GOLDER

Semi-Annual Monitoring Report
July- December 2019

Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

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ACRONYMS AND ABBREVIATIONS

ACL	Army Creek Landfill
AWC	Artesian Water Company
BCEE	bis (2-chloroethyl) ether
bgs	below ground surface
BRA	Bioremediation Area
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
cis-1,2,-DCE	cis-1,2-dichloroethene
COCs	Chemicals of Concerns
CSM	Conceptual Site Model
1,2-DCA	1,2-Dichloroethane
DDA	Drum Disposal Area
DNREC	State of Delaware Department of Natural Resources and Environmental Control
DO	Dissolved Oxygen
DS&G	Delaware Sand & Gravel
DQA	Data Quality Assessment
FS	Feasibility Study
FS Rev 1	Feasibility Study - Revision 1
FSWP Rev 2	Feasibility Study Work Plan - Revision 2
gpm	gallons per minute
GWTT	Groundwater Treatment and Technology
HDPE	High-Density Polyethylene
HI	Hazard Index
lbs	pounds
LCS	Laboratory Control Sample
LFExS	Low-Flow Extraction System
LIMS	Laboratory Information Management System
MCLs	Maximum Contaminant Levels
mg/L	milligrams per liter
MS/MSD	Matrix Spike/Matrix Spike Duplicate
mV	millivolts
NAPs	Natural Attenuation Parameters
NCC	New Castle County
NTUs	Nephelometric Turbidity Units
OM&M	Operation, Maintenance and Monitoring
ORP	Oxidation/Reduction Potential
PCB	Polychlorinated biphenyls
PFAS	Per- and polyfluoroalkyl substances
PFCs	Perfluorinated compounds
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctane sulfonatePOTWPublicly Owned Treatment Works
PRG	Preliminary Remediation Goal
QA/QC	Quality Assurance/Quality Control
RAO	Remedial Action Objective
ROD	Record of Decision
RSL	Regional Screening Levels
SAP Rev 2	Sampling and Analysis Plan – Revision 2
ss-PRG	Site-specific Preliminary Remediation Goals
SSC Rev 2	Supplemental Site Characterization Report – Revision 2
SVOCs	Semi-Volatile Organic Compounds
TAL	Target Analyte List
1,2,4-TMB	1,2,4-Trimethylbenzene
1,3,5-TMB	1,3,5-Trimethylbenzene

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TTO	Total Toxic Organics
TVOC	Total Volatile Organic Compound
µg/L	micrograms per liter
UPA	Upper Potomac Aquifer
UPCU	Upper Potomac Confining Unit
UPCUTZ	UPCU Transition Zone
USEPA	United States Environmental Protection Agency
VBVS	Vertical Bioventing System
VOCs	Volatile Organic Compounds

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1.0 INTRODUCTION

On behalf of the Delaware Sand & Gravel (DS&G) Remedial Trust (the Trust), Golder Associates Inc. (Golder) is providing this Semi-Annual Monitoring Report for the Delaware Sand & Gravel Superfund Site (the Site) located in New Castle County, Delaware (see Figures 1 and 2). This report covers the monitoring activities conducted at the Site from July to December 2019 including the following:

- Groundwater monitoring in accordance with the Sampling and Analysis Plan Revision 2 (SAP Rev 2) dated March 28, 2019 (Golder, 2019c)
- Sampling of additional monitoring wells in support of the ongoing pre-design investigation activities
- Low-flow extraction system (LFExS) operation, maintenance and monitoring (OM&M)
- Pumping well PW-1(U) OM&M

In addition to Site-wide groundwater quality data, this report also presents the following for the period covered by this report:

- evaluation of groundwater characteristics associated with the Drum Disposal Area (DDA), including hydraulic containment/hydraulic gradient evaluations in support of the LFExS performance evaluation
- estimates of mass removed by the LFExS
- estimate of mass removed by pumping at well PW-1(U)
- estimate of mass loading to the New Castle County (NCC) sewer system (publicly-owned treatment works [POTW]) during the period covered by this report

1.1 Groundwater Monitoring

The October 2019 monitoring event was conducted in general accordance with the SAP Rev 2 (Golder, 2019c), with addition of select monitoring wells as approved by the United States Environmental Protection Agency (USEPA) and State of Delaware Department of Natural Resources and Environmental Control (DNREC) to monitor groundwater conditions at and downgradient of the Site. The monitoring wells and/or piezometers sampled during the period covered by this report are listed on Table 1 and are shown on Figures 3 and 4. As included in the approved SAP-Rev 2, one-time monitoring events for cations, anions and Per- and polyfluoroalkyl substances (PFAS) analyses were included in the October 2019 monitoring event as well as re-sampling of wells MW-26N and BW-2 for the three-volume purge evaluation.

