodichloromethane	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	Bromoform	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	Bromomethane	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	Carbon disulfide	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	Carbon tetrachloride	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	Chlorobenzene	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	Chloroethane	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	Chloroform	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	Chloromethane	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	cis-1,2-Dichloroethene	ug/kg			< 5.3	< 19	< 6.6	< 5.5	< 7.3	< 6.5	< 74	< 12	< 22	< 30	< 6.8	< 61	< 21	< 23	< 49	< 7.2	< 41	< 56	< 7.2	< 100	< 6.2	< 47	< 6.1	< 49	< 28
VOCs	cis-1,3-Dichloropropene	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	Cyclohexane	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	Dibromochloromethane	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	Dichlorodifluoromethane	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	Ethylbenzene	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA

Table T4 - Sediment Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

					Location	SED-40	SED-40	SED-40	SED-40	SED-40	SED-41	SED-41	SED-41	SED-41	SED-41	SED-42	SED-42	SED-42	SED-42	SED-42	SED-43	SED-43	SED-43	SED-44	SED-44	SED-44	SED-44	SED-45	SED-45	SED-45
					Depth	0 - 6 in	0 - 6 in	12 - 24 in	24 - 36 in	6 - 12 in	0 - 6 in	0 - 6 in	12 - 24 in	24 - 36 in	6 - 12 in	0 - 6 in	0 - 6 in	12 - 24 in	24 - 36 in	6 - 12 in	0 - 6 in	0 - 6 in	6 - 12 in	0 - 6 in	0 - 6 in	12 - 18 in	6 - 12 in	0 - 6 in	0 - 6 in	6 - 12 in
					Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
					Date	11/22/2019	11/19/2020	11/19/2020	11/19/2020	11/19/2020	11/25/2019	11/10/2020	11/10/2020	11/10/2020	11/10/2020	11/25/2019	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/25/2019	12/1/2020	12/1/2020	11/25/2019	12/1/2020	12/1/2020	12/1/2020	11/25/2019	12/2/2020	12/2/2020
Group	Analyte	Unit	RUSL	IUSL																										
VOCs	Methyl acetate	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	Methyl tert-butyl ether	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	Methylcyclohexane	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	Methylene chloride	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	Styrene	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	Tetrachloroethene	ug/kg			< 5.3	< 19	< 6.6	< 5.5	< 7.3	< 6.5	< 74	< 12	< 22	< 30	< 6.8	< 61	< 21	< 23	< 49	< 7.2	< 41	< 56	< 7.2	< 100	< 6.2	< 47	< 6.1	< 49	< 28
VOCs	Toluene	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	trans-1,2-Dichloroethene	ug/kg			< 5.3	< 19	< 6.6	< 5.5	< 7.3	< 6.5	< 74	< 12	< 22	< 30	< 6.8	< 61	< 21	< 23	< 49	< 7.2	< 41	< 56	< 7.2	< 100	< 6.2	< 47	< 6.1	< 49	< 28
VOCs	trans-1,3-Dichloropropene	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	Trichloroethene	ug/kg			< 5.3	< 19	< 6.6	< 5.5	< 7.3	< 6.5	< 74	< 12	< 22	< 30	< 6.8	< 61	< 21	< 23	< 49	< 7.2	< 41	< 56	< 7.2	< 100	< 6.2	< 47	< 6.1	< 49	< 28
VOCs	Trichlorofluoromethane	ug/kg			< 5.3	NA	NA	NA	NA	< 6.5	NA	NA	NA	NA	< 6.8	NA	NA	NA	NA	< 7.2	NA	NA	< 7.2	NA	NA	NA	< 6.1	NA	NA
VOCs	Vinyl chloride	ug/kg			< 5.3	< 19	< 6.6	< 5.5	< 7.3	< 6.5	< 74	< 12	< 22	< 30	< 6.8	< 61	< 21	< 23	< 49	< 7.2	< 41	< 56	< 7.2	< 100	< 6.2	< 47	< 6.1	< 49	< 28
VOCs	Xylenes, Total	ug/kg			< 11	NA	NA	NA	NA	< 13	NA	NA	NA	NA	< 14	NA	NA	NA	NA	< 14	NA	NA	< 14	NA	NA	NA	< 12	NA	NA

Table T4 - Sediment Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

				Location	SED-46	SED-46	SED-46	SED-47	SED-47	SED-47	SED-48	SED-48	SED-48	SED-48	SED-48	SED-49	SED-49	SED-49	SED-50	SED-50	SED-50	SED-50	SED-51	SED-51	SED-52	SED-52	SED-53	SED-53	SED-54	SED-54
				Depth	0 - 6 in	0 - 6 in	6 - 12 in	0 - 6 in	0 - 6 in	6 - 12 in	0 - 6 in	0 - 6 in	0 - 6 in	12 - 18 in	6 - 12 in	0 - 6 in	0 - 6 in	6 - 12 in	0 - 6 in	0 - 6 in	12 - 24 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in
				Type	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
				Date	11/25/2019	12/2/2020	12/2/2020	11/26/2019	12/3/2020	12/3/2020	11/26/2019	12/3/2020	11/26/2019	12/3/2020	12/3/2020	11/26/2019	12/3/2020	12/3/2020	11/26/2019	12/3/2020	12/3/2020	12/3/2020	11/27/2019	11/27/2019	11/27/2019	11/27/2019	11/27/2019	11/27/2019	12/2/2019	12/2/2019
Group	Analyte	Unit	RUSL	IUSL																										
Chemical	Ammonia	mg/kg			371	1980	863	1540	1200	1670	806	491	1080	57.4	112	209	378	280	750	1130	257	382	692	401	465	271	387	196	854	536
Chemical	Nitrate as N	mg/kg			0.62	5	1.8	0.59	< 4.7	< 8.2	0.63	< 6.4	0.70	< 1.5	< 1.7	0.58	< 5.6	< 2.8	0.53	< 6.7	< 3.8	6.1	0.72	0.51	< 0.50	0.61	< 0.50	< 0.50	0.63	0.68
Chemical	Fluoride	mg/kg			3.41	120	20.6	6.02	6.37	16.5	2.94	1.86 J	3.46	1.88	3.09	5.44	9.14	5.78	4.67	7.00	2.51 J	2.92	2.77 J	2.96	1.48 J	1.69 J	0.838 J	0.607 J	1.93 J	1.01 J
Metals	Aluminum	mg/kg			25100	NA	NA	22000	NA	NA	26400	NA	20300	NA	NA	14300	NA	NA	22500	NA	NA	NA	20300	19900	24300	23900	23100	24100	27300	26800
Metals	Antimony	mg/kg			< 6.1	NA	NA	< 8.72	NA	NA	< 5.01	NA	< 5.68	NA	NA	< 7.62	NA	NA	< 6.52	NA	NA	NA	< 5.8	< 5.66	< 4.58	< 4.27	< 3.46	< 31.3	< 7.44	< 5.3
Metals	Arsenic	mg/kg			3.99 J	NA	NA	4.19 J	NA	NA	3.85 J	NA	3.38 J	NA	NA	2.12 J	NA	NA	3.64 J	NA	NA	NA	2.25 J	3.3 J	4.4 J	3.09 J	3.44 J	3.75 J	6.54 J	4.47 J
Metals	Barium	mg/kg			103	NA	NA	188	NA	NA	154	NA	146	NA	NA	69.2	NA	NA	178	NA	NA	NA	98	191	144	146	146	151	144	124
Metals	Beryllium	mg/kg			1.29 J	NA	NA	1.32 J	NA	NA	1.35	NA	1.19 J	NA	NA	0.727 J	NA	NA	1.62 J	NA	NA	NA	1.17 J	1.93	1.6	1.93	1.77	2.52	1.61 J	1.64
Metals	Cadmium	mg/kg			< 1.53	NA	NA	< 2.18	NA	NA	< 1.25	NA	< 1.42	NA	NA	< 1.9	NA	NA	< 1.63	NA	NA	NA	< 1.45	< 1.41	< 1.15	< 1.07	< 0.865	< 0.782	< 1.86	< 1.32
Metals	Calcium	mg/kg			620	NA	NA	737	NA	NA	408	NA	435	NA	NA	258	NA	NA	1120	NA	NA	NA	335	304	452	317	523	337	348	187
Metals	Chromium	mg/kg			26	NA	NA	27	NA	NA	26.9	NA	23	NA	NA	13.9	NA	NA	25.7	NA	NA	NA	25.1	26.1	29.7	34.6	30.2	32.5	34.5	33.4
Metals	Cobalt	mg/kg			5.51	NA	NA	7.78	NA	NA	7.53	NA	6.39	NA	NA	3.57	NA	NA	10.5	NA	NA	NA	5.3	11.5	7.14	10.3	8.5	13.7	6.78	7.1
Metals	Copper	mg/kg			19.6	NA	NA	22.3	NA	NA	26.4	NA	26.1	NA	NA	11.3	NA	NA	25.8	NA	NA	NA	19	20.8	20	19.6	23.5	21.8	25.6	21.1
Metals	Iron	mg/kg			12100	NA	NA	13200	NA	NA	12400	NA	9320	NA	NA	6750	NA	NA	15300	NA	NA	NA	9550	16100	17000	18500	15400	25200	18100	15800
Metals	Lead	mg/kg			33.8	NA	NA	43.1	NA	NA	37.4	NA	80	NA	NA	11.5	NA	NA	32.1	NA	NA	NA	24.2	17	23.9	23.4	26.9	16.9	29.8	25.9
Metals	Magnesium	mg/kg			1620	NA	NA	1980	NA	NA	1670	NA	1250	NA	NA	1040	NA	NA	2440	NA	NA	NA	1940	2810	2700	3020	2760	3810	2390	2700
Metals	Manganese	mg/kg			104	NA	NA	242	NA	NA	249	NA	286	NA	NA	75.9	NA	NA	368	NA	NA	NA	128	261	156	186	258	281	127	114
Metals	Mercury	ug/kg			< 141	NA	NA	106 J	NA	NA	107 J	NA	118 J	NA	NA	87.2 J	NA	NA	108 J	NA	NA	NA	< 148	< 130	57.1 J	58.5 J	82.5 J	48.3 J	104 J	65.2 J
Metals	Nickel	mg/kg			10.6	NA	NA	12.9	NA	NA	11.6	NA	9.87	NA	NA	6.89	NA	NA	13.8	NA	NA	NA	9.14	12	11.9	11.6	11.6	13.2	12.1	12.6
Metals	Potassium	mg/kg			946	NA	NA	1080	NA	NA	929	NA	708	NA	NA	621	NA	NA	1060	NA	NA	NA	1120	1560	1500	850	1350	1150	1310	1410
Metals	Selenium	mg/kg			< 9.15	NA	NA	< 13.1	NA	NA	< 7.51	NA	< 8.51	NA	NA	< 11.4	NA	NA	< 9.78	NA	NA	NA	2 J	< 8.48	< 6.87	< 6.4	1.26 J	1.2 J	< 11.2	1.34 J
Metals	Silver	mg/kg			< 15.3	NA	NA	< 2.18	NA	NA	< 12.5	NA	< 1.42	NA	NA	< 1.9	NA	NA	< 16.3	NA	NA	NA	< 1.45	< 14.1	< 11.5	< 10.7	< 8.65	< 7.82	< 18.6	< 13.2
Metals	Sodium	mg/kg			105	NA	NA	129	NA	NA	93.6	NA	112	NA	NA	78.4 J	NA	NA	71.5 J	NA	NA	NA	91.1	82.4	71.9	76.6	53.8	52.9	88 J	70.6
Metals	Thallium	mg/kg			< 61	NA	NA	< 87.2	NA	NA	< 50.1	NA	< 56.8	NA	NA	< 7.62	NA	NA	< 65.2	NA	NA	NA	< 58	< 56.6	< 45.8	< 42.7	< 3.46	< 31.3	< 74.4	< 53
Metals	Vanadium	mg/kg			68.1	NA	NA	50.3	NA	NA	65.9	NA	57.7	NA	NA	32.4	NA	NA	62.1	NA	NA	NA	54.3	64.8	71.2	81	71	87.6	77.1	78.9
Metals	Zinc	mg/kg			38.6	NA	NA	49.6	NA	NA	46.4	NA	42.1	NA	NA	27	NA	NA	67.3	NA	NA	NA	34.7	55.7	51.5	54.7	52.7	63.9	54.1	53.4
Radiological	Technetium-99	pCi/g	19	89400	0 ##	0 ##	0.110 #	0 ##	0 ##	0 ##	0 ##	0 ##	0 ##	0 ##	0 ##	0 ##	0 ##	0 ##	0.910 #	0 ##	0 ##	0 ##	0 ##	4.89 #	0 ##	0 ##	0 ##	0 ##	1.51 #	0 ##
Radiological	Uranium-233/234	pCi/g	13	3310	4.02	11.6	10.4	3.18	3.32	4.86	2.57	2.49	2.43	1.63	2.11	4.59	5.10	2.85	3.64	6.83	1.00	2.33	2.10	1.27	1.77	1.88	2.15	2.06	1.78	1.48
Radiological	Uranium-235/236	pCi/g	8	39	0.179	0.251 #	0.419	0.232	0.0528 #	0.0999 #	0.0910 #	0.154 #	0.0144 #	0.205	0.169	0.215	0.142	0.0436 #	0.104 #	0.351	0.139	0.152 #	0.178 #	0.0695 #	0.308 #	0.0494 #	0.194	0.0708 #	0.119 #	0.120 #
Radiological	Uranium-238	pCi/g	14	179	2.15	2.85	3.55	1.46	1.95	2.41	1.98	2.24	1.62	1.85	1.77	2.11	2.25	2.04	1.86	2.65	0.808	1.83	1.42	1.15	1.72	1.45	1.45	2.34	1.36	1.87
Radiological	Uranium-234	ug/kg			< 30.6	NA	NA	< 41.0	NA	NA	< 25.8	NA	< 29.6	NA	NA	< 37.2	NA	NA	< 31.4	NA	NA	NA	< 31.2	< 28.9	< 21.8	< 23.3	< 17.3	< 14.1	< 37.1	< 25.3
Radiological	Uranium-235	ug/kg			48.9	NA	NA	44 J	NA	NA	40.3	NA	37.4 J	NA	NA	81.9	NA	NA	72.1	NA	NA	NA	28.2 J	20.6 J	26.8 J	29.5 J	29.2	24.7	22.6 J	26 J
Radiological	Uranium-238	ug/kg			3190	NA	NA	2560	NA	NA	3140	NA	2650	NA	NA	4840	NA	NA	4470	NA	NA	NA	2610	2450	2530	2690	3200	3290	2870	2990
Radiological	Total Uranium Isotopes	ug/kg			3240	NA	NA	2600	NA	NA	3180	NA	2690	NA	NA	4920	NA	NA	4540	NA	NA	NA	2640	2470	2560	2720	3230	3310	2890	3020
SVOCs	1,1'-Biphenyl	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	2,4,5-Trichlorophenol	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	2,4,6-Trichlorophenol	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	2,4-Dichlorophenol	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	2,4-Dimethylphenol	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	2,4-Dinitrophenol	ug/kg			< 320	NA	NA	< 320	NA	NA	< 320	NA	< 1600	NA	NA	< 1600	NA	NA	< 1600	NA	NA	NA	< 1600	< 1600	< 1600	< 1600	< 1600	< 1600	< 1600	< 1600
SVOCs	2,4-Dinitrotoluene	ug/kg			< 130	NA	NA	< 120	NA	NA	< 130	NA	< 630	NA	NA	< 630	NA	NA	< 640	NA	NA	NA	< 620	< 630	< 640	< 620	< 640	< 630	< 630	< 620
SVOCs	2,6-Dinitrotoluene	ug/kg			< 130	NA	NA	< 120	NA	NA	< 130	NA	< 630	NA	NA	< 630	NA	NA	< 640	NA	NA	NA	< 620	< 630	< 640	< 620	< 640	< 630	< 630	< 620
SVOCs	2-Chloronaphthalene	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	2-Chlorophenol	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	2-Methylnaphthalene	ug/kg			< 13	NA	NA	< 13	NA	NA	< 13	NA	< 65	NA	NA	< 64	NA	NA	< 66	NA	NA	NA	< 63	< 64	< 66	< 64	< 65	< 65	< 65	< 63
SVOCs	2-Methylphenol	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	2-Nitroaniline	ug/kg			< 130	NA	NA	< 120	NA	NA	< 130	NA	< 630	NA	NA	< 630	NA	NA	< 640	NA	NA	NA	< 620	< 630	< 640	< 620	< 640	< 630	< 630	< 620
SVOCs	2-Nitrophenol	ug/kg			< 130	NA	NA	< 120	NA	NA	< 130	NA	< 630	NA	NA	< 630	NA	NA	< 640	NA	NA	NA	< 620	< 630	< 640	< 620	< 640	< 630	< 630	< 620
SVOCs	3,3'-Dichlorobenzidine	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	3-Nitroaniline	ug/kg			< 130	NA	NA	< 120	NA	NA	< 130	NA	< 630	NA	NA	< 630	NA	NA	< 640	NA	NA	NA	< 620	< 630	< 640	< 620	< 640	< 630	< 630	< 620
SVOCs	4,6-Dinitro-2-methylphenol	ug/kg			< 320	NA	NA	< 320	NA	NA	< 320	NA	< 1600	NA	NA	< 1600	NA	NA	< 1600	NA	NA	NA	< 1600	< 1600	< 1600	< 1600	< 1600	< 1600	< 1600	< 1600
SVOCs	4-Bromophenyl phenyl ether	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	4-Chloro-3-methylphenol	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	4-Chloroaniline	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	4-Chlorophenyl phenyl ether	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	4-Methylphenol	ug/kg			< 130	NA	NA	< 120	NA	NA	< 130	NA	< 630	NA	NA	< 630	NA	NA	< 640	NA	NA	NA	< 620	< 630	< 640	< 620	< 640	< 630	< 630	< 620
SVOCs	4-Nitroaniline	ug/kg			< 130	NA	NA	< 120	NA	NA	< 130	NA	< 630	NA	NA	< 630	NA	NA	< 640	NA	NA	NA	< 620	< 630	< 640	< 620	< 640	< 630	< 630	< 620
SVOCs	4-Nitrophenol	ug/kg			< 320	NA	NA	< 320	NA	NA	< 320	NA	< 1600	NA	NA	< 1600	NA	NA	< 1600	NA	NA	NA	< 1600	< 1600	< 1600	< 1600	< 1600	< 1600	< 1600	< 1600
SVOCs	Acenaphthene	ug/kg			< 13	NA	NA	< 13	NA	NA	< 13	NA	< 65	NA	NA	< 64	NA	NA	< 66	NA	NA	NA	< 63	< 64	< 66	< 64	< 65	< 65	< 65	< 63
SVOCs	Acenaphthylene	ug/kg			< 13	NA	NA	< 13	NA	NA	< 13	NA	< 65	NA	NA	< 64	NA	NA	< 66	NA	NA	NA	< 63	< 64	< 66	< 64	< 65	< 65	< 65	< 63
SVOCs	Acetophenone	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	Anthracene	ug/kg			< 13	NA	NA	< 13	NA	NA	< 13	NA	< 65	NA	NA	< 64	NA	NA	< 66	NA	NA	NA	< 63	< 64	< 66	< 64	< 65	< 65	< 65	< 63
SVOCs	Atrazine	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	Benz(a)anthracene	ug/kg			< 13	NA	NA	< 13	NA	NA	< 13	NA	< 65	NA	NA	< 64	NA	NA	< 66	NA	NA	NA	< 63	< 64	< 66	< 64	< 65	< 65	< 65	< 63
SVOCs	Benzaldehyde	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	Benzo(a)pyrene	ug/kg			< 13	NA	NA	< 13	NA	NA	< 13	NA	< 65	NA	NA	< 64	NA	NA	< 66	NA	NA	NA	< 63	< 64	< 66	< 64	< 65	< 65	< 65	< 63
SVOCs	Benzo(b)fluoranthene	ug/kg			< 13	NA	NA	< 13	NA	NA	< 13	NA	< 65	NA	NA	< 64	NA	NA	< 66	NA	NA	NA	< 63	< 64	< 66	< 64	< 65	< 65	< 65	< 63
SVOCs	Benzo(g,h,i)perylene	ug/kg			< 13	NA	NA	< 13	NA	NA	< 13	NA	< 65	NA	NA	< 64	NA	NA	< 66	NA	NA	NA	< 63	< 64	< 66	< 64	< 65	< 65	< 65	< 63
SVOCs	Benzo(k)fluoranthene	ug/kg			< 13	NA	NA	< 13	NA	NA	< 13	NA	< 65	NA	NA	< 64	NA	NA	< 66	NA	NA	NA	< 63	< 64	< 66	< 64	< 65	< 65	< 65	< 63

Table T4 - Sediment Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

					Location	SED-46	SED-46	SED-46	SED-47	SED-47	SED-47	SED-48	SED-48	SED-48	SED-48	SED-48	SED-49	SED-49	SED-49	SED-50	SED-50	SED-50	SED-50	SED-51	SED-51	SED-52	SED-52	SED-53	SED-53	SED-54	SED-54
					Depth	0 - 6 in	0 - 6 in	6 - 12 in	0 - 6 in	0 - 6 in	6 - 12 in	0 - 6 in	0 - 6 in	0 - 6 in	12 - 18 in	6 - 12 in	6 - 12 in	0 - 6 in	0 - 6 in	6 - 12 in	0 - 6 in	0 - 6 in	12 - 24 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in
					Type	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
					Date	11/25/2019	12/2/2020	12/2/2020	11/26/2019	12/3/2020	12/3/2020	11/26/2019	12/3/2020	11/26/2019	12/3/2020	12/3/2020	11/26/2019	12/3/2020	12/3/2020	11/26/2019	12/3/2020	12/3/2020	12/3/2020	11/27/2019	11/27/2019	11/27/2019	11/27/2019	11/27/2019	11/27/2019	12/2/2019	12/2/2019
Group	Analyte	Unit	RUSL	IUSL																											
SVOCs	Bis(2-chloroethoxy)methane	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	Bis(2-chloroethyl)ether	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	Bis(2-chloroisopropyl)ether	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	Bis(2-ethylhexyl)phthalate	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	Butyl benzyl phthalate	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	Caprolactam	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	Carbazole	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	Chrysene	ug/kg			< 13	NA	NA	< 13	NA	NA	< 13	NA	< 65	NA	NA	< 64	NA	NA	< 66	NA	NA	NA	< 63	< 64	< 66	< 64	< 65	< 65	< 65	< 63
SVOCs	Dibenz(a,h)anthracene	ug/kg			< 13	NA	NA	< 13	NA	NA	< 13	NA	< 65	NA	NA	< 64	NA	NA	< 66	NA	NA	NA	< 63	< 64	< 66	< 64	< 65	< 65	< 65	< 63
SVOCs	Dibenzofuran	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	Diethyl phthalate	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	Dimethyl phthalate	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	Di-n-butyl phthalate	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	Di-n-octyl phthalate	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	Fluoranthene	ug/kg			< 13	NA	NA	< 13	NA	NA	< 13	NA	< 65	NA	NA	< 64	NA	NA	< 66	NA	NA	NA	< 63	< 64	< 66	< 64	< 65	< 65	< 65	< 63
SVOCs	Fluorene	ug/kg			< 13	NA	NA	< 13	NA	NA	< 13	NA	< 65	NA	NA	< 64	NA	NA	< 66	NA	NA	NA	< 63	< 64	< 66	< 64	< 65	< 65	< 65	< 63
SVOCs	Hexachlorobenzene	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	Hexachlorobutadiene	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	Hexachlorocyclopentadiene	ug/kg			< 320	NA	NA	< 320	NA	NA	< 320	NA	< 1600	NA	NA	< 1600	NA	NA	< 1600	NA	NA	NA	< 1600	< 1600	< 1600	< 1600	< 1600	< 1600	< 1600	< 1600
SVOCs	Hexachloroethane	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	Indeno(1,2,3-cd)pyrene	ug/kg			< 13	NA	NA	< 13	NA	NA	< 13	NA	< 65	NA	NA	< 64	NA	NA	< 66	NA	NA	NA	< 63	< 64	< 66	< 64	< 65	< 65	< 65	< 63
SVOCs	Isophorone	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	Naphthalene	ug/kg			< 13	NA	NA	< 13	NA	NA	< 13	NA	< 65	NA	NA	< 64	NA	NA	< 66	NA	NA	NA	< 63	< 64	< 66	< 64	< 65	< 65	< 65	< 63
SVOCs	Nitrobenzene	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	N-Nitrosodi-n-propylamine	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	N-Nitrosodiphenylamine	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	Pentachlorophenol	ug/kg			< 320	NA	NA	< 320	NA	NA	< 320	NA	< 1600	NA	NA	< 1600	NA	NA	< 1600	NA	NA	NA	< 1600	< 1600	< 1600	< 1600	< 1600	< 1600	< 1600	< 1600
SVOCs	Phenanthrene	ug/kg			< 13	NA	NA	< 13	NA	NA	< 13	NA	< 65	NA	NA	< 64	NA	NA	< 66	NA	NA	NA	< 63	< 64	< 66	< 64	< 65	< 65	< 65	< 63
SVOCs	Phenol	ug/kg			< 64	NA	NA	< 64	NA	NA	< 65	NA	< 330	NA	NA	< 320	NA	NA	< 330	NA	NA	NA	< 320	< 320	< 330	< 320	< 330	< 330	< 330	< 320
SVOCs	Pyrene	ug/kg			< 13	NA	NA	< 13	NA	NA	< 13	NA	< 65	NA	NA	< 64	NA	NA	< 66	NA	NA	NA	< 63	< 64	< 66	< 64	< 65	< 65	< 65	< 63
VOCs	(1-Methylethyl)-Benzene	ug/kg			< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	1,1,1-Trichloroethane	ug/kg			< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	1,1,2,2-Tetrachloroethane	ug/kg			< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	1,1,2-Trichlor-1,2,2-trifluoroethane	ug/kg			< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	1,1,2-Trichloroethane	ug/kg			< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	1,1-Dichloroethane	ug/kg			< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	1,1-Dichloroethene	ug/kg			< 6.5	< 74	< 36	< 6.9	< 33	< 54	< 5.3	< 35	< 5.2	< 7.1	< 7.7	< 7.1	< 40	< 16	< 6.3	< 46	< 25	< 21	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	1,2,4-Trichlorobenzene	ug/kg			< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	1,2-Dibromo-3-chloropropane	ug/kg			< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	1,2-Dibromoethane	ug/kg			< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	1,2-Dichlorobenzene	ug/kg			< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	1,2-Dichloroethane	ug/kg			< 6.5	< 74	< 36	< 6.9	< 33	< 54	< 5.3	< 35	< 5.2	< 7.1	< 7.7	< 7.1	< 40	< 16	< 6.3	< 46	< 25	< 21	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	1,2-Dichloropropane	ug/kg			< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	1,3-Dichlorobenzene	ug/kg			< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	1,4-Dichlorobenzene	ug/kg			< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	2-Butanone	ug/kg			< 26	NA	NA	160	NA	NA	39	NA	23	NA	NA	< 28	NA	NA	190	NA	NA	NA	43	< 27	31	< 26	< 22	< 21	42	< 25
VOCs	2-Hexanone	ug/kg			< 13	NA	NA	< 14	NA	NA	< 11	NA	< 10	NA	NA	< 14	NA	NA	< 13	NA	NA	NA	< 13	< 13	< 12	< 13	< 11	< 10	< 13	< 13
VOCs	4-Methyl-2-pentanone	ug/kg			< 13	NA	NA	< 14	NA	NA	< 11	NA	< 10	NA	NA	< 14	NA	NA	< 13	NA	NA	NA	< 13	< 13	< 12	< 13	< 11	< 10	< 13	< 13
VOCs	Acetone	ug/kg			110	NA	NA	410	NA	NA	220	NA	280	NA	NA	300	NA	NA	370	NA	NA	NA	330	180	100	< 26	< 22	170	330	39
VOCs	Benzene	ug/kg			< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	Bromodichloromethane	ug/kg			< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	Bromoform	ug/kg			< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	Bromomethane	ug/kg			< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	Carbon disulfide	ug/kg			< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	Carbon tetrachloride	ug/kg			< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	Chlorobenzene	ug/kg			< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	Chloroethane	ug/kg			< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	Chloroform	ug/kg			< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	Chloromethane	ug/kg			< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	cis-1,2-Dichloroethene	ug/kg			< 6.5	< 74	< 36	< 6.9	< 33	< 54	< 5.3	< 35	< 5.2	< 7.1	< 7.7	< 7.1	< 40	< 16	< 6.3	< 46	< 25	< 21	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	cis-1,3-Dichloropropene	ug/kg			< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	Cyclohexane	ug/kg			< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	Dibromochloromethane	ug/kg			< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	Dichlorodifluoromethane	ug/kg			< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	Ethylbenzene	ug/kg			< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3

Table T4 - Sediment Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

					Location	SED-46	SED-46	SED-46	SED-47	SED-47	SED-47	SED-48	SED-48	SED-48	SED-48	SED-48	SED-49	SED-49	SED-49	SED-50	SED-50	SED-50	SED-50	SED-51	SED-51	SED-52	SED-52	SED-53	SED-53	SED-54	SED-54
					Depth	0 - 6 in	0 - 6 in	6 - 12 in	0 - 6 in	0 - 6 in	6 - 12 in	0 - 6 in	0 - 6 in	0 - 6 in	12 - 18 in	6 - 12 in	0 - 6 in	0 - 6 in	6 - 12 in	0 - 6 in	0 - 6 in	12 - 24 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in
					Type	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
					Date	11/25/2019	12/2/2020	12/2/2020	11/26/2019	12/3/2020	12/3/2020	11/26/2019	12/3/2020	11/26/2019	12/3/2020	12/3/2020	11/26/2019	12/3/2020	12/3/2020	11/26/2019	12/3/2020	12/3/2020	12/3/2020	11/27/2019	11/27/2019	11/27/2019	11/27/2019	11/27/2019	11/27/2019	12/2/2019	12/2/2019
Group	Analyte	Unit	RUSL	IUSL																											
VOCs	Methyl acetate	ug/kg				< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	12	< 6.3
VOCs	Methyl tert-butyl ether	ug/kg				< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	Methylcyclohexane	ug/kg				< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	Methylene chloride	ug/kg				< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	Styrene	ug/kg				< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	Tetrachloroethene	ug/kg				< 6.5	< 74	< 36	< 6.9	< 33	< 54	< 5.3	< 35	< 5.2	< 7.1	< 7.7	< 7.1	< 40	< 16	< 6.3	< 46	< 25	< 21	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	Toluene	ug/kg				< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	8.7	< 6.7	10	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	trans-1,2-Dichloroethene	ug/kg				< 6.5	< 74	< 36	< 6.9	< 33	< 54	< 5.3	< 35	< 5.2	< 7.1	< 7.7	< 7.1	< 40	< 16	< 6.3	< 46	< 25	< 21	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	trans-1,3-Dichloropropene	ug/kg				< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	Trichloroethene	ug/kg				< 6.5	< 74	< 36	< 6.9	< 33	< 54	< 5.3	< 35	< 5.2	< 7.1	< 7.7	< 7.1	< 40	< 16	< 6.3	< 46	< 25	< 21	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	Trichlorofluoromethane	ug/kg				< 6.5	NA	NA	< 6.9	NA	NA	< 5.3	NA	< 5.2	NA	NA	< 7.1	NA	NA	< 6.3	NA	NA	NA	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	Vinyl chloride	ug/kg				< 6.5	< 74	< 36	< 6.9	< 33	< 54	< 5.3	< 35	< 5.2	< 7.1	< 7.7	< 7.1	< 40	< 16	< 6.3	< 46	< 25	< 21	< 6.6	< 6.7	< 6.2	< 6.4	< 5.4	< 5.2	< 6.6	< 6.3
VOCs	Xylenes, Total	ug/kg				< 13	NA	NA	< 14	NA	NA	< 11	NA	< 10	NA	NA	< 14	NA	NA	< 13	NA	NA	NA	< 13	< 13	< 12	< 13	< 11	< 10	< 13	< 13

Table T4 - Sediment Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

					Location	SED-55	SED-55	SED-56	SED-56	SED-56	SED-57	SED-57	SED-57	SED-58	SED-58	SED-59	SED-59	SED-60	SED-60	SED-61	SED-61	SED-61	SED-61	SED-62	SED-62	SED-62	SED-62	SED-63	SED-63	SED-64	SED-64
					Depth	0 - 6 in	6 - 12 in	0 - 6 in	0 - 6 in	6 - 12 in	0 - 6 in	12 - 18 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	0 - 6 in	12 - 18 in	6 - 12 in	0 - 6 in	12 - 24 in	6 - 12 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in
					Type	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N
					Date	12/2/2019	12/2/2019	12/2/2019	12/2/2019	12/2/2019	12/4/2020	12/4/2020	12/4/2020	12/4/2020	12/4/2020	12/3/2020	12/3/2020	11/18/2020	11/18/2020	11/18/2020	11/18/2020	11/18/2020	11/18/2020	11/17/2020	11/17/2020	11/17/2020	11/17/2020	11/17/2020	11/17/2020	11/17/2020	11/17/2020	11/17/2020	11/17/2020
Group	Analyte	Unit	RUSL	IUSL																											
Chemical	Ammonia	mg/kg				321	223	449	325	244	NA	NA	NA	NA	NA	NA	NA	45.7	57.3	14.1	9.39	30.2	17.0	160	240	218	159	218	126	311	283
Chemical	Nitrate as N	mg/kg				< 0.50	< 0.50	0.52	0.74	< 0.50	NA	NA	NA	NA	NA	NA	NA	0.27	0.29	0.93	0.85	0.38	0.5	0.51	< 0.26	< 0.26	< 0.26	< 0.28	< 0.26	0.29	< 0.25
Chemical	Fluoride	mg/kg				< 1.88	< 1.76	< 1.89	< 1.96	0.690 J	NA	NA	NA	NA	NA	NA	NA	19.2	14.1	3.47	3.04	15.2	5.29	45.7	39.0	43.5	34.4	37.7	24.9	49.4	33.7
Metals	Aluminum	mg/kg				29400	29300	27000	27200	27300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Antimony	mg/kg				< 3.66	< 3.04	< 3.6	< 3.47	< 3.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Arsenic	mg/kg				4.6 J	4.56	4.54 J	4.87 J	5.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Barium	mg/kg				153	159	166	170	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Beryllium	mg/kg				1.88	3.39	2.21	2.28	4.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Cadmium	mg/kg				< 0.914	< 0.759	< 0.899	< 0.867	< 0.815	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Calcium	mg/kg				191	190	289	297	202	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Chromium	mg/kg				36.4	35.9	33.4	34.1	33	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Cobalt	mg/kg				8.47	15.6	8.86	9.36	13.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Copper	mg/kg				24.3	26.8	25.4	26.4	28.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Iron	mg/kg				19100	21900	17100	18700	21400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Lead	mg/kg				33.9	17	31.5	30	18.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Magnesium	mg/kg				2920	3650	2740	3040	3960	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Manganese	mg/kg				175	264	173	194	250	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Mercury	ug/kg				76.6 J	54.2 J	74.6 J	83.7	41 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Nickel	mg/kg				13.5	15.5	13.5	13.9	17.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Potassium	mg/kg				1370	834	1170	1280	1150	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Selenium	mg/kg				< 5.48	1.24 J	1.3 J	< 5.2	< 4.89	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Silver	mg/kg				< 9.14	< 7.59	< 8.99	< 8.67	< 8.15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Sodium	mg/kg				84.1	87	63.2	71.3	69.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Thallium	mg/kg				< 36.6	< 30.4	< 36	< 34.7	< 3.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Vanadium	mg/kg				93.2	86.2	81.8	86.9	79.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Zinc	mg/kg				56.1	70.8	55.6	59.1	83.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radiological	Technetium-99	pCi/g	19	89400		6.19 #	0 ##	2.53 #	0 ##	0 ##	NA	NA	NA	NA	NA	NA	NA	0.433 #	0.483 #	1.20	1.12	8.28	7.96	22.9	1.08	2.89	2.98	25.0	2.63	85.8	5.53
Radiological	Uranium-233/234	pCi/g	13	3310		2.05	1.62	2.02	2.82	1.89	2.22	1.49	1.63	1.21	1.38	2.09	1.52	39.7	44.4	4.29	15.1	3.86	9.17	1.21	1.84	1.57	1.60	0.853	0.760	1.30	1.11
Radiological	Uranium-235/236	pCi/g	8	39		0 ##	0.155	0.214	0.115 #	0.0276 #	0.110 #	0 #	0.101 #	0.0516 #	0.0321 #	0.0517 #	0.0494 #	2.19	1.81	0.244 #	0.789	0.186	0.267	0.167 #	0 ##	0.0659 #	0.0636 #	0.148 #	0.0985 #	0.0856 #	0.0301 #
Radiological	Uranium-238	pCi/g	14	179		1.74	1.62	1.40	2.11	1.72	1.82	2.05	1.74	1.37	1.15	1.88	1.27	7.42	8.17	0.818	3.50	1.95	2.79	1.73	1.12	2.00	1.35	0.875	0.649	1.18	1.32
Radiological	Uranium-234	ug/kg				< 18.3	< 16.0	< 17.2	< 18.8	< 16.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radiological	Uranium-235	ug/kg				25.4 J	23.2	23 J	24.5 J	21.7 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radiological	Uranium-238	ug/kg				3450	3230	3100	3440	2970	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radiological	Total Uranium Isotopes	ug/kg				3480	3250	3120	3460	2990	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	1,1'-Biphenyl	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	2,4,5-Trichlorophenol	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	2,4,6-Trichlorophenol	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	2,4-Dichlorophenol	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	2,4-Dimethylphenol	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	2,4-Dinitrophenol	ug/kg				< 1600	< 1600	< 1600	< 1600	< 1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	2,4-Dinitrotoluene	ug/kg				< 630	< 640	< 640	< 640	< 640	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	2,6-Dinitrotoluene	ug/kg				< 630	< 640	< 640	< 640	< 640	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	2-Chloronaphthalene	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	2-Chlorophenol	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	2-Methylnaphthalene	ug/kg				< 64	< 65	< 66	< 65	< 66	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	2-Methylphenol	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	2-Nitroaniline	ug/kg				< 630	< 640	< 640	< 640	< 640	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	2-Nitrophenol	ug/kg				< 630	< 640	< 640	< 640	< 640	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	3,3'-Dichlorobenzidine	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	3-Nitroaniline	ug/kg				< 630	< 640	< 640	< 640	< 640	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	4,6-Dinitro-2-methylphenol	ug/kg				< 1600	< 1600	< 1600	< 1600	< 1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	4-Bromophenyl phenyl ether	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	4-Chloro-3-methylphenol	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	4-Chloroaniline	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	4-Chlorophenyl phenyl ether	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	4-Methylphenol	ug/kg				< 630	< 640	< 640	< 640	< 640	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	4-Nitroaniline	ug/kg				< 630	< 640	< 640	< 640	< 640	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	4-Nitrophenol	ug/kg				< 1600	< 1600	< 1600	< 1600	< 1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Acenaphthene	ug/kg				< 64	< 65	< 66	< 65	< 66	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Acenaphthylene	ug/kg				< 64	< 65	< 66	< 65	< 66	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Acetophenone	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Anthracene	ug/kg				< 64	< 65	< 66	< 65	< 66	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Atrazine	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Benz(a)anthracene	ug/kg				< 64	< 65	< 66	< 65	< 66	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Benzaldehyde	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Benzo(a)pyrene	ug/kg				< 64	< 65	< 66	< 65	< 66	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Benzo(b)fluoranthene	ug/kg				< 64	< 65	< 66	< 65	< 66	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Benzo(g,h,i)perylene	ug/kg				< 64	< 65	< 66	< 65	< 66	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Benzo(k)fluoranthene	ug/kg				< 64	< 65	< 66	< 65	< 66	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table T4 - Sediment Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

					Location	SED-55	SED-55	SED-56	SED-56	SED-56	SED-57	SED-57	SED-57	SED-58	SED-58	SED-59	SED-59	SED-60	SED-60	SED-61	SED-61	SED-61	SED-61	SED-62	SED-62	SED-62	SED-62	SED-63	SED-63	SED-64	SED-64
					Depth	0 - 6 in	6 - 12 in	0 - 6 in	0 - 6 in	6 - 12 in	0 - 6 in	12 - 18 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	0 - 6 in	12 - 18 in	6 - 12 in	0 - 6 in	12 - 24 in	6 - 12 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in
					Type	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	FD	N	N	N	N
					Date	12/2/2019	12/2/2019	12/2/2019	12/2/2019	12/2/2019	12/4/2020	12/4/2020	12/4/2020	12/4/2020	12/4/2020	12/3/2020	12/3/2020	11/18/2020	11/18/2020	11/18/2020	11/18/2020	11/18/2020	11/18/2020	11/17/2020	11/17/2020	11/17/2020	11/17/2020	11/17/2020	11/17/2020	11/17/2020	11/17/2020
Group	Analyte	Unit	RUSL	IUSL																											
SVOCs	Bis(2-chloroethoxy)methane	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Bis(2-chloroethyl)ether	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Bis(2-chloroisopropyl)ether	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Bis(2-ethylhexyl)phthalate	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Butyl benzyl phthalate	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Caprolactam	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Carbazole	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Chrysene	ug/kg				< 64	< 65	< 66	< 65	< 66	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Dibenz(a,h)anthracene	ug/kg				< 64	< 65	< 66	< 65	< 66	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Dibenzofuran	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Diethyl phthalate	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Dimethyl phthalate	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Di-n-butyl phthalate	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Di-n-octyl phthalate	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Fluoranthene	ug/kg				< 64	< 65	< 66	< 65	< 66	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Fluorene	ug/kg				< 64	< 65	< 66	< 65	< 66	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Hexachlorobenzene	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Hexachlorobutadiene	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Hexachlorocyclopentadiene	ug/kg				< 1600	< 1600	< 1600	< 1600	< 1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Hexachloroethane	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Indeno(1,2,3-cd)pyrene	ug/kg				< 64	< 65	< 66	< 65	< 66	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Isophorone	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Naphthalene	ug/kg				< 64	< 65	< 66	< 65	< 66	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Nitrobenzene	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	N-Nitrosodi-n-propylamine	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	N-Nitrosodiphenylamine	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Pentachlorophenol	ug/kg				< 1600	< 1600	< 1600	< 1600	< 1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Phenanthrene	ug/kg				< 64	< 65	< 66	< 65	< 66	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Phenol	ug/kg				< 320	< 330	< 330	< 330	< 330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Pyrene	ug/kg				< 64	< 65	< 66	< 65	< 66	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	(1-Methylethyl)-Benzene	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	1,1,1-Trichloroethane	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	1,1,2,2-Tetrachloroethane	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	1,1,2-Trichlor-1,2,2-trifluoroethane	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	1,1,2-Trichloroethane	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	1,1-Dichloroethane	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	1,1-Dichloroethene	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	< 4.9	< 5.1	< 5.6	< 5.7	< 4.4	< 5	< 8.9	< 5.2	< 5	< 5.1	< 5.6	< 5	< 6.6	< 4.8
VOCs	1,2,4-Trichlorobenzene	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	1,2-Dibromo-3-chloropropane	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	1,2-Dibromoethane	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	1,2-Dichlorobenzene	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	1,2-Dichloroethane	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	< 4.9	< 5.1	< 5.6	< 5.7	< 4.4	< 5	< 8.9	< 5.2	< 5	< 5.1	< 5.6	< 5	< 6.6	< 4.8
VOCs	1,2-Dichloropropane	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	1,3-Dichlorobenzene	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	1,4-Dichlorobenzene	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	2-Butanone	ug/kg				< 19	< 20	< 21	< 19	< 14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	2-Hexanone	ug/kg				< 9.7	< 9.8	< 10	< 9.7	< 7.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	4-Methyl-2-pentanone	ug/kg				< 9.7	< 9.8	< 10	< 9.7	< 7.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Acetone	ug/kg				< 19	200	220	23	< 14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Benzene	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Bromodichloromethane	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Bromoform	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Bromomethane	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Carbon disulfide	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Carbon tetrachloride	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Chlorobenzene	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Chloroethane	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Chloroform	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Chloromethane	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	cis-1,2-Dichloroethene	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	< 4.9	< 5.1	< 5.6	< 5.7	< 4.4	< 5	< 8.9	< 5.2	< 5	< 5.1	< 5.6	< 5	< 6.6	< 4.8
VOCs	cis-1,3-Dichloropropene	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Cyclohexane	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Dibromochloromethane	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Dichlorodifluoromethane	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Ethylbenzene	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table T4 - Sediment Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