A synoptic round of water levels was collected after completion of the monitoring event. Due to dynamic aquifer conditions at the time of the synoptic water level event caused by changes in AWC's operating conditions and development of recently installed monitoring and extraction wells at the Site, the measurements obtained were determined to not be representative of 'typical' aquifer conditions; therefore, a synoptic round of water levels was collected from UPA and UPCUTZ wells on January 28, 2020. Tables 2A and 2B provide the gauged water levels and calculated groundwater elevations for the November 2019 and January 2020 synoptic water level events, respectively.

In addition to the October 2019 routine monitoring event, bimonthly monitoring was performed in August and October 2019 for four wells (MW-26N, UPA-03D, AWC-E1, and AWC-E2) located upgradient of well AWC-G3R. The sampling frequency for these wells was increased to evaluate the migration of manganese and the leachate

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plume from the area of combined mass between the DS&G and Army Creek Landfill (ACL) Sites toward Artesian Water Company's (AWC's) Llangollen Wellfield.

1.2 LFExS and Well PW-1(U) Operation, Maintenance and Monitoring

The LFExS extracts groundwater from the DDA at a target extraction rate of 8 to 10 gallons per minute (gpm) and discharges the extracted water directly to the NCC sewer system. The LFExS provides hydraulic containment and removal of volatile organic compounds (VOCs) and bis(2-chloroethyl) ether (BCEE) contaminant mass from the groundwater within the DDA through operation of eight extraction wells (see Appendix B of Golder, 2016b). Additional discussion is included in Section 2.2.

In June 2004, NCC and the DS&G Trust worked together to install pumping well PW-1[1] in the vicinity of monitoring well DGC-7S to complete the groundwater divide between the DDA and AWC's Llangollen wellfield and to provide capture of Upper Potomac Aquifer (UPA) groundwater in the vicinity of the DDA. On October 15, 2012, the Trust assumed hands-on responsibility for the operation and maintenance of pumping well PW-1(U) from NCC. The well PW-1(U) system discharges directly to the NCC sanitary sewer system (POTW). The NCC sewer discharge permit was modified to include the discharge from both the LFExS and pumping well PW-1(U) with the total combined flow now permitted at 51 gpm.

Since the Trust assumed hands-on responsibility for operation and maintenance, well PW-1(U) has extracted groundwater at a rate between approximately 30 and 40 gpm (instantaneous extraction rate). A summary of the LFExS and well PW-1(U) system operation and monitoring results since installation of the systems is presented in the Supplemental Site Characterization Report – Revision 2 (SSC Rev 2) dated January 29, 2016 (Golder, 2016a). As presented in the SSC Rev 2 Report, the groundwater data indicate that operation of pumping well PW-1(U) captures some contaminant mass within the UPA upper sand groundwater to the north and northwest of well PW-1(U). Operation of well PW-1(U) is also providing some capture of the impacts observed in the Upper Potomac Confining Unit Transition Zone (UPCUTZ) between the DDA and well PW-1(U).

During the October 2019 monitoring event, the extraction wells for both systems were sampled and analyzed in accordance with the SAP Rev 2 (Golder, 2019c), and samples were also collected and analyzed for parameters required by the NCC sewer discharge permit. A summary of the LFExS monitoring activities conducted during the period covered by this report are presented in Sections 3.4.1, 3.4.2, and 4.1. Well PW-1(U) monitoring activities conducted during the period covered by this report are presented in Sections 3.4.3 and 4.2.

2.0 SITE SETTING AND PREVIOUS ACTIVITIES

The detailed Conceptual Site Model (CSM) originally presented in the FSWP Rev 2 (Golder, 2011b) was most recently updated in the Final FS Report - Revision 1 (Final FS Rev 1; Golder, 2016b). The sections below briefly present the Site history and description, remedial activities to date, and an overview of the chemicals of concern (COCs).

[1] Wells PW-1(L) (screened in the lower sand of the UPA) and PW-1(U) (screened in the upper sand of the UPA) began operation in October 2004. Well PW-1(L) was operated until January 25, 2005, when the USEPA "approved termination of pumping from the lower zone [well PW-1(L)] because multiple rounds of chemical-quality data and hydraulic data demonstrated that the lower zone is generally free of contaminants and is hydraulically separated from the upper zone [well PW-1(U)]" (Ruth, 2007). On May 23, 2011, the portion of well PW-1 containing well PW-1(L) was grouted up to just below the base of well PW-1(U) (Ruth, 2013).

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2.1 Brief Site History and Description

The DS&G Site is approximately 27 acres in area and is located in an area of residential and light-industrial use with many residential developments within one mile. The Site is bound to the north and northeast by the Norfolk Southern Railroad tracks and to the west by Army Creek, which eventually discharges into the Delaware River.

Prior to 1968, the DS&G Site operated as a sand and gravel quarry, following which filling operations began. Between 1968 and 1976, the DS&G Landfill collected approximately 550,000 cubic yards of waste including about 13,000 drums[2] containing liquids and sludges from chemical production, manufacturing, and petroleum-refining processes (USEPA, 2005). The following presents a summary of the disposal area activities from the 1993 Record of Decision (ROD) Amendment for the DS&G Site:

- The Drum Disposal Area (DDA): "This area was originally a pit where drums containing liquids and sludges, including perfume, plastics, paint, and petroleum, from various industrial processes were disposed. The majority of drum contents were organics and inorganic solids." (USEPA, 1993).
- The Ridge Area: "...was used primarily for surface storage of drums and large storage tanks containing inorganic and organic sludges and solids. The drums and tanks have been removed, or emptied, and steam cleaned; however, contaminated surface soils remain." (USEPA, 1993).
- The Inert Disposal Area: "Field investigations suggest that nearly one half million cubic yards of construction rubble and scattered chemical wastes were deposited in this disposal area. The refuse was covered with a thin layer of soil. Abandoned cars, trucks, storage tanks, and other solid wastes currently occupy the surface of the Inert Disposal Area." (USEPA, 1993).
- The Grantham South Area: "An estimated 73,400 cubic yards of construction rubble and scattered chemical wastes were deposited in a layer nearly 35 feet thick. Pre-construction field investigations identified elevated levels of organic and inorganic contaminants within the refuse layer" (USEPA, 1993). Between 1988 and 1991, the US Army Corps of Engineers installed a cap on the Grantham South Area.

The ACL Superfund Site is located immediately west of the DS&G Site across Army Creek/Army Pond. The ACL Site is a 60-acre abandoned sand and gravel quarry that was operated by NCC as an unlined landfill between 1960 and 1968 and received 1.9 million cubic yards of municipal and industrial wastes (USEPA, 1998).

2.2 Previous and Ongoing Remedial Activities

In 1984, the USEPA and DNREC conducted an immediate removal action, removing more than 1,600 drums from the surface of the DDA and Ridge Areas (USEPA, 1984). Between 1989 and 1991, a multi-layer landfill cap, gas venting system, and perimeter fence were installed in the Grantham South Area. Between 1996 and 1997, the Trust constructed an 11-acre, multi-layer, landfill cap over the Inert Area.

In 1994, the Trust constructed a slurry-wall system to enclose an area of about three acres, including the DDA and the surrounding soils affected by historical releases from the DDA. The slurry-wall system consists of a three-foot thick, soil-bentonite slurry wall keyed into the underlying Upper Potomac Confining Unit (UPCU; clay unit), where present, and ranges in depth from 17 to 57 feet below ground surface (bgs) (USEPA, 1997). Between 1995

[2] The 1993 Amended ROD indicates "approximately 550,000 cubic yards of industrial wastes and construction debris, including at least 7,000 drums, were disposed of within four distinct disposal areas on the DS&G property" (USEPA, 1993).