					Location	SED-55	SED-55	SED-56	SED-56	SED-56	SED-57	SED-57	SED-57	SED-58	SED-58	SED-59	SED-59	SED-60	SED-60	SED-61	SED-61	SED-61	SED-61	SED-62	SED-62	SED-62	SED-62	SED-63	SED-63	SED-64	SED-64
					Depth	0 - 6 in	6 - 12 in	0 - 6 in	0 - 6 in	6 - 12 in	0 - 6 in	12 - 18 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	0 - 6 in	12 - 18 in	6 - 12 in	0 - 6 in	12 - 24 in	6 - 12 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in
					Type	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	FD	N	N	N	N
					Date	12/2/2019	12/2/2019	12/2/2019	12/2/2019	12/2/2019	12/4/2020	12/4/2020	12/4/2020	12/4/2020	12/4/2020	12/3/2020	12/3/2020	11/18/2020	11/18/2020	11/18/2020	11/18/2020	11/18/2020	11/18/2020	11/17/2020	11/17/2020	11/17/2020	11/17/2020	11/17/2020	11/17/2020	11/17/2020	11/17/2020	11/17/2020
Group	Analyte	Unit	RUSL	IUSL																											
VOCs	Methyl acetate	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Methyl tert-butyl ether	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Methylcyclohexane	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Methylene chloride	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Styrene	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Tetrachloroethene	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	< 4.9	< 5.1	< 5.6	< 5.7	< 4.4	< 5	< 8.9	< 5.2	< 5	< 5.1	< 5.6	< 5	< 6.6	< 4.8
VOCs	Toluene	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	trans-1,2-Dichloroethene	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	< 4.9	< 5.1	< 5.6	< 5.7	< 4.4	< 5	< 8.9	< 5.2	< 5	< 5.1	< 5.6	< 5	< 6.6	< 4.8
VOCs	trans-1,3-Dichloropropene	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Trichloroethene	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	< 4.9	< 5.1	< 5.6	< 5.7	< 4.4	< 5	< 8.9	< 5.2	< 5	< 5.1	< 5.6	< 5	< 6.6	< 4.8
VOCs	Trichlorofluoromethane	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Vinyl chloride	ug/kg				< 4.9	< 4.9	< 5.2	< 4.8	< 3.5	NA	NA	NA	NA	NA	NA	NA	< 4.9	< 5.1	< 5.6	< 5.7	< 4.4	< 5	< 8.9	< 5.2	< 5	< 5.1	< 5.6	< 5	< 6.6	< 4.8
VOCs	Xylenes, Total	ug/kg				< 9.7	< 9.8	< 10	< 9.7	< 7.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table T4 - Sediment Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

					Location	SED-65	SED-65	SED-66	SED-66	SED-66	SED-67	SED-67	SED-67	SED-68	SED-68	SED-68	SED-68	SED-B1	SED-B1	SED-B2	SED-B2	SED-B3	SED-B3	SED-B4	SED-B4	SED-B5	SED-B5	SED-B6	SED-B6	SED-B7	SED-B7	SED-B8	SED-B8
					Depth	0 - 6 in	6 - 12 in	0 - 6 in	12 - 24 in	6 - 12 in	0 - 6 in	12 - 24 in	6 - 12 in	0 - 6 in	12 - 24 in	12 - 24 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in
					Type	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
					Date	11/16/2020	11/16/2020	3/9/2021	3/9/2021	3/9/2021	3/8/2021	3/8/2021	3/8/2021	3/8/2021	3/8/2021	3/8/2021	3/8/2021	3/10/2021	3/10/2021	3/10/2021	3/10/2021	3/9/2021	3/9/2021	3/9/2021	3/9/2021	3/10/2021	3/10/2021	3/10/2021	3/10/2021	3/9/2021	3/9/2021	3/9/2021	3/9/2021
Group	Analyte	Unit	RUSL	IUSL																													
Chemical	Ammonia	mg/kg			156	276	785	745	563	623	518	611	84.7	80.9	72.2	89.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chemical	Nitrate as N	mg/kg			0.47	< 0.26	< 2.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chemical	Fluoride	mg/kg			40.6	33.6	20.9	4.21	10.4	30.4	9.43	10.5	4.43	4.53	4.66	4.46	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Aluminum	mg/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Antimony	mg/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Arsenic	mg/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Barium	mg/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Beryllium	mg/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Cadmium	mg/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Calcium	mg/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Chromium	mg/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Cobalt	mg/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Copper	mg/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Iron	mg/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Lead	mg/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Magnesium	mg/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Manganese	mg/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Mercury	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Nickel	mg/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Potassium	mg/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Selenium	mg/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Silver	mg/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Sodium	mg/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Thallium	mg/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Vanadium	mg/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals	Zinc	mg/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radiological	Technetium-99	pCi/g	19	89400	312	8.41	2.16	0.184 #	0.770	1.83	0.461 #	0.639 #	0.0815 #	0.0594 #	0.156 #	0 ##	23.7	0.295 #	19.1	0.720 #	4.37	5.34	1.05	0.383 #	0.565 #	1.40	1.13	1.36	3.71	0.472 #	0.937	1.40
Radiological	Uranium-233/234	pCi/g	13	3310	1.01	1.12	14.5	1.52	4.75	14.8	2.57	2.78	1.02	1.23	1.30	1.26	401	3.15	267	5.45	47.2	90.6	33.6	10.4	30.0	4.43	30.4	7.98	24.7	5.49	43.7	37.6
Radiological	Uranium-235/236	pCi/g	8	39	0.113 #	0 ##	0.637	0.156	0.265	0.743	0.155	0.118 #	0.0106 #	0.0471 #	0.0530 #	0.0732 #	26.9	0.315	15.8	0.405	2.56	4.75	2.25	0.384	1.36	0.178 #	1.82	0.447	1.13	0.275	1.92	1.92
Radiological	Uranium-238	pCi/g	14	179	0.726	0.791	4.19	1.19	2.46	4.41	1.60	1.39	1.45	0.615	0.955	1.08	95.7	2.01	60.3	2.30	13.1	22.1	7.78	3.49	7.25	2.29	6.94	2.89	6.32	3.16	11.0	8.65
Radiological	Uranium-234	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radiological	Uranium-235	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radiological	Uranium-238	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radiological	Total Uranium Isotopes	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	1,1'-Biphenyl	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	2,4,5-Trichlorophenol	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	2,4,6-Trichlorophenol	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	2,4-Dichlorophenol	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	2,4-Dimethylphenol	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	2,4-Dinitrophenol	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	2,4-Dinitrotoluene	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	2,6-Dinitrotoluene	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	2-Chloronaphthalene	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	2-Chlorophenol	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	2-Methylnaphthalene	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	2-Methylphenol	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	2-Nitroaniline	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	2-Nitrophenol	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	3,3'-Dichlorobenzidine	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	3-Nitroaniline	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	4,6-Dinitro-2-methylphenol	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	4-Bromophenyl phenyl ether	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	4-Chloro-3-methylphenol	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	4-Chloroaniline	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	4-Chlorophenyl phenyl ether	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	4-Methylphenol	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	4-Nitroaniline	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	4-Nitrophenol	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Acenaphthene	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Acenaphthylene	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Acetophenone	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Anthracene	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Atrazine	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Benz(a)anthracene	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Benzaldehyde	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Benzo(a)pyrene	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Benzo(b)fluoranthene	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Benzo(g,h,i)perylene	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Benzo(k)fluoranthene	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table T4 - Sediment Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

					Location	SED-65	SED-65	SED-66	SED-66	SED-66	SED-67	SED-67	SED-67	SED-68	SED-68	SED-68	SED-68	SED-B1	SED-B1	SED-B2	SED-B2	SED-B3	SED-B3	SED-B4	SED-B4	SED-B5	SED-B5	SED-B6	SED-B6	SED-B7	SED-B7	SED-B8	SED-B8
					Depth	0 - 6 in	6 - 12 in	0 - 6 in	12 - 24 in	6 - 12 in	0 - 6 in	12 - 24 in	6 - 12 in	0 - 6 in	12 - 24 in	12 - 24 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in
					Type	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
					Date	11/16/2020	11/16/2020	3/9/2021	3/9/2021	3/9/2021	3/8/2021	3/8/2021	3/8/2021	3/8/2021	3/8/2021	3/8/2021	3/8/2021	3/10/2021	3/10/2021	3/10/2021	3/10/2021	3/9/2021	3/9/2021	3/9/2021	3/9/2021	3/10/2021	3/10/2021	3/10/2021	3/10/2021	3/9/2021	3/9/2021	3/9/2021	3/9/2021
Group	Analyte	Unit	RUSL	IUSL																												
SVOCs	Bis(2-chloroethoxy)methane	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Bis(2-chloroethyl)ether	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Bis(2-chloroisopropyl)ether	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Bis(2-ethylhexyl)phthalate	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Butyl benzyl phthalate	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Caprolactam	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Carbazole	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Chrysene	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Dibenz(a,h)anthracene	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Dibenzofuran	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Diethyl phthalate	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Dimethyl phthalate	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Di-n-butyl phthalate	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Di-n-octyl phthalate	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Fluoranthene	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Fluorene	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Hexachlorobenzene	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Hexachlorobutadiene	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Hexachlorocyclopentadiene	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Hexachloroethane	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Indeno(1,2,3-cd)pyrene	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Isophorone	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Naphthalene	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Nitrobenzene	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	N-Nitrosodi-n-propylamine	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	N-Nitrosodiphenylamine	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Pentachlorophenol	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Phenanthrene	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Phenol	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs	Pyrene	ug/kg			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	(1-Methylethyl)-Benzene	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	1,1,1-Trichloroethane	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	1,1,2,2-Tetrachloroethane	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	1,1,2-Trichlor-1,2,2-trifluoroethane	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	1,1,2-Trichloroethane	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	1,1-Dichloroethane	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	1,1-Dichloroethene	ug/kg			< 5.4	< 4.6	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	1,2,4-Trichlorobenzene	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	1,2-Dibromo-3-chloropropane	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	1,2-Dibromoethane	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	1,2-Dichlorobenzene	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	1,2-Dichloroethane	ug/kg			< 5.4	< 4.6	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	1,2-Dichloropropane	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	1,3-Dichlorobenzene	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	1,4-Dichlorobenzene	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	2-Butanone	ug/kg			NA	NA	73	46	26	< 28	< 25	< 23	< 18	< 16	< 17	< 17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	2-Hexanone	ug/kg			NA	NA	< 12	< 11	< 11	< 14	< 12	< 11	< 9.1	< 8.2	< 8.4	< 8.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	4-Methyl-2-pentanone	ug/kg			NA	NA	< 12	< 11	< 11	< 14	< 12	< 11	< 9.1	< 8.2	< 8.4	< 8.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Acetone	ug/kg			NA	NA	220	160	120	72	66	48	87	82	57	58	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Benzene	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Bromodichloromethane	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Bromoform	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Bromomethane	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Carbon disulfide	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Carbon tetrachloride	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Chlorobenzene	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Chloroethane	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Chloroform	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Chloromethane	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	cis-1,2-Dichloroethene	ug/kg			< 5.4	< 4.6	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	cis-1,3-Dichloropropene	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Cyclohexane	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Dibromochloromethane	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Dichlorodifluoromethane	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Ethylbenzene	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table T4 - Sediment Analytical Results
Westinghouse Columbia Fuel Fabrication Facility, Hopkins, SC

					Location	SED-65	SED-65	SED-66	SED-66	SED-66	SED-67	SED-67	SED-67	SED-68	SED-68	SED-68	SED-68	SED-B1	SED-B1	SED-B2	SED-B2	SED-B3	SED-B3	SED-B4	SED-B4	SED-B5	SED-B5	SED-B6	SED-B6	SED-B7	SED-B7	SED-B8	SED-B8
					Depth	0 - 6 in	6 - 12 in	0 - 6 in	12 - 24 in	6 - 12 in	0 - 6 in	12 - 24 in	6 - 12 in	0 - 6 in	12 - 24 in	12 - 24 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in	0 - 6 in	6 - 12 in
					Type	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
					Date	11/16/2020	11/16/2020	3/9/2021	3/9/2021	3/9/2021	3/8/2021	3/8/2021	3/8/2021	3/8/2021	3/8/2021	3/8/2021	3/8/2021	3/10/2021	3/10/2021	3/10/2021	3/10/2021	3/9/2021	3/9/2021	3/9/2021	3/9/2021	3/10/2021	3/10/2021	3/10/2021	3/10/2021	3/9/2021	3/9/2021	3/9/2021	3/9/2021
Group	Analyte	Unit	RUSL	IUSL																												
VOCs	Methyl acetate	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Methyl tert-butyl ether	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Methylcyclohexane	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Methylene chloride	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Styrene	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Tetrachloroethene	ug/kg			< 5.4	< 4.6	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Toluene	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	trans-1,2-Dichloroethene	ug/kg			< 5.4	< 4.6	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	trans-1,3-Dichloropropene	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Trichloroethene	ug/kg			< 5.4	< 4.6	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Trichlorofluoromethane	ug/kg			NA	NA	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Vinyl chloride	ug/kg			< 5.4	< 4.6	< 5.9	< 5.5	< 5.3	< 7.1	< 6.2	< 5.7	< 4.6	< 4.1	< 4.2	< 4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOCs	Xylenes, Total	ug/kg			NA	NA	< 12	< 11	< 11	< 14	< 12	< 11	< 9.1	< 8.2	< 8.4	< 8.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
RUSL - Residential Use Screening Level (NUREG 1757, Appendix H)
IUSL - Industrial Use Screening Level (NUREG 1757, Appendix H)
Concentrations in orange shaded cells exceed their RUSL
Concentrations in blue shaded cells exceed their IUSL
pCi/g - picocuires per gram
ug/kg - micrograms per kilogram
mg/kg - milligrams per kilogram
N - normal sample
FD - field duplicate sample
Bold concentrations indicate detections
J - result below reporting limit
- value is below minimum detectable concentration
- value shown as zero reported by analytical laboratory as a negative number
SVOCs - semivolatile organic compounds
VOCs - volatile organic compounds
NA - not analyzed
* - sludge sample collected from the Sanitary Lagoon
** - sludge sample collected from the East Lagoon

Appendix U
Surface Water and Sediment Analytical Results (on DVD)

Appendix V
2022 Leidos Phase II Sediment TBD

Technical Basis Document

Remedial Investigation Phase II Soil and Sediment Sampling and Sediment Transect Evaluation for the Westinghouse Columbia Fuel Fabrication Facility (WCFFF) – Revision 1

Prepared for:

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Prepared by:

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May 27, 2022

Revision Log

Revision Number:	Date:	Description:
0	7/28/21	Initial issuance of the report.
1	5/27/22	Dose and risk assessment was updated to include additional sample data collected from the site drainage Middle Ditch after the RI Phase II sampling was originally completed. While the conclusions of the report did not change, new data was available, and evaluated. This report was updated to reflect that evaluation, and its results. Remedial Investigation fieldwork was completed in October 2021, resultantly this revision of the TBD removed all references to this being an “interim” evaluation.

Remedial Investigation Process

The Westinghouse Columbia Fuel Fabrication Facility (WCFFF) has performed a site Remedial Investigation (RI) in accordance with a Consent Agreement with the South Carolina Department of Health and Environmental Control (SCDHEC). Westinghouse and SCDHEC entered into this Consent Agreement in February 2019.

The purpose of the RI is to complete a comprehensive evaluation of groundwater, surface water, sediment, and soils at the site to determine the source, nature and extent of impacts from historic activities. Following completion of the RI, the Consent Agreement requires WCFFF to perform a Feasibility Study (FS) to evaluate remedial alternatives. After SCDHEC approval of the FS, the Department will issue a Record of Decision (ROD) specifying the selected remedy or set of remedies for the site. WCFFF will then implement these remedies per a SCDHEC approved Remedial Design/Remedial Action Plan and issue a final report documenting remediation of the site and successful completion of the Consent Agreement.

This Technical Basis Document (TBD) provides the evaluation of the sediment and soil data collected under the RI. This assessment will be included as part of the Final Remedial Investigation report. Remedial alternatives will be evaluated in the FS.

Three significant sampling campaigns have been conducted across the site. Sampling in Phase I of the RI was completed to gain a better understanding of the site conditions; additional sampling was completed in Phase II of the RI to fully characterize sediment impacts; subsequently, an addendum was completed to perform bounding sampling based on the results of the Phase II investigation in the Mill Creek Corridor. These sampling events, in addition to the ongoing routine environmental sampling program, have been evaluated, and a bounding assessment has been performed by evaluating the dose and risk associated with the areas where elevated concentrations have been identified. The results of these comprehensive sampling campaigns have defined the limited horizontal and vertical extent of sediment and soil impact. There are no current or future concerns for contaminants to potentially move offsite, and the documented impacts pose no potentially significant threat to plant workers, the general public, or the environment.

RI Phase I Assessment

During Phase I of the RI, sediment samples were collected from various areas of the site including the Mill Creek Corridor. Prominent features of the Westinghouse Columbia Site, including the Middle Ditch and the Mill Creek Corridor are identified in **Figure 1**. The locations of the RI Phase I sediment transects are shown in **Figure 2**.

Figure 1 – Mill Creek Corridor

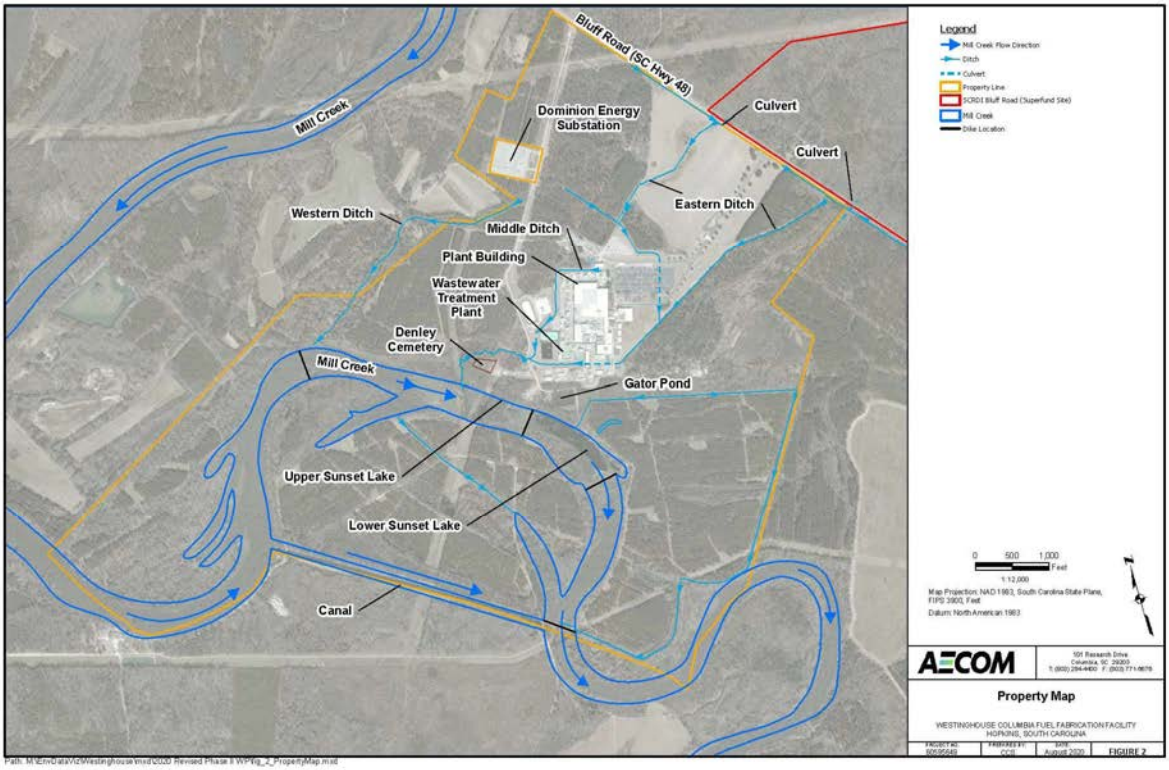
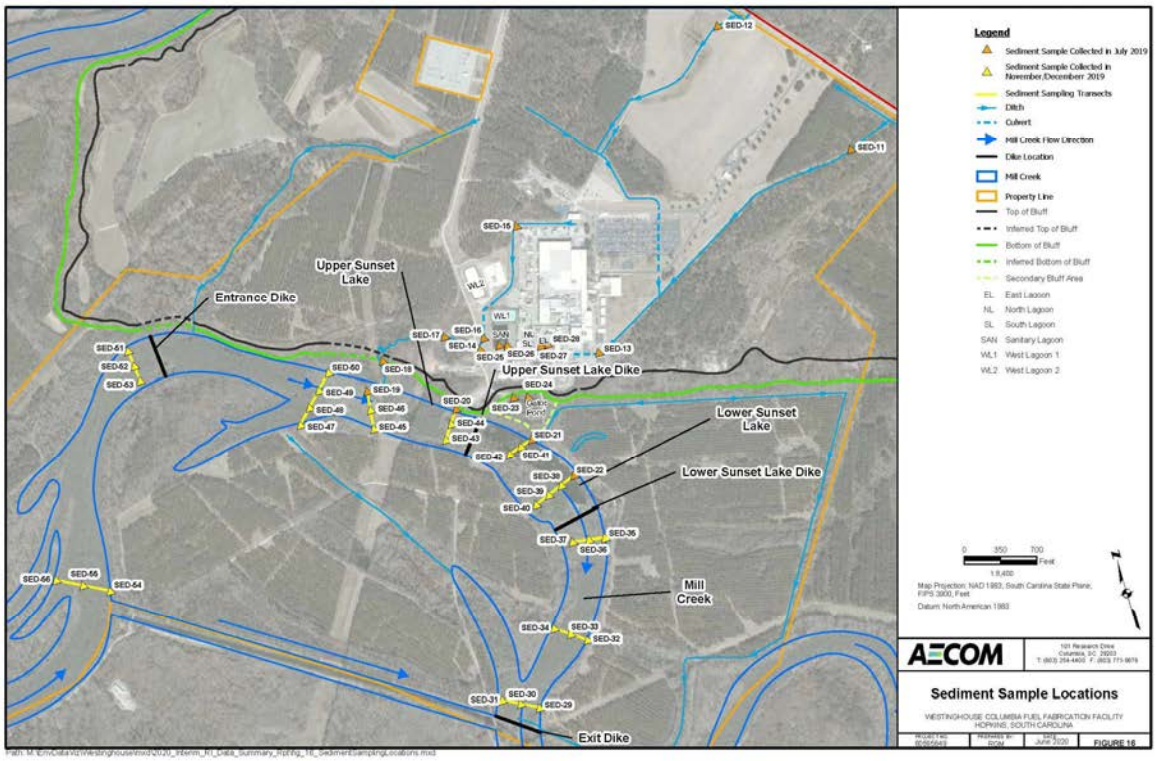


Figure 2 – RI Phase I Sediment Transects



Mill Creek is a naturally meandering creek that was dammed to create Upper and Lower Sunset Lake, prior to the establishment of the Westinghouse Columbia site. A diversion canal was also created that redirected a majority of the water flow, limiting the volume of water in Upper and Lower Sunset Lake, and creating nearly stagnant conditions. This low flow of water through the Upper and Lower Sunset Lake, combined with the thick growth of trees and brush has created swamp like conditions in Upper Sunset Lake.

Some of the Phase I sediment sample locations in Upper Sunset Lake and in Lower Sunset Lake were identified to contain Uranium (U) concentrations above the residential use screening level for soils (NUREG 1757, Vol. 2, Rev. 1, Appendix H), but below industrial use screening level. These samples were collected from locations on the WCFFF property. Assessment of this data was completed in the *Final Interim Remedial Investigation Data Summary Report*, approved by SCDHEC on July 30, 2020, and concluded that the identification of U concentrations in the sediment does not pose any undue risk to public health and safety, nor does it indicate potential off-site impact. However, additional sampling and investigation to further understand the extent of the potential impact into the Mill Creek Corridor was planned as described in the *Phase II RI Work Plan*, approved by SCDHEC on October 14, 2020 and in an addendum approved on November 5, 2020.

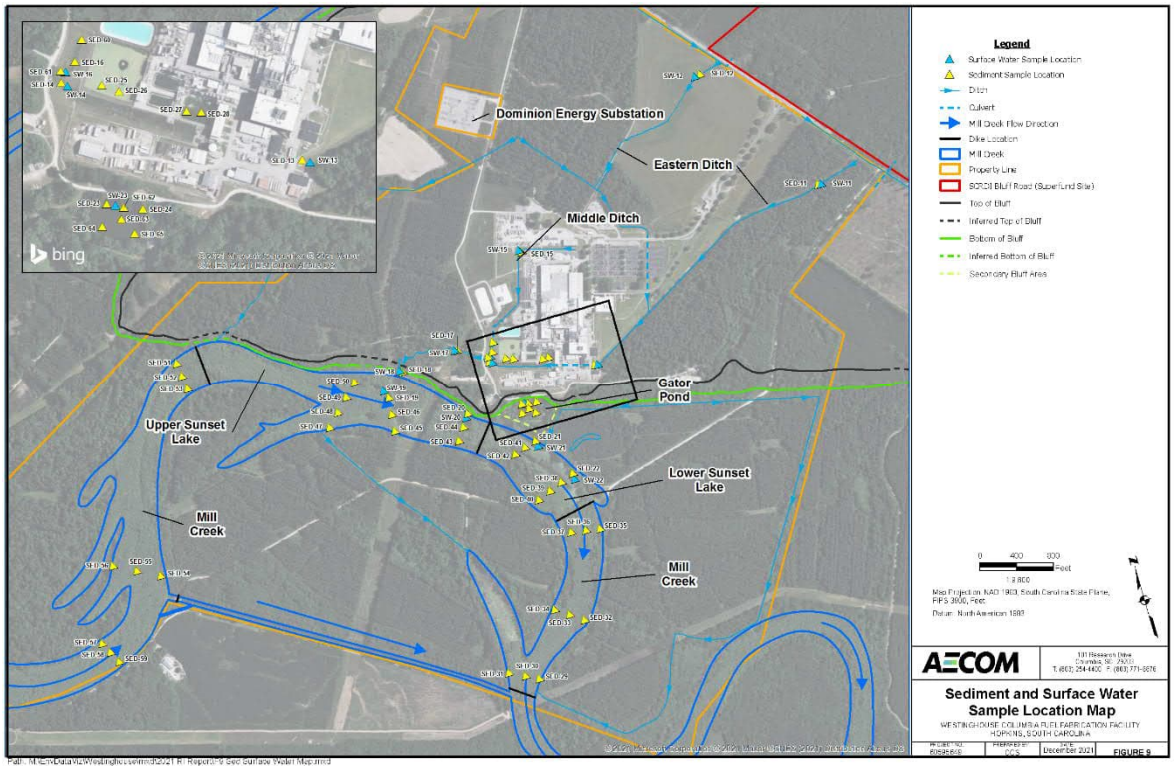
RI Phase II Assessment

During Phase II of the RI, sampling was performed to further assess the vertical and horizontal extent of impact on sediment quality in several areas of the site; the Mill Creek Corridor surface water body, the Gator Pond, and the site stormwater ditches including the area known as the Middle Ditch. Westinghouse collected sediment samples from 17 of the original sediment sample locations in the Mill Creek Corridor (SED-19 through SED-22 and SED-38 through SED-50), while also sampling at greater depths than were performed in Phase I. The Phase II sediment sampling began on November 9, 2020 and was completed December 4, 2020. The soil and sediment sampling results for the Middle Ditch are discussed in the Site Drainage "Middle Ditch" Section (beginning on page 10 of this document), and the Gator Pond sediment sampling results for the Gator Pond are discussed in the Gator Pond Section (beginning on page 13 of this report).

Based on the Phase II results, additional sampling was proposed by WCFFF and approved by SCDHEC on February 22, 2021. This follow up sediment sampling campaign was conducted in March of 2021 and is discussed in the Mill Creek Corridor Bounding Section (beginning on page 16 of this document).

The locations of the RI Phase II sediment transects performed in November and December of 2020 are shown in **Figure 3**.

Figure 3 – RI Phase II Sediment Transects



RI Phase II sediment samples were collected from the previous Phase I locations at deeper intervals, and at new locations to bound previously identified areas of elevated residual radioactivity.

Upstream Areas (Sediment Background)

Sediment samples were collected at multiple locations to assess background sediment quality. These sediment samples were collected at locations that are upstream of the surface water flow from the site, where only naturally occurring radioactivity is expected to be present in the sediment. Locations SED-11 and SED-12 were each collected from a storm water ditch and are representative of the naturally occurring sediment within the storm water ditches as it enters the WCFFF site boundary.

Locations SED-51, SED-52, and SED-53 were collected just upstream of the site Entrance Dike, locations SED-54, SED-55, and SED-56 were collected well upstream within the flow path of Mill Creek, and SED-57, SED-58, and SED-59 were collected upstream of the diversion canal. The three sediment transects (sediment locations 51-59) are representative of the naturally occurring background sediment within Mill Creek, of which Upper and Lower Sunset Lakes are a part.

Upper and Lower Sunset Lakes

Three sediment transects in Upper Sunset Lake, and two sediment transects in Lower Sunset Lake were sampled during Phase I of the RI. These transects were placed to identify potential environmental impacts from historic plant operations. During Phase II, vertical sediment profiling was performed at 17 of the Phase I sediment locations.

Downstream Areas

Three of the sediment sampling transects (Figure 2) are downstream of the Lower Sunset Lake dike. This portion of Mill Creek is heavily forested, lowland swamp with minimal flow. The majority of the flow in Mill Creek through the WCFFF property is by way of the diversion canal (Figures 1 and 3) along the southern property boundary.

RI Phase II Evaluation

All Phase II sediment samples were sent to an off-site laboratory for analysis of U, Technetium-99 (Tc-99), Ammonia, Fluoride, Nitrate, and Volatile Organic Compounds (VOCs). Reported chemical constituent results were below the EPA Regional Screening Levels for residential use, and therefore further comparisons to industrial screening levels of evaluation were not necessary.

The RI Phase II sediment radiological results were evaluated in accordance with WCFFF site procedure RA-433, "Environmental Remediation." The radiological screening levels provided in Table 3 in procedure RA-433 (Rev 2) are based on single contaminant concentrations for each isotope. When multiple radionuclides are present, a "sum of fractions" (SOF) approach is used to assess compliance with the concentration limit. The SOF for each unique sample is calculated using the following equation:

$$SOF = \frac{Conc_{U-234}}{SSL_{,U-234}} + \frac{Conc_{U-235}}{SSL_{,U-235}} + \frac{Conc_{U-238}}{SSL_{,U-238}} + \frac{Conc_{Tc-99}}{SSL_{,Tc-99}}$$

The values in **Table 1** represent soil concentrations of individual radionuclides, using conservative exposure parameters, that would be deemed in compliance with the dose limits for an individual as specified in 10 CFR 20.1402 (i.e., equivalent to 25 mrem/year under Residential Use).

Table 1: Residential and Industrial Use Screening Levels

Contaminant	Residential Use Screening Level	Industrial Use Screening Level	Basis of Screening Level
Uranium - 234	13 pCi/g (0.002 mg/Kg)	3,310 pCi/g (0.5 mg/kg)	NUREG 1757, Vol. 1-2 , Appendix H[1]
Uranium – 235	8 pCi/g (3.704 mg/Kg)	39 pCi/g (18 mg/kg)	NUREG 1757, Vol. 1-2 , Appendix H[1]
Uranium – 238	14 pCi/g (41.667 mg/Kg)	179 pCi/g (533 mg/kg)	NUREG 1757, Vol. 1-2 , Appendix H[1]
Total Uranium	12.69 pCi/g (5.320 mg/Kg)	2,933 pCi/g (1,230 mg/kg)	Calculated based on NUREG 1757, Vol. 2, Rev. 1-2, Appendix H[2]
Technetium - 99	19 pCi/g (1.110 E -03 mg/Kg)	89,400 pCi/g (5.2 mg/Kg)	NUREG 1757 Vol. 1-2 , Appendix H[1]

The Residential Use Screening Levels (RUSLs) were determined using highly conservative assumptions to develop an exposure scenario where it is assumed that a person would construct a house on the property, live on the property, drink the groundwater, and eat produce farmed on the property as well as fish caught on the property.

At the time of facility decommissioning, site specific Exposure Pathway Modeling will be used to develop Derived Concentration Guidance Levels (DCGLs) for the WCFFF following NUREG-1575, Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM). This guidance, commonly referred to as MARSSIM is a detailed instruction for planning, implementing, and evaluating environmental and facility radiological surveys conducted to demonstrate compliance with a dose- and risk-based regulation. The DCGL is a radionuclide specific concentration in pCi/g that is equal to the release criteria dose of 25 mRem/yr. While the Residential Screening Levels for soils are based on the most conservative assumptions, site specific DCGLs will generally be higher in most cases. For example, the recently decommissioned Westinghouse Hematite Site had the following site-specific DCGLs (**Table 2**) for unrestricted release using a Residential Farmer Scenario.

Table 2: Westinghouse Hematite Site-Specific DCGLs

Contaminant	DCGL for Unrestricted Free Release to the Public	Basis of Screening Level
Uranium - 234	195.4 pCi/g	Hematite Decommissioning Plan (NRC License No SNM-33)
Uranium – 235	51.6 pCi/g	Hematite Decommissioning Plan (NRC License No SNM-33)
Uranium – 238	168.8 pCi/g	Hematite Decommissioning Plan (NRC License No SNM-33)
Total Uranium	170.2 pCi/g	Hematite Decommissioning Plan (NRC License No SNM-33)
Technetium - 99	25.1 pCi/g	Hematite Decommissioning Plan (NRC License No SNM-33)

Because site-specific DCGLs will generally be higher, the RUSLs are provided in RA-433 for reference, and where practical, WCFFF will strive to achieve these values. However, it is most appropriate to compare samples collected from within the WCFFF property boundary to the Industrial Use Screening Levels (IUSLs) also listed in RA-433, because they are representative of the current and future use of the property, until such time as the WCFFF undergoes full site decommissioning.

The IUSLs are also based on conservative assumptions, but these assumptions better represent the current and future use of the WCFFF, as it is assumed that the industrial worker will not live on the property, nor engage in the consumption of any food or water produced on the facility property.

Sediment Sample Results

The Phase II radiological results are the focus of this TBD, as the sediment sample analytical results from Phase I of the RI have been previously reported and discussed in the *Final Interim Remedial Investigation Data Summary Report*, approved by DHEC on July 30, 2020 (also known as the *RI Phase I Report*).

The Phase II data has been submitted to SCDHEC through routine monthly reports required by the Consent Agreement. This evaluation will be incorporated into the Final Remedial Investigation report.

The sediment data can be categorized by the area of the site from which it was collected. This includes a new background sediment transect collected upstream of the diversion canal; additional bounding sampling collected in a site drainage "Middle Ditch"; additional sediment characterization performed in the Gator Pond; and additional characterization performed in the Mill Creek Corridor of Upper and Lower Sunset Lake.

Upstream Areas (Sediment Background)

In Phase I of the RI, two background sediment transects were collected upstream of the site entrance dike. While these background sediment results appear to reflect the levels of naturally occurring radioactive materials that will be identified in all sediments, an additional background sediment transect (SED-57, SED-58, and SED-59) was collected further upstream of the site diversion canal. The result of this additional background sediment transect are presented in **Table 3**, along with the original Phase I Transect results for reference.

Table 3: Background Sediment Sampling Results

Sample ID	Gross Analyte Activity (pCi/g)				SOF	SOF
	U-234	U-235	U-238	Tc-99	Residential	Industrial
SED-51-0-6 (Phase I)	2.10	0.18	1.42	*0.00*	0.3	0.0
SED-51-6-12 (Phase I)	1.27	0.07	1.15	*4.89*	0.4	0.0
SED-52-0-6 (Phase I)	1.77	0.31	1.72	*0.00*	0.3	0.0
SED-52-6-12 (Phase I)	1.88	0.05	1.45	*0.00*	0.3	0.0
SED-53-0-6 (Phase I)	2.15	0.19	1.45	*0.00*	0.3	0.0
SED-53-6-12 (Phase I)	2.06	0.07	2.34	*0.00*	0.3	0.0
SED-54-0-6 (Phase I)	1.78	0.12	1.36	*1.51*	0.3	0.0
SED-54-6-12 (Phase I)	1.48	0.12	1.87	*0.00*	0.3	0.0
SED-55-0-6 (Phase I)	2.05	0.00	1.74	*6.19*	0.6	0.0
SED-55-6-12 (Phase I)	1.62	0.16	1.62	*0.00*	0.3	0.0
SED-56-0-6 (Phase I)	2.02	0.21	1.40	*2.53*	0.4	0.0
SED-56-6-12 (Phase I)	1.89	0.03	1.72	*0.00*	0.3	0.0
SED-57P2-0-6 (Phase II)	2.22	0.11	1.82	NA	0.3	0.0
SED-57P2-6-12 (Phase II)	1.63	0.10	1.74	NA	0.3	0.0
SED-57P2-12-18 (Phase II)	1.49	0.00	2.05	NA	0.3	0.0
SED-58P2-0-6 (Phase II)	1.21	0.05	1.37	NA	0.2	0.0
SED-58P2-6-12 (Phase II)	1.38	0.03	1.15	NA	0.2	0.0
SED-59P2-0-6 (Phase II)	2.09	0.05	1.88	NA	0.3	0.0
SED-59P2-6-12 (Phase II)	1.52	0.05	1.27	NA	0.2	0.0

As can be seen from the data in Table 3 above, the results of the new background sediment transect are consistent with the results of the two background sediment transects collected during Phase I of the RI. All Phase I Tc-99 reported results in Table 3 above were less than the instruments Minimum Detectable Activity (MDA), meaning that the results could not reliably be distinguished from the laboratory instrument's background value. Therefore, no additional Tc-99 sampling was performed in Phase II.

Site Drainage "Middle Ditch"

In Phase I of the RI, location SED-16 in an on-site drainage ditch was identified to be elevated, but similar results were not identified further upstream or downstream of this location. To determine the size and extent of the elevated concentrations at location SED-16, additional bounding sampling was performed during Phase II. Location SED-60 was collected approximately 50 ft upstream and SED-61 was collected approximately 50 ft downstream of the original SED-16 location. In 2021, an additional routine soil sample location was added to the environmental monitoring program. The sample location, LOC-5, was found to be elevated, and is approximately 500 ft upstream of SED-16. LOC-5 was sampled twice since the RI Phase II sampling was conducted. LOC-5 is considered a surface soil sample location, as opposed to a sediment sample

location, because the area it is collected from is not covered by water for a majority of the year; however it is appropriate to include this sample location given that it was collected from the same on-site drainage middle ditch, and is in close proximity to the adjacent sediment sample locations. The locations of the routine soil and vegetation samples, along with the LOC-5 sample location, are shown in **Figure 4**.

Figure 4 – LOC-5 Sample Location



The results of this additional sediment and soil sampling are presented in **Table 4**.

Table 4: Middle Ditch Sediment Sampling Results

Sample ID	Gross Analyte Activity (pCi/g)				SOF	SOF	%
	U-234	U-235	U-238	Tc-99	Residential	Industrial	Moist.
SED-16P2-0-6	67.2	3.31	12.1	0.614	**6.5**	0.2	25.8
SED-16P2-6-12	63.7	3.18	11.8	2.62	**6.3**	0.2	23.3
SED-16P2-12-24	6.03	0.48	1.99	3.71	0.9	0.0	18.4
SED-60P2-0-6	39.7	2.19	7.42	0.433	**3.9**	0.1	18.4
SED-60P2-6-12	44.4	1.81	8.17	0.483	**4.3**	0.1	18.4
SED-61P2-0-6	4.29	0.244	0.818	1.2	0.5	0.0	16.2
SED-61P2-6-12	9.17	0.267	2.79	7.96	**1.4**	0.0	13.6
SED-61P2-12-18	3.86	0.186	1.95	8.28	0.9	0.0	11
LOC5-SOIL-20210526	113.0	5.16	21.5	0.00	**10.9**	0.3	20.4
LOC5-SOIL-20210929	40.40	2.59	9.15	0.00	**4.1**	0.1	15.5
Average	39.18	1.94	7.77	2.53	**3.9**	0.1	NA

As can be seen from the data in Table 4 above, the results of the bounding sampling show that the elevated concentrations identified in location SED-16 are confined to the top 12 inches of soil and sediment. The confinement to the top 12 inches is consistent with a surface release and is believed to be the source of surficial contamination in this area (1971 West Lagoon Rupture). While the top 12 inches in SED-60, and SED-61 remain elevated, concentrations are diminishing relative to SED-16. The surface soil results at LOC-5 also show elevated residual contamination, which given the location of the sample point between the current West I and West II Lagoons, further supports the conclusion that the 1971 West Lagoon rupture is the likely source of contamination. When compared to the RI Phase I sampling, this shows that the area of impact at location SED-16 is limited. RI Phase I sample locations SED-15 up stream, and SED-17 down stream did not exceed the RUSL provided in Table 1. Using these as bounding locations, the area of elevated surface sediment and soil concentrations is conservatively estimated to be approximately 1,250 ft long by 100 ft wide. These dimensions result in an area of approximately 125,000 ft^2 (11,600 m^2).

Furthermore, this location remains in an industrial use area of the site which is not typically occupied; the area is only accessed intermittently throughout the year for brush clearing, and sampling activities. These concentrations do not represent any undue risk to the health and safety of the workforce or the public, and do not indicate potential off-site impact. Given the distance from the site boundary, there is little concern for migration, or offsite impact. However, a dose and risk assessment was still performed for this area of elevated surface sediment and soil, as described in the Dose and Risk section of this report.

This area will continue to be monitored, and potential remediation options will be evaluated during the Feasibility Study (FS) and approved by SCDHEC in the Record of Decision (ROD) as required by the Consent Agreement. Until remediation is performed, funding to clean-up the impact was incorporated in the Decommissioning Funding Plan (DFP) required by Nuclear Regulatory

Commission (NRC) regulations and the site's NRC license. The most recent triennial DFP update was submitted May of 2022, and the projected decommissioning costs for this area were incorporated.

Gator Pond

In Phase I of the RI, surficial sediment samples identified the presence of Tc-99 in Gator Pond. To assess the vertical and horizontal extent of potential impact in Phase II of the RI, the original two locations, along with four new locations were sampled. The results of this additional sediment sampling are presented in **Table 5**.

Table 5: Gator Pond Sediment Sampling Results

Sample ID	Gross Analyte Activity (pCi/g)				SOF	SOF	%
	U-234	U-235	U-238	Tc-99	Residential	Industrial	Moist.
SED-23P2-0-6	1.36	0.0994	1.36	144	**7.8**	0.0	66.5
SED-23P2-6-12	1.19	0.0658	1.29	30.6	**1.8**	0.0	46.9
SED-23P2-12-24	1.06	0.0187	1.19	1.4	0.2	0.0	24.5
SED-23P2-24-36	1.11	0.0379	0.736	0.785	0.2	0.0	23.5
SED-24P2-0-6	3.12	0.16	2.13	118	**6.6**	0.0	80.4
SED-24P2-6-12	2.63	0.153	1.67	158	**8.7**	0.0	92
SED-24P2-12-18	1.57	0.217	1.47	33.3	**2.0**	0.0	75.9
SED-62P2-0-6	1.21	0.167	1.73	22.9	**1.4**	0.0	33.2
SED-62P2-6-12	1.57	0.0659	2	2.89	0.4	0.0	22.9
SED-62P2-12-24	1.84	0	1.12	1.08	0.3	0.0	23.6
SED-63P2-0-6	0.853	0.148	0.875	25	**1.5**	0.0	22.8
SED-63P2-6-12	0.76	0.0985	0.649	2.63	0.3	0.0	27.5
SED-64P2-0-6	1.3	0.0856	1.18	85.8	**4.7**	0.0	22.1
SED-64P2-6-12	1.11	0.0301	1.32	5.53	0.5	0.0	32.2
SED-65P2-0-6	1.01	0.113	0.726	312	**16.6**	0.0	22.4
SED-65P2-6-12	1.12	0	0.791	8.41	0.6	0.0	31.9

As can be seen from the data in Table 5 above, the results of the Gator Pond sediment sampling show elevated concentrations of Tc-99 across the Gator Pond in the top 6 inches of sediment. To a lesser extent, residual amounts of Tc-99 were identified at greater depths extending down to approximately 18 inches below the ground surface. Gator Pond is the only area of the site where Tc-99 is present in sediments above residential levels. The Gator Pond is a "flow through pond" with groundwater discharging to the pond in the northeastern portion of the pond and surface water recharging groundwater in the east, west, northwestern, and bottom of the pond. Sediment impact in the Gator Pond is the result of groundwater impacted with Tc-99 discharging to the Gator Pond and the Tc-99 subsequently settling in the bottom of the Gator Pond sediments.

Gator Pond represents an industrial use area of the site and is not a source of drinking water; therefore, these concentrations do not represent any undue risk to the health and safety of the workforce or the public, and do not indicate a potential for off-site impact. This area will continue to be monitored, and potential remediation options will be evaluated during the FS and approved by SCDHEC in the ROD as required by the Consent Agreement. Until remediation is performed, funding to clean-up the impact was incorporated in the Decommissioning Funding Plan (DFP) required by NRC regulations and the site's NRC license. The most recent triennial DFP update was submitted May of 2022.

Mill Creek Corridor

During Phase I of the RI, 17 sediment sample locations within Upper and Lower Sunset Lake were identified to contain elevated concentrations of U in sediments. To further assess the vertical and horizontal extent of the potential impact, additional sampling was performed at these locations in Phase II, extending to greater depths. The results of this additional sediment sampling are presented in **Table 6**.