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and 1997, the Trust completed remedial activities for the DDA (including drum and soil removal, and construction of a bio-venting system within the slurry-wall system) and Ridge Area (implemented under OU4 and OU5, which superseded OU2). (USEPA, 1997)

The area within the slurry-wall system is divided by a partition wall, which isolates the portion of the DDA with contaminated soils (containment area) from the area where the clay is thin, discontinuous, or not present (partition area). Around the partition area, the slurry wall is classified as a "hanging wall" because the UPCU is absent beneath this section of wall.

An overview of the OU4 (Ridge Area/DDA excavation of drums and highly contaminated wastes) and OU5 (Ridge Area/DDA bio-cell construction and operation) activities is provided in the USEPA's 1999 Five-Year Review (FYR; USEPA, 1999), where the USEPA states the following:

> "Excavation of buried drums within the DDA began in August 1995 and was completed in August 1996. An estimated 13,000 drums were removed and transported off-site for treatment and/or disposal. In addition, approximately 2,300 cubic yards of PCB [polychlorinated biphenyl] contaminated soil was transported off-site for incineration between February and May 1996. Construction of the DDA slurry wall was completed during summer 1996[3]. Construction of the bioremediation (bioventing) system designed to treat 80,000 cubic yards of contaminated soils within the DDA slurry wall began in September 1996 and was completed in July 1997. The bioremediation process for contaminated soils began in July 1997 and will operate for a projected period of approximately eight years under the O&M Phase."

Between 1997 and 2009, the Trust operated an active remediation (bio-venting) system within a portion of the DDA referred to as the Bioremediation Area (BRA). Between 1996 and 1997 the Trust installed the BRA which included two components: a bio-cell and a vertical bioventing system (VBVS), which treated the interval below the bio-cell. The bio-cell included the original 0.8-acre area where drums were disposed within the DDA, and the soils that were excavated and consolidated from the DDA and the Ridge Area. The Trust mixed the excavated soils with wood chips, sand, and di-ammonium phosphate to enhance the biodegradation of the soil contaminants prior to placement within the bio-cell (additional discussion is provided in Appendix C of the Final FS Rev1). As described in more detail in Appendix B of the Final FS Rev1, the Trust constructed and operated the bio-cell above the surface of the Columbia Aquifer water table (as influenced by operation of an extraction well to lower and maintain the water table beneath the bio-cell).

In 2005, with concurrence of the USEPA, the Trust suspended operation of the VBVS portion of the system, due to high water levels[4] in the VBVS extraction wells. The bio-cell is located at a higher elevation than the VBVS; therefore, operation of the bio-cell was not affected by the high water levels. The bio-cell continued to operate until 2009 when the Trust suspended active operation of the bio-cell because the technical limits of the system (asymptotic performance) had been achieved. Portions of the bio-cell's aboveground piping and appurtenances were subsequently removed to enable construction of the LFExS.

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[3] The 1999 FYR indicates slurry-wall construction was completed in 1996; however, the construction was essentially completed in 1994. The Preliminary Close Out Report (USEPA, 1997) states that the USEPA accepted the certification of completion for the slurry wall on February 23, 1995.

[4] Shutdown of the NCC system in 2004 resulted in a rise in the Columbia Aquifer and UPA potentiometric surfaces.

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As indicated in Section 3.1.2 of the SSC Rev 2, a groundwater recovery system was operated by NCC between 1973 and October 2004 to extract contaminated groundwater from the UPA and in an attempt to create a groundwater divide between the Sites (ACL and DS&G) and AWC's Llangollen wellfield.

In October 2004, NCC began pumping from well PW-1 (as discussed in Section 1.2) and initiated a pilot study to shut down the NCC recovery well system. The NCC groundwater recovery system has been shut down since that time.

In May 2009, the Trust began operation of the LFExS, which initially extracted water from six extraction wells within the DDA (wells C-2D, C-19D, C-18D, BG-1, C-4D, and B-4D). The LFExS started temporary operation on May 4, 2009 and operated at a monthly average flow rate of approximately 2 to 5 gallons per minute (gpm) until the system was shut down for construction of the permanent system in December 2009. Operation of the permanent system started on February 23, 2010. In September 2010, the Trust completed construction of an additional extraction well within the DDA (C-30) and in December 2012, existing well C-20D began operation as part of the LFExS. As indicated in Section 1.2, the system discharges directly to the NCC sewer system under a permit with NCC.