Table 6: Mill Creek Sediment Sampling Results

Sample ID	Gross Analyte Activity (pCi/g)				SOF	SOF	%
	U-234	U-235	U-238	Tc-99	Residential	Industrial	Moist.
SED-19P2-0-6	19.1	1.02	5.15	0.208	**2.0**	0.1	87.8
SED-19P2-6-12	27	1.22	6.42	1.12	**2.7**	0.1	87.6
SED-19P2-12-18	2.05	0.0675	1.51	0	0.3	0.0	68.6
SED-20P2-0-6	1.72	0.0212	1.67	0.638	0.3	0.0	39.1
SED-20P2-6-12	2.13	0.094	1.5	0.265	0.3	0.0	36.2
SED-20P2-12-24	1.43	0.145	1.89	0.208	0.3	0.0	32.4
SED-20P2-24-36	1.49	0.0841	1.4	0.7	0.3	0.0	32.5
SED-21P2-0-6	13.2	0.393	3.79	1.17	**1.4**	0.0	77.5
SED-21P2-6-12	2.19	0.131	1.51	0.528	0.3	0.0	72.7
SED-21P2-12-24	1.56	0.0344	1.07	0.225	0.2	0.0	45.8
SED-21P2-24-36	1.75	0	0.97	0.0586	0.2	0.0	52.5
SED-22P2-0-6	6.21	0.257	2.24	0.304	0.7	0.0	61.1
SED-22P2-6-12	1.97	0.192	0.971	0.0333	0.2	0.0	53
SED-22P2-12-24	1.09	0.035	0.838	0	0.1	0.0	36.5
SED-22P2-24-36	1.81	0.225	1.08	0	0.2	0.0	25.8
SED-38P2-0-6	60.9	3.12	17	2.13	**6.4**	0.2	74.5
SED-38P2-6-12	4.19	0.276	2.52	0.116	0.5	0.0	67.2
SED-38P2-12-24	3.01	0.188	1.71	0.174	0.4	0.0	76
SED-38P2-24-36	1.74	0.0835	1.6	0.128	0.3	0.0	44.3
SED-39P2-0-6	2.22	0.0959	1.81	0.626	0.3	0.0	45.1
SED-39P2-6-12	2.37	0.0929	1.85	0.732	0.4	0.0	43.7

Table 6: Mill Creek Sediment Sampling Results (continued)

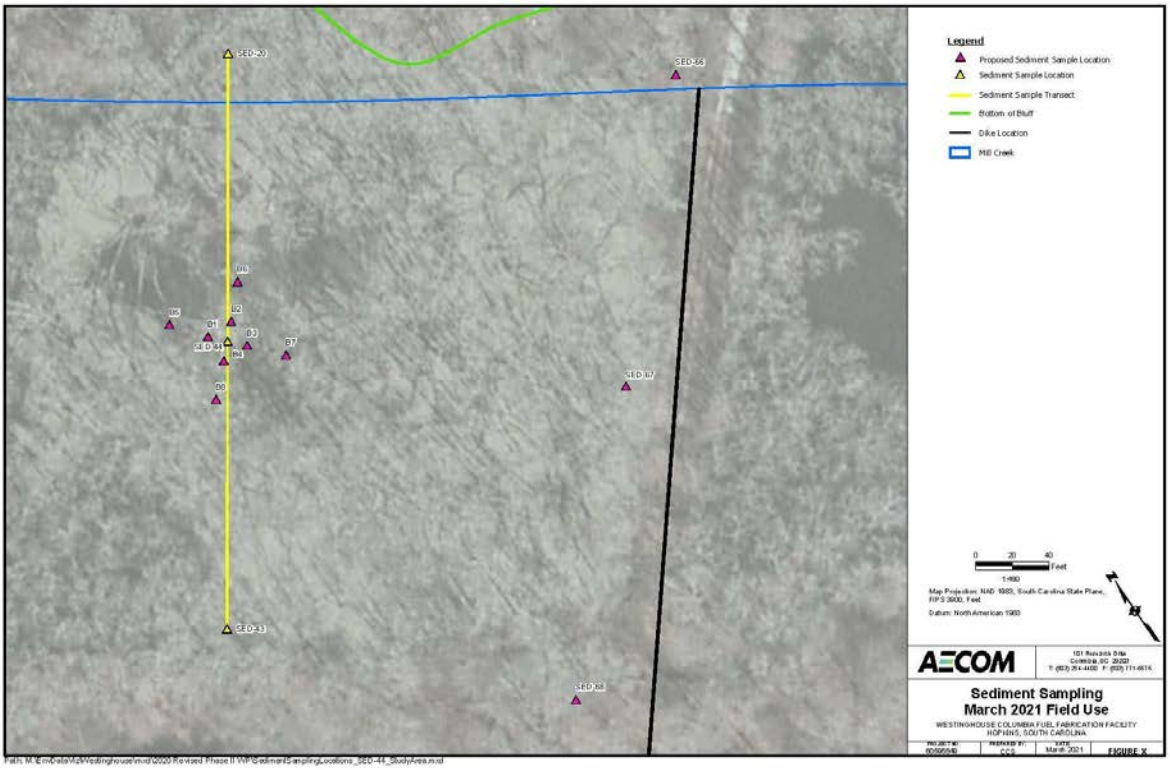
Sample ID	Gross Analyte Activity (pCi/g)				SOF	SOF	%
	U-234	U-235	U-238	Tc-99	Residential	Industrial	Moist.
SED-39P2-12-24	1.58	0.243	1.63	0.536	0.3	0.0	43.3
SED-39P2-24-36	1.86	0.181	1.96	0.281	0.3	0.0	33.1
SED-40P2-0-6	4.69	0.362	2.29	0.4	0.6	0.0	32.2
SED-40P2-6-12	1.34	0.0449	1.43	0.199	0.2	0.0	72.3
SED-40P2-12-24	1.17	0	1.09	0.085	0.2	0.0	34.8
SED-40P2-24-36	1.36	0.0645	1.23	0.137	0.2	0.0	32
SED-41P2-0-6	17	0.789	3.38	1.12	**1.7**	0.0	24.7
SED-41P2-6-12	1.84	0.0733	1.29	0.038	0.2	0.0	85.8
SED-41P2-12-24	2.14	0	1.87	0.216	0.3	0.0	67.6
SED-41P2-24-36	0.806	0.06	0.925	0.185	0.1	0.0	78.7
SED-42P2-0-6	31.1	1.18	7.57	1.21	**3.1**	0.1	92
SED-42P2-6-12	4.34	0.248	1.68	0.137	0.5	0.0	84.3
SED-42P2-12-24	3.19	0.135	1.5	0.0327	0.4	0.0	70.5
SED-42P2-24-36	1.57	0.0342	1.58	0	0.2	0.0	71.3
SED-43P2-0-6	5.13	0.211	1.87	0.226	0.6	0.0	71.4
SED-43P2-6-12	16	0.873	4.5	0.00633	**1.7**	0.1	80.3
SED-44P2-0-6	435	24.3	98.7	9.42	**44.0**	**1.3**	88.9
SED-44P2-6-12	34	1.57	8.74	4.33	**3.7**	0.1	84.9
SED-44P2-12-18	3.34	0.0293	2.7	0	0.5	0.0	73.3
SED-45P2-0-6	6	0.325	1.92	0	0.6	0.0	87.3
SED-45P2-6-12	2.95	0.0545	1.48	0	0.3	0.0	75.7
SED-46P2-0-6	11.6	0.251	2.85	0	**1.1**	0.0	89.4
SED-46P2-6-12	10.4	0.419	3.55	0.11	**1.1**	0.0	83.8
SED-47P2-0-6	3.32	0.0528	1.95	0	0.4	0.0	76
SED-47P2-6-12	4.86	0.0999	2.41	0	0.6	0.0	89.4
SED-48P2-0-6	2.49	0.154	2.24	0	0.4	0.0	70.3
SED-48P2-6-12	2.11	0.169	1.77	0	0.3	0.0	36.8
SED-48P2-12-18	1.63	0.205	1.85	0	0.3	0.0	33.8
SED-49P2-0-6	5.1	0.142	2.25	0	0.6	0.0	77.7
SED-49P2-6-12	2.85	0.0436	2.04	0	0.4	0.0	70.4
SED-50P2-0-6	6.83	0.351	2.65	0	0.8	0.0	83.9
SED-50P2-6-12	2.33	0.152	1.83	0	0.3	0.0	66
SED-50P2-12-24	1	0.139	0.808	0	0.2	0.0	59.4

The majority of the Phase II RI sediment results are consistent with the results collected from Phase I, showing only residual levels of U contamination in the surficial layer of sediment of Mill Creek. However, there is one significant sediment result that stands out. Location SED-44 (0-6") was significantly more elevated than any of the surrounding sediment locations collected during either the Phase I or Phase II sampling. This prompted an additional sampling campaign to further bound the extent of potential impact in this area.

Mill Creek Corridor Bounding Sampling

During the RI Phase II bounding efforts, a sampling plan was developed and submitted to SCDHEC for review and approval. This plan established two bounding "boxes" placed around the location of SED-44. One box (with 4 corner points) was approximately 10 m^2 in area, and the other was approximately 100 m^2 in area. An additional sediment transect was also placed between the location of SED-44 and the Upper Sunset Lake dike which is the impounding barrier downstream. Samples SED-66, SED-67, and SED-68 were collected from this transect to determine if additional depositional areas could be identified further downstream of SED-44. The approximate locations of these bounding samples are shown in **Figure 5**.

Figure 5 – SED-44 Bounding Sample Locations



The original SED-44 results are presented alongside the bounding sample results in **Table 7**. Locations SED-B1, SED-B2, SED-B3, and SED-B4 represent the corner points of the 10 m^2

bounding area, and SED-B5, SED-B6, SED-B7, and SED-B8 represent the corner points of the 100 m^2 bounding area. SED-66, SED-67, and SED-68 make up the new sediment transect that was placed approximately 25 ft upstream of the Upper Sunset Lake dike.

Table 7: SED-44 Bounding Sediment Sampling Results

Sample ID	Gross Analyte Activity (pCi/g)				SOF	SOF	%
	U-234	U-235	U-238	Tc-99	Residential	Industrial	Moist.
SED-44P2-0-6	435.0	24.3	98.7	9.4	**44.0**	**1.3**	88.9
SED-44P2-6-12	34.0	1.6	8.7	4.3	**3.7**	0.1	84.9
SED-44P2-12-18	3.3	0.0	2.7	0.0	0.5	0.0	73.3
SED-B1-0-6	401.0	26.9	95.7	23.7	**42.3**	**1.3**	83.6
SED-B1-6-12	3.2	0.3	2.0	0.3	0.4	0.0	72.3
SED-B2-0-6	267.0	15.8	60.3	19.1	**27.8**	0.8	89.1
SED-B2-6-12	5.5	0.4	2.3	0.7	0.7	0.0	77.1
SED-B3-0-6	47.2	2.6	13.1	4.4	**5.1**	0.2	82.9
SED-B3-6-12	90.6	4.8	22.1	5.3	**9.4**	0.3	85.3
SED-B4-0-6	33.6	2.3	7.8	1.1	**3.5**	0.1	94.2
SED-B4-6-12	10.4	0.4	3.5	0.4	**1.1**	0.0	73.5
SED-B5-0-6	30.0	1.4	7.3	0.6	**3.0**	0.1	94.6
SED-B5-6-12	4.4	0.2	2.3	1.4	0.6	0.0	72.9
SED-B6-0-6	30.4	1.8	6.9	1.1	**3.1**	0.1	92.2
SED-B6-6-12	8.0	0.4	2.9	1.4	0.9	0.0	73
SED-B7-0-6	24.7	1.1	6.3	3.7	**2.7**	0.1	78
SED-B7-6-12	5.5	0.3	3.2	0.5	0.7	0.0	77.6
SED-B8-0-6	5.5	0.3	3.2	0.9	0.7	0.0	98
SED-B8-6-12	37.6	1.9	8.7	1.4	**3.8**	0.1	90.5
SED-66-0-6	14.5	0.6	4.2	2.2	**1.6**	0.0	63.3
SED-66-6-12	4.8	0.3	2.5	0.8	0.6	0.0	49
SED-66-12-24	1.5	0.2	1.2	0.2	0.2	0.0	51.7
SED-67-0-6	14.8	0.7	4.4	1.8	**1.6**	0.0	86.5
SED-67-6-12	2.8	0.1	1.4	0.6	0.4	0.0	70.4
SED-67-12-24	2.6	0.1	1.4	0.5	0.3	0.0	71.8
SED-68-0-6	1.0	0.0	1.5	0.1	0.2	0.0	28
SED-68-6-12	1.3	0.1	1.1	0.0	0.2	0.0	26.3
SED-68-12-24	0.1	1.2	0.0	0.6	0.2	0.0	26.8

As can be seen from the results above, locations SED-B1 and SED-B2 still have elevated U concentrations in the surficial layer indicating that the area of the interest around SED-44 may be slightly greater than $10m^2$. However, the results from all the surrounding sample areas are consistent with the levels seen throughout Upper and Lower Sunset Lake and indicate that while

the area may be slightly greater than 10 m^2, it is less than 100 m^2 and appears to be isolated to this small area in Upper Sunset Lake. The elevated concentrations also appear to be limited to the surficial layer, and do not extend deeper into the sediment. Lastly it can be noted above that the sample media itself was very high in percent moisture because these samples were mostly collected from areas under standing water. However, the analytical laboratory results are reported dried.

When evaluating radiological samples, the water (moisture content) in the sample is an efficient shield to radioactivity, reducing the amount of radioactivity transmitted into the environment. The water also adds weight to the overall sample mass. If the water content of a sediment sample is removed through heating and drying the sample, then the sample results are not necessarily reflective of the actual sediment that exists in the environment, which is covered by and saturated with water. Therefore, it is appropriate to interpret the results moving forward in two ways, Dry (as reported by the laboratory), and Wet (accounting for moisture in the sample). It is also appropriate to focus on the surficial sediment layer, since the underlying sediment concentrations are much lower, and the surficial layer provides a bounding case.

Next an area average calculation was performed on the 10 m^2 and 100 m^2 bounding areas. Utilizing the laboratory reported results (dry), a straight average was performed on the 10m^2 bounding area, giving equal weighting to each sample. The 10 m^2 area average results are presented in **Table 8**. A weighted average was applied to the 100 m^2 area, assigning a 10% area weight to the 10 m^2 average, and even weighting to the remaining 4 corner points. The 100m^2 area average results are presented in **Table 9**.

The 10 m^2 area average calculation was repeated utilizing moisture corrected activity (wet), which better represents the "as found" condition of the sediment, since it exists in extremely wet conditions nearly all year round. These results are reported in **Table 10**. The moisture corrected results were also used to calculate a weighted average for the 100 m^2 bounding area. These results are reported in **Table 11**.

Table 8: SED-44 10 m^2 Bounding Area Average (Dry)

10 m^2 Bounding area, 0-6 inch layer, dried sample activity

Sample ID	Gross Analyte Activity (pCi/g)				Calculated Enrichment (%)	SOF Resid.	SOF Indust.	% of area	Gross Analyte Activity (pCi/g)				SOF Resid.	SOF Indust.
	U-234	U-235	U-238	Tc-99					U-234	U-235	U-238	Tc-99		
SED-44P2-0-6	435.0	24.3	98.7	9.4	3.7	**44.0**	**1.3**	20%	87.0	4.9	19.7	1.9	**8.8**	0.3
SED-B1-0-6	401.0	26.9	95.7	23.7	4.2	**42.3**	**1.3**	20%	80.2	5.4	19.1	4.7	**8.5**	0.3
SED-B2-0-6	267.0	15.8	60.3	19.1	4.0	**27.8**	0.8	20%	53.4	3.2	12.1	3.8	**5.6**	0.2
SED-B3-0-6	47.2	2.6	13.1	4.4	3.0	**5.1**	0.2	20%	9.4	0.5	2.6	0.9	**1.0**	0.0
SED-B4-0-6	33.6	2.3	7.8	1.1	4.4	**3.5**	0.1	20%	6.7	0.5	1.6	0.2	0.7	0.0
Area Average									*236.8*	*14.4*	*55.1*	*11.5*	*24.6*	*0.7*

Table 9: SED-44 100 m^2 Bounding Area Average (Dry)

100 m^2 Bounding area, 0-6 inch layer, dried sample activity

Sample ID	Gross Analyte Activity (pCi/g)				Calculated Enrichment (%)	SOF Resid.	SOF Indust.	% of area	Gross Analyte Activity (pCi/g)				SOF Resid.	SOF Indust.
	U-234	U-235	U-238	Tc-99					U-234	U-235	U-238	Tc-99		
10M2-0-6-WA	236.8	14.4	55.1	11.5	N/A	**24.6**	0.7	10%	23.7	1.4	5.5	1.2	**2.5**	0.1
SED-B5-0-6	30.0	1.4	7.3	0.6	2.9	**3.0**	0.1	23%	6.8	0.3	1.6	0.1	0.7	0.0
SED-B6-0-6	30.4	1.8	6.9	1.1	4.0	**3.1**	0.1	23%	6.8	0.4	1.6	0.3	0.7	0.0
SED-B7-0-6	24.7	1.1	6.3	3.7	2.8	**2.7**	0.1	23%	5.6	0.3	1.4	0.8	0.6	0.0
SED-B8-0-6	5.5	0.3	3.2	0.9	1.4	0.7	0.0	23%	1.2	0.1	0.7	0.2	0.2	0.0
Weighted Average									*44.1*	*2.5*	*10.8*	*2.6*	*4.6*	*0.1*

Table 10: SED-44 10 m^2 Bounding Area Average (Wet)

10 m^2 Bounding area, 0-6 inch layer, wet sample activity (moisture corrected)

Sample ID	Gross Analyte Activity (pCi/g)				Calculated Enrichment (%)	SOF Resid.	SOF Indust.	% of area	Gross Analyte Activity (pCi/g)				SOF Resid.	SOF Indust.
	U-234	U-235	U-238	Tc-99					U-234	U-235	U-238	Tc-99		
SED-44P2-0-6	48.3	2.7	11.0	9.4	3.7	**5.3**	0.1	20%	9.7	0.5	2.2	1.9	**1.1**	0.0
SED-B1-0-6	65.8	4.4	15.7	23.7	4.2	**8.0**	0.2	20%	13.2	0.9	3.1	4.7	**1.6**	0.0
SED-B2-0-6	29.1	1.7	6.6	19.1	4.0	**3.9**	0.1	20%	5.8	0.3	1.3	3.8	0.8	0.0
SED-B3-0-6	8.1	0.4	2.2	4.4	3.0	**1.1**	0.0	20%	1.6	0.1	0.4	0.9	0.2	0.0
SED-B4-0-6	1.9	0.1	0.5	1.1	4.4	0.3	0.0	20%	0.4	0.0	0.1	0.2	0.1	0.0
Area Average									*30.6*	*1.9*	*7.2*	*11.5*	*3.7*	*0.1*

Table 11: SED-44 100 m^2 Bounding Area Average (Wet)

100 m^2 Bounding area, 0-6 inch layer, wet sample activity (moisture corrected)

Sample ID	Gross Analyte Activity (pCi/g)				Calculated Enrichment (%)	SOF Resid.	SOF Indust.	% of area	Gross Analyte Activity (pCi/g)				SOF Resid.	SOF Indust.
	U-234	U-235	U-238	Tc-99					U-234	U-235	U-238	Tc-99		
10M2-0-6-WA	30.6	1.9	7.2	11.5	N/A	**3.7**	0.1	10%	3.1	0.2	0.7	1.2	0.4	0.0
SED-B5-0-6	1.6	0.1	0.4	0.6	2.9	0.2	0.0	23%	0.4	0.0	0.1	0.1	0.0	0.0
SED-B6-0-6	2.4	0.1	0.5	1.1	4.0	0.3	0.0	23%	0.5	0.0	0.1	0.2	0.1	0.0
SED-B7-0-6	5.4	0.2	1.4	3.7	2.8	0.7	0.0	23%	1.2	0.1	0.3	0.8	0.2	0.0
SED-B8-0-6	0.1	0.0	0.1	0.9	1.4	0.1	0.0	23%	0.0	0.0	0.0	0.2	0.0	0.0
Weighted Average									*5.2*	*0.3*	*1.3*	*2.6*	*0.7*	*0.0*

Dose and Risk Assessment

A dose and risk assessment was performed based on the sample results from SED-44 and LOC-5 to evaluate any potential risks to the work force and public health and safety. The average concentrations reported in Table 4 and Tables 8 through 11 above were used to develop a dose and risk assessment of the elevated areas of Sunset Lake (SED-44) and the Middle Ditch (LOC-5). RESRAD-ONSITE Version 7.2 was used to calculate potential dose and risk to the evaluated receptor (residential farmer or industrial worker, as appropriate). RESRAD-ONSITE (formerly RESRAD) is a computer model developed by the Argonne National Laboratory (ANL) for the U.S. Department of Energy (DOE). RESRAD-ONSITE calculates site-specific risk and dose to various future hypothetical on-site receptors at sites with residual radioactive materials.

The use of the RESRAD family of codes for modeling risk and dose has become an acceptable regulatory standard. RESRAD-ONSITE Version 7.2 incorporates recently (2014) updated dose conversion and morbidity slope factors calculated by Oak Ridge National Laboratory (ORNL). These updated factors are presented in the ORNL document entitled Calculation of Slope Factors and Dose Coefficients (ORNL 2014) and are included in the DCFPAK 3.02 library of the RESRAD-ONSITE Version 7.2 model. The derivations of these factors are based on updated decay chain and nuclide energy data presented in International Commission on Radiological Protection Publication (ICRP)-107, Nuclear Decay Data for Dosimetric Calculations (ICRP 2008).

Middle Ditch

Using the default Residential Farmer scenario, and the Industrial Worker scenario in RESRAD-ONSITE, 4 separate dose and risk models were created using both maximum soil concentrations (LOC-5 – "worst case scenario") and average soil concentrations results (better representative of site conditions):

- Middle Ditch (Residential – Max Soil Concentrations)
- Middle Ditch (Residential - Average Soil Concentrations)
- Middle Ditch (Industrial - Max Soil Concentrations)
- Middle Ditch (Industrial - Average Soil Concentrations)

Each Dose and Risk assessment was evaluated for a period of 100 years. The Industrial - Average soil concentrations are considered most reflective of the current site conditions. The Residential conditions and the maximum soil concentrations are only reported as a "worst case scenario". These conditions would assume that a resident farmer would be allowed to establish a homestead in the area, without any remediation or control placed on the property (not a realistic future use scenario). Average and maximum soils concentrations were taken from Table 4. RESRAD-ONSITE parameters that differ from the default Residential Farmer or Industrial Worker settings are shown in **Table 12** below.

Table 12: RESRAD-ONSITE Dose and Risk Parameters

Area	Parameter	Max Soil Concentrations	Average Soil Concentrations
Middle Ditch	U-234 (pCi/g)	113.0	39.18
	U-235 (pCi/g)	5.16	1.94
	U-238 (pCi/g)	21.50	7.77
	Tc-99 (pCi/g)	0.00	2.53
	Area (m^2)	11,600	11,600
	Thickness (m)	0.3	0.3
	Length parallel to aquifer (m)	107.7	107.7

Using the parameters listed in Table 12, four separate dose evaluations, and four separate risk reports were generated. These eight individual dose and risk reports combined represent over 200 pages of information and are available for review upon request. For the purposes of this discussion, the maximum dose and risk reported over the 100 year period for each scenario is summarized in **Table 13** below.

Table 13: Middle Ditch Dose & Risk Summary

	Max Soil Concentrations		Average Soil Concentrations	
Evaluated Receptor	Max. Dose (mRem/yr)	Max. Risk	Max. Dose (mRem/yr)	Max. Risk
Resident Farmer	16.45	1.8E-4	5.77	6.4E-5
Industrial Worker	1.57	2.2E-5	0.57	8.2E-6

The Middle Ditch is on WCFFF property and is not publicly accessible. It is within a controlled Industrial area that is fenced, monitored, and patrolled by site security. Site personnel also monitor the area and perform environmental sampling. However, should a member of the public intentionally or inadvertently access the area, even under the potential worst-case scenario (max soil concentration), there is no risk of excessive exposure, as the calculated maximum exposure is below the threshold of 25 mRem/yr for unrestricted release.

The Industrial Worker Scenario using average soil concentrations is a more realistic dose and risk model. The Industrial Worker Scenario shows that the anticipated dose to the CFFF work force is de minimums, and that the risk is well within acceptable ranges. Therefore, no immediate action is required based on this assessment, and evaluation of remedial alternatives will be performed in the FS. Until remediation is performed, funding to clean-up the impact was incorporated in the Decommissioning Funding Plan (DFP) required by NRC regulations and the site's NRC license. The most recent triennial DFP update was submitted May of 2022, and the projected decommissioning costs for this area were incorporated.

Mill Creek

Using the default Residential Farmer scenario in RESRAD-ONSITE, 8 separate dose and risk models were created using both dry (laboratory reported) and wet (moisture corrected) results:

- SED-44 Area of Interest (dry)
- SED-44 Area of Interest (wet)
- SED-44 10m^2 average (dry)
- SED-44 10m^2 average (wet)
- SED-44 100m^2 average (dry)
- SED-44 100m^2 average (wet)
- Mill Creek (dry)
- Mill Creek (wet)

Each Dose and Risk assessment was evaluated for a period of 100 years. The wet conditions are considered most reflective of the current site conditions. Mill Creek, and subsequently Upper and Lower Sunset Lake remain saturated throughout the year. Therefore, the modeled scenario for wet conditions uses the moisture corrected sample activity, which assumes that the sediment is saturated, and has at least 12 inches (0.3 m) of water cover. The actual measured depth of water at the time of sampling in this area measured between 13.5 and 44 inches.

The Dry conditions are only reported as a "worst case scenario" in the extremely unlikely event that Mill Creek would run dry, or the area would experience an extreme and unforeseen drought. Therefore, the modeled scenario for dry conditions uses the laboratory dried sample activity and assumes no water cover. RESRAD-ONSITE parameters that differ from the default Residential Farmer settings are shown in **Table 14**.

Table 14: RESRAD-ONSITE Dose and Risk Parameters

Area	Parameter	Wet Conditions	Dry Conditions
SED-44 Area of Interest	U-234 (pCi/g)	48.3	435
	U-235 (pCi/g)	2.7	24.3
	U-238 (pCi/g)	11	55.1
	Tc-99 (pCi/g)	9.4	9.4
	Area (m^2)	10	10
	Thickness (m)	0.15	0.15
	Length parallel to aquifer (m)	1	1
	Cover thickness (m)	0.3	0
	Cover Density (g/cc)	1	N/A
SED-44 10 m^2 Ave	U-234 (pCi/g)	30.6	236.8
	U-235 (pCi/g)	1.9	14.4
	U-238 (pCi/g)	7.2	55.1
	Tc-99 (pCi/g)	11.5	11.5
	Area (m2)	10	10
	Thickness (m)	0.15	0.15
	Length parallel to aquifer (m)	1	1
	Cover thickness (m)	0.3	0
	Cover Density (g/cc)	1	N/A
SED-44 100 m^2 Ave	U-234 (pCi/g)	5.2	44.1
	U-235 (pCi/g)	0.3	2.5
	U-238 (pCi/g)	1.3	10.8
	Tc-99 (pCi/g)	2.6	2.6
	Area (m2)	100	100
	Thickness (m)	0.15	0.15
	Length parallel to aquifer (m)	10	10
	Cover thickness (m)	0.3	0
	Cover Density (g/cc)	1	N/A
Mill Creek	U-234 (pCi/g)	4.5	37.2
	U-235 (pCi/g)	0.2	1.9
	U-238 (pCi/g)	1.1	9.4
	Tc-99 (pCi/g)	1	1
	Area (m2)	14500	14500
	Thickness (m)	0.15	0.15
	Length parallel to aquifer (m)	381	381
	Cover thickness (m)	0.3	0
	Cover Density (g/cc)	1	N/A

Using the parameters listed in Table 14, eight separate dose evaluations, and eight separate risk reports were generated. These sixteen individual dose and risk reports combined represent over 400 pages of information and are available for review upon request. The maximum dose and risk reported over the 100 year period for each scenario is summarized in **Table 15**.

Table 15: Mill Creek Dose & Risk Summary

Area	Wet Conditions		Dry Conditions	
	Max. Dose (mRem/yr)	**Max. Risk**	**Max. Dose (mRem/yr)**	**Max. Risk**
SED-44 Area of Interest	1.843	1.44E-05	17.13	1.88E-04
SED-44 10 m^2 Ave	1.18	9.24E-06	10.5	1.23E-04
SED-44 100 m^2 Ave	0.39	3.69E-06	2.567	3.47E-05
Mill Creek	0.421	4.56E-06	3.111	4.59E-05

The SED-44 Area of Interest is on WCFFF property and is not publicly accessible. It is within a controlled area that is monitored and patrolled by site security. Site personnel also monitor the area and perform environmental sampling. However, should a member of the public intentionally or inadvertently access the area, even under the potential worst case scenario, there is no risk of excessive exposure, as the calculated maximum exposure is below the threshold of 25 mRem/yr for unrestricted release.

Rather than making assumptions about the quantity of radioactive material present in the area, the dose and risk assessment summarized in Table 15 shows that, even under the potential worst case scenario, projected doses to a member of the public would not exceed regulatory criteria or require any type of posting or access restriction. No immediate action is required based on this assessment, and evaluation of remedial alternatives will be performed in the FS. Until remediation is performed, funding to clean-up the impact was incorporated in the Decommissioning Funding Plan (DFP) required by NRC regulations and the site's NRC license. The most recent triennial DFP update was submitted May of 2022.

Conclusions

Evaluation of the elevated soil and sediment results identified on WCFFF property could lead to three possible conclusions. First, the results could indicate an immediate need to take remedial action based on the determined level of risk. Second, the results could indicate that further evaluation is warranted in the FS that will be performed as part of the Consent Agreement, and third, the results could indicate that no action is necessary.

Based on this evaluation of the Phase II RI sediment sampling results, the follow up bounding sampling results, and the dose modeling/associated risk estimates, no immediate action is

necessary. The results of these comprehensive sampling campaigns have defined the limited horizontal and vertical extent of soil and sediment impact. There are no current or future concerns for contaminants to potentially move offsite, and the documented impacts pose no potentially significant threat to plant workers, the general public or the environment. Continued environmental monitoring per the site's NRC license and WCFFF's procedure RA-434, Environmental Data Management, will be performed, and further evaluation in the areas of the Middle Ditch, Gator Pond and the Mill Creek Corridor will be included in the Final RI report and in the FS required by the Consent Agreement. In the interim, projected future decommissioning costs for these areas were incorporated into the triennial DFP update, which was submitted in May 2022, to ensure that the costs associated with future remedial efforts are appropriately captured.

References

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RA-433, Rev 2 - WCFFF Environmental Remediation Procedure, dated April 28, 2022.

RA-434, Rev 1 - WCFFF Environmental Data Management Procedure, dated November 11, 2021.

Appendix W
2020 Leidos Sediment Sampling and Sediment Transect TBD

Technical Basis Document

Sediment Sampling and Sediment Transect Results for the
Westinghouse Columbia Fuel Fabrication Facility (WCFFF), Revision 1

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July 13, 2020

Background

In July of 2019, the Westinghouse Columbia Fuel Fabrication Facility (WCFFF) collected 18 surficial (top six inches) sediment samples from areas of the site, including the on-site ditches, Sanitary Lagoon, East Lagoon, and Mill Creek. It was expected that samples from the Sanitary Lagoon, and East Lagoon would contain uranium (U), as these are active work areas within the WCFFF, and are known to be impacted. Additionally, one location within a storm water ditch, two locations in Upper Sunset Lake and one location in Lower Sunset Lake were identified to contain U concentrations above the residential use screening level (NUREG 1757, Vol. 2, Rev. 1, Appendix H), but below industrial use screening levels. These samples were collected from locations on the WCFFF property; therefore, the identification of U concentrations in the sediment does not pose any undue risk to public health and safety.

A follow up sediment sampling campaign was conducted in November of 2019. Westinghouse collected sediment samples from Mill Creek along ten transects with an additional 28 sediment sampling locations, to obtain additional sediment quality data. Generally, there were three sample locations per transect; two within a few feet of the edges of the Mill Creek floodplain and one in the presumed middle of the flow channel. In cases where Mill Creek is significantly wider due to impoundment, four sediment sample locations were collected along the transect. Sediment samples above the Entrance Dike (SED 51 through SED-56) and below the Lower Sunset Lake Dike (SED-29 through SED-37) were collected to a total depth of 12 inches. In a few locations, the sample core was up to 16 inches in length.

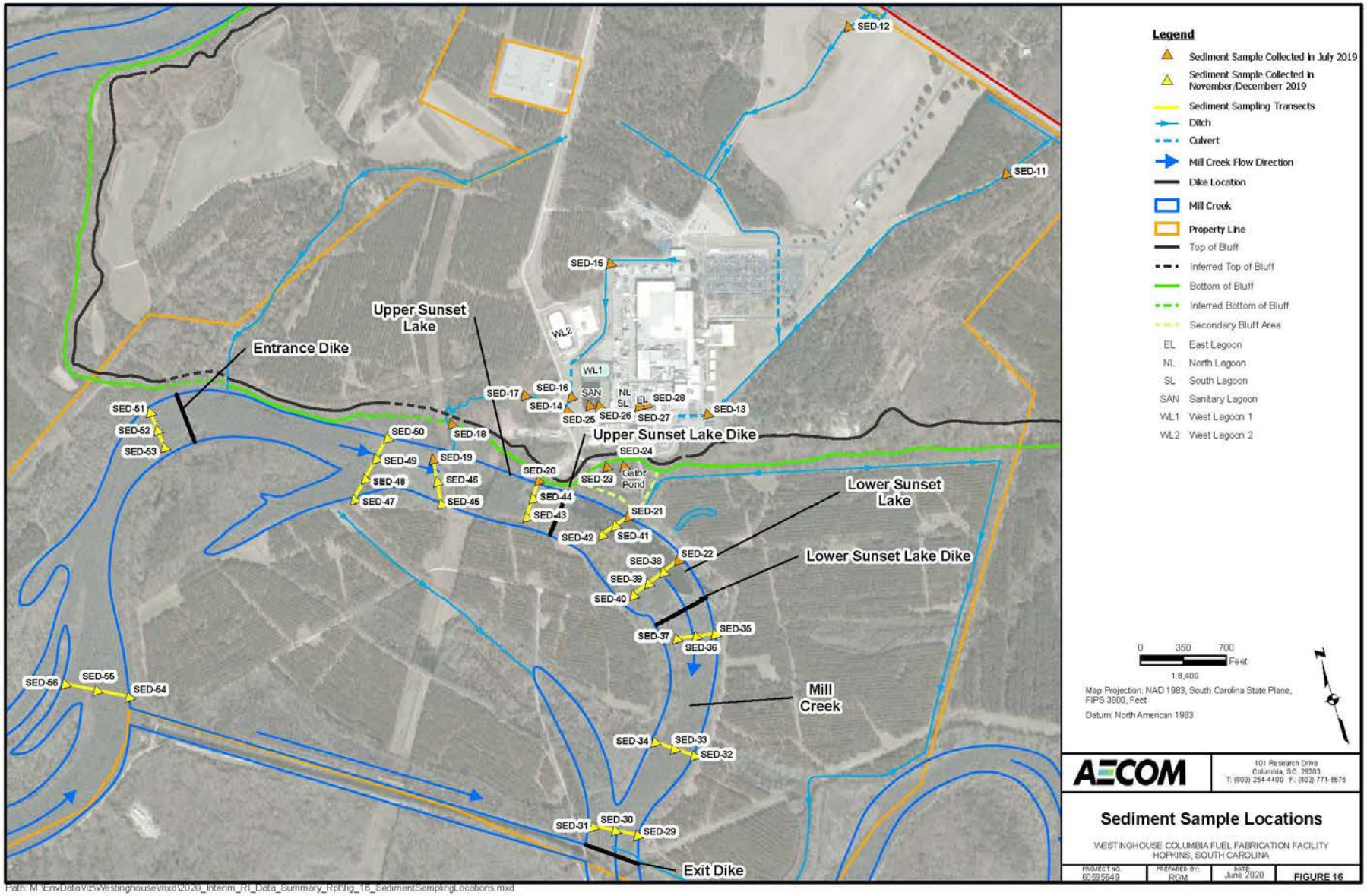
The sediment transect sampling locations are shown on Figure 16 from the Final Remedial Investigation (RI) Data Summary Report (LTR-RAC-20-62), and are presented in Figure 1 of this report.

Upstream Areas

Sediment samples were collected at eight locations to assess background sediment quality. These sediment samples were collected at locations that are upstream of the surface water flow from the site, where only naturally occurring radioactivity is expected to be present in the sediment. Locations SED-11 and SED-12 were each collected from a storm water ditch and are representative of the naturally occurring sediment within the storm water ditches as it enters the WCFFF site boundary.

Locations SED-51, SED-52, and SED-53 were collected just upstream of the site Entrance Dike, and locations SED-54, SED-55, and SED-56 were collected well upstream within the flow path of Mill Creek. These six sediment sampling locations are representative of the naturally occurring background sediment within Mill Creek, which Upper and Lower Sunset Lakes are part of.

FIGURE 1 – Sediment Transect Sampling Locations



Site Features of Interest

Sediment samples were collected from eight locations across the site in storm water ditches. These locations were selected as they best represent the initial areas where contaminants from the site could potentially migrate. Sediment sample locations SED-13 through SED-18 are representative of the flow path of storm water across the site as it travels towards Mill Creek. Sediment samples SED-23 and SED-24 were collected from a surface water body known as the Gator Pond.

Sludge from the Sanitary Lagoon (SED-25 and SED-26), and the East Lagoon (SED-27 and SED-28) were also sampled; however these areas are known to be impacted and represent active wastewater treatment areas of the site.

Upper and Lower Sunset Lakes

Water depths in Upper and Lower Sunset Lakes are more profound than the non-impounded sections of Mill Creek. In the case of Lower Sunset Lake, a boat was the primary method used to reach each sampling location. In cases where water is shallow (i.e. SED-34, Figure 1) and not accessible by boat, hip waders were used to access the sediment sampling location. Previously collected sediment samples (SED-19 through SED-22) from this area of the site were surficial collections only.

Downstream Areas

Three of the sediment sampling transects (Figure 1) are downstream of the Lower Sunset Lake dike. This portion of Mill Creek is heavily forested, lowland swamp with minimal flow. The majority of the flow in Mill Creek through the Westinghouse property is by way of the diversion canal along the southern property boundary.

The Exit Dike (Figure 1) is located just north of the diversion canal and contains a drainage pipe that connects the water flowing from the section of Mill Creek that flows through Upper and Lower Sunset Lakes to the water flowing down the man-made diversion canal. Although not fully impounding, the depth of the surface water in Mill Creek appears to increase downstream closer to the Exit Dike.

Sampling Results

Sediment samples were sent to an off-site laboratory for analysis of U, Tc-99, Fluoride, and Nitrate. Reported Fluoride and Nitrate results were below the EPA Regional Screening Levels for residential use, therefore comparisons to industrial screening levels was not necessary.

The radiological screening levels in Table 1 are based on single contaminant concentrations for each isotope. When multiple radionuclides are present a "sum of fractions" (SOF) approach should be used to assess compliance with the concentration limit. The SOF for each unique sample is calculated using the following equation:

$$SOF = \frac{Conc_{U-234}}{SSL_{,U-234}} + \frac{Conc_{U-235}}{SSL_{,U-235}} + \frac{Conc_{U-238}}{SSL_{,U-238}} + \frac{Conc_{Tc-99}}{SSL_{,Tc-99}}$$

The values in Table 1 represent soil concentrations of individual radionuclides, using generally accepted exposure parameters, that would be deemed in compliance with the dose limits specified in 10 CFR 20.1402 (e.g. equivalent to 25 mrem/year under Residential Use).

Table 1: Residential and Industrial Use Screening Levels

Contaminant	Residential Screening Level	Industrial Screening Level	Basis of Screening Level
Uranium - 234	13 pCi/g (0.002 mg/Kg)	3,310 pCi/g (0.5 mg/kg)	NUREG 1757, Vol. 1-2 , Appendix H[1]
Uranium – 235	8 pCi/g (3.704 mg/Kg)	39 pCi/g (18 mg/kg)	NUREG 1757, Vol. 1-2 , Appendix H[1]
Uranium – 238	14 pCi/g (41.667 mg/Kg)	179 pCi/g (533 mg/kg)	NUREG 1757, Vol. 1-2 , Appendix H[1]
Total Uranium	12.69 pCi/g (5.320 mg/Kg)	2,933 pCi/g (1,230 mg/kg)	Calculated based on NUREG 1757, Vol. 2, Rev. 1-2, Appendix H[2]
Technetium - 99	19 pCi/g (1.110 E -03 mg/Kg)	89,400 pCi/g (5.2 mg/Kg)	NUREG 1757 Vol. 1-2 , Appendix H[1]

The Residential Use Screening Levels (RUSLs) were determined using highly conservative assumptions to develop an exposure scenario where it is assumed that a person would construct a house on the property, live on the property, drink the groundwater, and eat produce farmed on the property. For this reason, the RUSLs are provided for reference, but samples collected from within the CFFF property boundary will ultimately be compared to the Industrial Use Screening Level (IUSL), which is representative of the current and future use of the property.

The IUSLs are also based on conservative assumptions, but these assumptions better represent the current and future use of the WCFFF, as it is assumed that the industrial worker will not live on the property, or engage in the consumption of any food or water produced on the facility property. The sediment sample analytical results from the July 2019 sampling event are provided for reference in Table 2, along with the calculated SOF for both Residential and Industrial use scenarios.

Table 2: June 2019 Sediment Sampling Results

Sample ID	Analyte (pCi/g)				SOF	SOF
	U-234	U-235	U-238	Tc-99	Resid.	Ind.
SED-11	1.14	0.00	0.74	0.00[2]	0.14	0.00
SED-12	0.93	0.06[1]	1.17	0.00[2]	0.16	0.01
SED-13	1.67	0.16[1]	1.33	0.00[2]	0.24	0.01
SED-14	1.42	0.03[1]	0.39	0.02	0.14	0.00
SED-15	2.58	0.18	2.05	5.62	0.66	0.02
SED-16	14.90	0.68	2.77	4.94	**1.69**	0.04
SED-17	0.66	0.02	0.30	7.50	0.47	0.00
SED-18	0.22	0.02[1]	0.30	0.00[2]	0.04	0.00
SED-19	32.50	2.30	8.18	6.28	**3.70**	0.11
SED-20	62.50	3.12	14.90	0.00[2]	**6.26**	0.18
SED-21	1.86	0.10[1]	1.96	4.12	0.51	0.01
SED-22	117.00	4.98	28.00	0.00[2]	**11.62**	0.32
SED-23	1.35	0.00[1]	1.69	50.80	**2.90**	0.01
SED-24	1.14	0.06[1]	0.94	35.80	**2.05**	0.01
SED-25	907.00	41.10	149.00	8.55	**86.00**	**2.16**
SED-26	222.00	11.00	46.90	1.68	**21.89**	0.61
SED-27	225.00	11.90	37.40	0.00[2]	**21.47**	0.58
SED-28	254.00	12.40	44.60	5.75	**24.58**	0.64

[1] Value is estimated, result below detection limit

[2] Negative values below lab bkg, set to zero

The sediment samples that were collected are below the applicable IUSLs, with the exception of SED-25, which was collected from the Sanitary Lagoon, an area of the site that is known to be impacted. The Sanitary Lagoon is an earthen lagoon within a controlled and fenced area of the facility, and further investigation is planned under the DHEC Consent Agreement and associated Remedial Investigation Work. Public access to this area of the site is restricted. In addition, the sample location itself represents an inaccessible area as it is located in the Sanitary Lagoon sludge that is covered by several feet of treated sanitary wastewater awaiting chlorine disinfection. This sample does not represent undue risk to the workforce at this time, but routine dose monitoring should be performed for personnel who work in this area.

Samples SED-23 and SED-24 (both collected from the Gator Pond) were identified to be above the RUSL due to Tc-99. Sediment sample locations SED-26 (also collected from the Sanitary

Lagoon), SED-27 and SED-28 (both collected from the East Lagoon) were also identified to contain concentrations of U above the RUSL, as expected.

Sediment sampling location SED-16 was identified to be above the RUSL, however this area is below the applicable IUSL, and appears to be isolated, as U concentration in downstream sediment samples SED-17, and SED-18 were below RUSL.

Three samples from Mill Creek were found to be above the RUSL; SED-19 and SED-20 were collected in Upper Sunset Lake upstream of the Upper Sunset Lake Dike, and sediment sample SED-22 was collected from Lower Sunset Lake upstream of the Lower Sunset Lake Dike. It is important to note that these samples represent sediment that is contained on the WCFFF property and the RUSL is used for reference only. The sample results are below the IUSL, which is a more appropriate comparison as these samples are representative of an industrial use area. However, out of prudence to public and environmental health and safety, additional investigations were performed within Mill Creek, both up and down stream. The sediment sample analytical results from the November 2019 sampling event are provided in Table 3.