The LFExS currently has eight operational extraction wells (wells C-2D, C-19D, C-18D, BG-1, C-4D, B-4DR, C-30 and C-20D as shown on Figure 4) that provide hydraulic containment within the DDA by inducing inward (horizontal) gradients in the Columbia Aquifer across the slurry walls, and upward (vertical) gradients between the UPA upper sand and the Columbia Aquifer (i.e., maintaining a lower potentiometric head within the DDA). Operation of the LFExS also removes VOC and semi-VOC (SVOC, primarily BCEE and 1,4-dioxane[5]) dissolved-phase contaminant mass from within the DDA containment area.

Completed actions have achieved important remedial objectives at the Site. The USEPA has indicated that the remedial activities at the Grantham South, Inert Area, and Ridge Area are currently protective of human health and the environment; however, the USEPA has indicated that "in order for the remedy to be protective in the long term, additional response actions are needed at the DDA" (USEPA, 2015a). Ongoing activities, including maintenance of caps over the DDA and Grantham South and Inert Areas and operation of well PW-1(U) and the LFExS, address sources and potential exposure pathways on the DS&G property.

On December 12, 2017, the USEPA issued the Record of Decision-Amendment 2 (ROD-A2; USEPA 2017) for the DS&G Site adopting the Alternative C identified in the Final Feasibility Study Revision 1 (Final FS Rev 1; Golder, 2016b) as the Selected Remedy for the Site. On May 22, 2018, the Trust and the USEPA signed an "Administrative Settlement Agreement and Order on Consent for Remedial Design" (RD AOC; effective date May 29, 2018). The Statement of Work (SOW) associated with the RD AOC "sets forth the procedures and requirements for implementing the Work, which consists of: (1) a Preliminary Design Investigation (PDI), and (2) a Remedial Design (RD) for the components of the Remedial Action (RA)". (USEPA, 2018a)

The USEPA provided partial approval of the PDI WP with comments on November 30, 2018. (USEPA, 2018b) PDI WP-Rev 2 and SAP Rev 2 were submitted to the USEPA on March 28, 2019 for review and approval. The USEPA-approved PDI WP-Rev 2 and SAP Rev 2 via email dated April 10, 2019. (USEPA, 2019a) Between December 4, 2018 and November 15, 2019, 55 borings were advanced, groundwater chemistry (volatile organic

[5] 1,4-dioxane is considered an SVOC due to its fate and transport properties and is handled as such within the context of the CSM. However, since it is analyzed via a VOC analytical method, the 1,4-dioxane results are presented in Sections 3.4 and 4, and Appendix B grouped with the other VOC analytes.

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compounds [VOCs] and semi-VOCs [SVOCs]) was evaluated in 20 vertical aquifer profiling (VAP) locations, and 47 monitoring and 5 extraction wells were installed and developed as outlined in the Pre-Design Investigation-Revision 2 (PDI WP-Rev 2; March 28, 2019; Golder, 2019b) and the SAP Rev 2 (March 28, 2019; Golder, 2019c) and documented in correspondence between Golder and the USEPA regarding well screen interval recommendations and approvals. Table 1 includes screen intervals for all site wells, including the newly installed wells, Figure 3 includes the locations of the newly installed wells downgradient of well PW-1(U), and Figure 4 includes the locations of the newly installed wells in the DDA Vicinity.

During 2019, additional investigation activities were also performed downgradient of the Western Lobe of the ACL. These activities were performed as part of the USEPA-approved Additional Investigation Work Plan-Revision 2 (AIWP-Rev 2; Ruth and Golder, 2019) dated March 27, 2019 for the ACL Site. These activities included installation of six monitoring wells (MW-22NU, P-4L, WL-1U, WL-1L, W2-2U and WL-2L).