Table 3: November 2019 Sediment Transect Sampling Results

Sample ID	Analyte (pCi/g)				SOF	SOF
	U-234	U-235	U-238	Tc-99	Resid.	Ind.
SED-29-0-6	6.23	0.31	2.51	0.00[2]	0.70	0.02
SED-29-06-12	1.81	0.21	1.55	0.00[2]	0.28	0.01
SED-29-12-16	1.23	0.18	1.16	0.00[2]	0.20	0.01
SED-30-0-6	5.71	0.19	2.51	2.43[1]	0.77	0.02
SED-30-6-12	1.41	0.03[1]	1.28	0.00[2]	0.20	0.01
SED-31-0-6	2.81	0.07[1]	1.75	0.96[1]	0.40	0.01
SED-31-6-12	2.96	0.11[1]	1.69	0.00[2]	0.36	0.01
SED-32-0-6	3.71	0.10[1]	2.00	5.06[1]	0.71	0.01
SED-32-6-12	10.00	0.47	3.28	0.00[2]	***1.06***	0.03
SED-33-0-6	5.06	0.39	2.52	0.00[2]	0.62	0.03
SED-33-6-12	1.27	0.10[1]	1.56	0.00[2]	0.22	0.01
SED-33-12-16	1.06	0.05[1]	1.09	0.00[2]	0.17	0.01
SED-34-0-6	3.13	0.13[1]	1.81	0.00[2]	0.39	0.01
SED-34-6-12	2.93	0.05[1]	1.73	0.00[2]	0.36	0.01
SED-35-0-6	2.26	0.18	1.59	0.00[2]	0.31	0.01
SED-35-6-12	1.59	0.04[1]	1.66	0.00[2]	0.25	0.01
SED-36-0-6	4.40	0.21	2.38	0.00[2]	0.53	0.02
SED-36-6-12	1.50	0.09	1.05	0.00[2]	0.20	0.01
SED-37-0-6	4.88	0.25	1.78	0.00[2]	0.53	0.02
SED-37-6-12	2.04	0.15	1.62	0.00[2]	0.29	0.01
SED-38 0	3.26	0.20	1.68	16.50[1]	***1.26***	0.02
SED-39 0"-6"	1.86	0.01[1]	1.70	0.00[2]	0.27	0.01
SED-40 0"-6"	1.90	0.13	1.24	0.00[2]	0.25	0.01
SED-41 0"-6"	1.72	0.04[1]	1.41	1.00[1]	0.29	0.01
SED-42 0"-6"	6.12	0.29	2.23	5.94[1]	0.98	0.02
SED-43 0"-6"	47.50	2.32	12.10	0.00[2]	***4.81***	0.14
SED-44 0"-6"	8.86	0.38	2.62	6.23[1]	***1.24***	0.03
SED-45 0"-6"	5.86	0.27	2.20	2.83[1]	0.79	0.02
SED-46 0"-6"	4.02	0.18	2.15	0.00[2]	0.49	0.02
SED-47 0"-6"	3.18	0.23	1.46	0.00[2]	0.38	0.02
SED-48 0"-6"	2.57	0.09[1]	1.98	0.00[2]	0.35	0.01
SED-48-DUP 0"-6"	2.43	0.01[1]	1.62	0.00[2]	0.30	0.01
SED-49 0"-6"	4.59	0.22	2.11	0.00[2]	0.53	0.02
SED-50 0"-6"	3.64	0.10[1]	1.86	0.91[1]	0.47	0.01

[1] Value is estimated, result below minimum detectable concentration

[2] Negative values below laboratory analytical background are set to zero

Sediment samples SED-38, SED-43, and SED-44 (Figure 1) from the November 2019 sediment sampling event also contained U concentrations above the RUSL. As can be seen in Figure 1, SED-19 is located near the flow path of storm water runoff from the facility. SED-20, SED-43,

and SED-44 are just upstream of the Upper Sunset Lake Dike, and SED-22 and SED-38 are just upstream of the Lower Sunset Lake Dike. These results seem to indicate that the dikes are serving as effective impounding barriers. The samples containing uranium (U) noted above were located near the northern edges of Upper and Lower Sunset Lakes closest to the facility. Samples collected farther from the edge of the lakes contained lower or non-detectable U concentrations. This observation coupled with the lack of U within the upper surficial groundwater immediately up-gradient of Upper Sunset Lake and Lower Sunset Lake indicates that the U was transported to the lakes via overland flow. Concentrations above the residential-use screening level (RUSL) were not detected in samples collected up-gradient of the entrance dike nor down-gradient of the Lower Sunset Lake Dike, indicating that the extent of the elevated U is confined between these structures. The dikes restrict the flow of surface water causing a pooling effect, which would encourage any suspended solids to settle out upstream of the dikes.

As there are no current activities that would be a likely source of the detected U, transport of impacted soil and sediments from historical events are the likely source of radiological impacts. The only known historical event that may have resulted in U being transported to the on-site Upper and Lower Sunset Lake sediments is the West Lagoon 1 release which occurred in October 1971 and was documented in the 1977 NRC Environmental Impact Appraisal (EIA). The 1977 NRC EIA also concluded that the causeway/dike structures restricted the potential impact of the West Lagoon 1 release.

Sample location SED-32 was sampled at both the surface (top 6 inches) and subsurface interval (6-12 inches below the surface). The surface interval contained radiological concentrations below the RUSL, but the subsurface interval contained radiological concentrations above the RUSL. While this location is still on the WCFFF property and is representative of an industrial use area, it is important to note that subtraction of naturally occurring, background radiation has not been performed. If background radioactivity is subtracted from the sample, it falls below the RUSL.

In order to establish the level of naturally occurring, background radioactivity in the sediment of Mill Creek, sediment samples from two transects were collected upstream of the WCFFF from areas that have not been influenced by activities at the facility. Sediment sample locations SED-51 through SED-56 were selected as areas representative of background conditions within Mill Creek. These locations are protected from potential back flow by the Entrance Dike and are representative of the naturally occurring levels of U found in the surrounding soil of the area. The results of these background sediment sample locations are provided in Table 4.

Table 4: Background Sediment Sampling Results

Sample ID	Analyte (pCi/g)			SOF	SOF
	U-234	U-235	U-238	Resid.	Ind.
SED-51 0"-6"	2.1	ND	1.42	0.26	0.01
SED-51 6"-12"	1.27	ND	1.15	0.18	0.01
SED-52 0"-6"	1.77	ND	1.72	0.26	0.01
SED-52 6"-12"	1.88	ND	1.45	0.25	0.01
SED-53 0"-6"	2.15	0.194	1.45	0.29	0.01
SED-53 6"-12"	2.06	ND	2.34	0.33	0.01
SED-54 0"-6"	1.78	ND	1.36	0.23	0.01
SED-54 6"-12"	1.48	ND	1.87	0.25	0.01
SED-55 0"-6"	2.05	ND	1.74	0.28	0.01
SED-55 6"-12"	1.62	0.155	1.62	0.26	0.01
SED-56 0"-6"	2.02	0.214	1.4	0.28	0.01
SED-56 6"-12"	1.89	ND	1.72	0.27	0.01
SED-56-DUP 0"-6"	2.82	ND	2.11	0.37	0.01
Ave Surface	1.98	0.07	1.52	0.27	
Ave Sub-Surface	1.70	0.03	1.69	0.25	
Total Average	1.84	0.05	1.60	0.26	

As can be seen from Table 4 above, the naturally occurring background levels of U in the sediment represent approximately ¼ of the RUSL. Tc-99 is not a naturally occurring nuclide; therefore it is not expected to be found in background samples. Tc-99 concentrations within the sediment sample analytical results from these locations were below the Minimum Detectable Concentration (MDC). Since U background represents a significant portion of the RUSL, background subtraction is warranted. For the sediment samples with analytical results above the RUSL, the average U background value was subtracted to produce a net sample result. The net sample result, and corresponding SOF values are presented in Table 5.

Table 5: RSL Exceedances With Adjustments to Account for Natural Background Concentrations of U

Sample ID	Analyte (pCi/g)				SOF	SOF
	U-234	U-235	U-238	Tc-99	Resid.	Ind.
SED-19	30.66	2.25	6.58	6.28[1]	***3.44***	0.10
SED-20	60.66	3.07	13.30	0.00[2]	***6.00***	0.17
SED-22	115.16	4.93	26.40	0.00[2]	***11.36***	0.31
SED-32-6-12	8.16	0.42	1.68	0.00[2]	0.80	0.02
SED-38 0	1.42	0.16	0.08	16.50[1]	***1.00***	0.01
SED-43 0"-6"	45.66	2.27	10.50	0.00[2]	***4.55***	0.13
SED-44 0"-6"	7.02	0.33	1.02	6.23[1]	0.98	0.02

[1] Value is estimated, result below minimum detectable concentration

[2] Negative values below laboratory analytical background are set to zero

As can be seen from Table 5 above, sediment sample locations SED-32 and SED-44 net sample results are found to be below the RUSL when adjusted for background U concentrations in the sediment.

Sediment sample locations SED-19, SED-20, SED-22, SED-38, and SED-43 while above RUSL, do not exceed the IUSL. The IUSL is an appropriate screening level for areas of the WCFFF that are representative of industrial use.

It is also important to note that all sediment samples collected downstream of the Lower Sunset Lake Dike are below the RUSL when adjusted for background. Sediment sample locations SED-29 through SED-31 represent the area just upstream of the Exit Dike and the WCFFF boundary. It would be expected that if impacted sediment were to migrate out of Lower Sunset Lake that the area upstream of the Exit Dike would be a likely settling point. The average Residential SOF of these three samples is 0.42 and the background adjusted net Residential SOF is 0.15, indicating that there is no concern for the potential migration of impacted sediment from the WCFFF.

Conclusions

In total, 63 unique sediment samples were collected from 46 locations across the WCFFF and within Mill Creek crossing the Southern portion of the WCFFF. Several upstream areas were sampled to establish the naturally occurring background U concentrations that would be expected in every sample. Sediment samples were collected from multiple transects in Upper and Lower Sunset Lake where migration of contamination may occur in the sediment. Sediment samples were also collected from several sections of Mill Creek downstream of the Lower Sunset Lake Dike where no migration of impacted sediment was expected to be observed.

A review of the sediment analytical results concludes that naturally occurring U is expected to be present in the sediment samples and that the background levels are significant enough to warrant background subtraction. Areas of U impact above the RUSL were observed in Upper and Lower Sunset Lake, but the detected levels of sediment impact do not pose a risk to public health and safety, the environment, or to the workers at the WCFFF. The sediment impacts above RUSL

were located just upstream of the dikes in both Upper and Lower Sunset Lakes. This supports the conclusion that the dikes are functioning as effective impounding barriers. Fast moving water can carry solids downstream in a suspended form. Restricting the flow of surface water causes pooling, which encourages suspended solids to settle out of the water. Therefore, it is expected that the sediment analytical results upstream of the Lower Sunset Lake Dike represents the furthest downstream extent of sediment impact from the WCFFF.

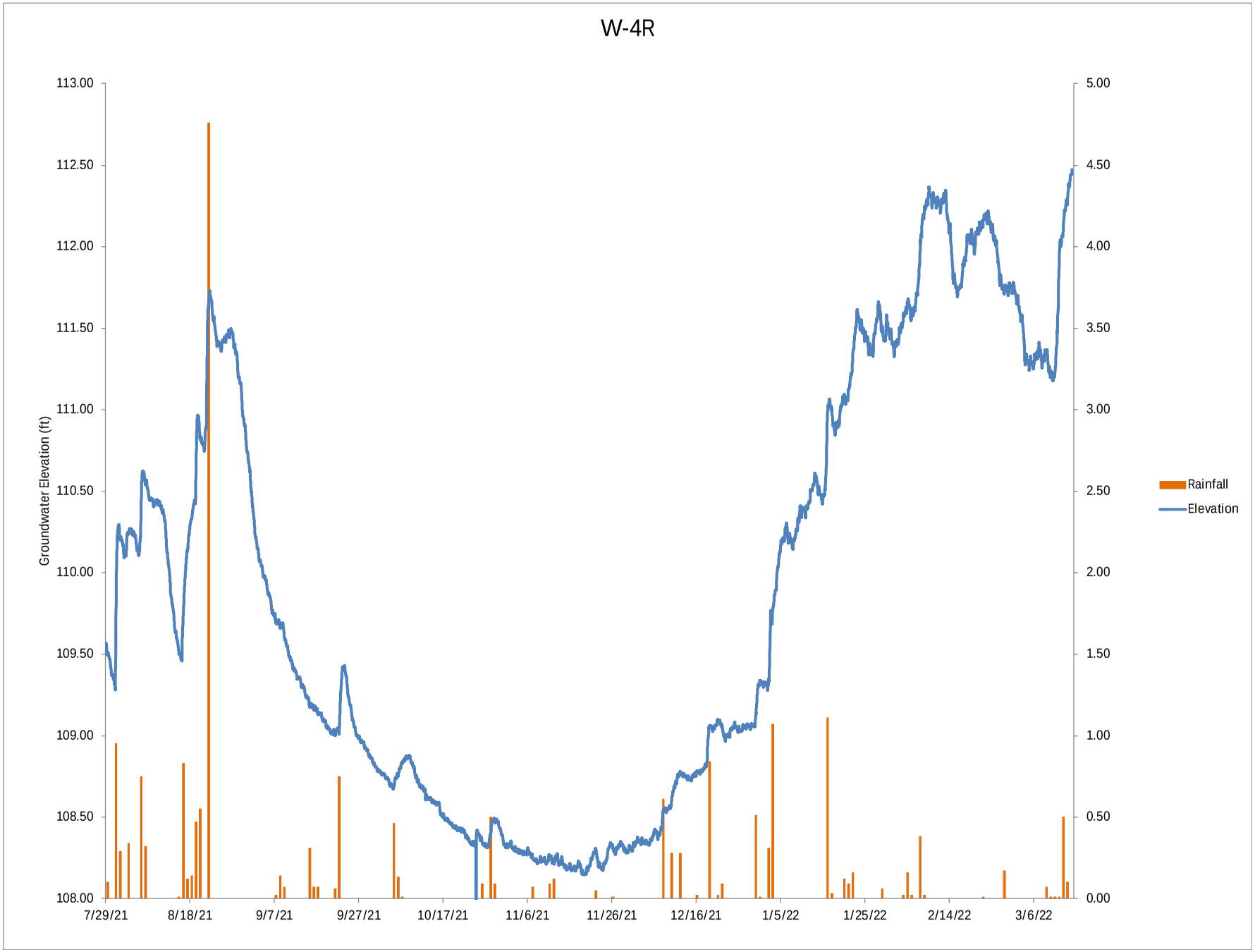
Most importantly, no contamination above the RUSL was identified downstream of the Lower Sunset Lake Dike. Sediment samples collected upstream of the Exit Dike, and subsequently the WCFFF property boundary, indicate that there is no concern for the potential migration of impacted sediment from the facility. Should elevated sample results be identified in the future, or isolated incidents such as environmental releases raise the potential for the migration of contamination, additional monitoring and potentially remedial action may be necessary. However, the only action that is required at this time is the continued environmental monitoring of Mill Creek as part of the WCFFF periodic environmental monitoring program, and the continued implementation of the DHEC Consent Agreement and associated Remedial Investigation Work.

References

NRC 2006. *Consolidated Decommissioning Guidance: Decommissioning Process for Materials Licensees*, NUREG-1757, Vol. 1, Rev. 2.

NRC 2006. *Consolidated Decommissioning Guidance: Characterization, Survey, and Determination of Radiological Criteria*, NUREG-1757, Vol. 2, Rev. 1.

Appendix X
Pressure Transducer Hydrographs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111.00
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110.00
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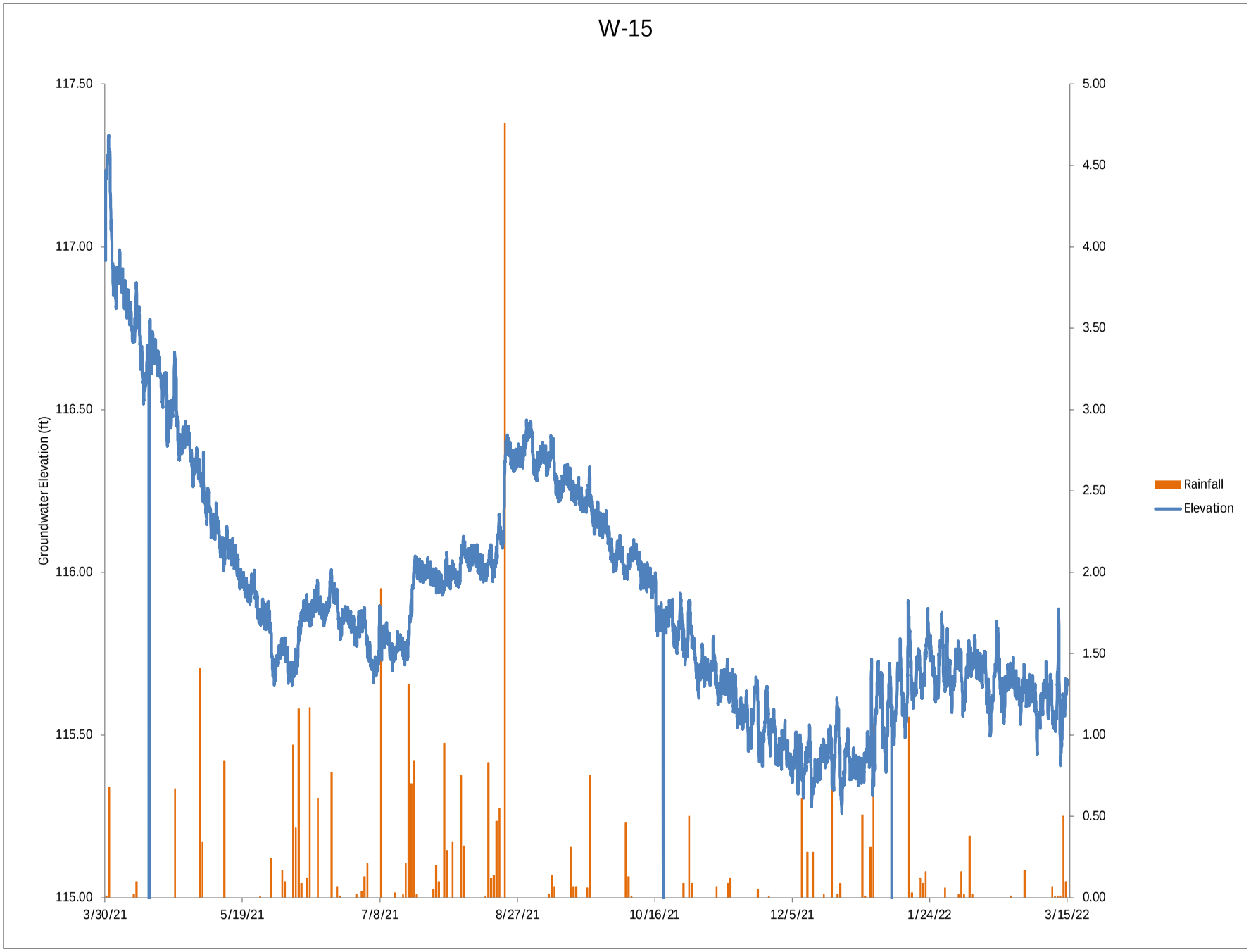
108.50
108.00
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
7/29/21
8/18/21
9/7/21
9/27/21
10/17/21
11/6/21
11/26/21
12/16/21
1/5/22
1/25/22
2/14/22
3/6/22
Rainfall
Elevation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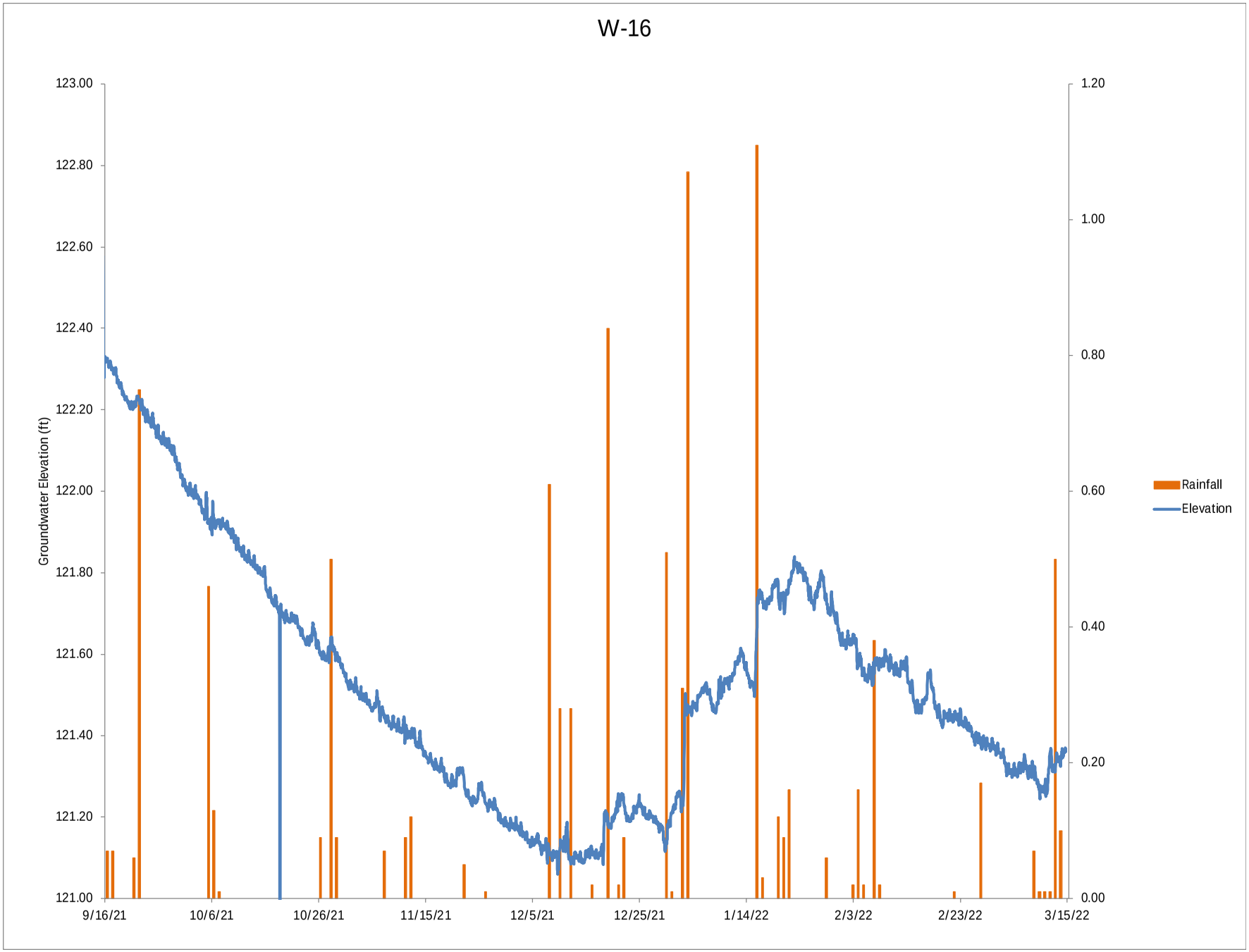
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
3/30/21
5/19/21
7/8/21
8/27/21
10/16/21
12/5/21
1/24/22
3/15/22
Rainfall
Elevation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122.40
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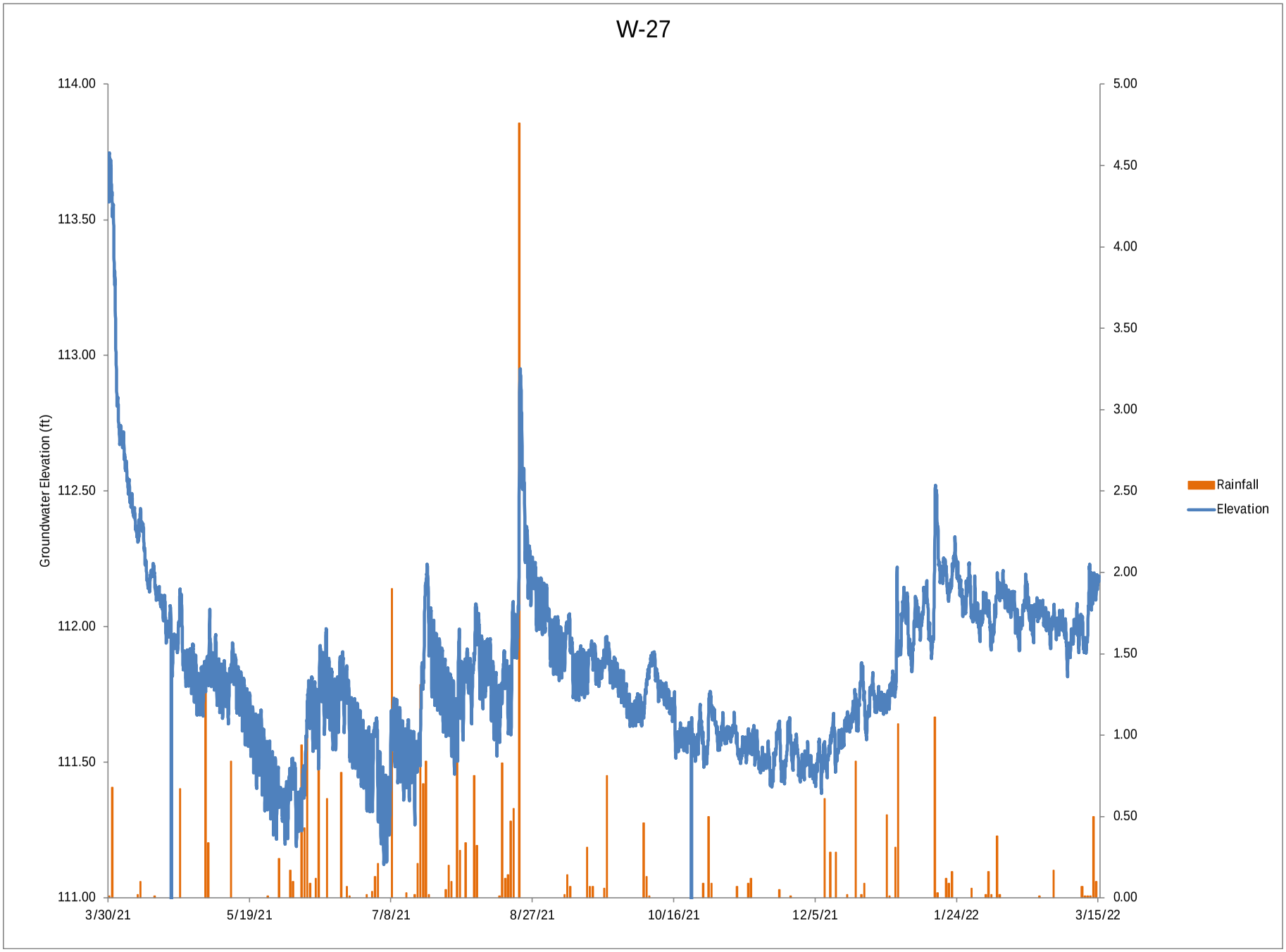
122.00
121.80
121.60
121.40
121.20
121.00
Groundwater Elevation (ft)
1.20
1.00
0.80
0.60
0.40
0.20
0.00
9/16/21
10/6/21
10/26/21
11/15/21
12/5/21
12/25/21
1/14/22
2/3/22
2/23/22
3/15/22
Rainfall
Elevation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113.00
112.50
112.00
111.50
111.00
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
3/30/21
5/19/21
7/8/21
8/27/21
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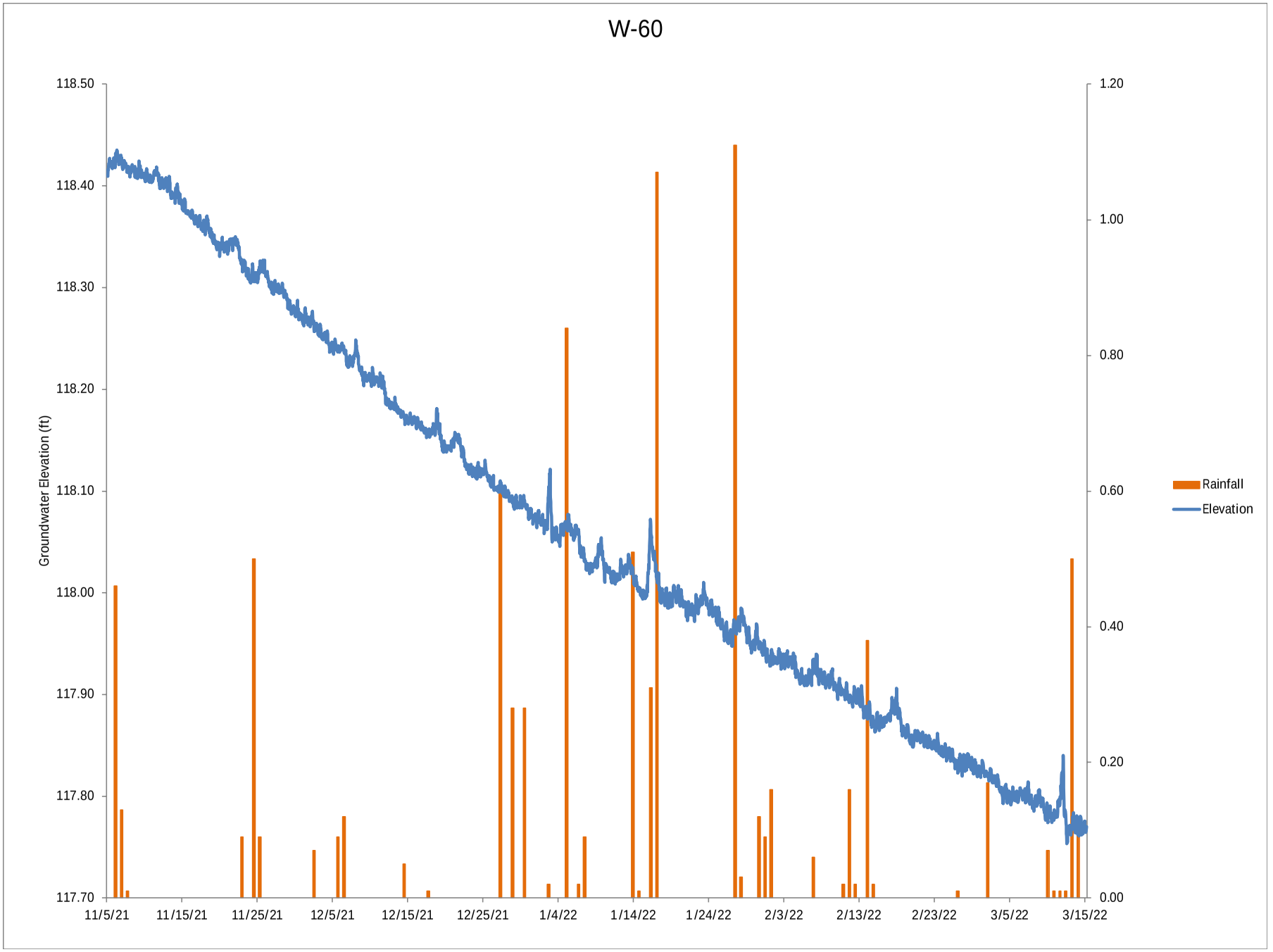
12/5/21
1/24/22
3/15/22
Rainfall
Elevation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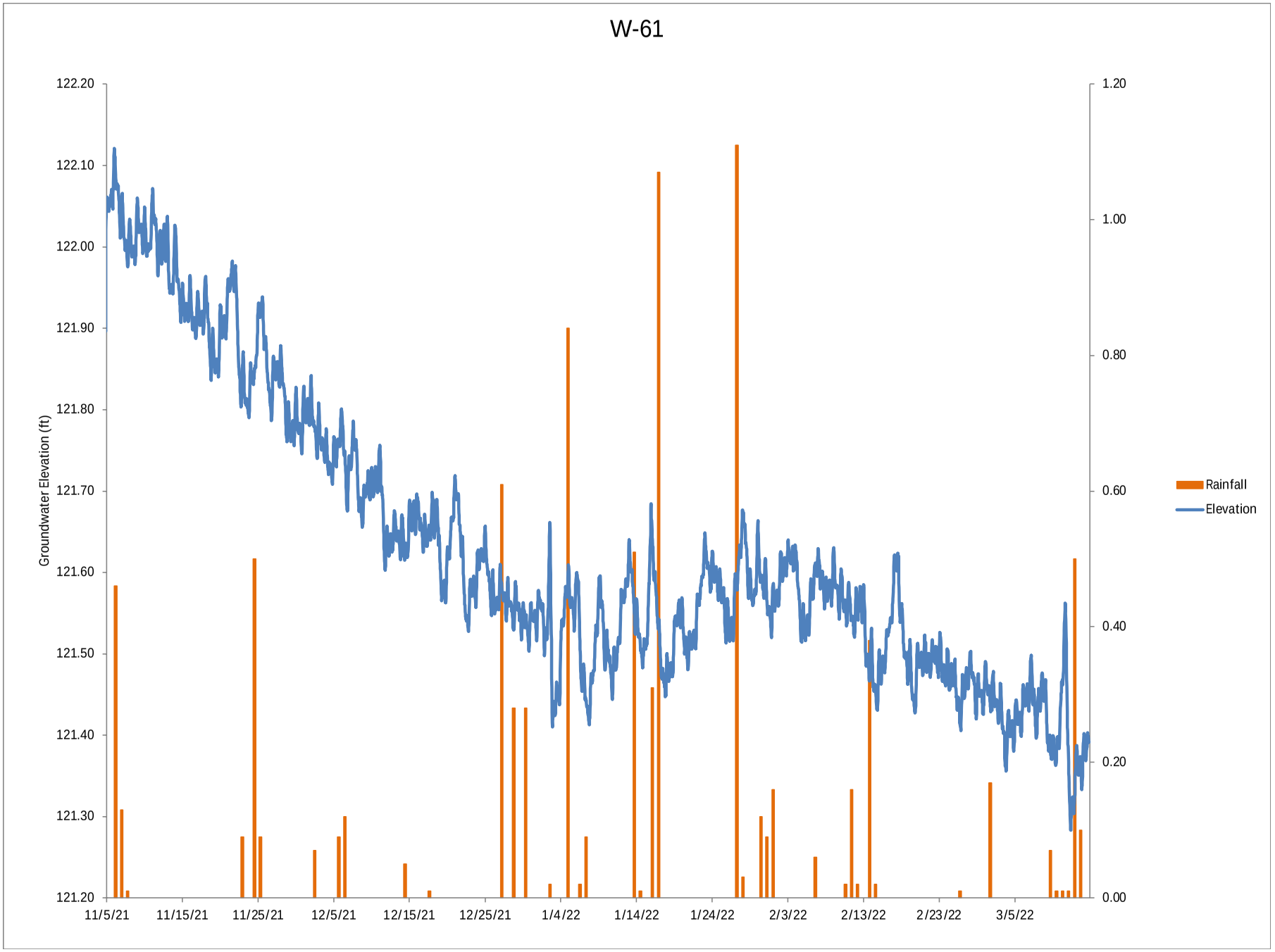
117.70
1.20
1.00
0.80
0.60
0.40
0.20
0.00
11/5/21
11/15/21
11/25/21
12/5/21
12/15/21
12/25/21
1/4/22
1/14/22
1/24/22
2/3/22
2/13/22
2/23/22
3/5/22
3/15/22
Rainfall
Elevation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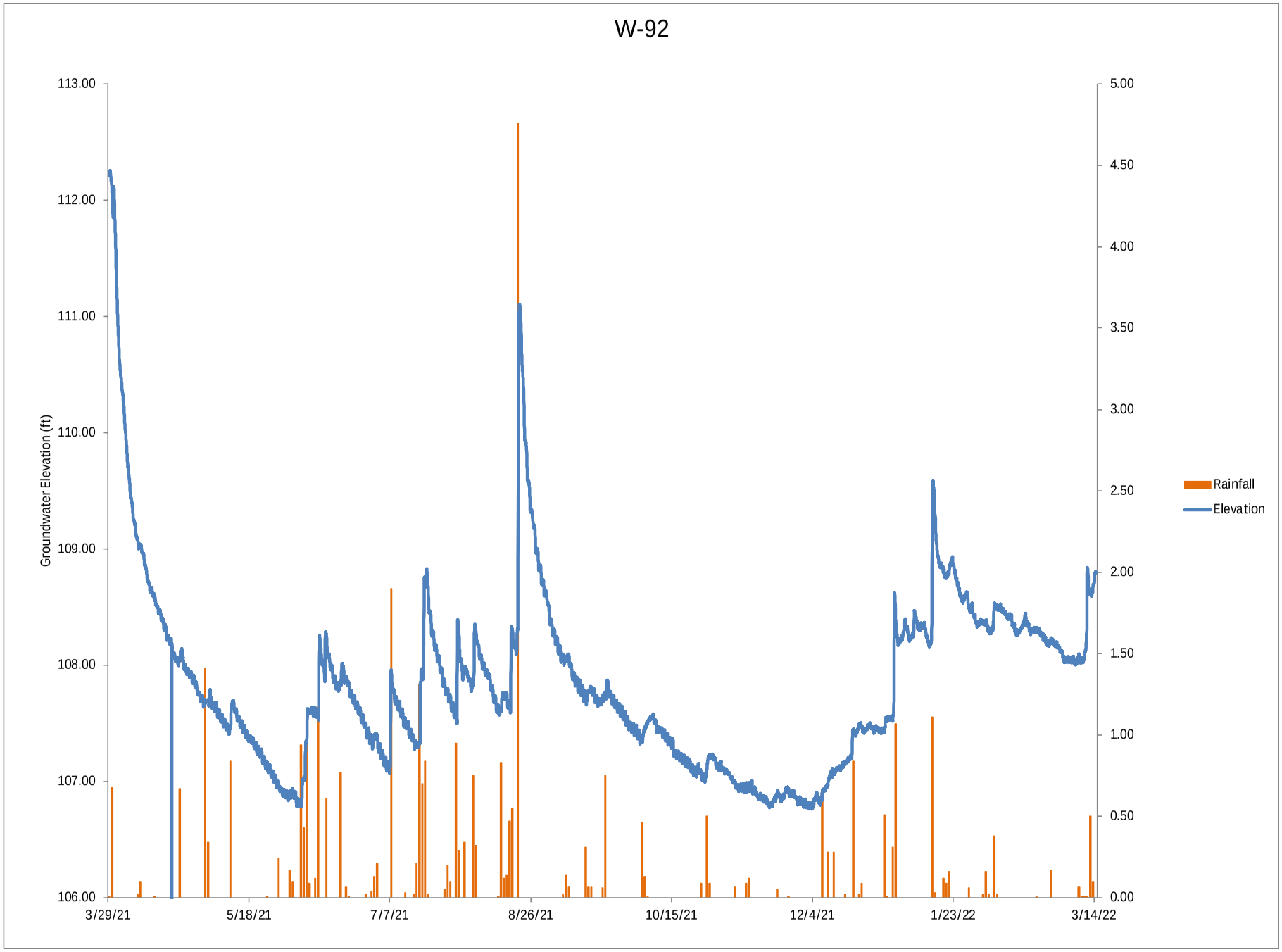
121.70
121.60
121.50
121.40
121.30
121.20
1.20
1.00
0.80
0.60
0.40
0.20
0.00
11/5/21
11/15/21
11/25/21
12/5/21
12/15/21
12/25/21
1/4/22
1/14/22
1/24/22
2/3/22
2/13/22
2/23/22
3/5/22
Rainfall
Elevation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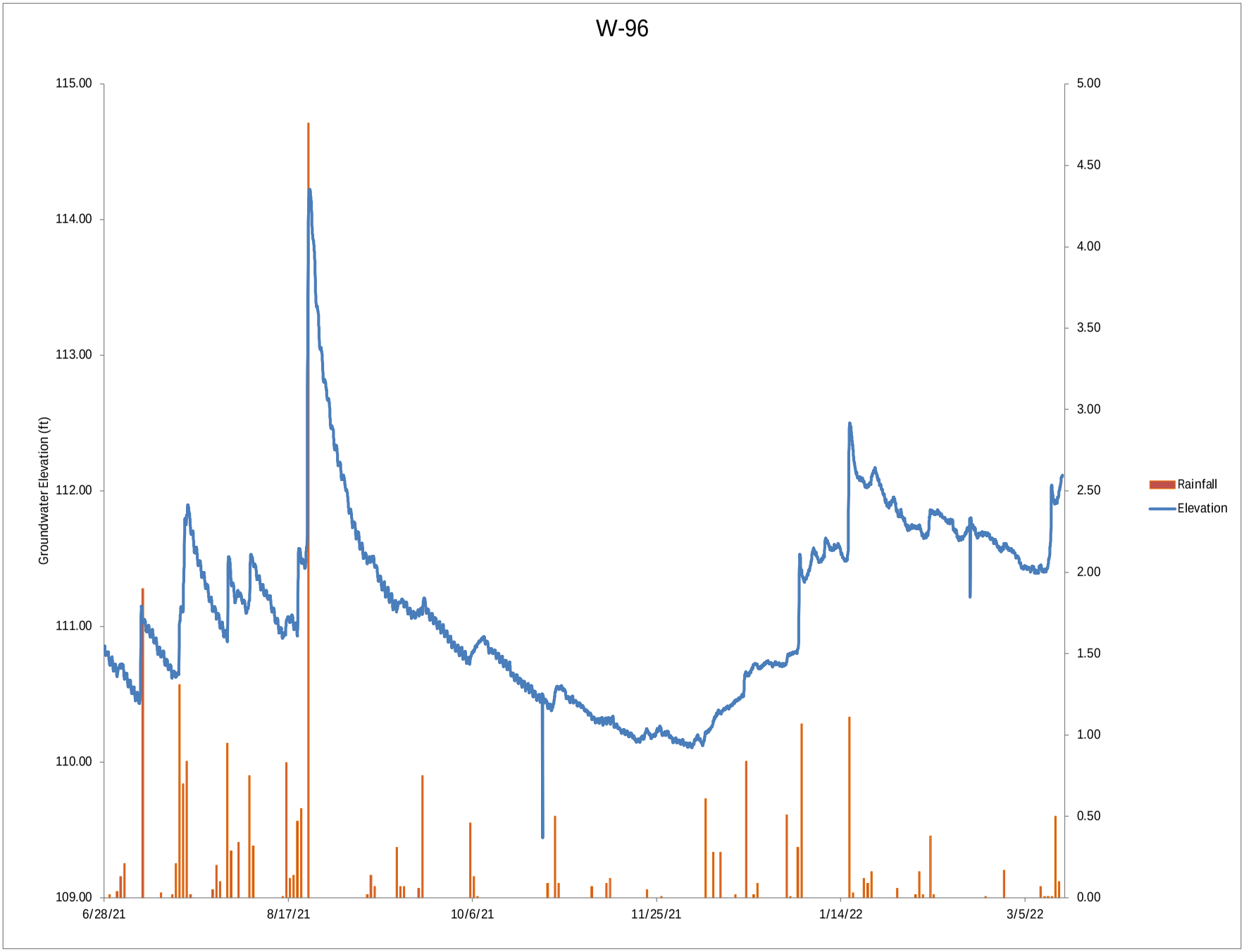
106.00
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
3/29/21
5/18/21
7/7/21
8/26/21
10/15/21
12/4/21
1/23/22
3/14/22
Rainfall
Elevation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109.00
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
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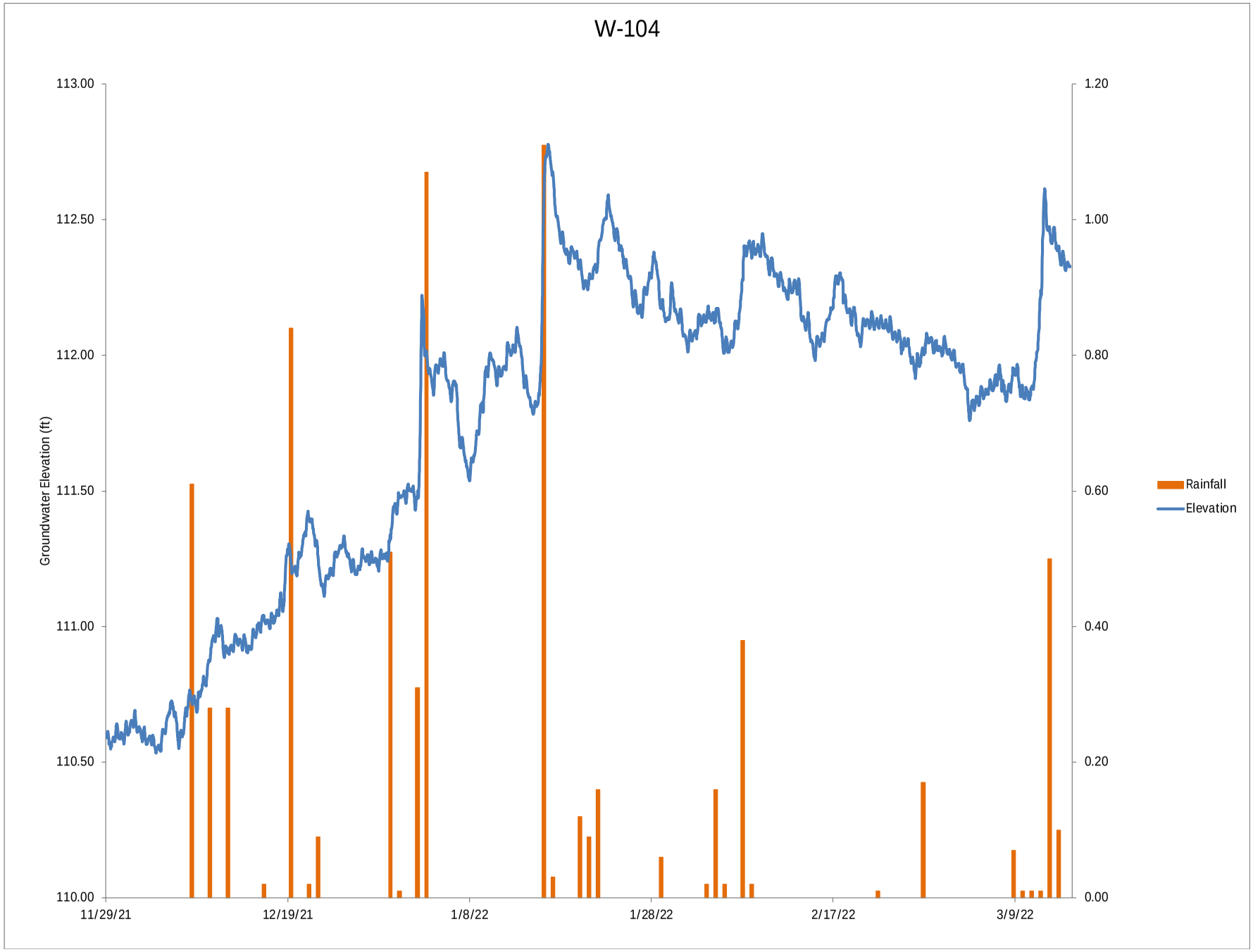
6/28/21
8/17/21
10/6/21
11/25/21
1/14/22
3/5/22
Rainfall
Elevation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0.60
0.40
0.20
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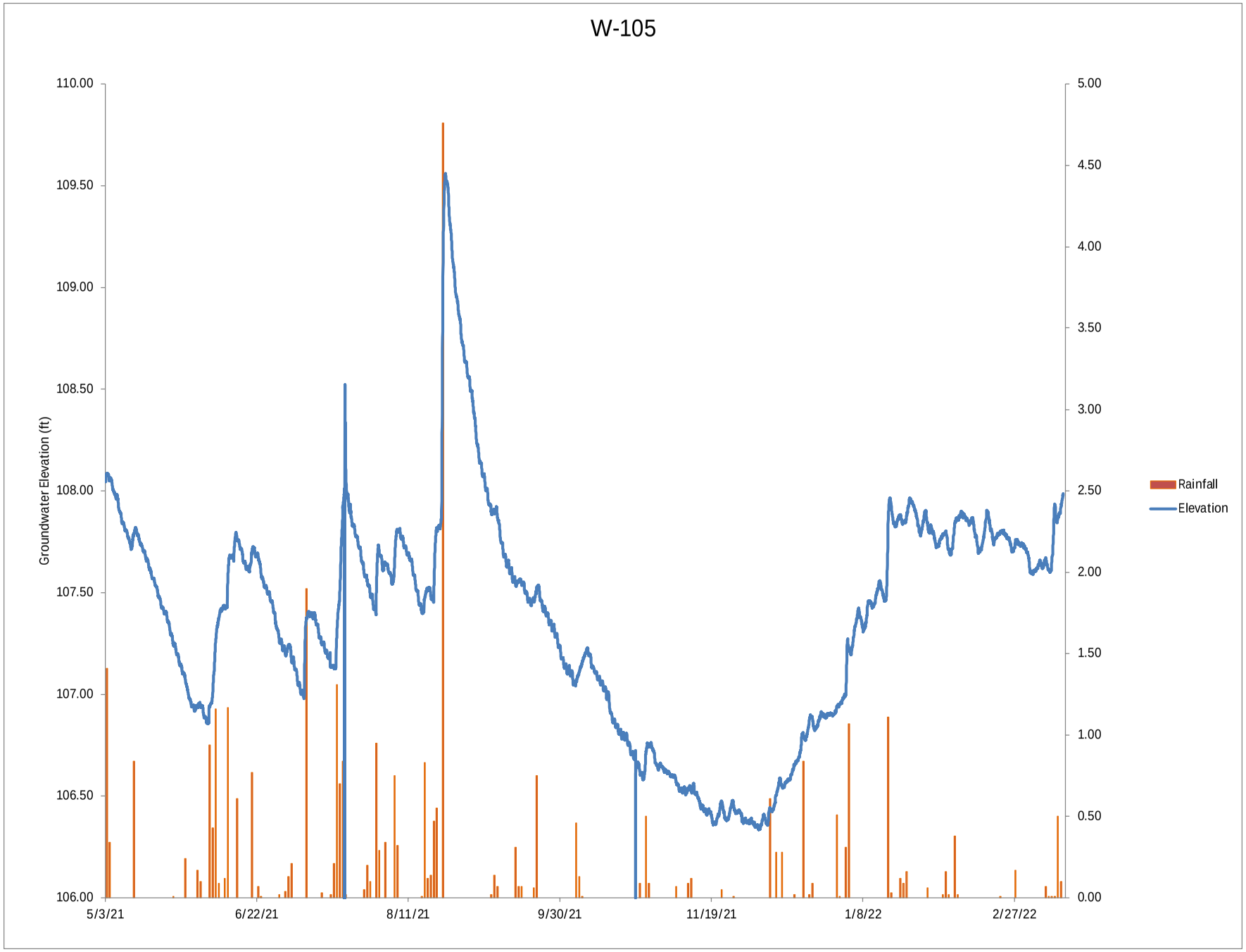
11/29/21
12/19/21
1/8/22
1/28/22
2/17/22
3/9/22
Rainfall
Elevation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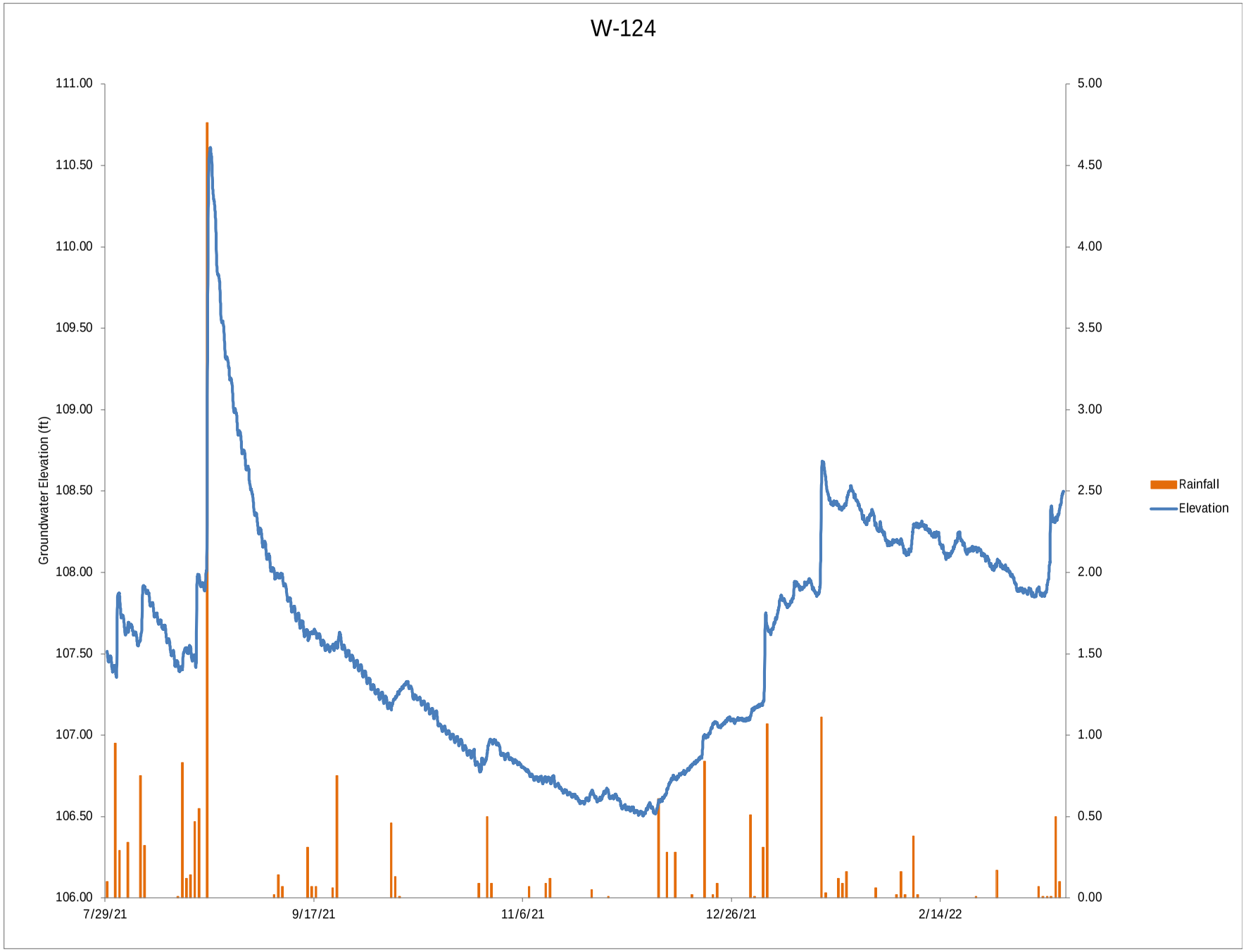
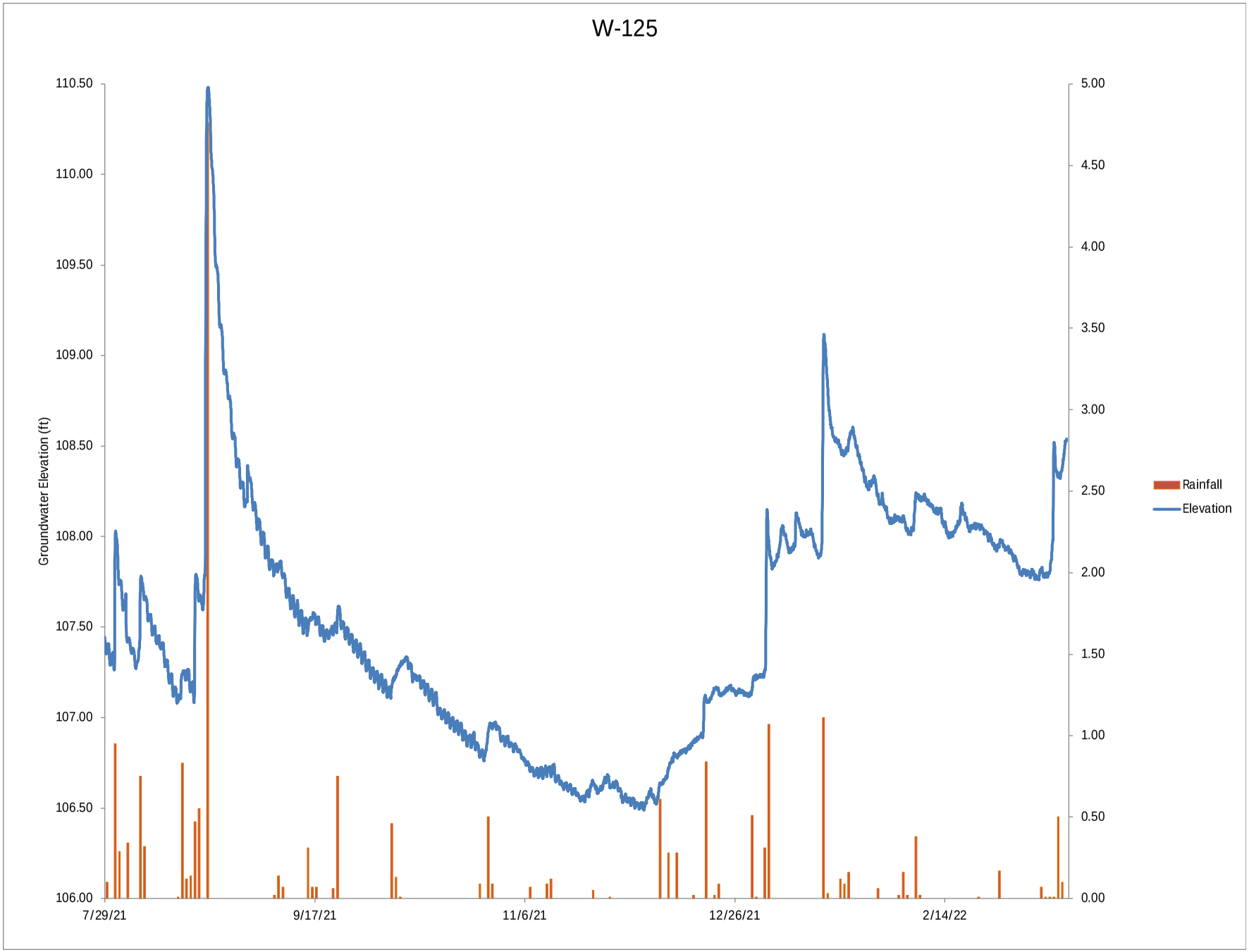
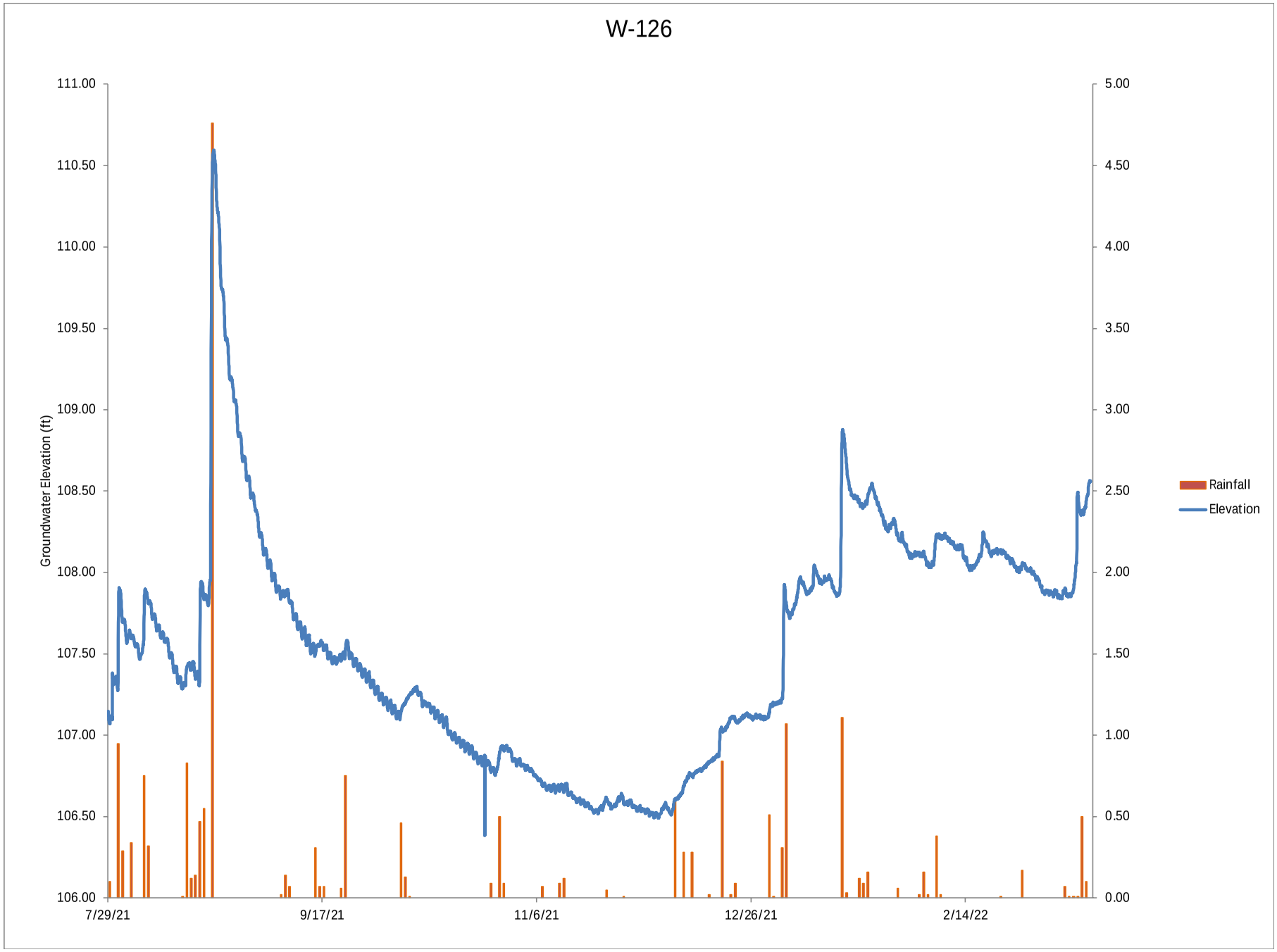
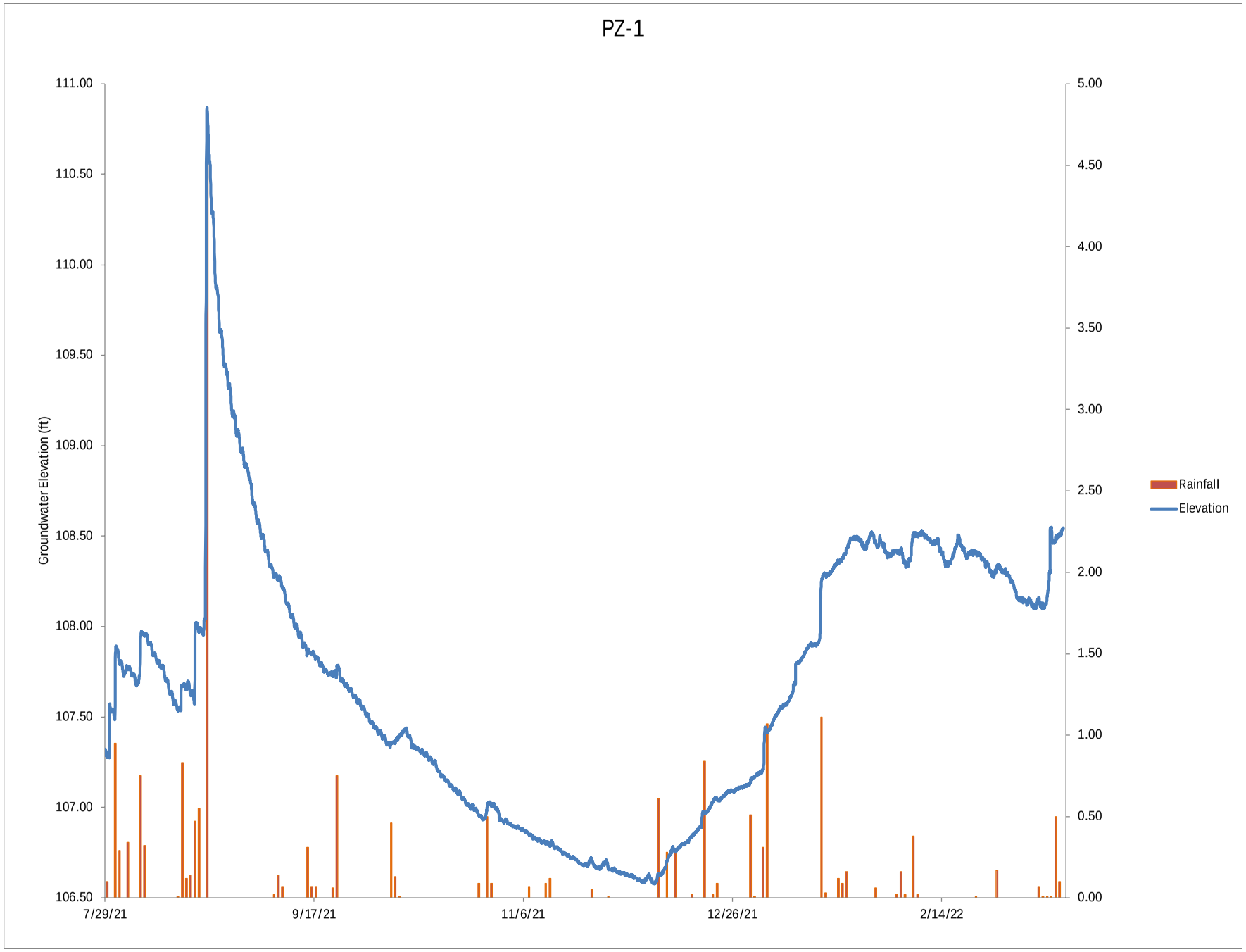
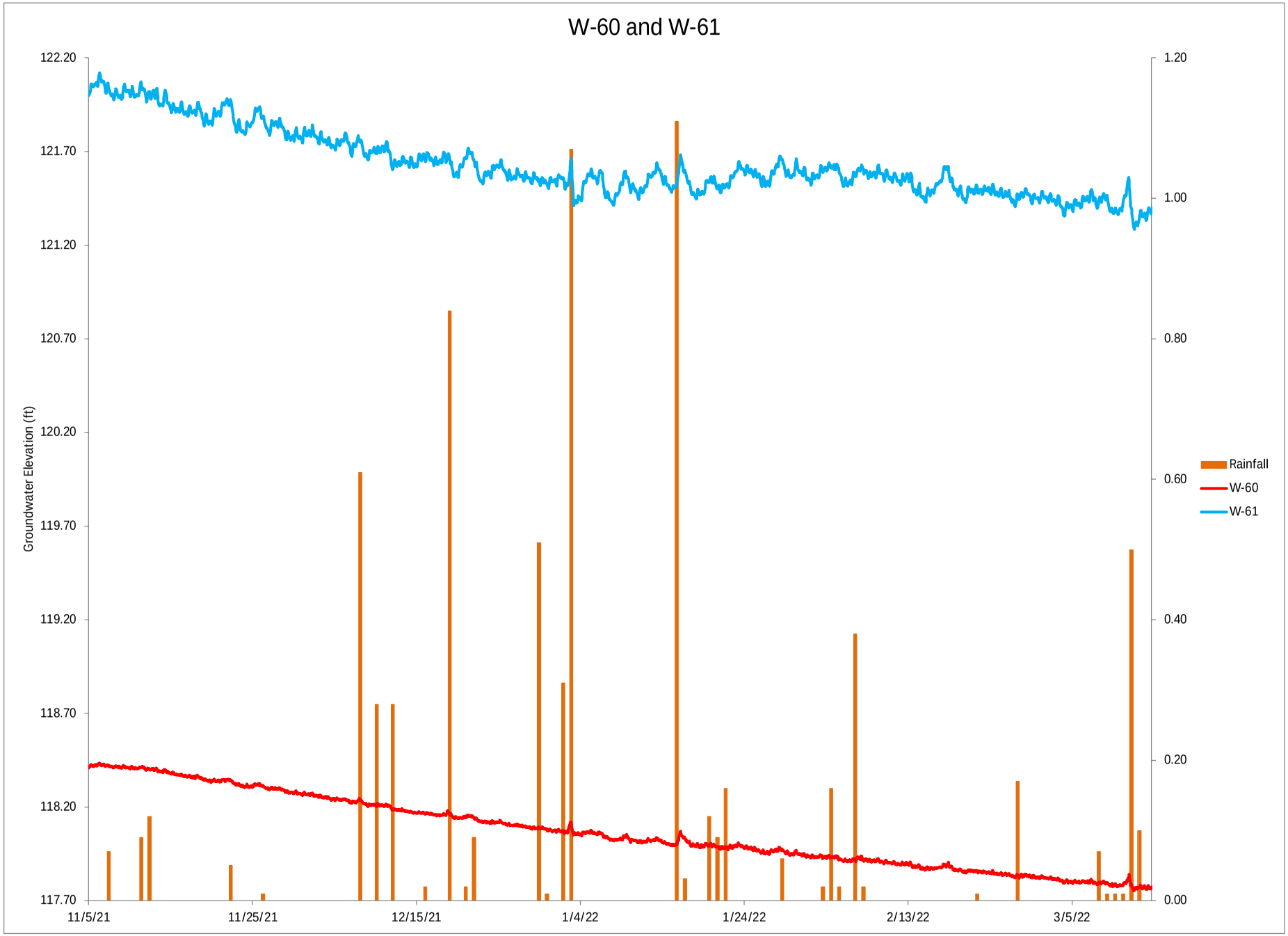
106.00
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
5/3/21
6/22/21
8/11/21
9/30/21
11/19/21
1/8/22
2/27/22
Rainfall
Elevation

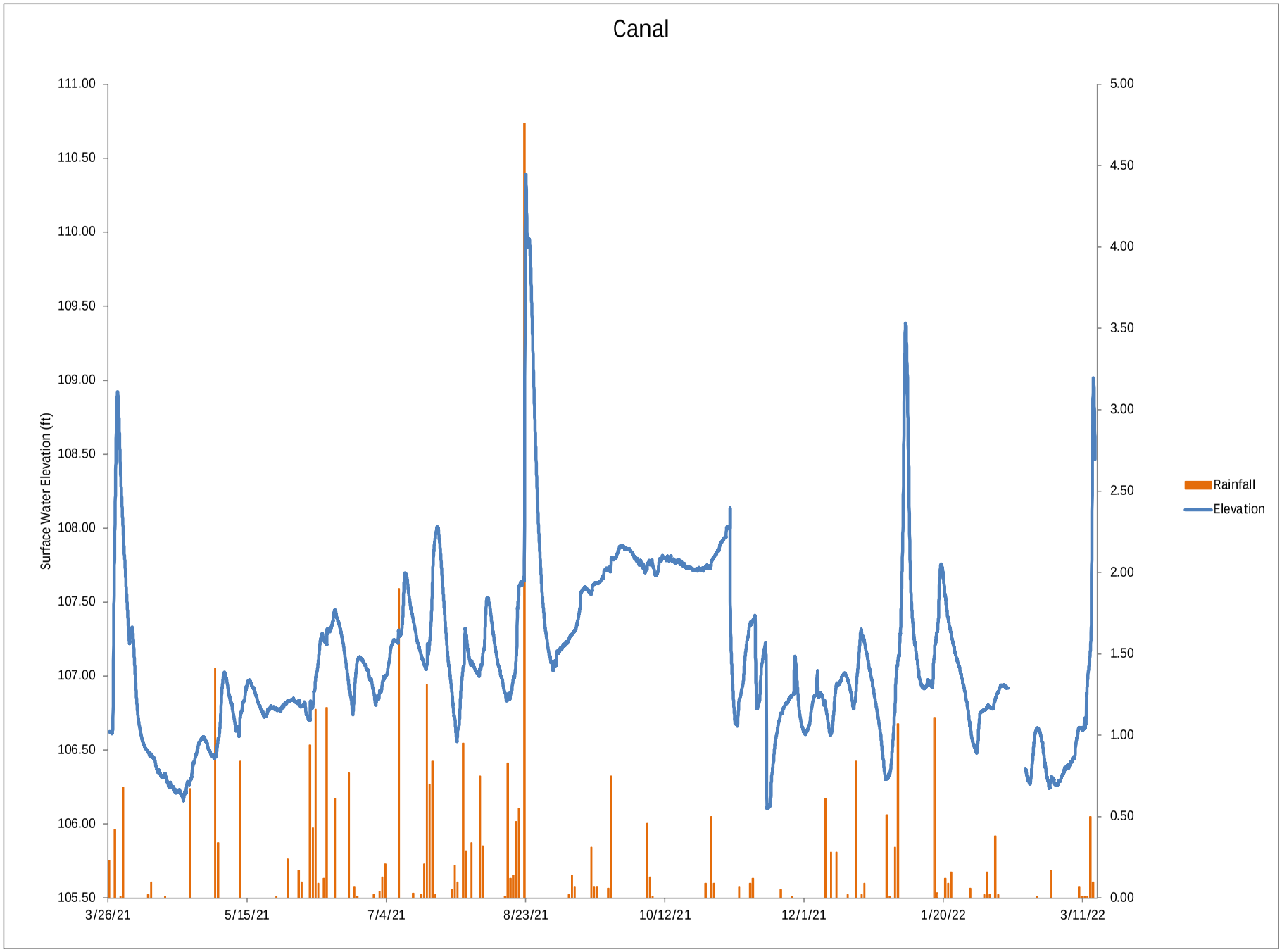

W-124
Groundwater Elevation (ft)
111.00
110.50
110.00
109.50
109.00
108.50
108.00
107.50
107.00
106.50
106.00
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
7/29/21
9/17/21
11/6/21
12/26/21
2/14/22
Rainfall
Elevation

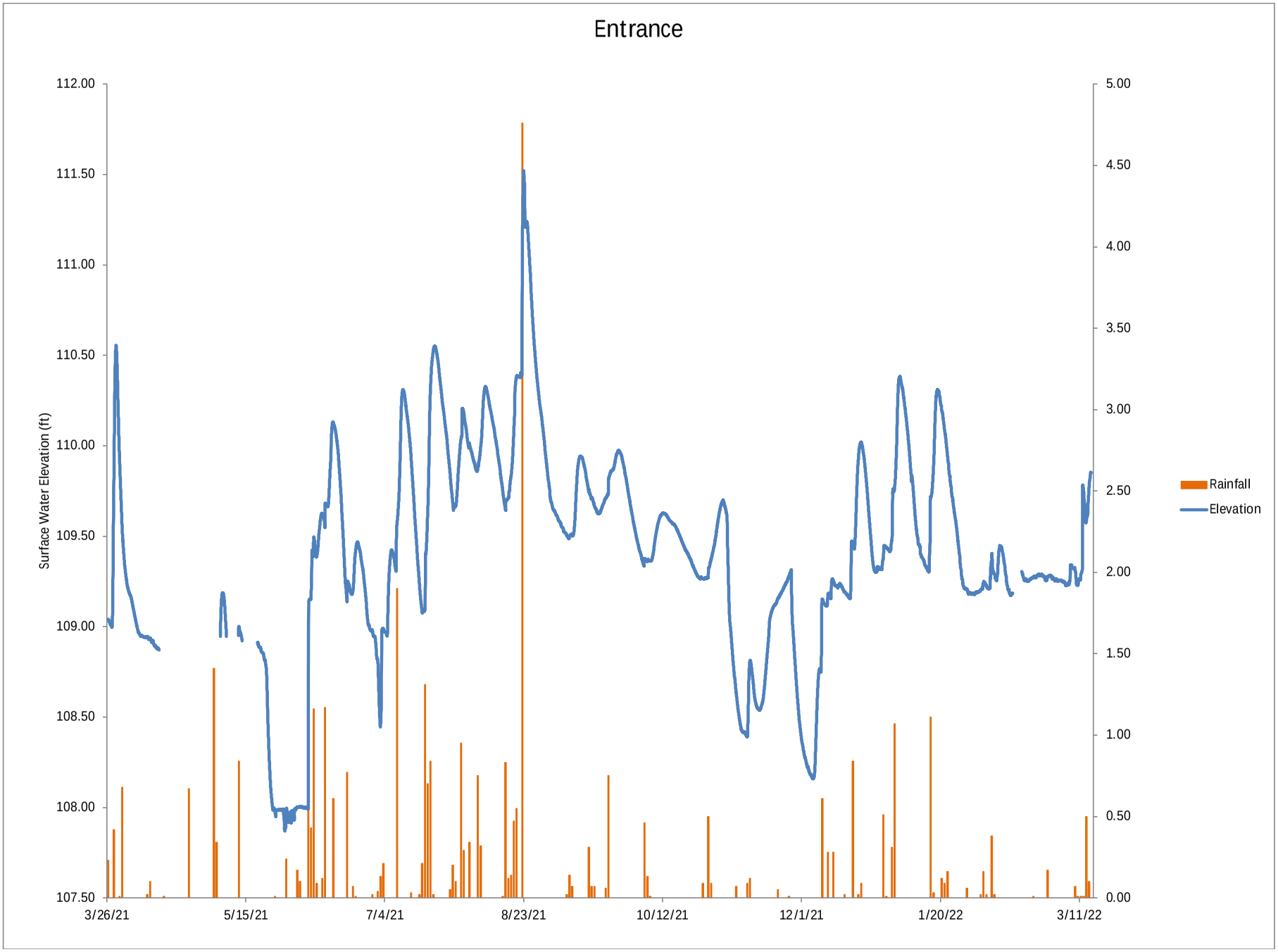

W-125
Groundwater Elevation (ft)
110.50
110.00
109.50
109.00
108.50
108.00
107.50
107.00
106.50
106.00
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
7/29/21
9/17/21
11/6/21
12/26/21
2/14/22
Rainfall
Elevation

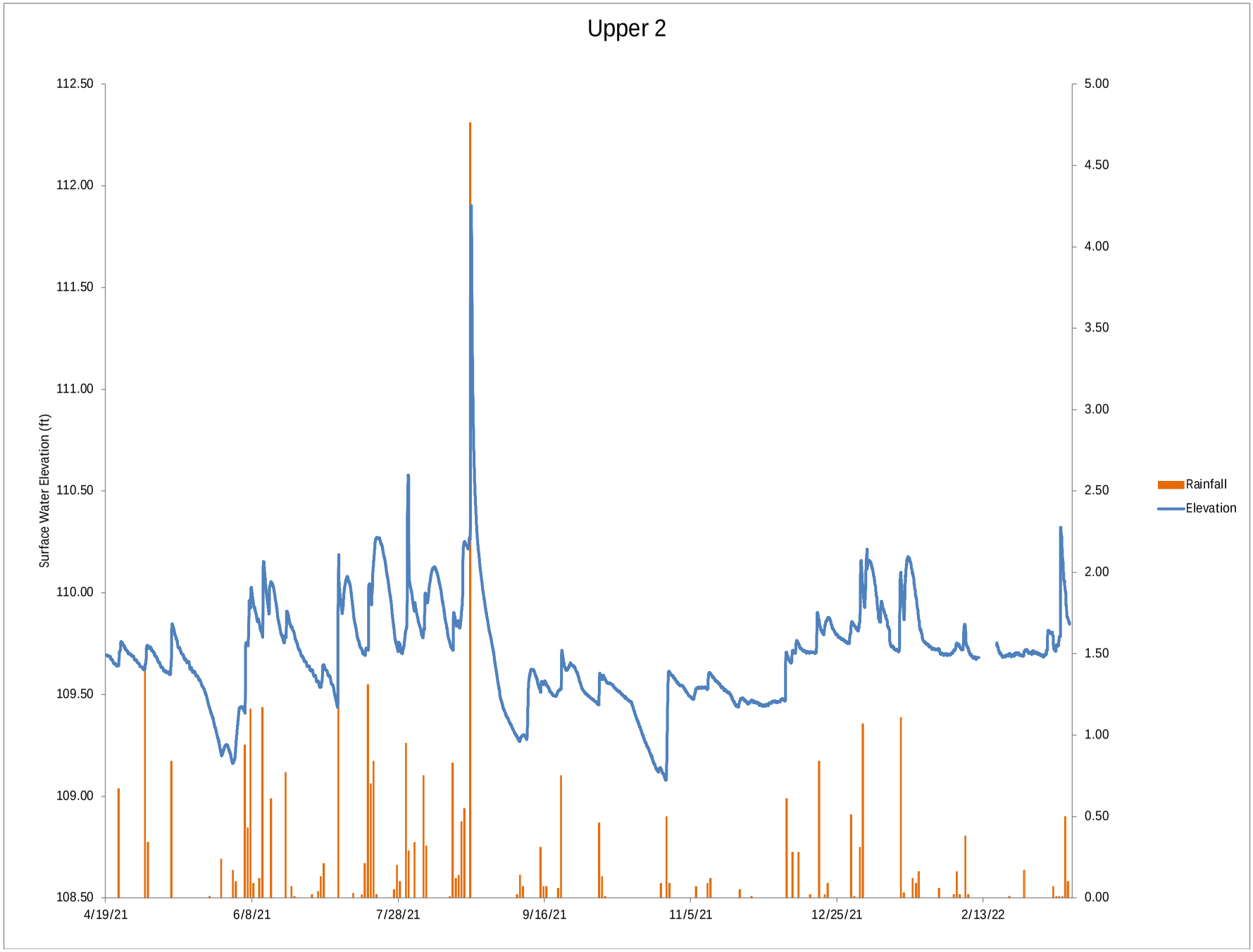

W-126
Groundwater Elevation (ft)
111.00
110.50
110.00
109.50
109.00
108.50
108.00
107.50
107.00
106.50
106.00
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
7/29/21
9/17/21
11/6/21
12/26/21
2/14/22
Rainfall
Elevation

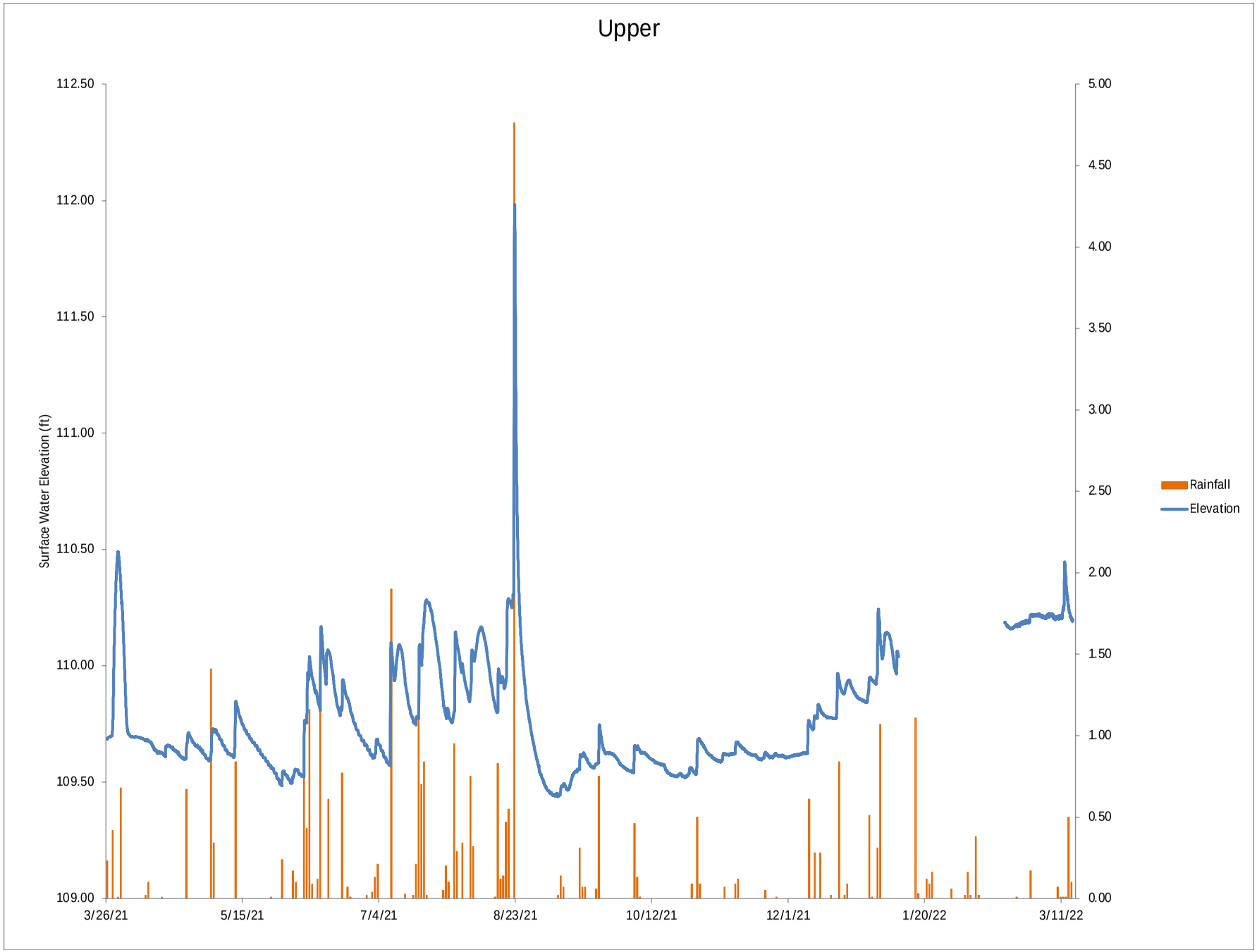

PZ-1
Groundwater Elevation (ft)
111.00
110.50
110.00
109.50
109.00
108.50
108.00
107.50
107.00
106.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
7/29/21
9/17/21
11/6/21
12/26/21
2/14/22
Rainfall
Elevation

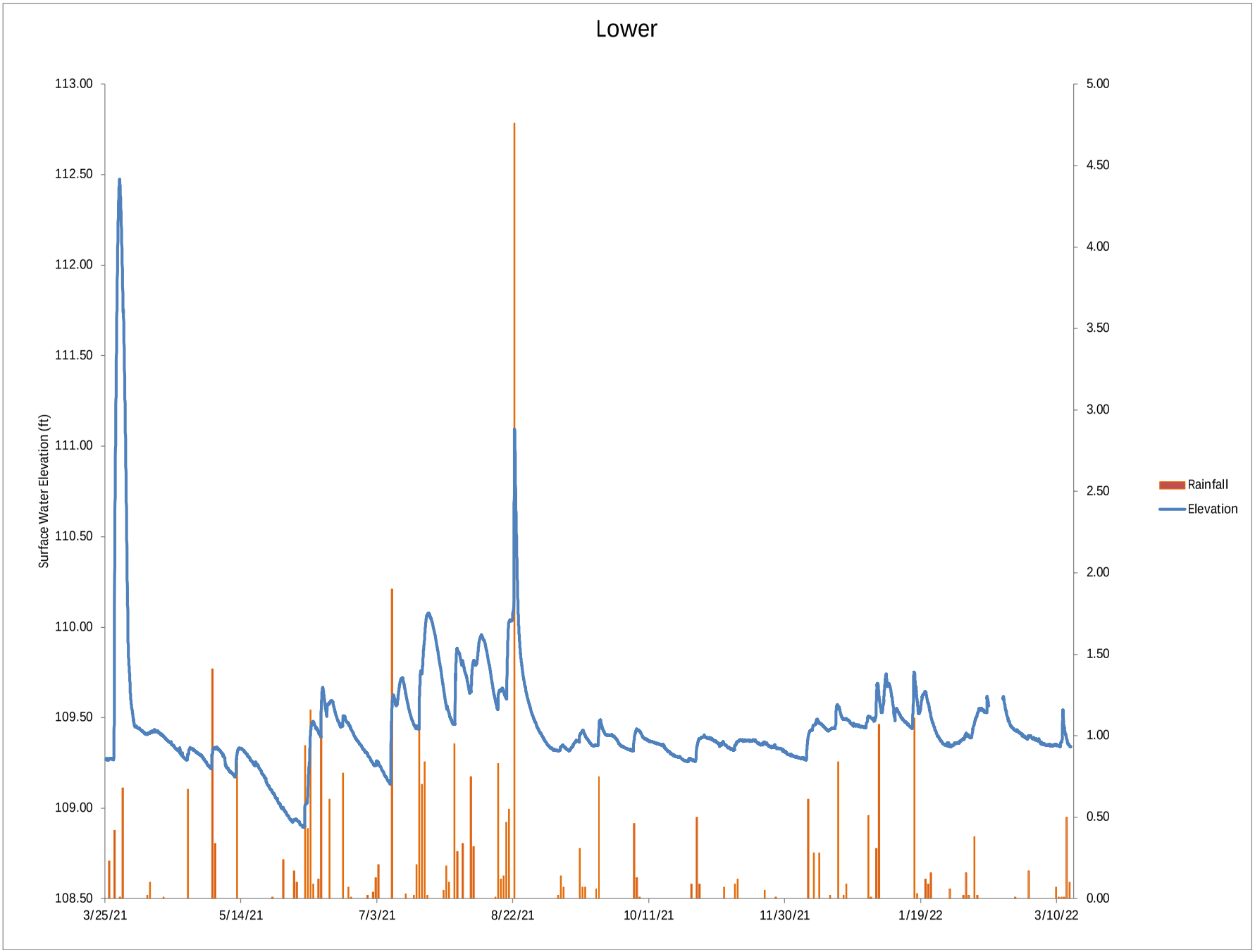

W-60 and W-61
Groundwater Elevation (ft)
122.20
121.70
121.20
120.70
120.20
119.70
119.20
118.70
118.20
117.70
1.20
1.00
0.80
0.60
0.40
0.20
0.00
11/5/21
11/25/21
12/15/21
1/4/22
1/24/22
2/13/22
3/5/22
Rainfall
W-60
W-61


Canal
Surface Water Elevation (ft)
111.00
110.50
110.00
109.50
109.00
108.50
108.00
107.50
107.00
106.50
106.00
105.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
3/26/21
5/15/21
7/4/21
8/23/21
10/12/21
12/1/21
1/20/22
3/11/22
Rainfall
Elevation

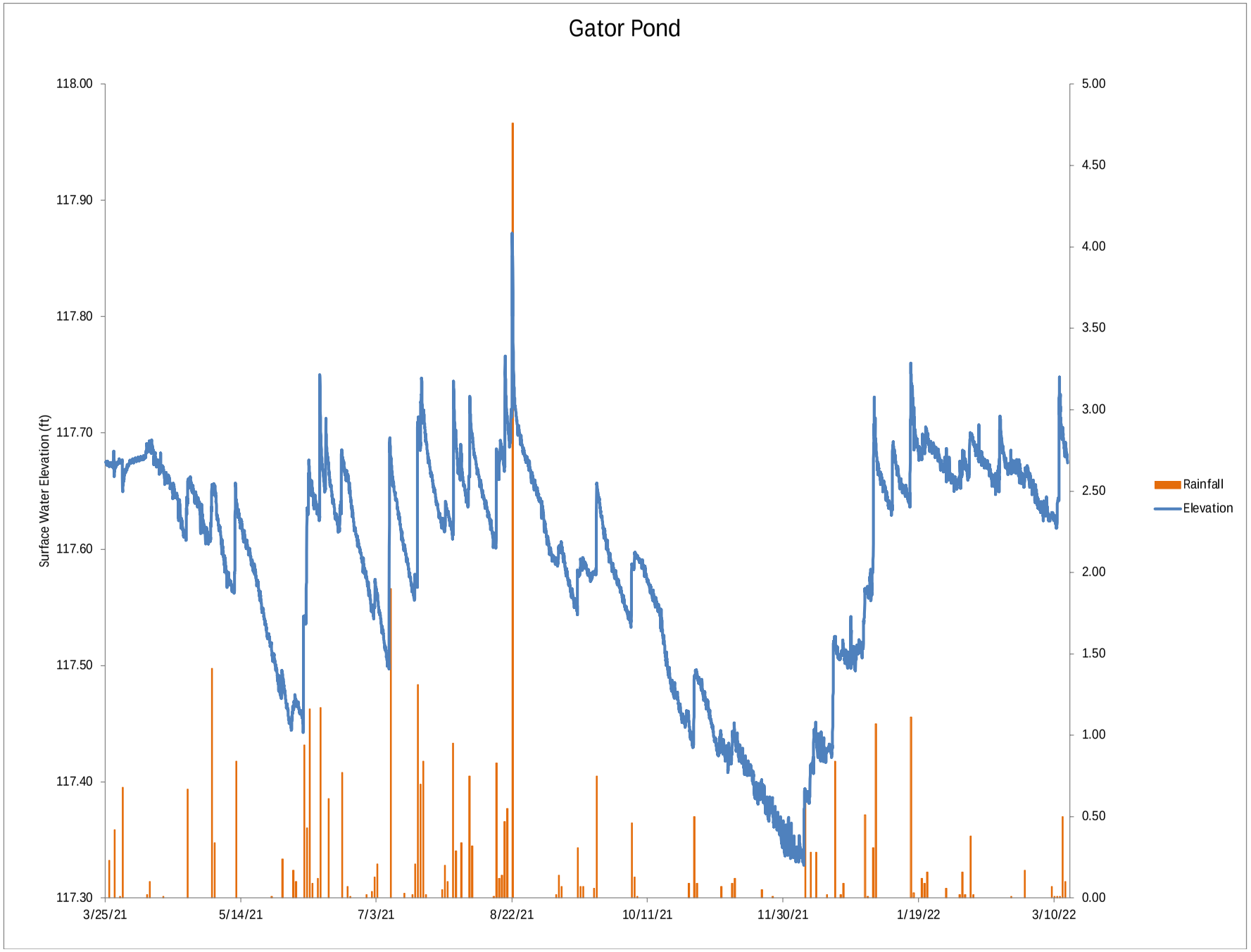

Entrance
Surface Water Elevation (ft)
112.00
111.50
111.00
110.50
110.00
109.50
109.00
108.50
108.00
107.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
3/26/21
5/15/21
7/4/21
8/23/21
10/12/21
12/1/21
1/20/22
3/11/22
Rainfall
Elevation

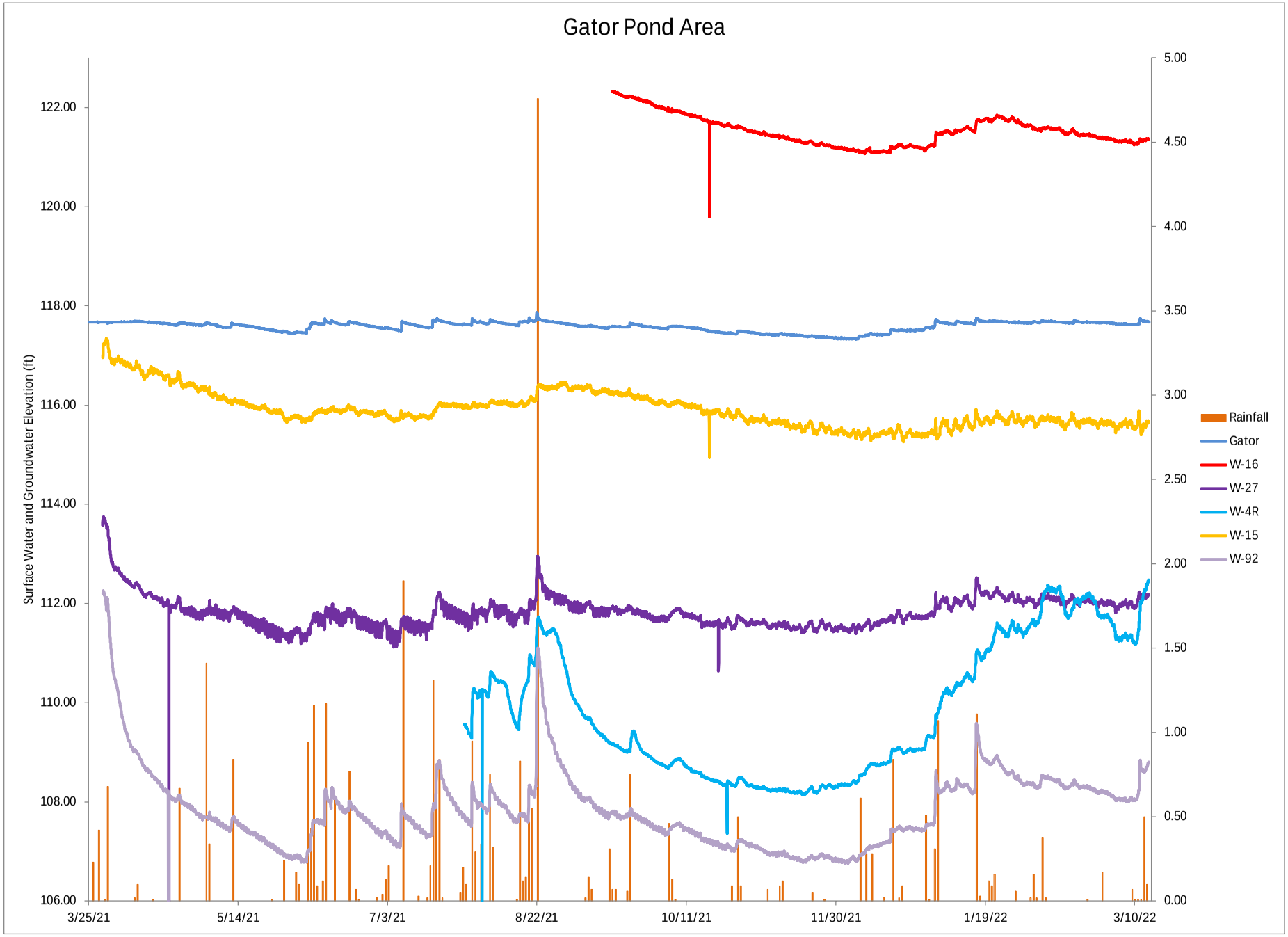

Upper 2
Surface Water Elevation (ft)
112.50
112.00
111.50
111.00
110.50
110.00
109.50
109.00
108.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
4/19/21
6/8/21
7/28/21
9/16/21
11/5/21
12/25/21
2/13/22
Rainfall
Elevation

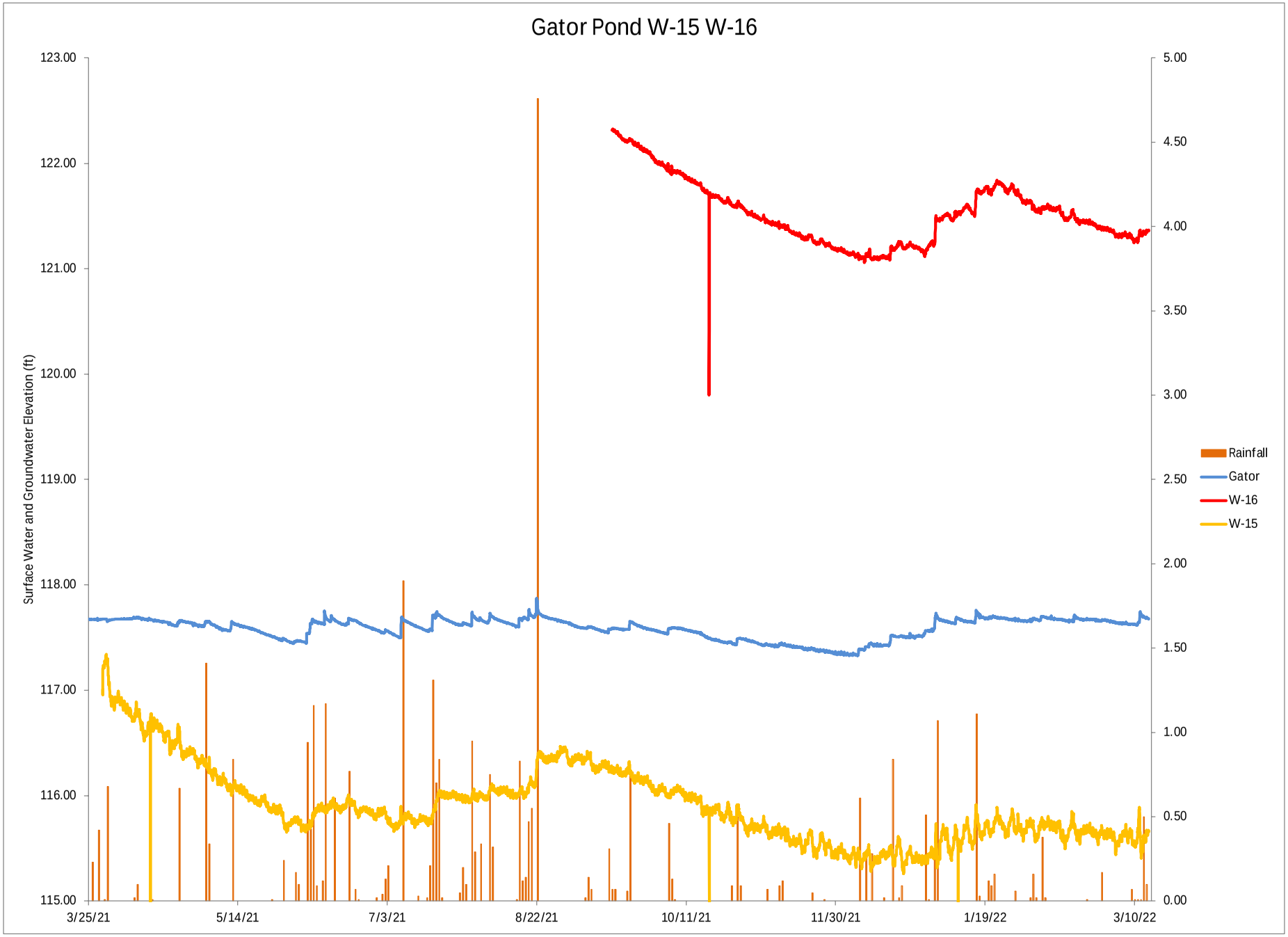

Upper
Surface Water Elevation (ft)
112.50
112.00
111.50
111.00
110.50
110.00
109.50
109.00
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
3/26/21
5/15/21
7/4/21
8/23/21
10/12/21
12/1/21
1/20/22
3/11/22
Rainfall
Elevation

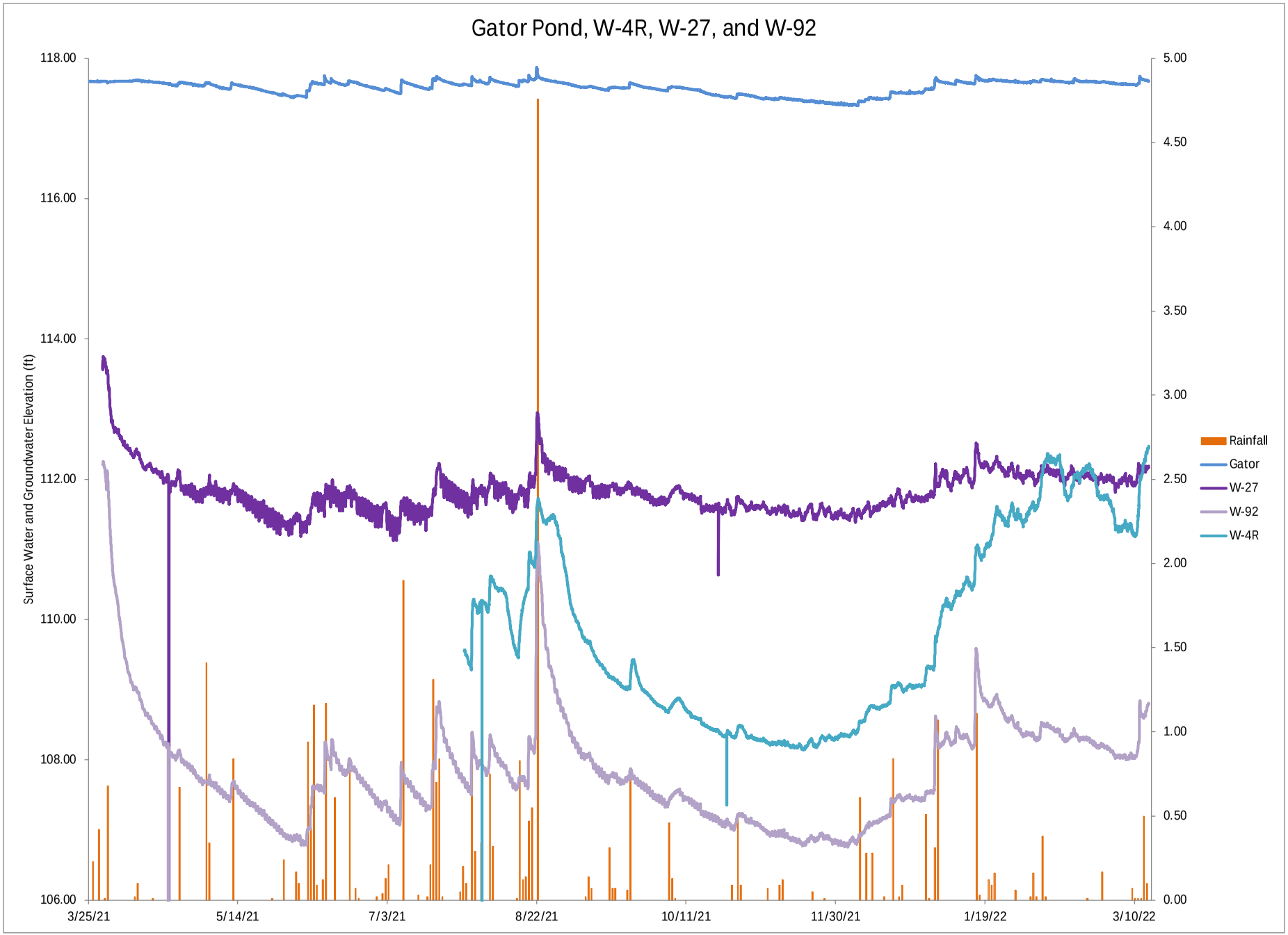

Lower
Surface Water Elevation (ft)
113.00
112.50
112.00
111.50
111.00
110.50
110.00
109.50
109.00
108.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
3/25/21
5/14/21
7/3/21
8/22/21
10/11/21
11/30/21
1/19/22
3/10/22
Rainfall
Elevation

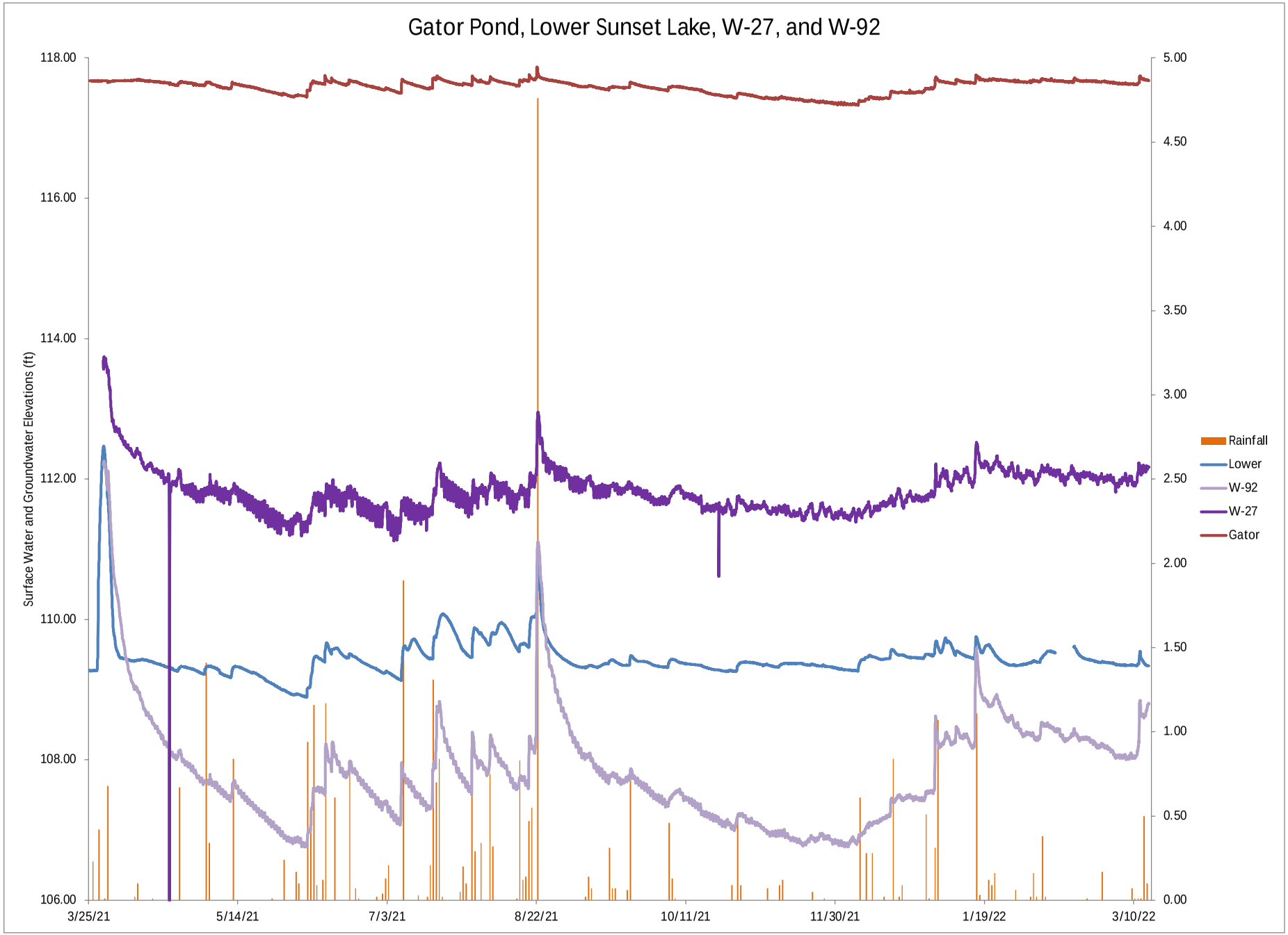

Mill Creek Surface Water
Surface Water Elevation (ft)
113.00
112.00
111.00
110.00
109.00
108.00
107.00
106.00
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
3/25/2021 12:00
5/14/2021 12:00
7/3/2021 12:00
8/22/2021 12:00
10/11/2021 12:00
11/30/2021 12:00
1/19/2022 12:00
3/10/2022 12:00
Rainfall
Canal
Lower
Upper
Upper 2
Entrance
Creek

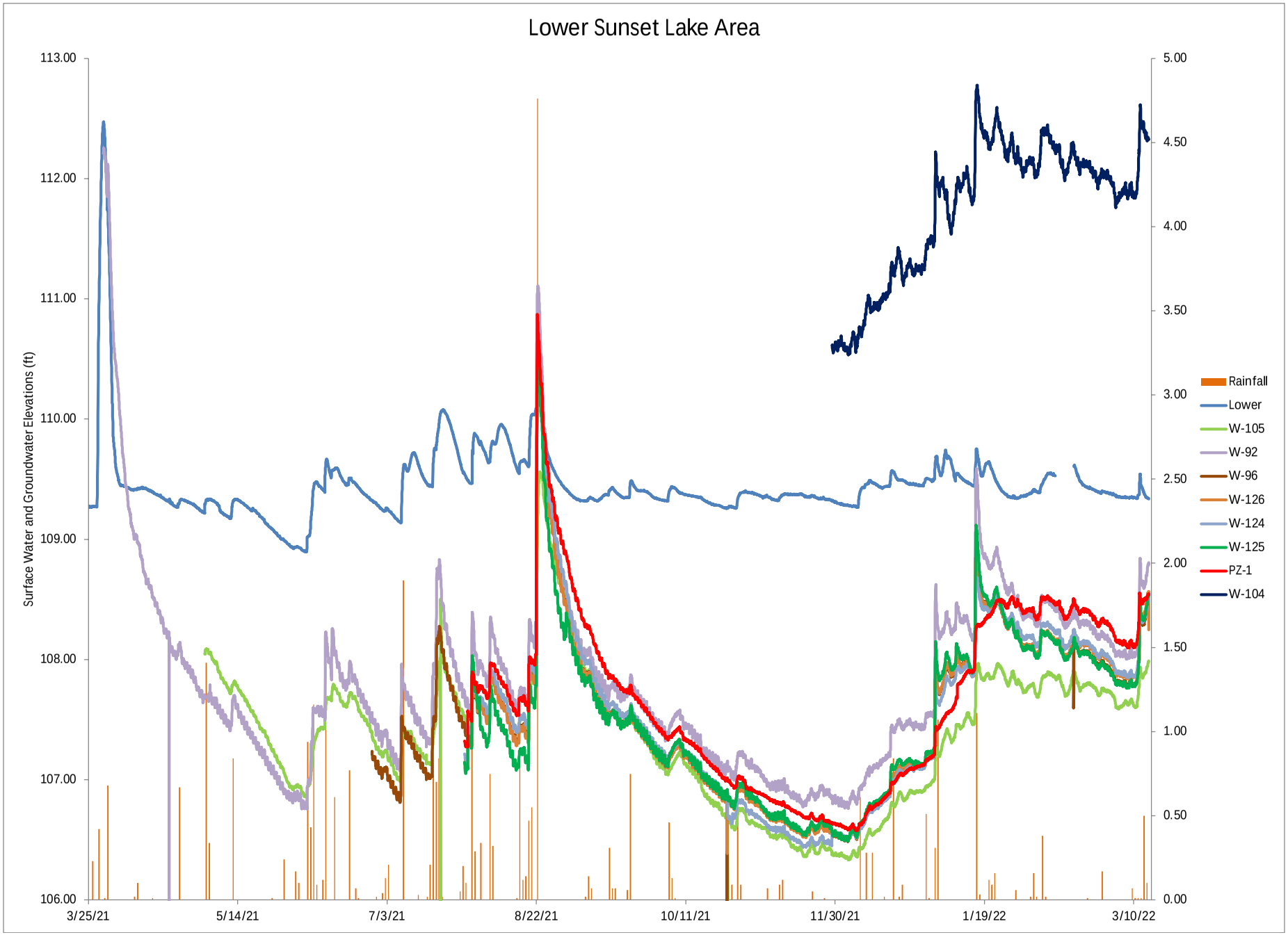

Gator Pond
Surface Water Elevation (ft)
118.00
117.90
117.80
117.70
117.60
117.50
117.40
117.30
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
3/25/21
5/14/21
7/3/21
8/22/21
10/11/21
11/30/21
1/19/22
3/10/22
Rainfall
Elevation

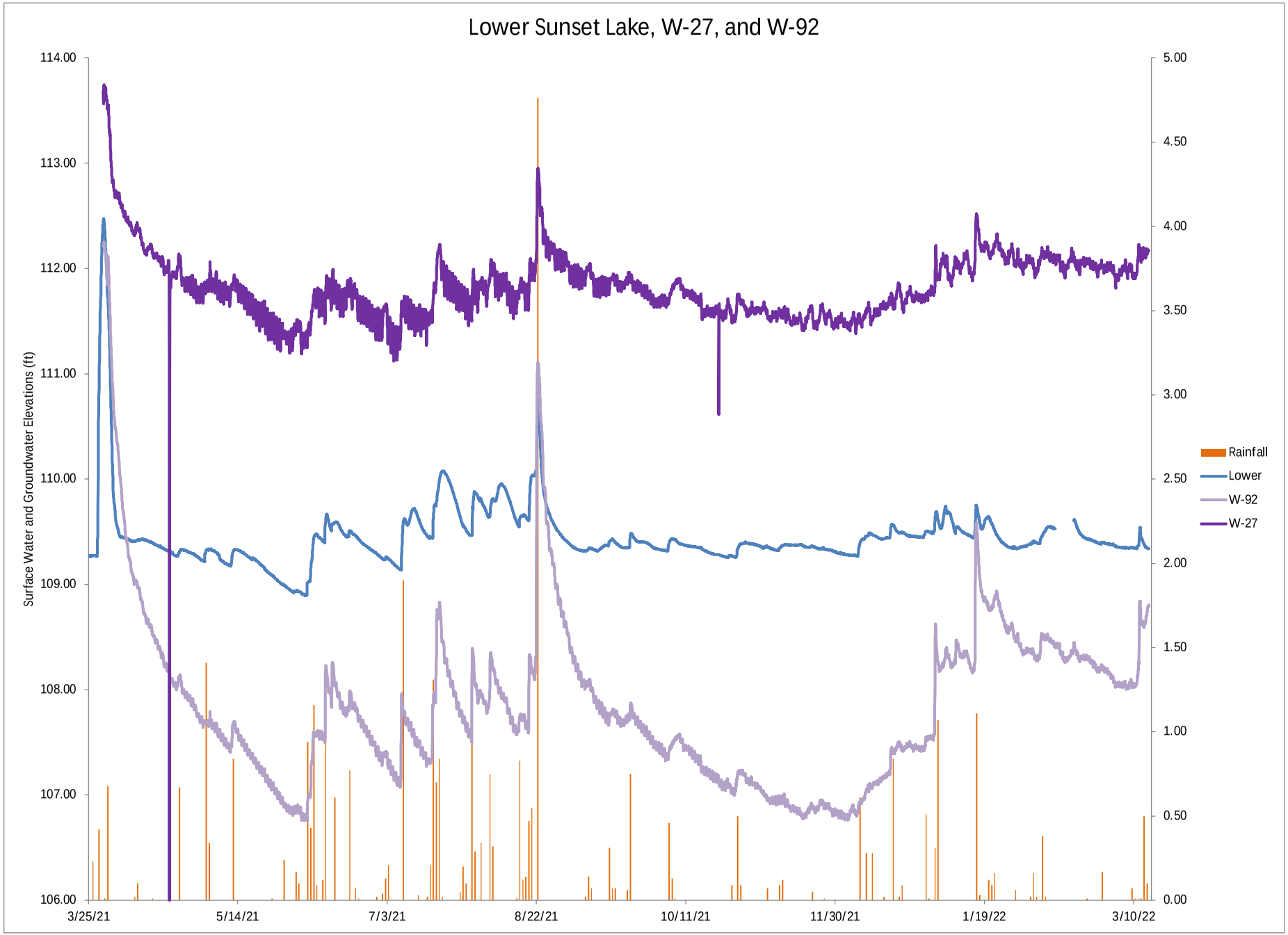

Gator Pond Area
Surface Water and Groundwater Elevation (ft)
122.00
120.00
118.00
116.00
114.00
112.00
110.00
108.00
106.00
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
3/25/21
5/14/21
7/3/21
8/22/21
10/11/21
11/30/21
1/19/22
3/10/22
Rainfall
Gator
W-16
W-27
W-4R
W-15
W-92

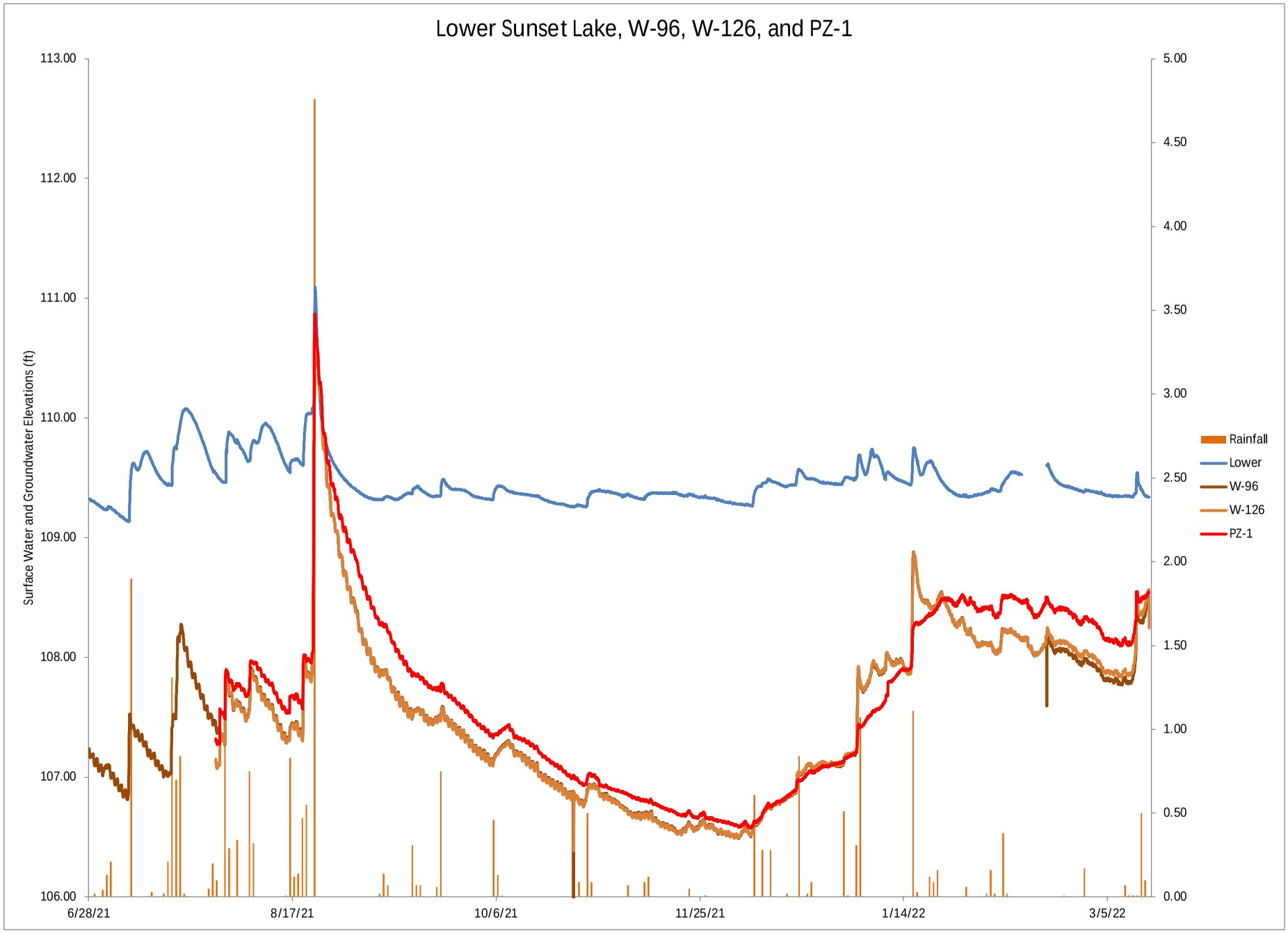

Gator Pond W-15 W-16
Surface Water and Groundwater Elevation (ft)
123.00
122.00
121.00
120.00
119.00
118.00
117.00
116.00
115.00
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
3/25/21
5/14/21
7/3/21
8/22/21
10/11/21
11/30/21
1/19/22
3/10/22
Rainfall
Gator
W-16
W-15

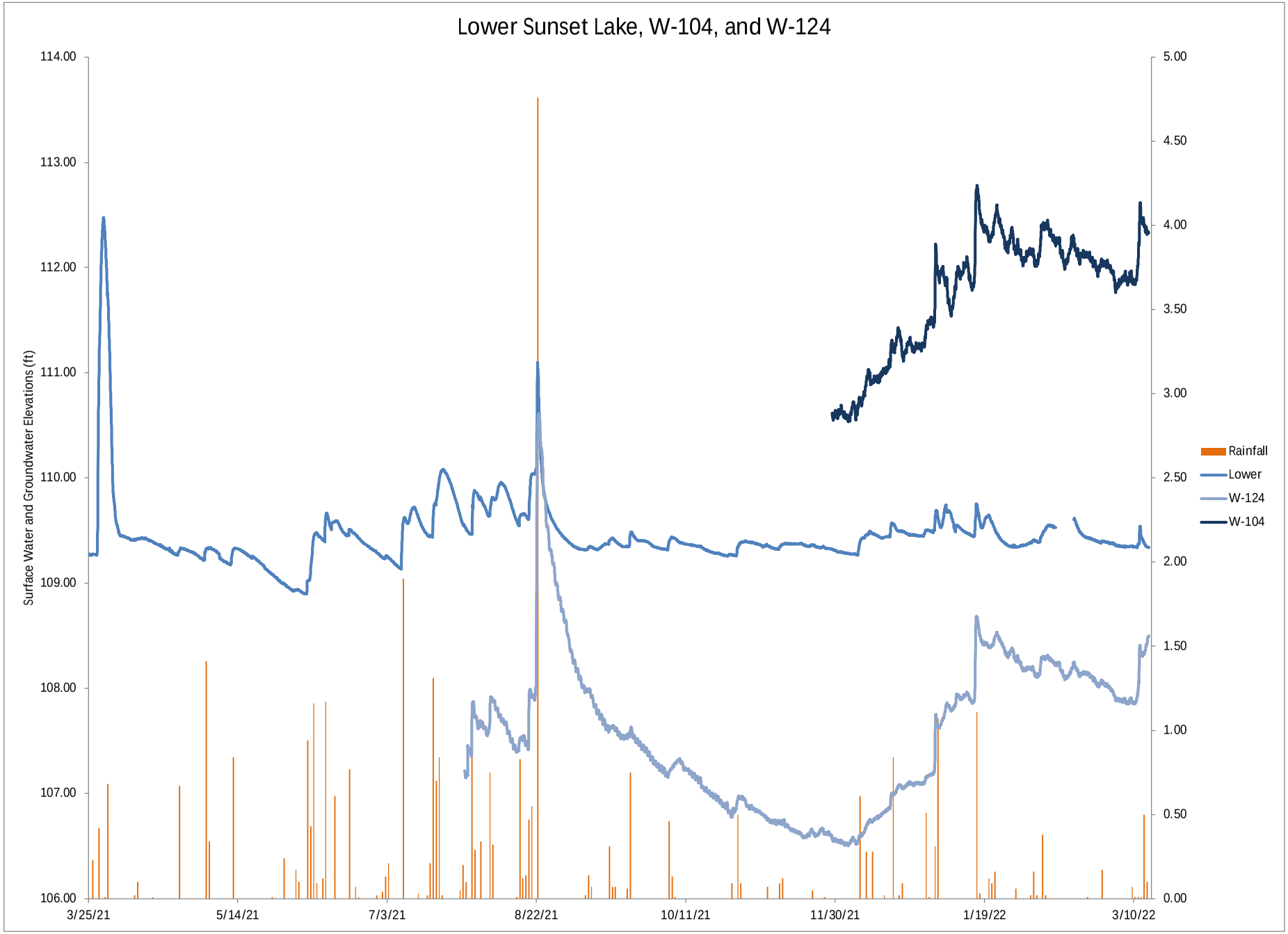

Gator Pond, W-4R, W-27, and W-92
Surface Water and Groundwater Elevation (ft)
118.00
116.00
114.00
112.00
110.00
108.00
106.00
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
3/25/21
5/14/21
7/3/21
8/22/21
10/11/21
11/30/21
1/19/22
3/10/22
Rainfall
Gator
W-27
W-92
W-4R

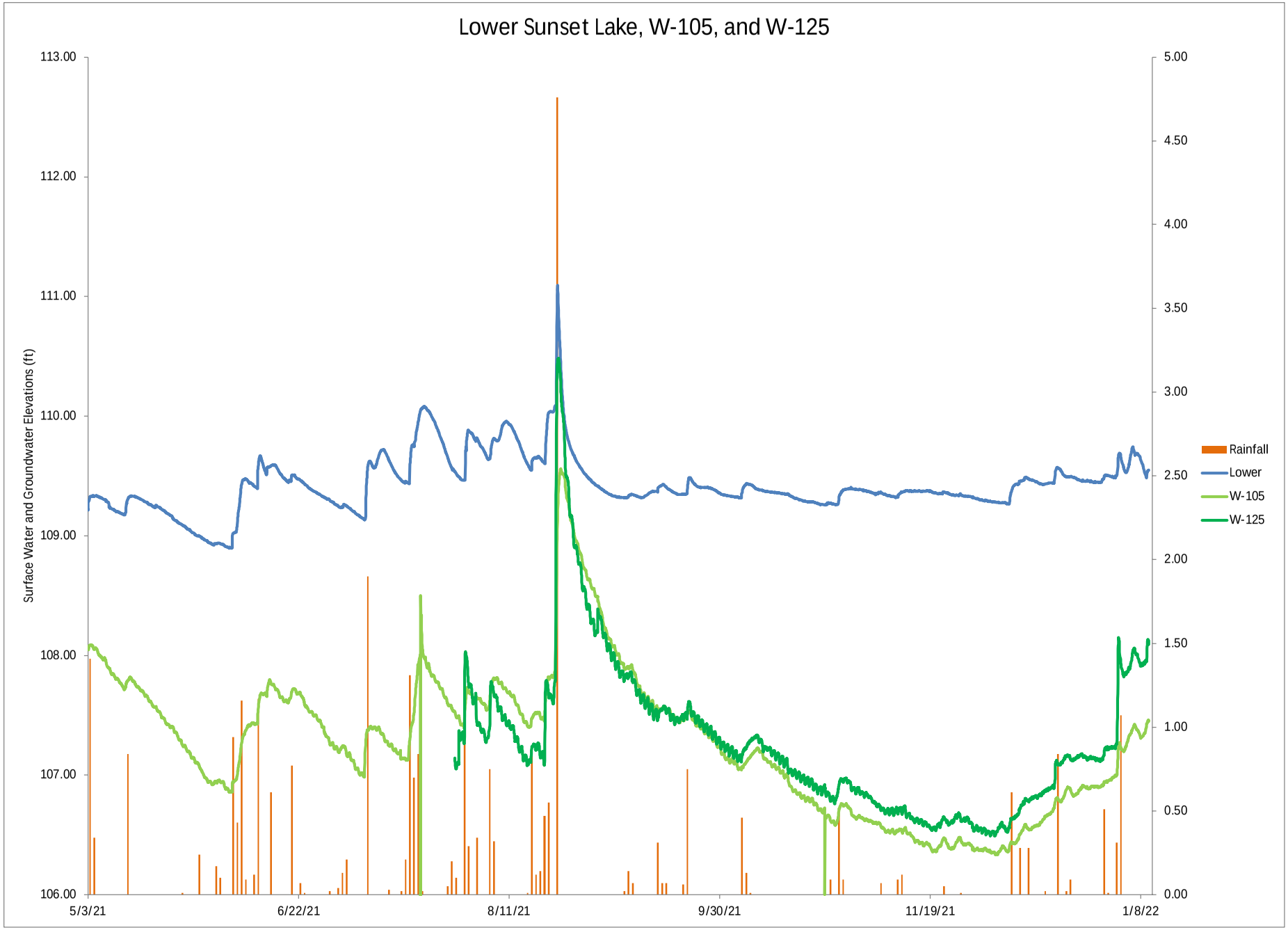

Gator Pond, Lower Sunset Lake, W-27, and W-92
Surface Water and Groundwater Elevations (ft)
118.00
116.00
114.00
112.00
110.00
108.00
106.00
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
3/25/21
5/14/21
7/3/21
8/22/21
10/11/21
11/30/21
1/19/22
3/10/22
Rainfall
Lower
W-92
W-27
Gator


Lower Sunset Lake Area
Surface Water and Groundwater Elevations (ft)
113.00
112.00
111.00
110.00
109.00
108.00
107.00
106.00
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
3/25/21
5/14/21
7/3/21
8/22/21
10/11/21
11/30/21
1/19/22
3/10/22
Rainfall
Lower
W-105
W-92
W-96
W-126
W-124
W-125
PZ-1
W-104


Lower Sunset Lake, W-27, and W-92
Surface Water and Groundwater Elevations (ft)
114.00
113.00
112.00
111.00
110.00
109.00
108.00
107.00
106.00
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
3/25/21
5/14/21
7/3/21
8/22/21
10/11/21
11/30/21
1/19/22
3/10/22
Rainfall
Lower
W-92
W-27


Lower Sunset Lake, W-96, W-126, and PZ-1
Surface Water and Groundwater Elevations (ft)
113.00
112.00
111.00
110.00
109.00
108.00
107.00
106.00
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
6/28/21
8/17/21
10/6/21
11/25/21
1/14/22
3/5/22
Rainfall
Lower
W-96
W-126
PZ-1


Lower Sunset Lake, W-104, and W-124
Surface Water and Groundwater Elevations (ft)
114.00
113.00
112.00
111.00
110.00
109.00
108.00
107.00
106.00
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
3/25/21
5/14/21
7/3/21
8/22/21
10/11/21
11/30/21
1/19/22
3/10/22
Rainfall
Lower
W-124
W-104

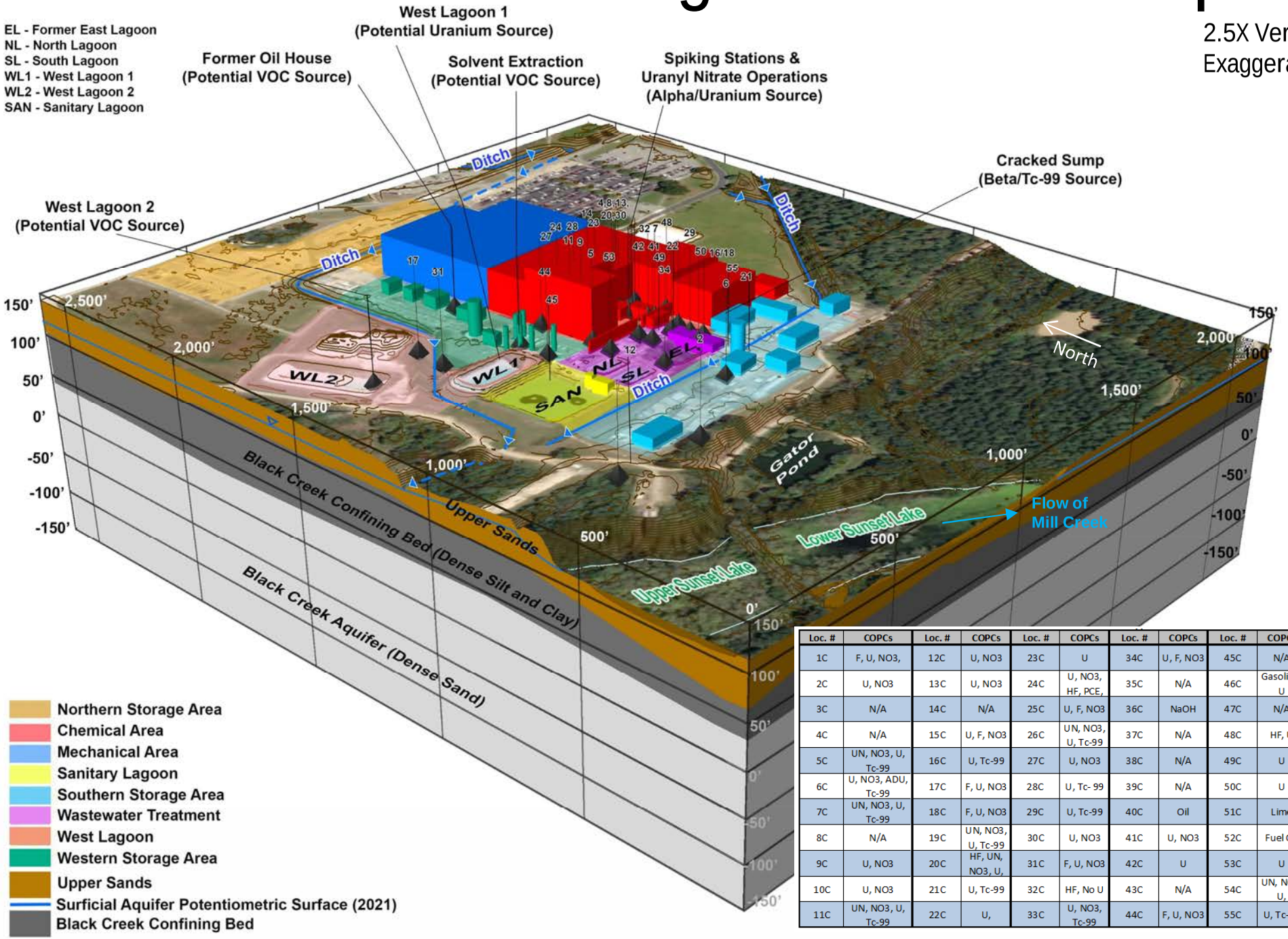

Lower Sunset Lake, W-105, and W-125
Surface Water and Groundwater Elevations (ft)
113.00
112.00
111.00
110.00
109.00
108.00
107.00
106.00
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
5/3/21
6/22/21
8/11/21
9/30/21
11/19/21
1/8/22
Rainfall
Lower
W-105
W-125

Appendix Y
Conceptual Site Model

Conceptual Site Model
Rev. 4

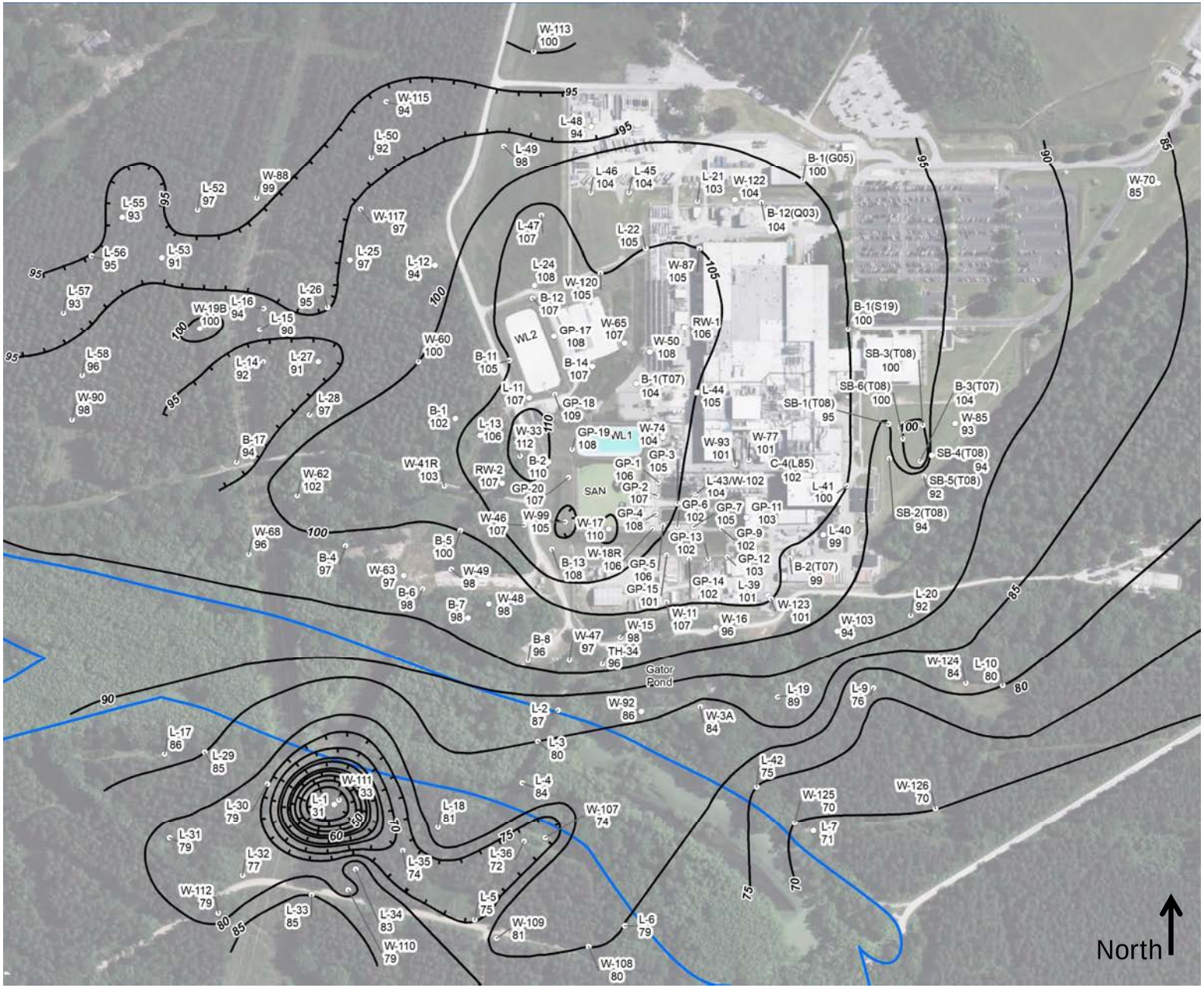
Westinghouse Columbia

Site CSM Block Diagram – Known Spills



Loc. #	COPCs	Loc. #	COPCs	Loc. #	COPCs	Loc. #	COPCs	Loc. #	COPCs	Loc. #	COPCs
1C	F, U, NO3,	12C	U, NO3	23C	U	34C	U, F, NO3	45C	N/A	56C	U, F, NO3
2C	U, NO3	13C	U, NO3	24C	U, NO3, HF, PCE,	35C	N/A	46C	Gasoline, U	57C	U
3C	N/A	14C	N/A	25C	U, F, NO3	36C	NaOH	47C	N/A	58C	U & Tc-99
4C	N/A	15C	U, F, NO3	26C	UN, NO3, U, Tc-99	37C	N/A	48C	HF, U	59C	U, Tc-99
5C	UN, NO3, U, Tc-99	16C	U, Tc-99	27C	U, NO3	38C	N/A	49C	U	60C	U, Tc-99
6C	U, NO3, ADU, Tc-99	17C	F, U, NO3	28C	U, Tc- 99	39C	N/A	50C	U	61C	U, Tc-99
7C	UN, NO3, U, Tc-99	18C	F, U, NO3	29C	U, Tc-99	40C	Oil	51C	Lime	62C	U
8C	N/A	19C	UN, NO3, U, Tc-99	30C	U, NO3	41C	U, NO3	52C	Fuel Oil	63C	U
9C	U, NO3	20C	HF, UN, NO3, U,	31C	F, U, NO3	42C	U	53C	U	64C	U, Tc-99
10C	U, NO3	21C	U, Tc-99	32C	HF, No U	43C	N/A	54C	UN, NO3, U,	65C	U, Tc-99
11C	UN, NO3, U, Tc-99	22C	U,	33C	U, NO3, Tc-99	44C	F, U, NO3	55C	U, Tc-99	66C	U, Tc-99

Top of Black Creek Contour Map



Legend

EL	Former East Lagoon
NL	North Lagoon
SL	South Lagoon
SAN	Sanitary Lagoon
WL1	West Lagoon I
WL2	West Lagoon II

Mill Creek

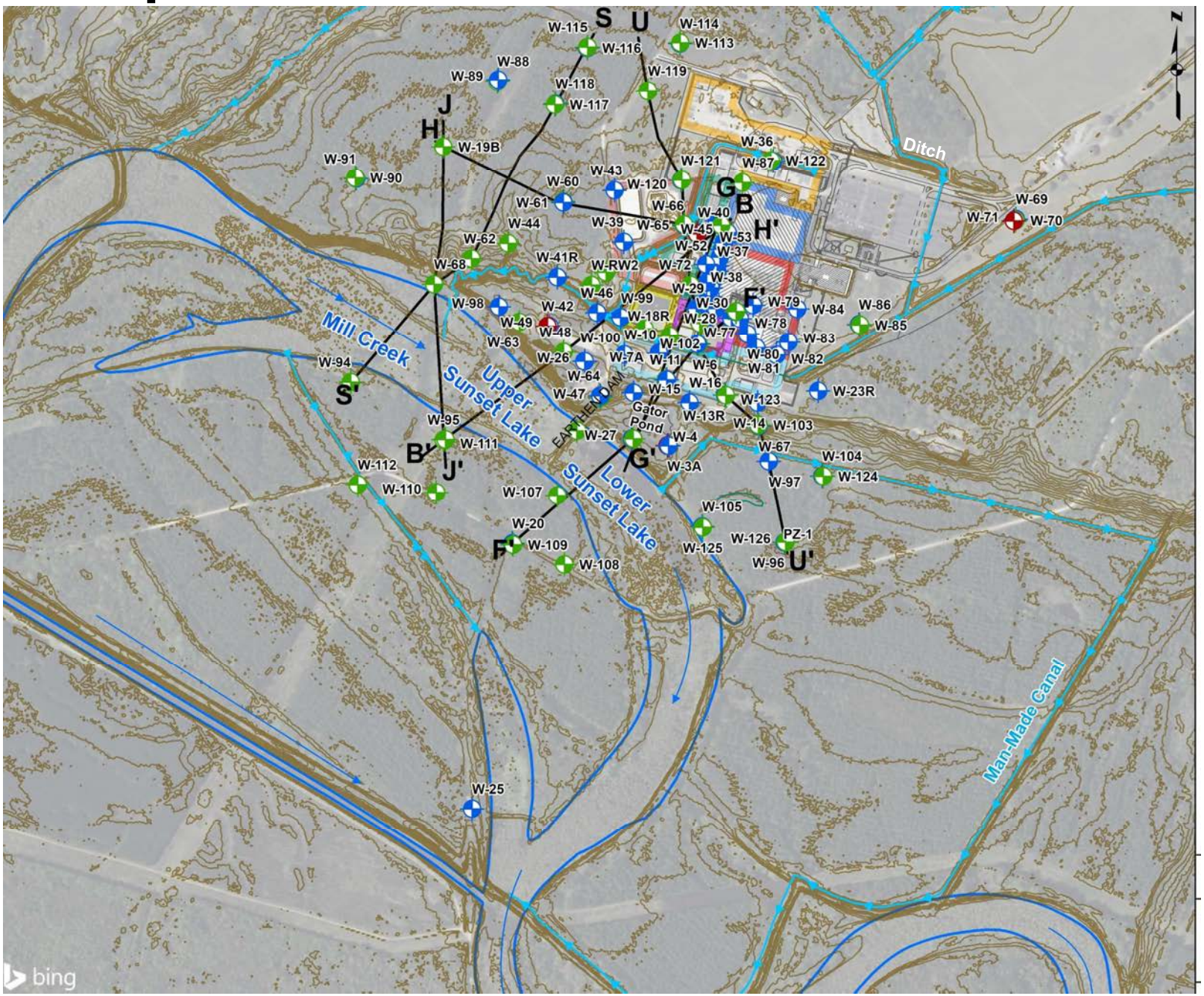
Black Creek Clay Elevation (ft-msl)

Elev. Contour of Top of Black Creek Clay (ft-msl)

Depression 5 ft Contour Interval

Normal 5 ft Contour Interval

Site Map with Man-Made Canal



EL - Former East Lagoon
NL - North Lagoon
SL - South Lagoon
WL1 - West Lagoon I
WL2 - West Lagoon II
SAN - Sanitary Lagoon

- Northern Storage Area
- Chemical Area
- Mechanical Area
- Sanitary Lagoon
- Southern Storage Area
- Wastewater Treatment
- West Lagoon
- Western Storage Area

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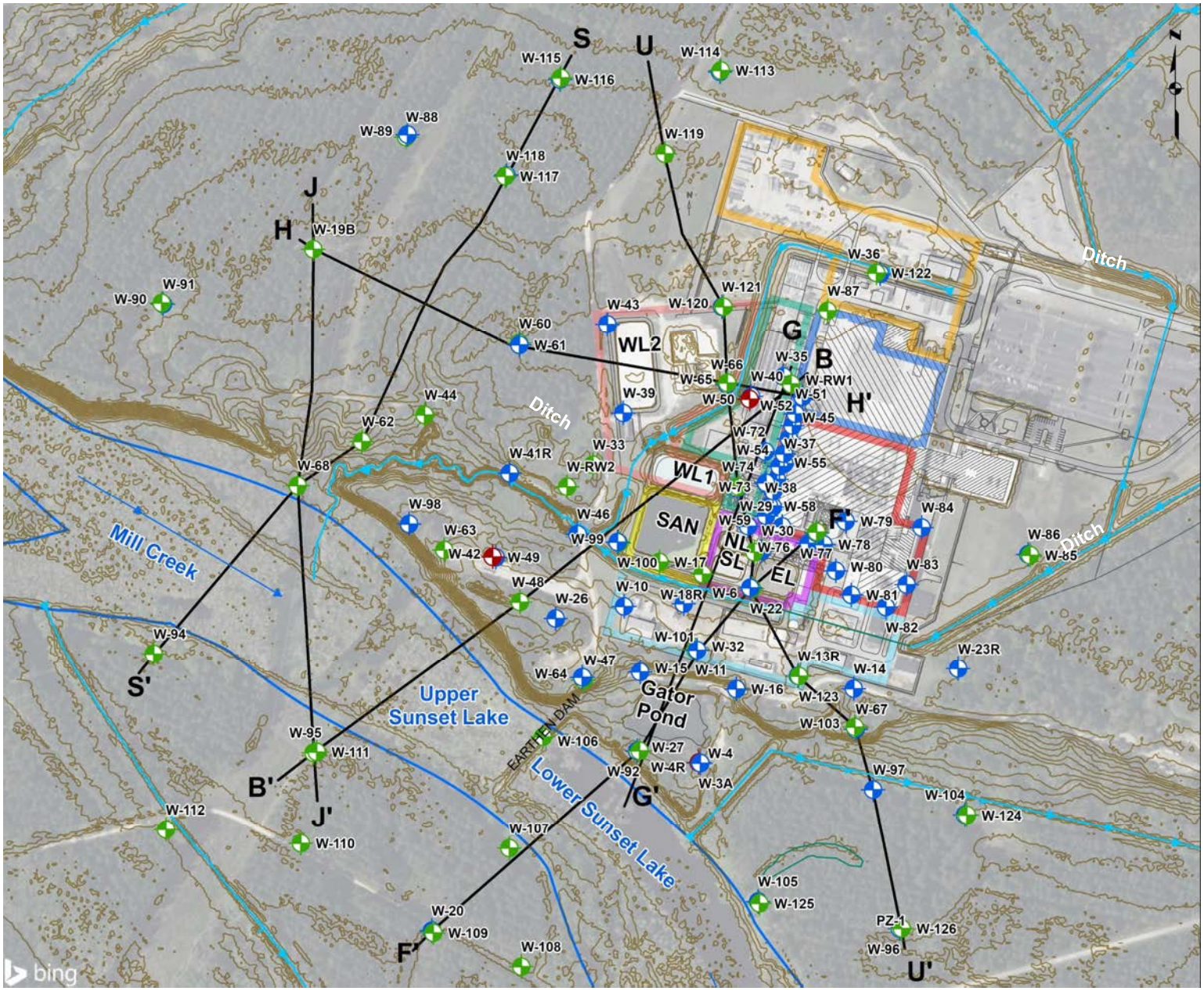
Site CSM Block Diagram – Transect Reference



EL - Former East Lagoon
NL - North Lagoon
SL - South Lagoon
WL1 - West Lagoon I
WL2 - West Lagoon II
SAN - Sanitary Lagoon

- Northern Storage Area
- Chemical Area
- Mechanical Area
- Sanitary Lagoon
- Southern Storage Area
- Wastewater Treatment
- West Lagoon
- Western Storage Area

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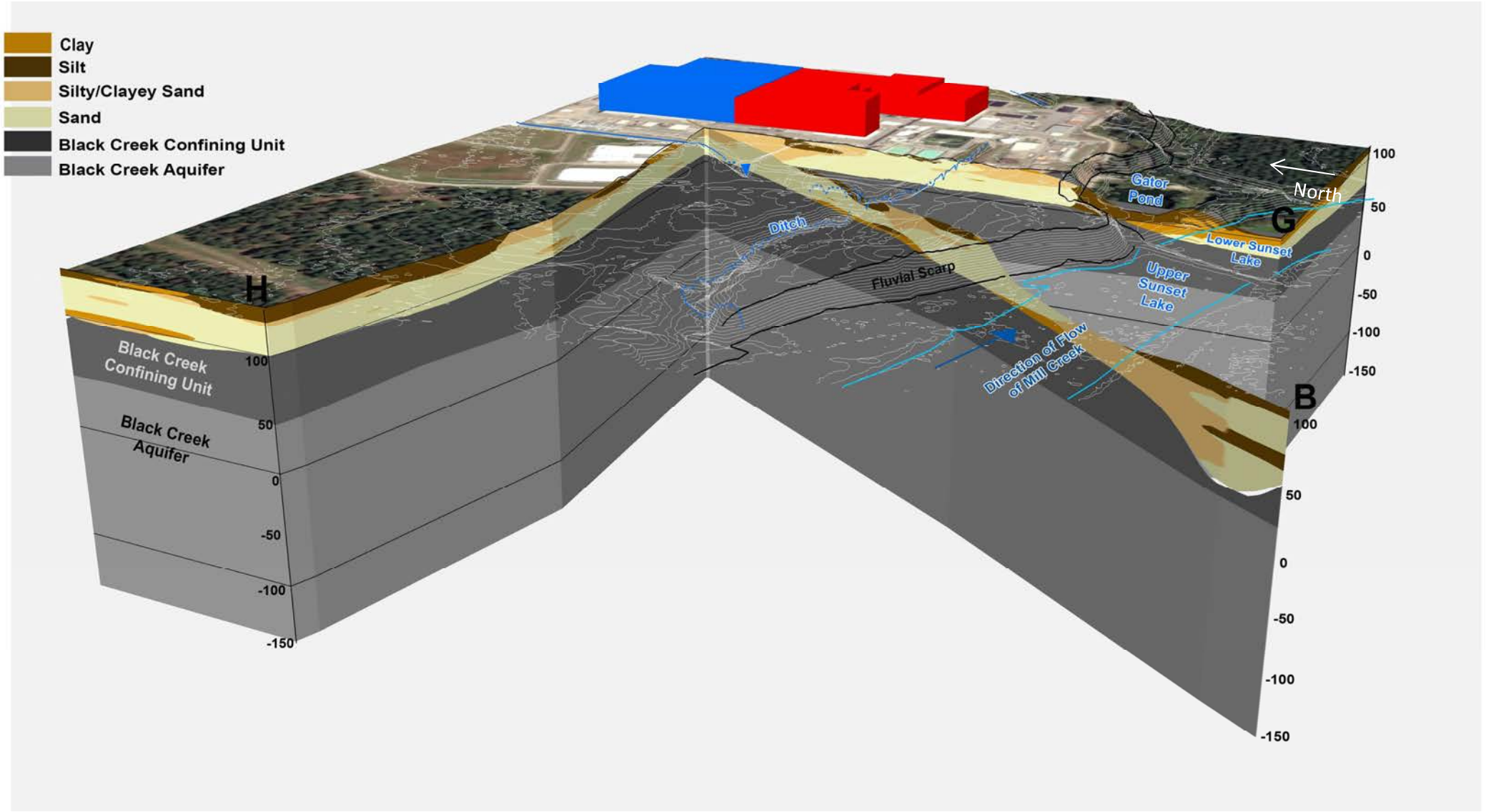
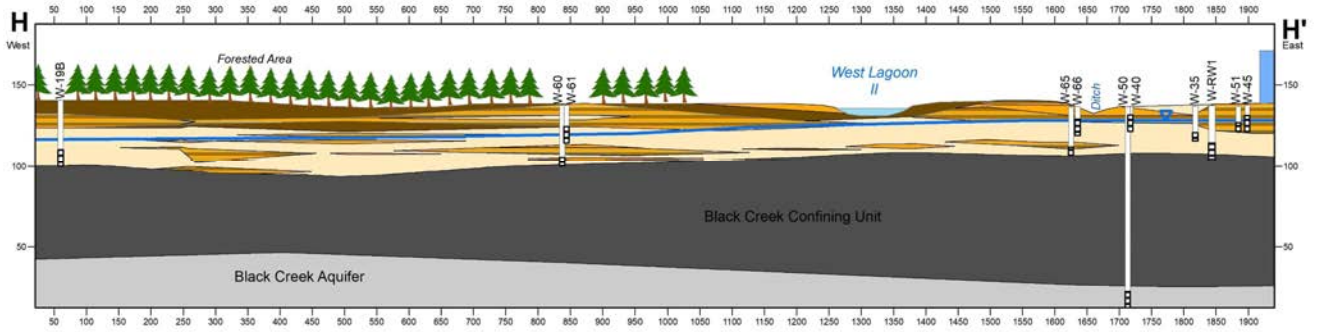
Site CSM Block Diagram – Geology



2.5X Vertical Exaggeration

Site CSM Cross Sections



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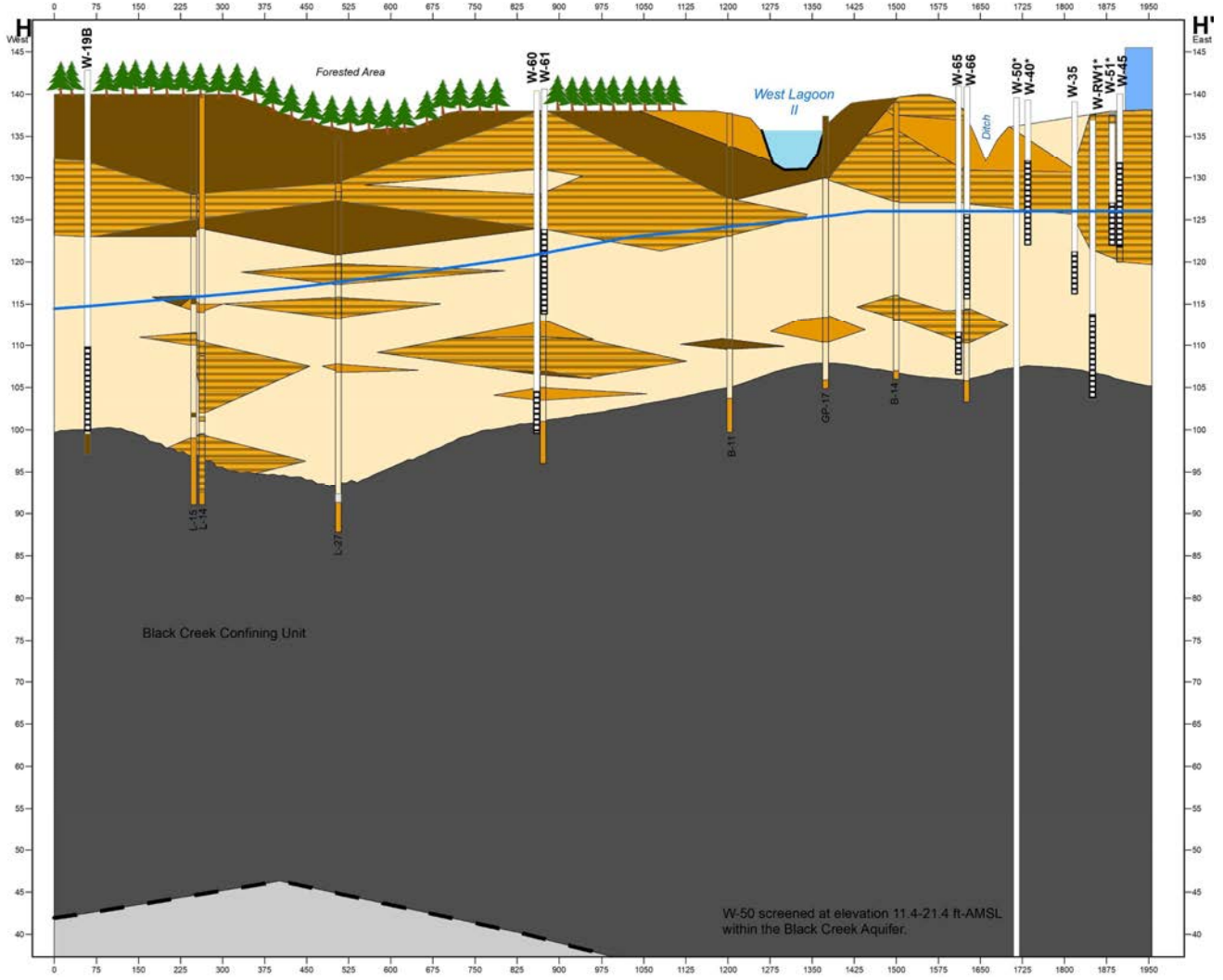


15X Vertical Exaggeration

Wells up to 75' away from the transect are projected onto the cross sections. Wells that are >20 ft and less than 75 ft are indicated with an asterisk (*). Borings are projected from up to 100' from the transect for stratigraphic interpretation and evaluation.

Legend

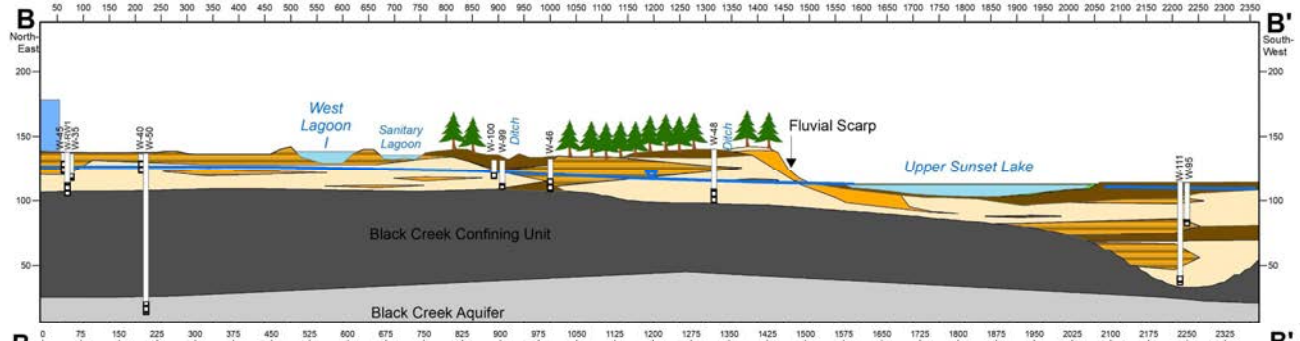
- Well Riser
- Well Screen
- Shallow Aquifer Potentiometric Surface
- Mechanical Area OU
- Surface Water

Lithology

Surficial Soil Aquifer:
- Silty/Clayey Sand
- Clay
- Silt
- Sand

- Black Creek Confining Unit
- Black Creek Aquifer
- Inferred Geologic Contact

Site CSM Cross Sections



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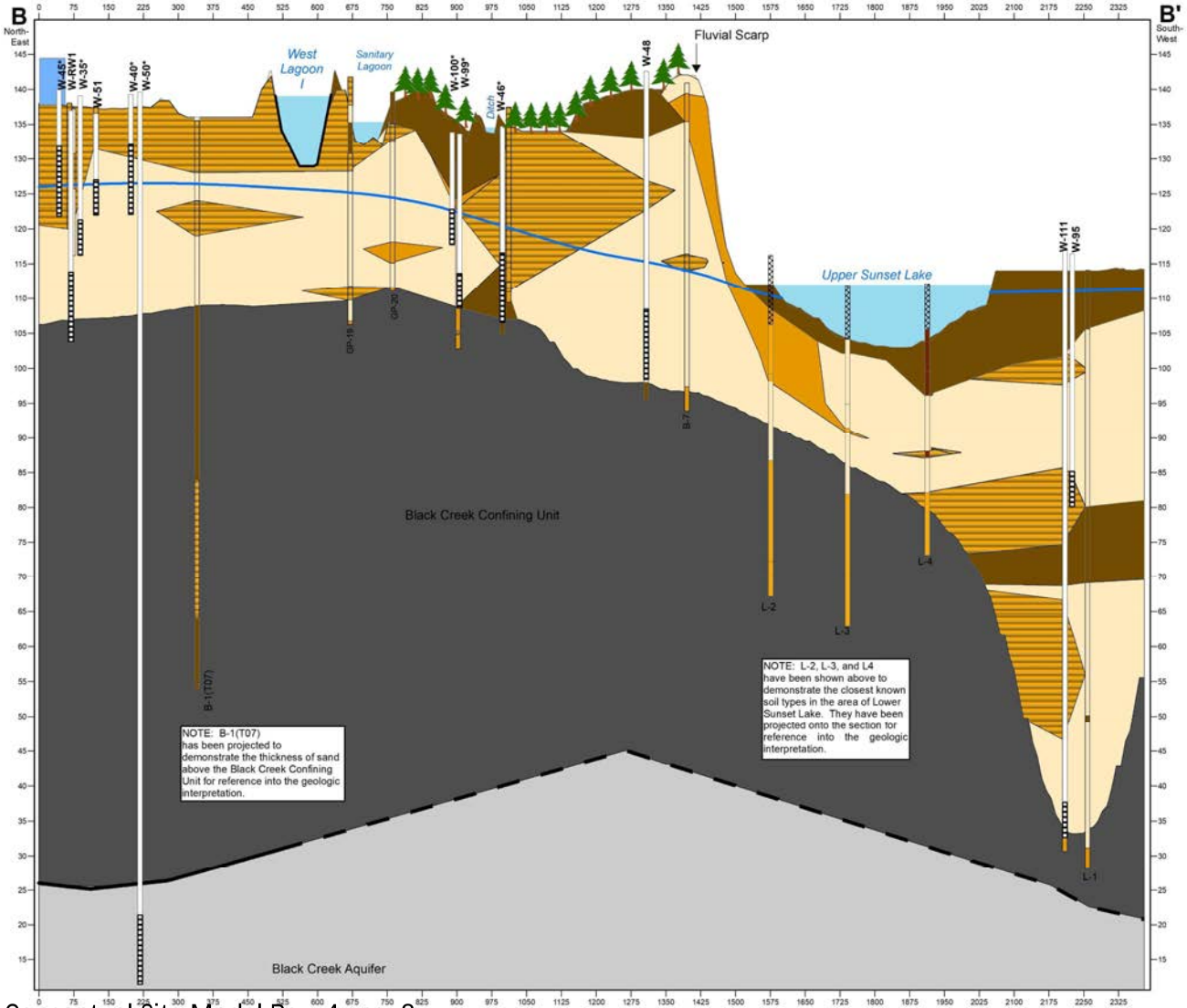

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Legend

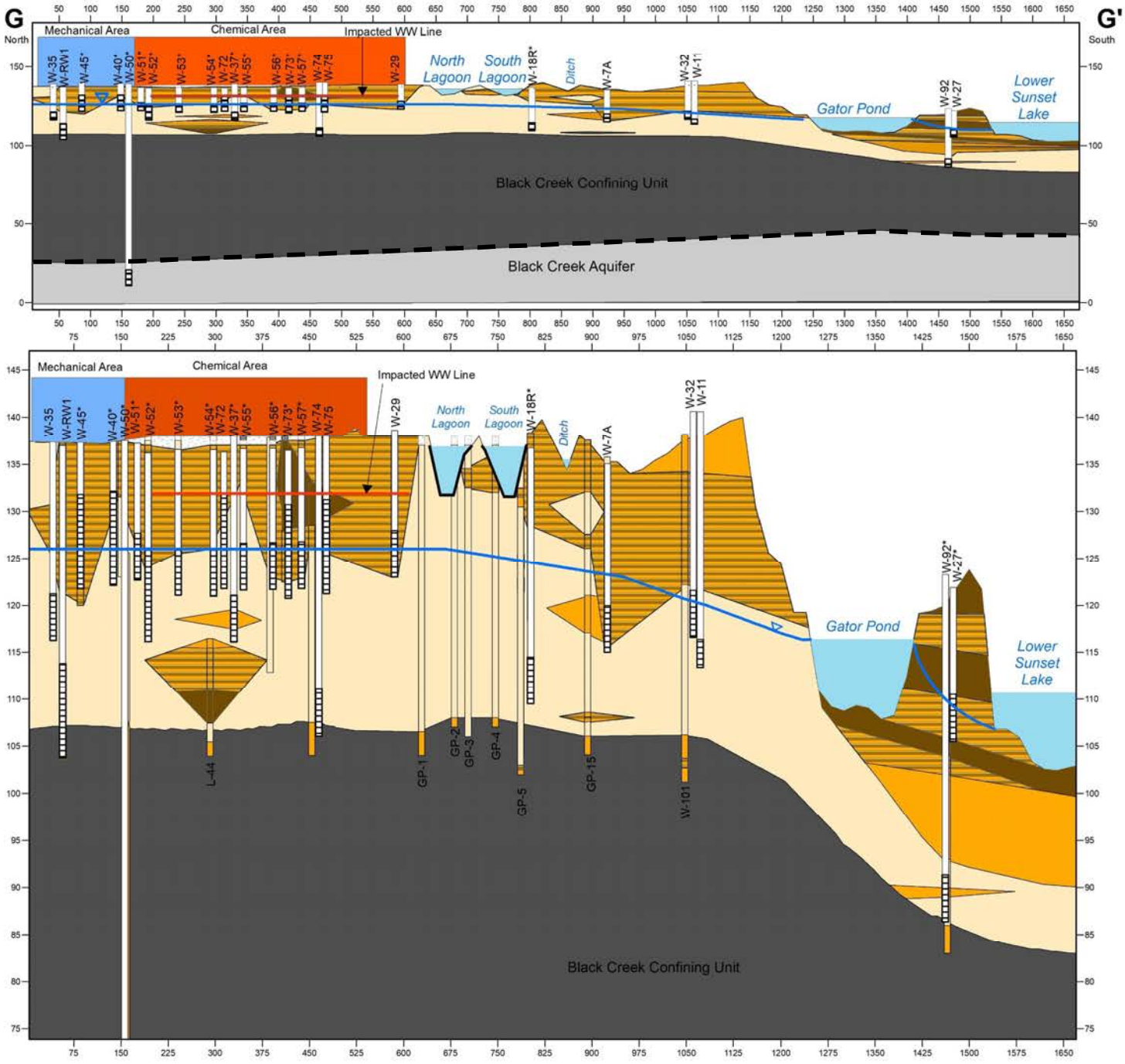
- Well Riser
- Well Screen
- Shallow Aquifer Potentiometric Surface
- Mechanical Area OU
- Surface Water

Lithology

Surficial Soil Aquifer
- Silty/Clayey Sand
- Clay
- Silt
- Sand

- Black Creek Confining Unit
- Black Creek Aquifer
- Inferred Geologic Contact

Site CSM Cross Sections



2.5X Vertical Exaggeration

15X Vertical Exaggeration

Wells up to 100' away from the transect are projected onto the cross sections. Wells that are >20 ft and less than 100 ft are indicated with an asterisk (*). Borings are projected from up to 100' from the transect for stratigraphic interpretation and evaluation.

Legend

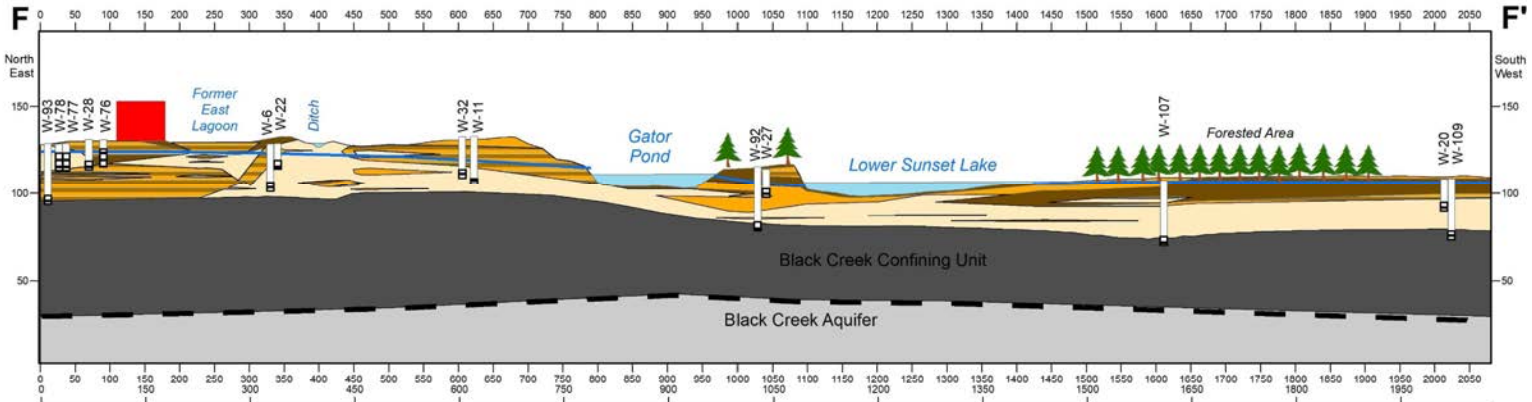
- Well Riser
- Well Screen
- Shallow Aquifer Potentiometric Surfac
- Mechanical Area OU
- Chemical Area OU
- Surface Water

Lithology

Surficial Soil Aquifer:
- Silty/Clayey Sand
- Clay
- Silt
- Sand

- Black Creek Confining Unit
- Black Creek Aquifer
- Inferred Geologic Contact

Site CSM Cross Sections



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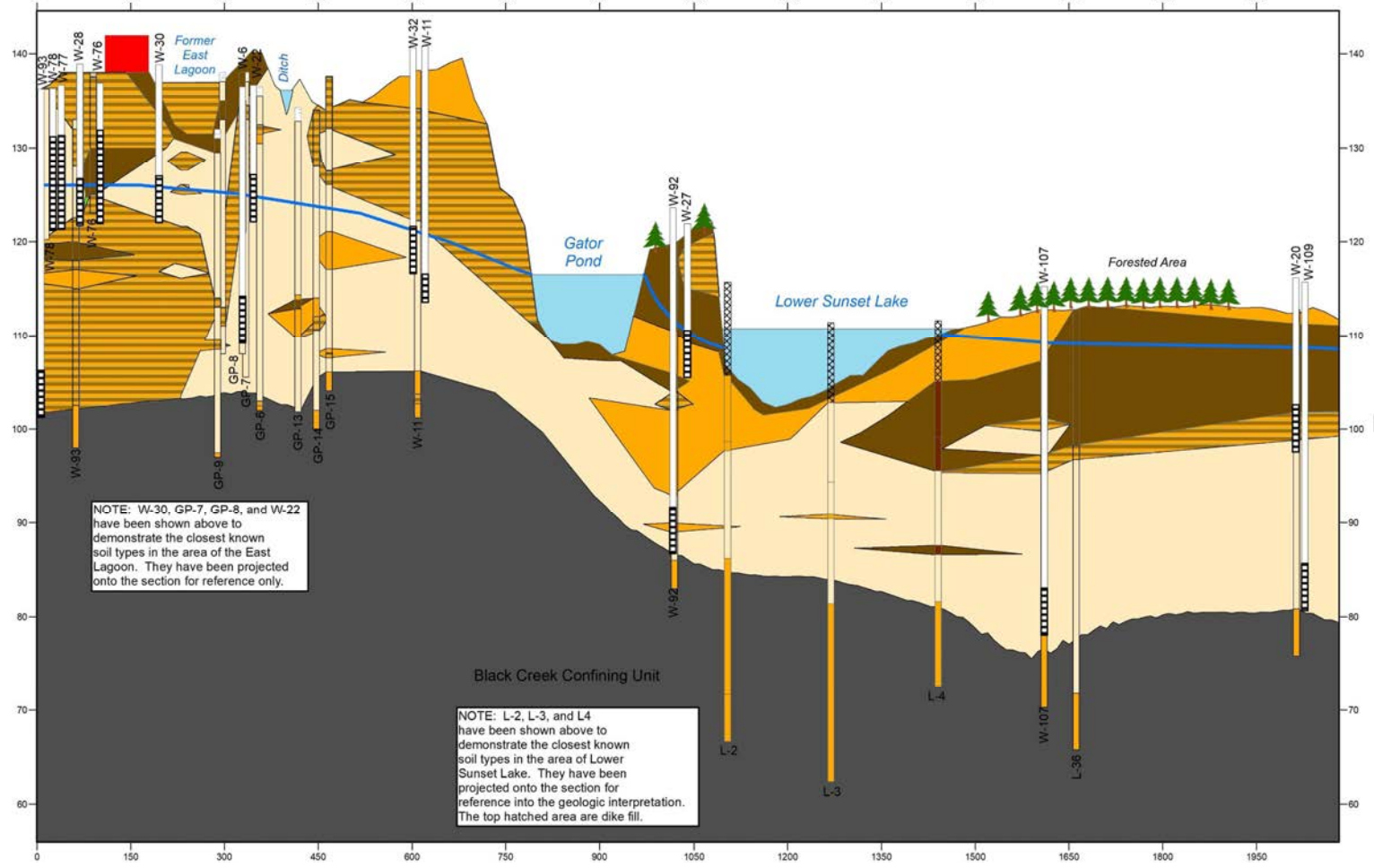

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Legend

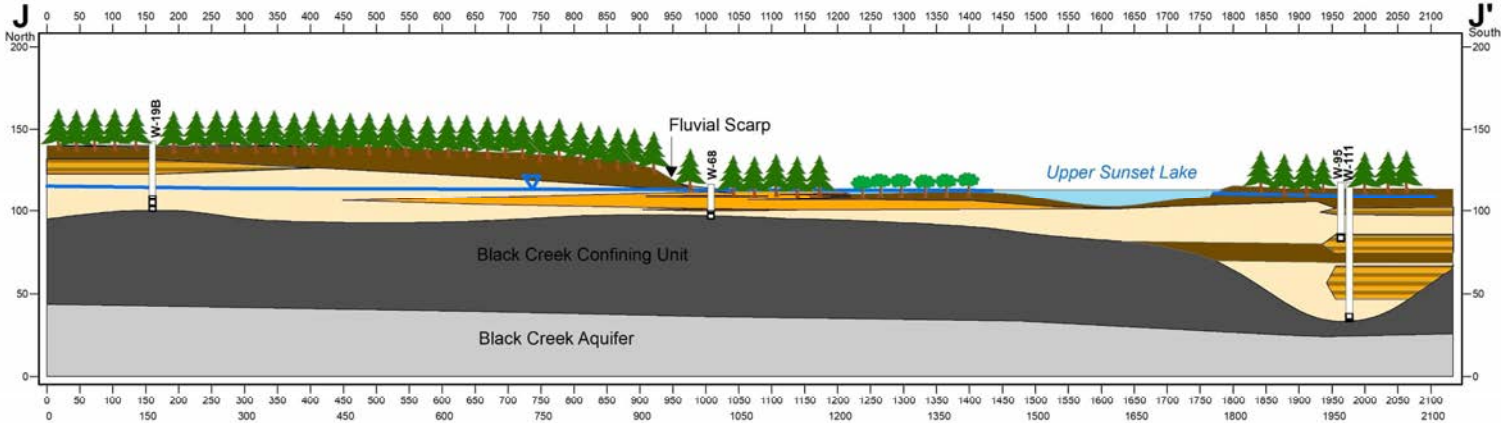
- Well Riser
- Well Screen
- Shallow Aquifer Potentiometric Surface
- Mechanical Area OU
- Chemical Area OU
- Surface Water

Lithology

Surficial Soil Aquifer:
- Silty/Clayey Sand
- Clay
- Silt
- Sand

- Black Creek Confining Unit
- Black Creek Aquifer
- Inferred Geologic Contact

Site CSM Cross Sections



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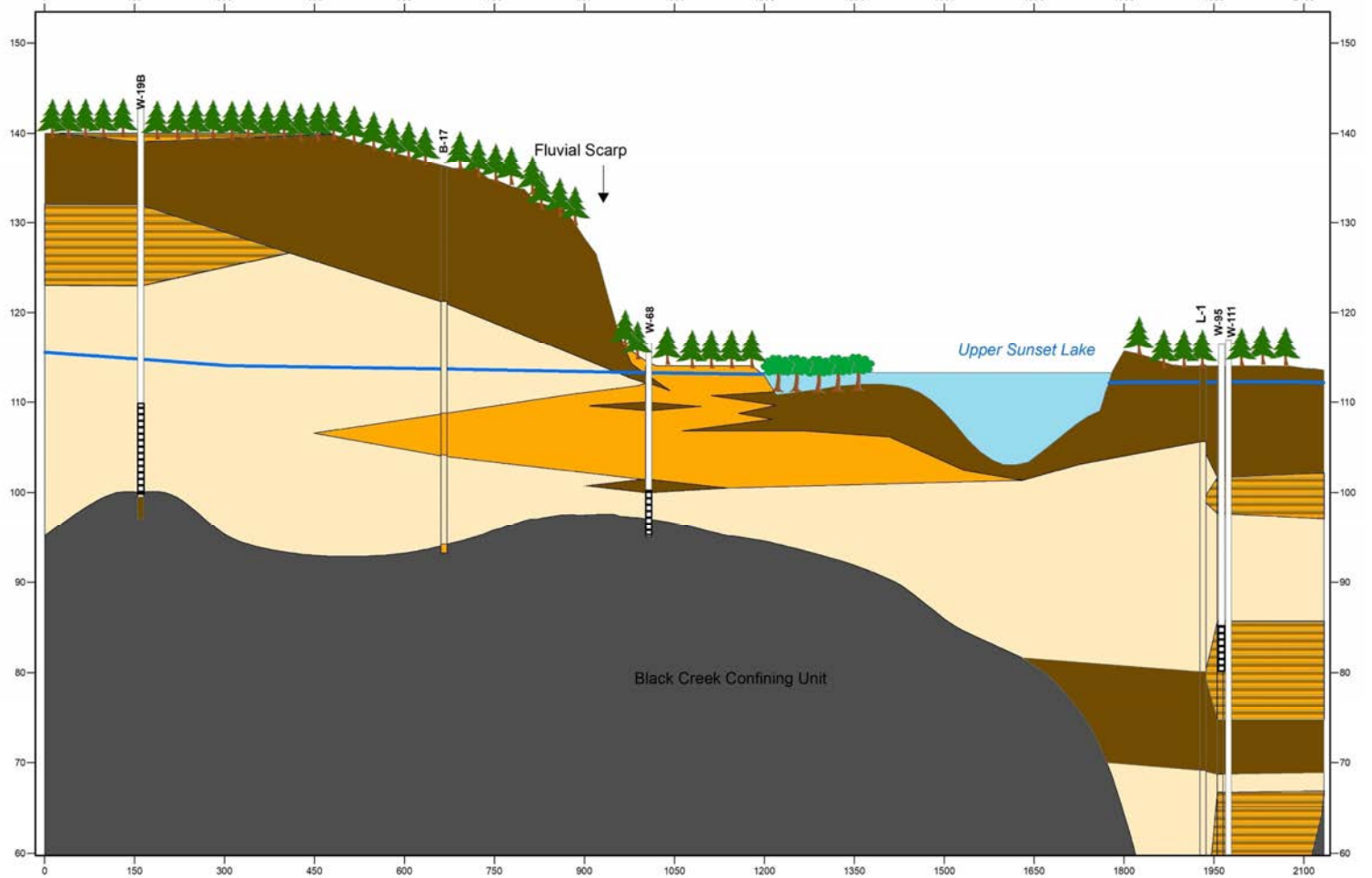

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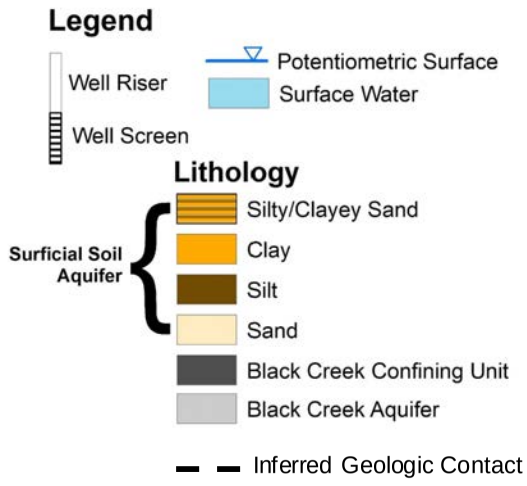
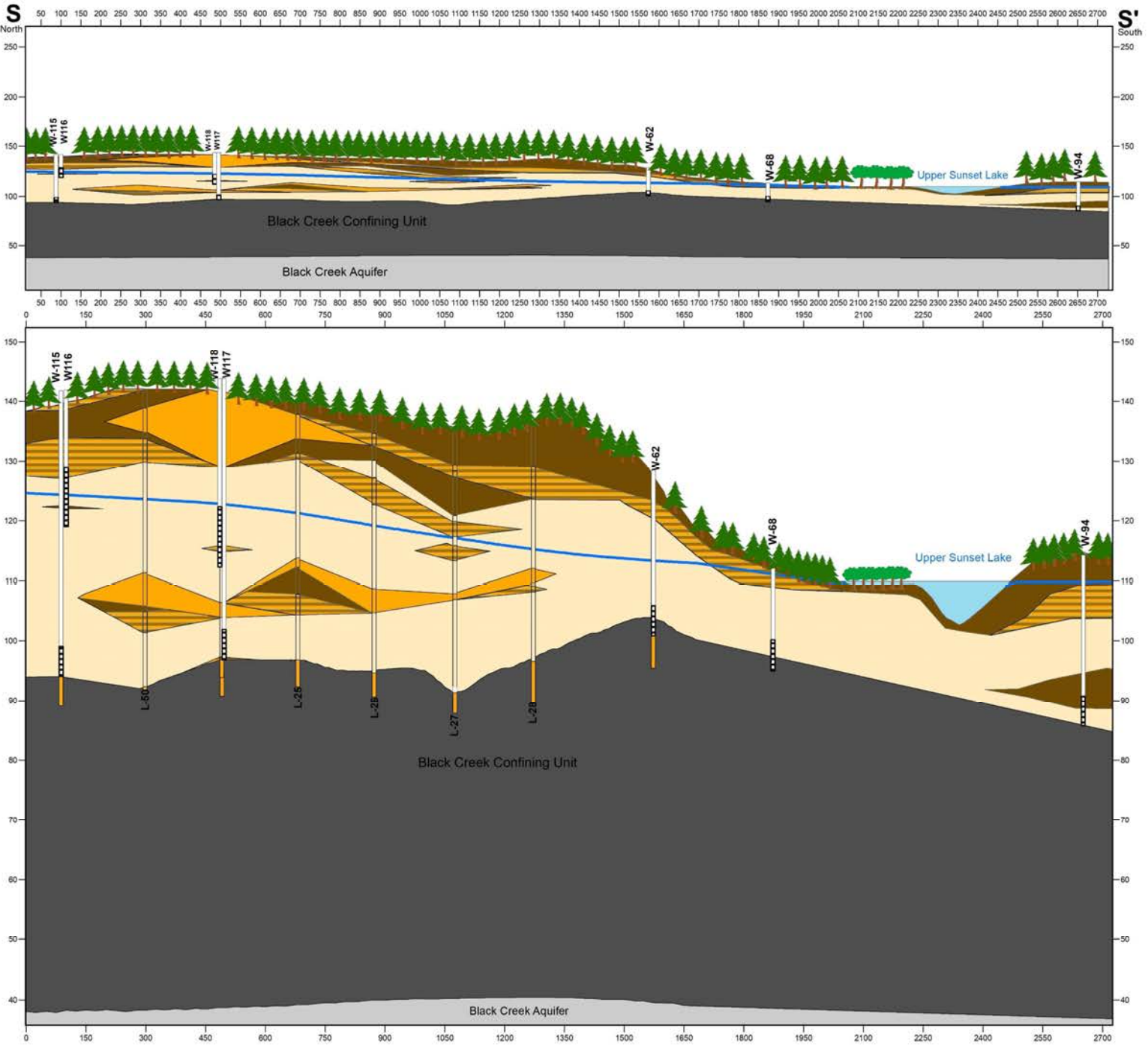


Site CSM Cross Sections



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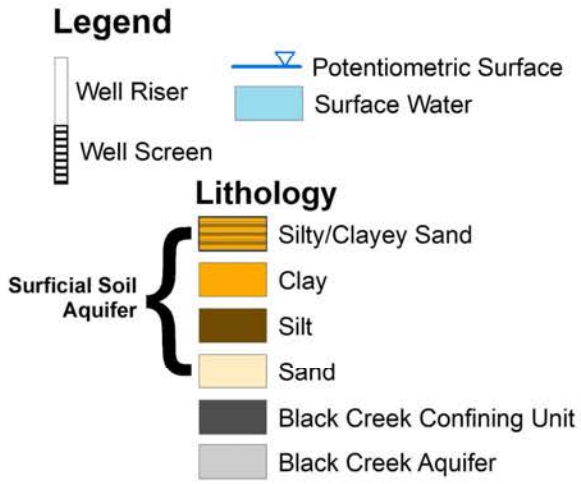
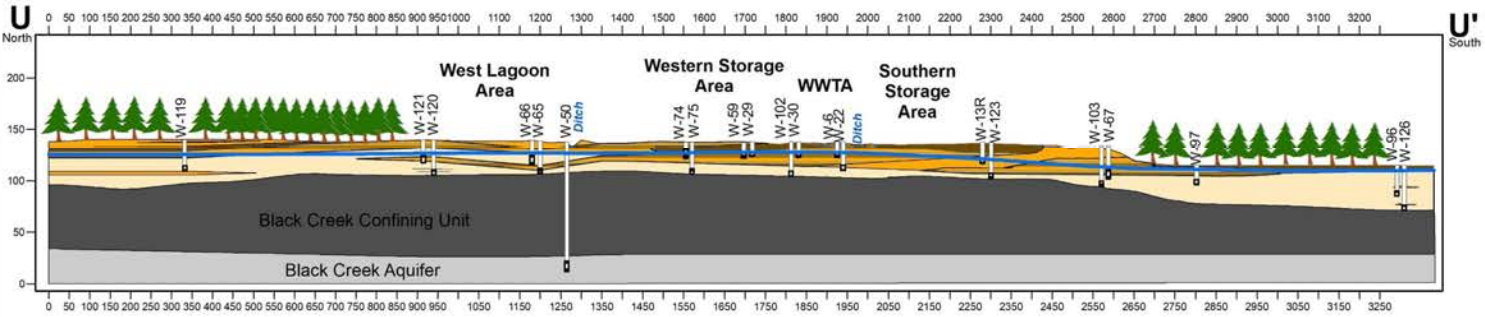


Site CSM Cross Sections



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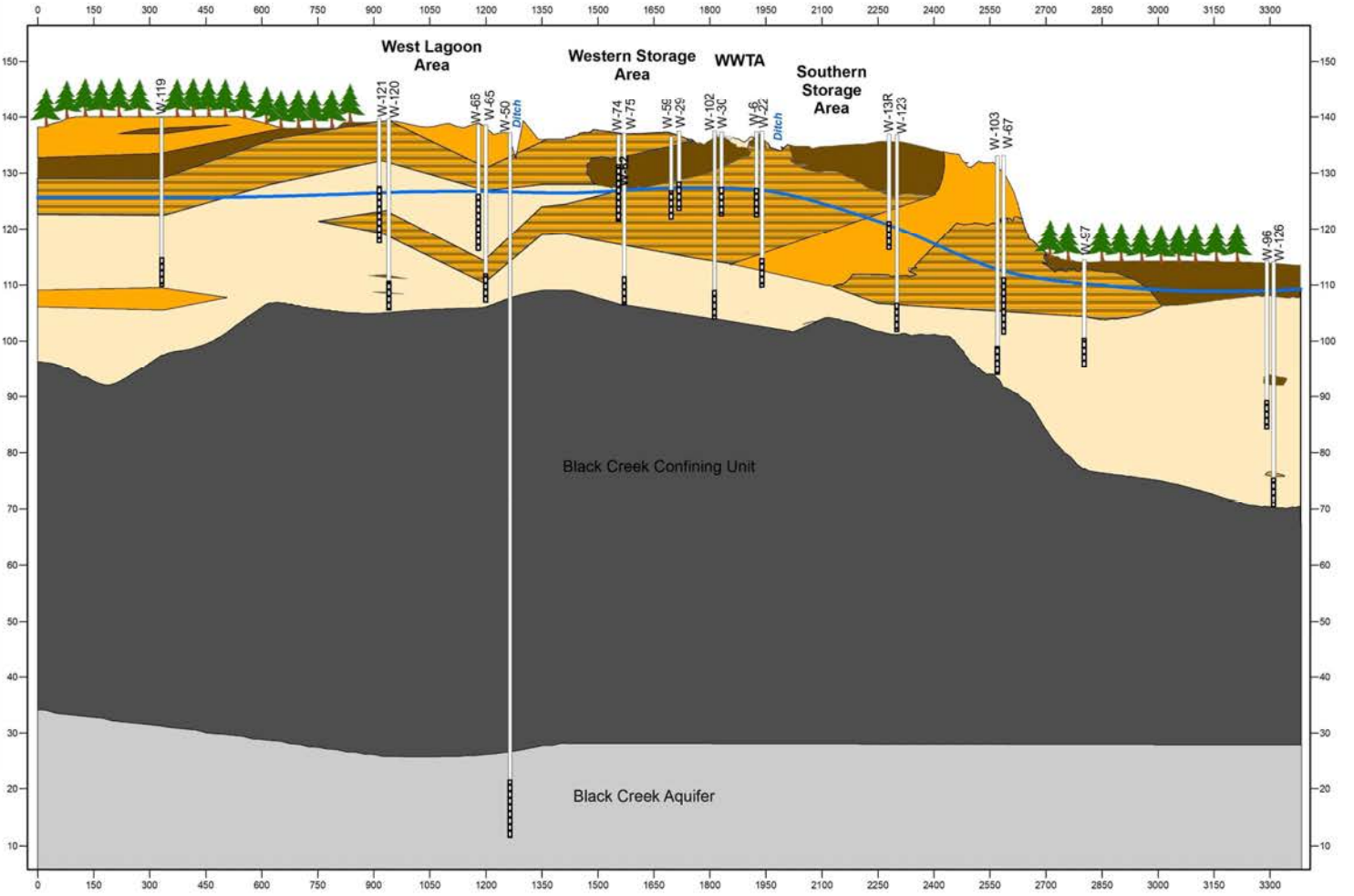

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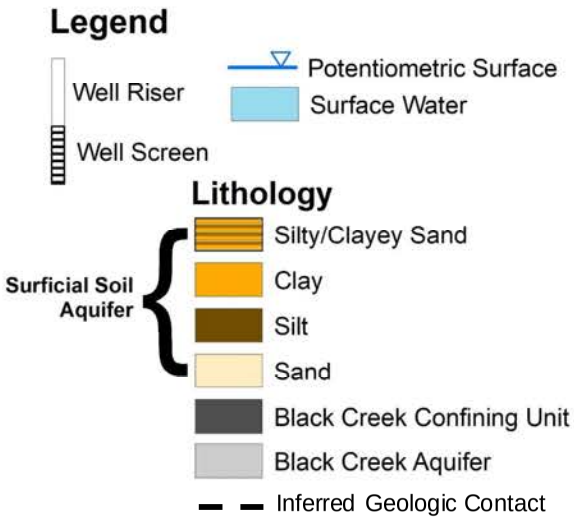
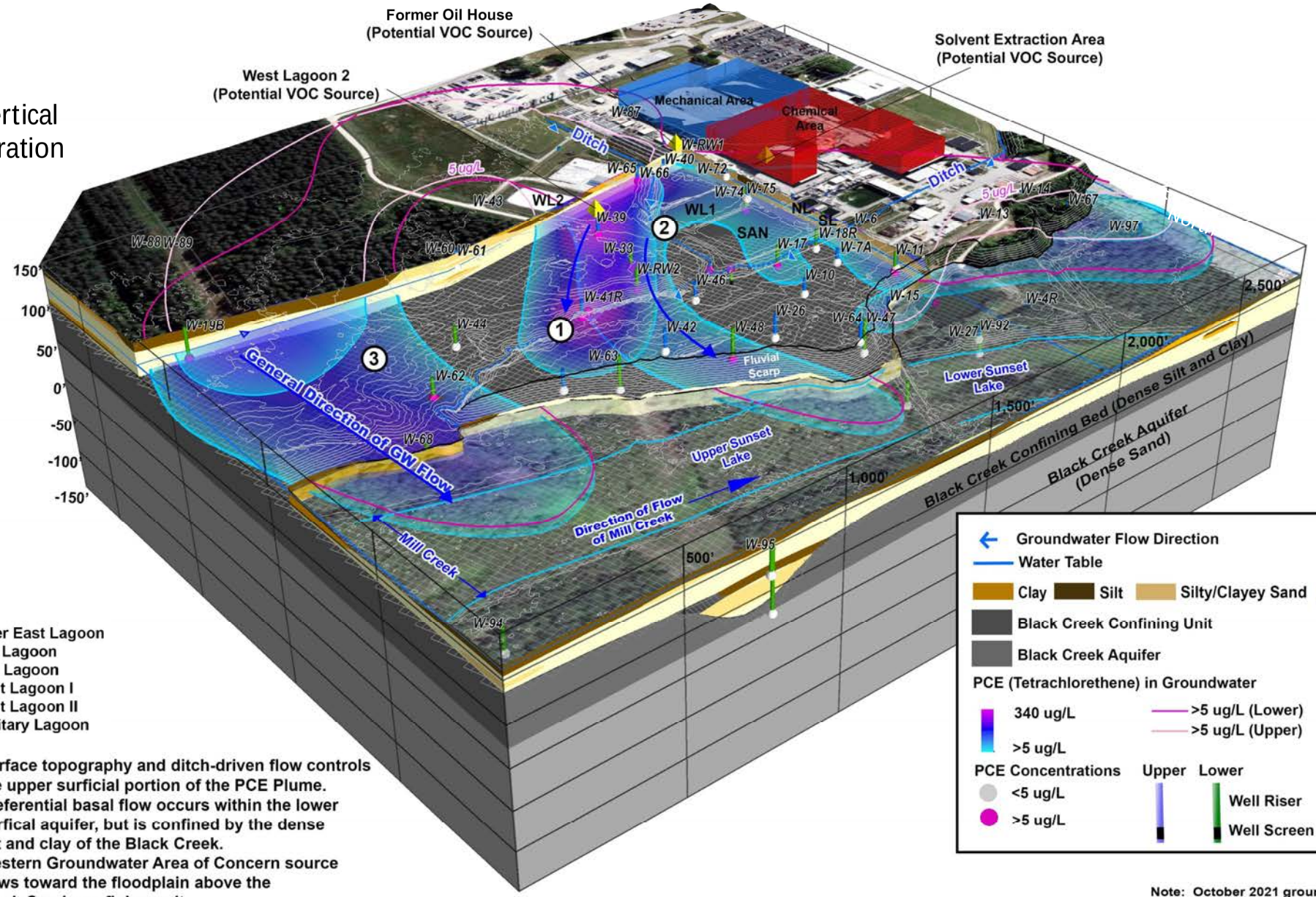
WWTA – Wastewater Treatment Area



Site CSM Block – PCE (2021)

2.5X Vertical Exaggeration



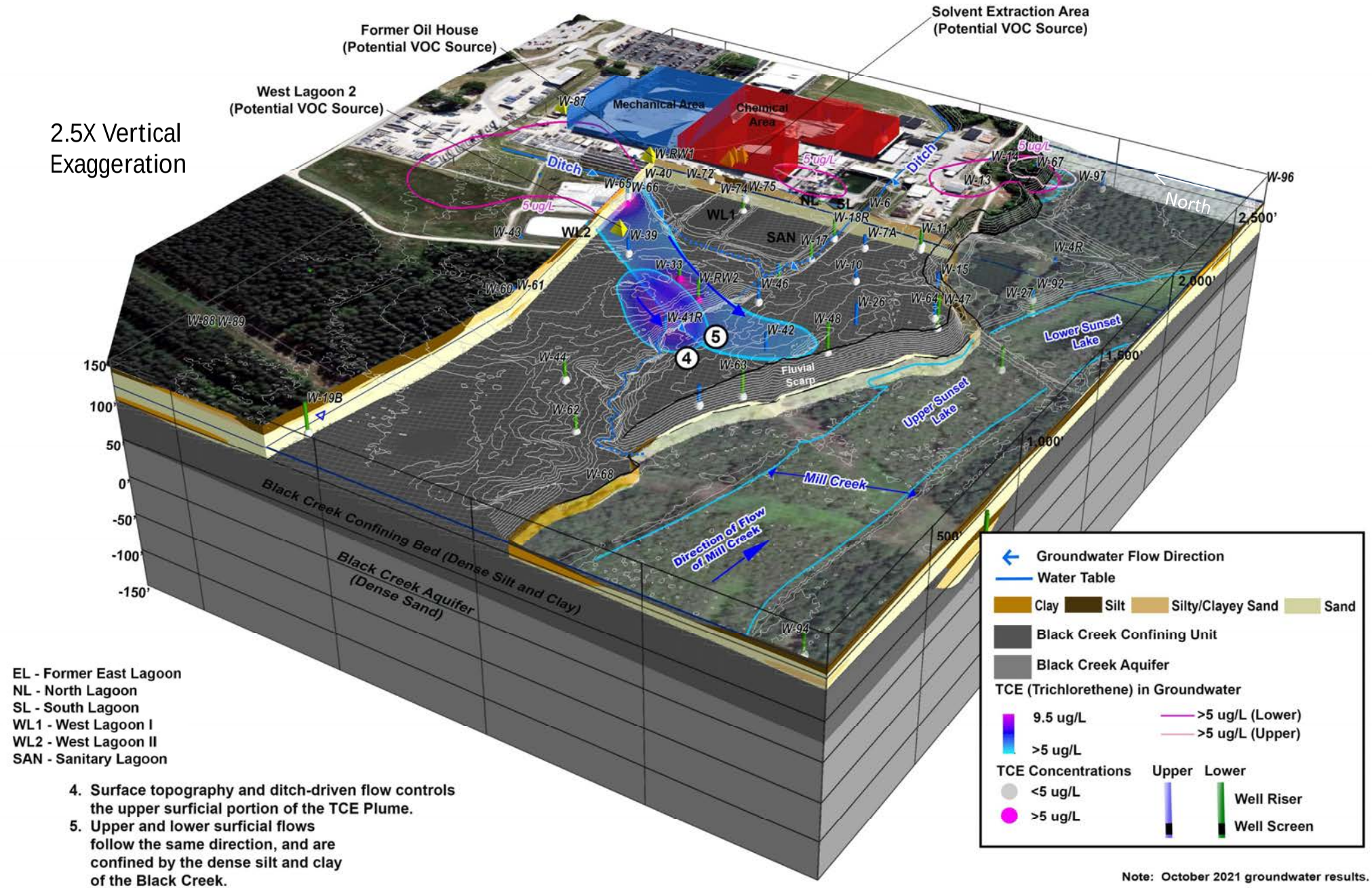
EL - Former East Lagoon
NL - North Lagoon
SL - South Lagoon
WL1 - West Lagoon I
WL2 - West Lagoon II
SAN - Sanitary Lagoon

1. Surface topography and ditch-driven flow controls the upper surficial portion of the PCE Plume.
2. Preferential basal flow occurs within the lower surfical aquifer, but is confined by the dense silt and clay of the Black Creek.
3. Western Groundwater Area of Concern source flows toward the floodplain above the Black Creek confining unit.

Groundwater Flow Direction
Water Table
Clay | Silt | Silty/Clayey Sand | Sand
Black Creek Confining Unit
Black Creek Aquifer
PCE (Tetrachlorethene) in Groundwater
340 ug/L
>5 ug/L
>5 ug/L (Lower)
>5 ug/L (Upper)
PCE Concentrations
<5 ug/L
>5 ug/L
Upper
Lower
Well Riser
Well Screen

Note: October 2021 groundwater results.

Site CSM Block – TCE (2021)

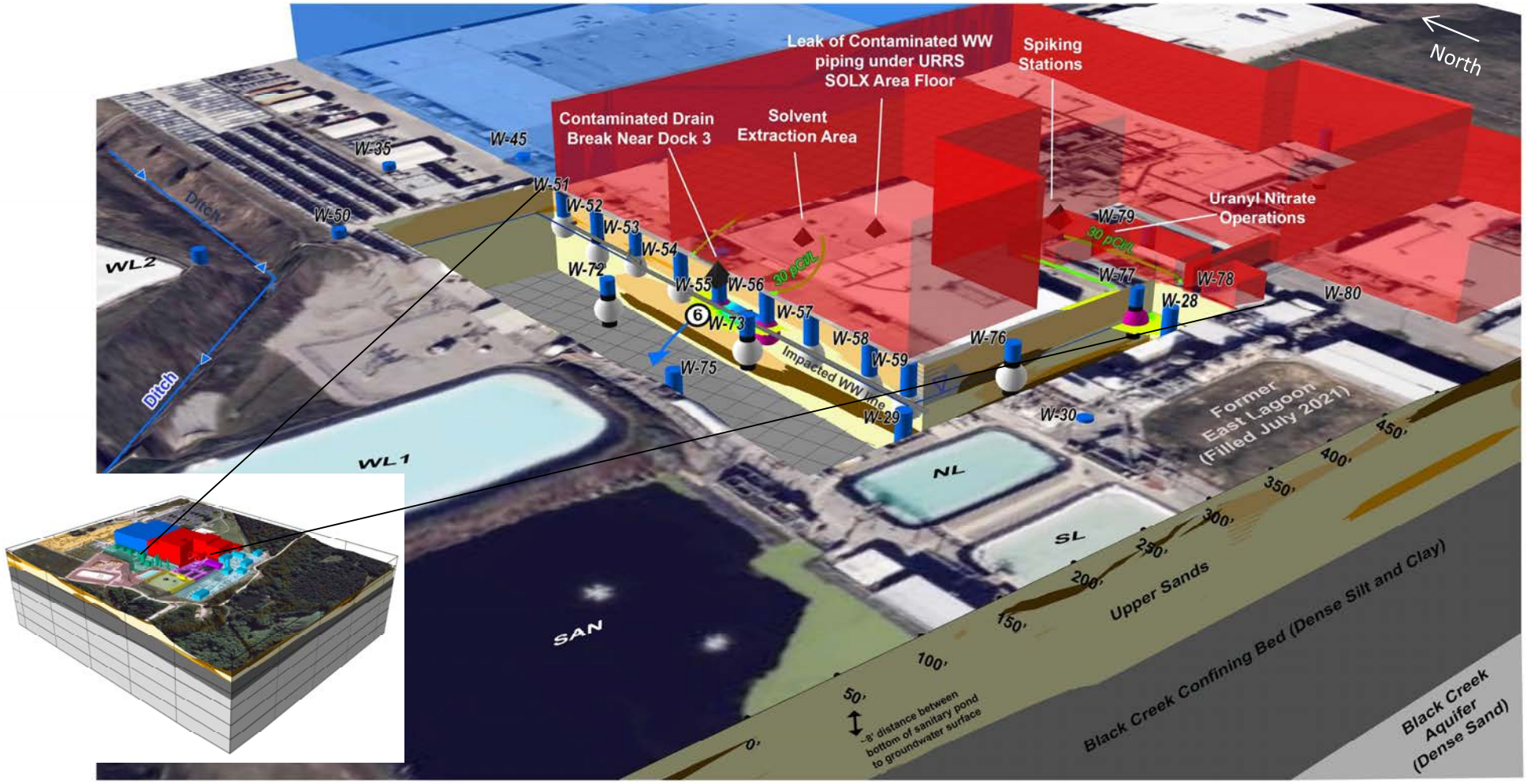


EL - Former East Lagoon
NL - North Lagoon
SL - South Lagoon
WL1 - West Lagoon I
WL2 - West Lagoon II
SAN - Sanitary Lagoon

4. Surface topography and ditch-driven flow controls the upper surficial portion of the TCE Plume.
5. Upper and lower surficial flows follow the same direction, and are confined by the dense silt and clay of the Black Creek.

Note: October 2021 groundwater results.

Site CSM Block –Uranium (2021)



Uranium Concentrations
143 ug/L in Groundwater
>30 ug/L in Groundwater
Potential Radioactive Release Sources
Uranium in Groundwater Above MCL
Uranium in Groundwater Below MCL
Note: October 2021 groundwater results

Upper Surficial Groundwater Well

Upper Sands
Black Creek Confining Unit
Black Creek Aquifer
Groundwater Flow Direction
Water Table
>30 pCi/L (Upper)

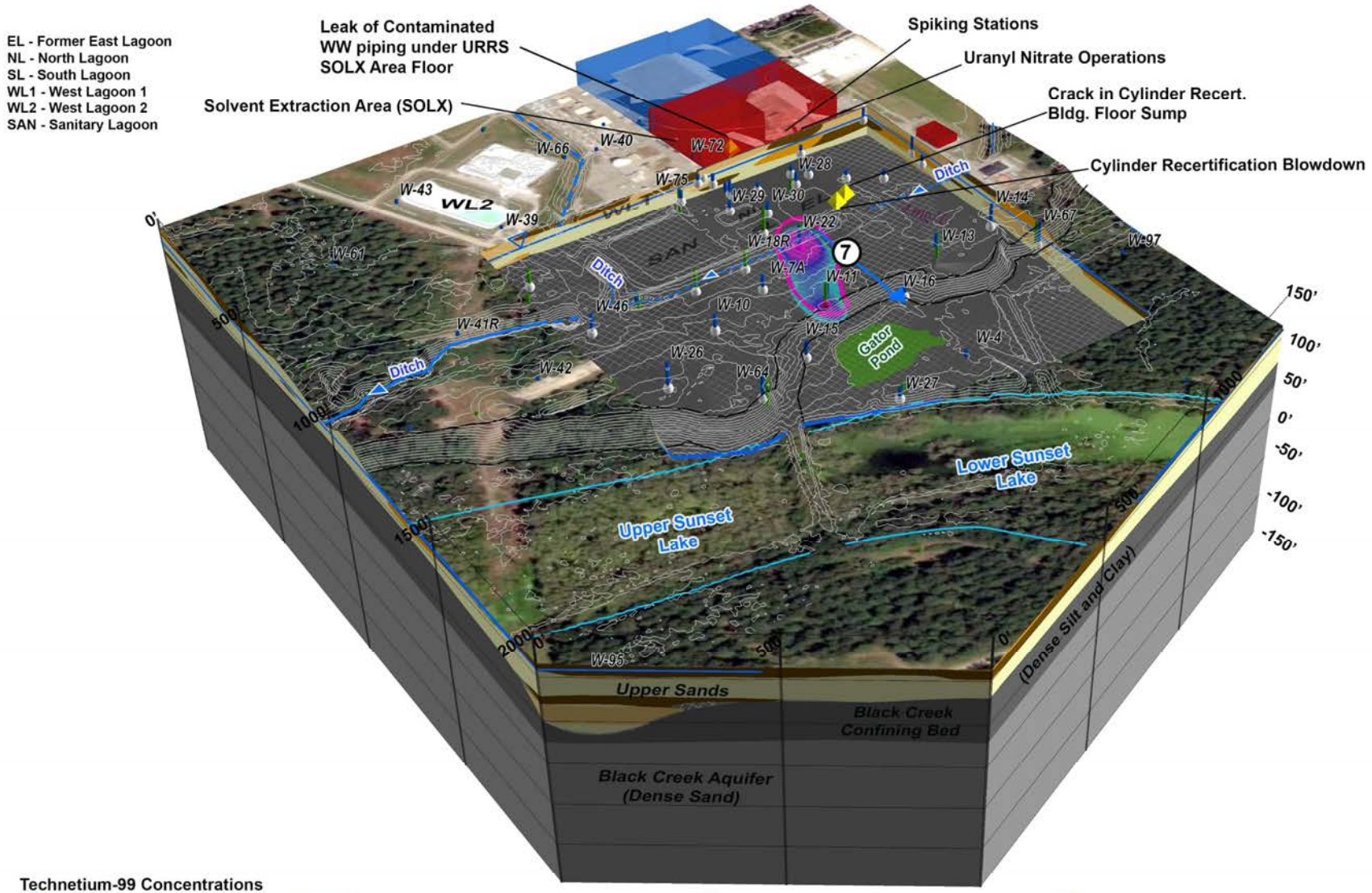
6. Flow from source areas into uppermost surficial aquifer only and low rate of advection and dispersion

EL - Former East Lagoon
NL - North Lagoon
SL - South Lagoon
WL1 - West Lagoon 1
WL2 - West Lagoon 2
SAN - Sanitary Lagoon

2.5X Vertical Exaggeration

Site CSM Block –Sitewide Tc-99 (2021)

2.5X Vertical Exaggeration



Technetium-99 Concentrations

2,500 pCi/L in Groundwater

>900 pCi/L in Groundwater

Potential Tc-99 Release Sources

Clay

Silt

Silty/Clayey Sand

Sand

Black Creek Confining Unit

Black Creek Aquifer

Groundwater Flow Direction

Water Table

Upper Surficial Groundwater Well

Lower Surficial Groundwater Well

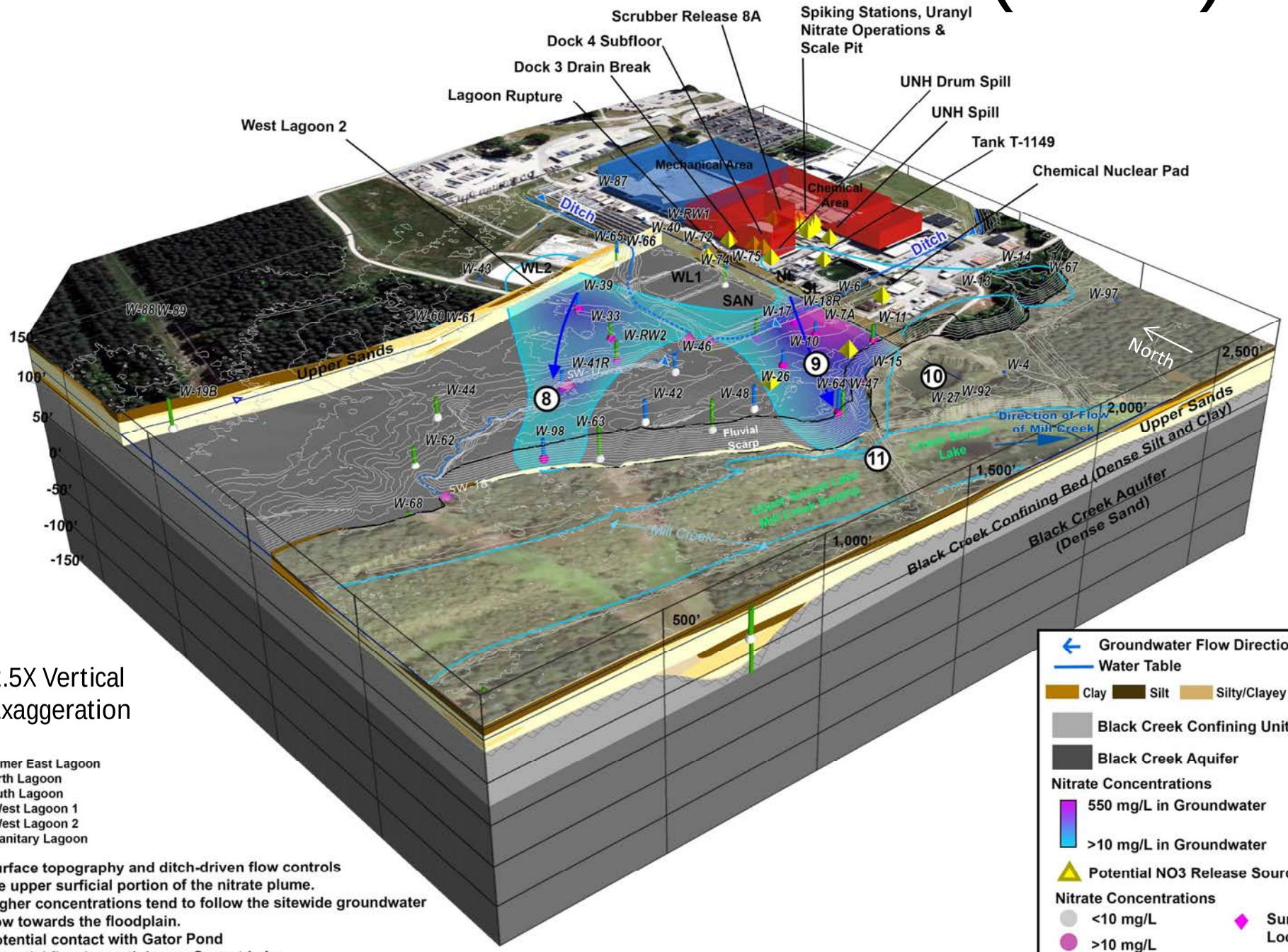
Tc-99 > 900 pCi/L

Tc-99 < 900 pCi/L

7. Higher concentrations tend to follow the sitewide groundwater flow toward the floodplain.

Note: October 2021 groundwater results

Site CSM Block –Nitrate (2021)

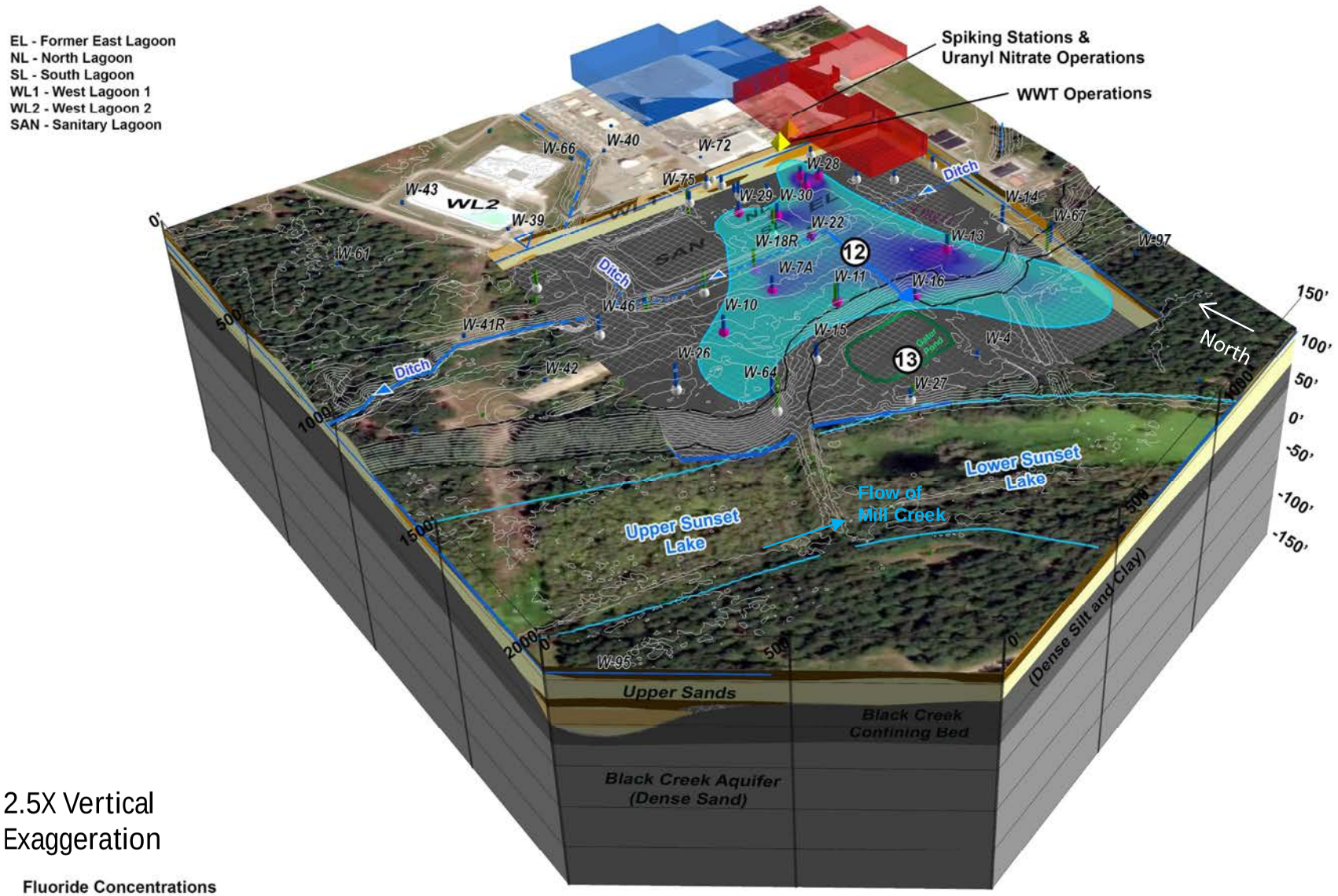


EL - Former East Lagoon
NL - North Lagoon
SL - South Lagoon
WL1 - West Lagoon 1
WL2 - West Lagoon 2
SAN - Sanitary Lagoon

8. Surface topography and ditch-driven flow controls the upper surficial portion of the nitrate plume.
9. Higher concentrations tend to follow the sitewide groundwater flow towards the floodplain.
10. Potential contact with Gator Pond
11. Potential flow beneath Lower Sunset Lake

Note: October 2021 groundwater results.

Site CSM Block –Fluoride (2021)



2.5X Vertical Exaggeration

Fluoride Concentrations

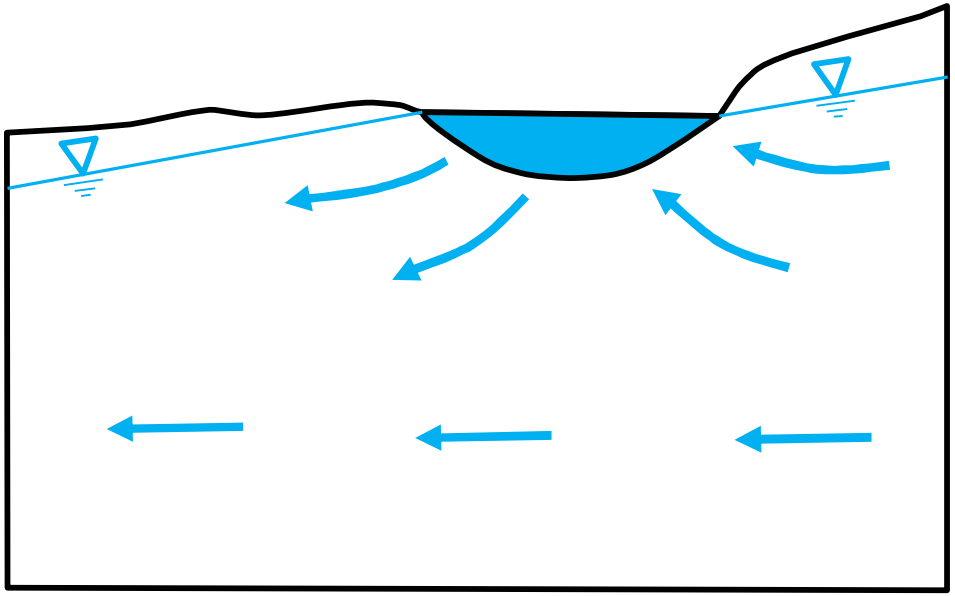
- 14 mg/L in Groundwater
- >4mg/L in Groundwater
- Potential Fluoride Release Sources
- Clay
- Silt
- Silty/Clayey Sand
- Sand
- Black Creek Confining Unit
- Black Creek Aquifer
- Groundwater Flow Direction
- Water Table
- Upper Surficial Groundwater Well
- Fluoride > 4 mg/L
- Fluoride < 4 mg/L

12. Fluoride plume tends to follow the sitewide groundwater flow toward the Gator Pond and the floodplain.
13. Contact with the Gator Pond.

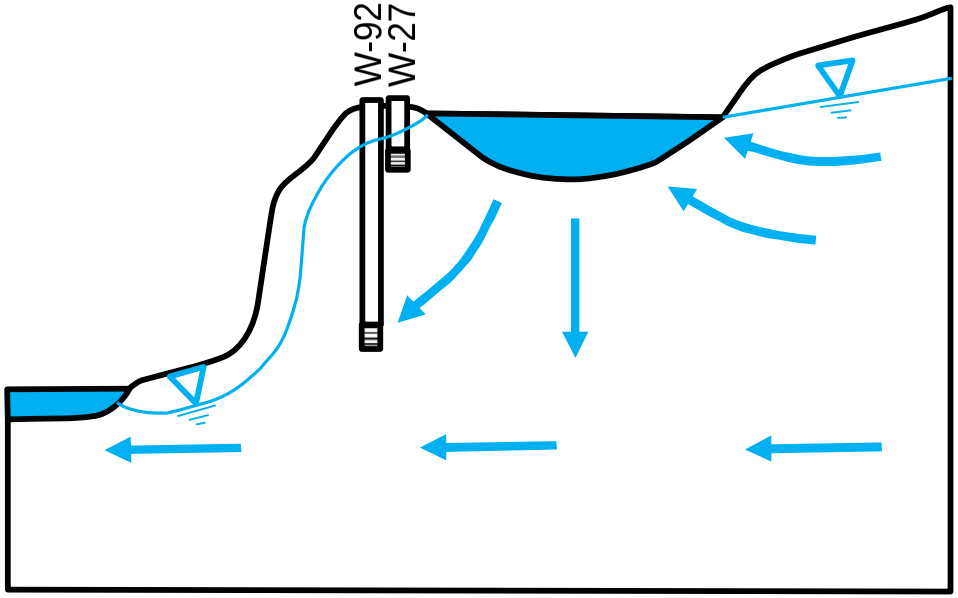
Note: October 2021 groundwater results.

Surface Water CSM:
Gator Pond (Flow-Through Lake)

A. Conceptual Example

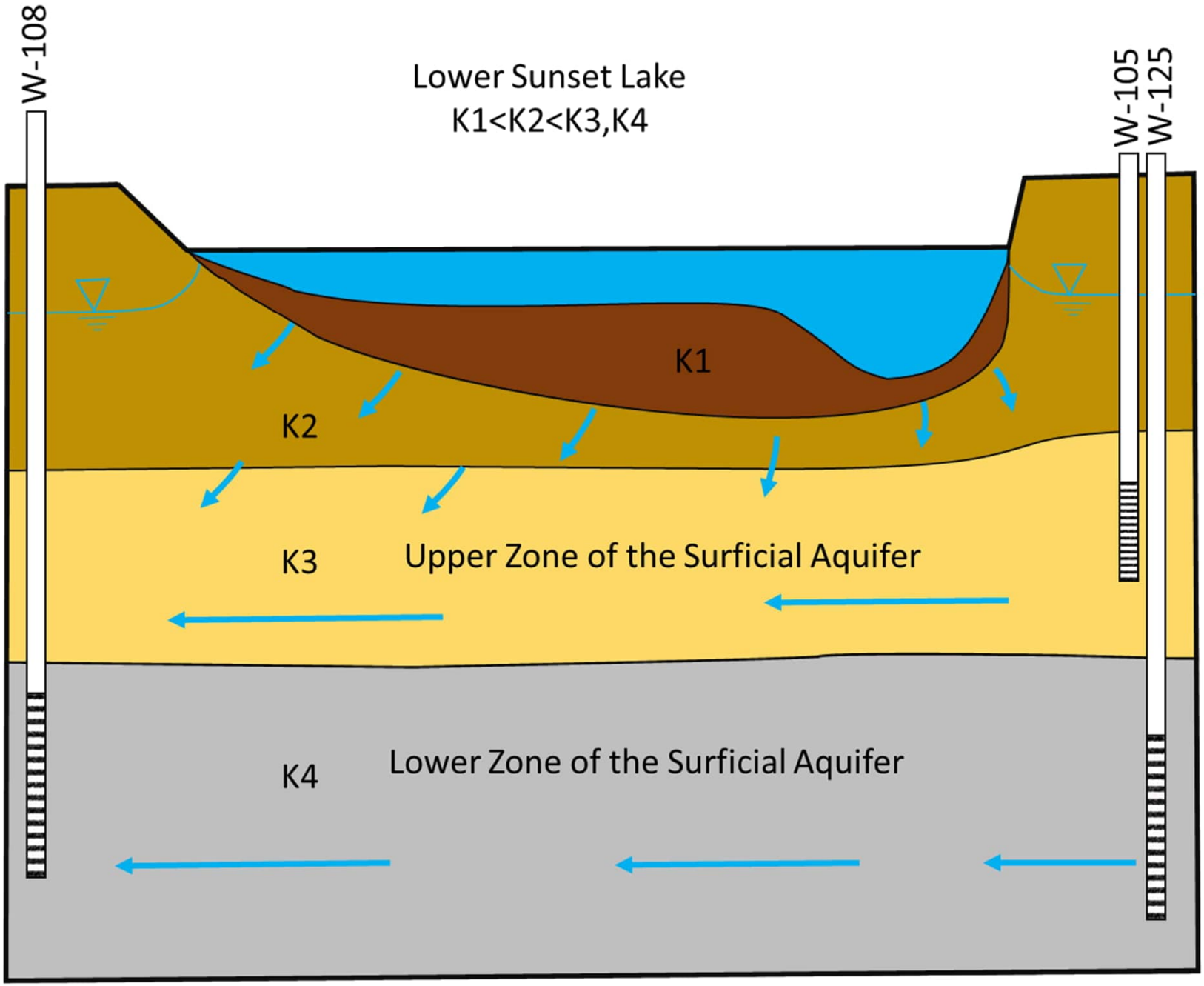


B. Conceptual Example applied to Gator Pond



Flow-through lake (from Anderson and Munter, Water Resources Res., v.17, p. 1139-1150, 1981. Copyright by Amer Geophysics Union.

Surface Water CSM



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