2.3 Chemicals of Concern

Table 7 of the ROD-A2 issued by the USEPA for the DS&G Site (USEPA 2017) includes the list of COCs for the Site. As discussed in the document and presented below, the COCs in groundwater at the Site include VOCs (benzene, and four alkylbenzenes [ethylbenzene; xylenes; 1,2,4-trimethylbenzene; and 1,3,5-trimethylbenzene]), SVOCs (BCEE; 1,4-dioxane[6]; naphthalene; and N,N-dimethylaniline), and metals (arsenic, cobalt, iron and manganese).

hemical of Concern	ss-PRG (micrograms per liter [µg/L])	Notes
1,2,4-Trimethylbenzene	5.7	COC-specific Non-Carcinogenic PRG
1,3,5-Trimethylbenzene	6.1	COC-specific Non-Carcinogenic PRG
1,4-Dioxane	4.6	Carcinogenic PRG with a Target Risk of 1.0E-05
Arsenic	0.52	Carcinogenic PRG with a Target Risk of 1.0E-05
Benzene	4.6	Carcinogenic PRG with a Target Risk of 1.0E-05
Bis(2-chloroethyl) Ether	0.14	Carcinogenic PRG with a Target Risk of 1.0E-05
Cobalt	6.0	COC-specific Non-Carcinogenic PRG
Ethylbenzene	15	Carcinogenic PRG with a Target Risk of 1.0E-05
Iron	13,939	COC-specific Non-Carcinogenic PRG
Manganese	260	COC-specific Non-Carcinogenic PRG
N,N-dimethylaniline	25	Carcinogenic PRG with a Target Risk of 1.0E-05
Naphthalene	0.63	COC-specific Non-Carcinogenic PRG
Xylenes, Total	21	COC-specific Non-Carcinogenic PRG

[6] 1,4-dioxane is detected using a VOC analytical method and is presented as a VOC in Appendix B.

Based on review of the available analytical data, it is apparent that the ACL Site represents an on-going source of contaminant mass (primarily iron and manganese, which are also COCs at the DS&G Site) to the UPA. As stated by the USEPA in their comments dated December 19, 2014, "the Army Creek Landfill may be characterized as an indirect source of dissolved iron and manganese and a source of 1,2-dichloroethane [1,2-DCA] in the UPA. Elevated total arsenic and cobalt are also found in groundwater downgradient of the Army Creek Landfill and appear to be site-related." (USEPA, 2014)

3.0 GROUNDWATER SAMPLING AND ANALYSES

Consistent with the SAP Rev 2 (Golder, 2019c), Golder measured water levels, sampled wells and submitted the samples for analysis to monitor performance of the LFExS and the PW-1(U) system. Also consistent with the SAP, Golder performed routine groundwater monitoring in the UPA at and downgradient of the Site (see well list in Table 1). The monitoring locations are shown on Figures 3 and 4.

The semi-annual groundwater monitoring events are typically conducted in April and October each year and the results are summarized in semi-annual monitoring reports. This July to December 2019 semi-annual report provides the groundwater monitoring results from the October 2019 routine semi-annual monitoring event, as summarized on Table 1.

Due to ongoing drilling activities in October and November 2019 and aquifer testing activities in November 2019 through January 2020, the wells installed between September and November 2019 were sampled in January 2020. As such, these data will be included in the January to June 2020 semi-annual groundwater monitoring report.

As outlined in the SAP, this semi-annual report includes the following information:

- Purpose and scope of monitoring
- Brief description of field procedures
- Summary of collected field data, including a table of field sampling parameters
- Groundwater elevation contour maps
- Laboratory analytical data tables (new data only)
- Trend plots of constituent concentrations over time
- Mass removal estimates based on a comparison of previous to current remaining mass estimates, and calculation of mass extracted by the LFExS
- Mass remaining estimates based on contouring the semi-annual groundwater data and calculating the residual mass in the saturated zone[7]
- Recommendations for additional monitoring or system enhancements

[7] Mass remaining estimates were updated as part of the SSC Rev 2 (Golder, 2016a).

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3.1 Groundwater Elevations

As stated in Section 1.1, water levels were gauged on two separate dates - November 6, 2019 (see Table 2A) and January 28, 2020 (see Table 2B). We note that the January 28, 2020 data set is limited to the UPCUTZ and UPA wells due to time constraints. Depth to water was measured using a decontaminated electronic water level indicator from the top of casing reference points, and water elevations were subsequently calculated using surveyed elevation information. The November 2019 groundwater elevations were used to prepare the groundwater elevation contours presented in Figure 5, and January 2020 groundwater elevations were used to prepare the groundwater elevation contours presented on Figures 6 through 9. The presented groundwater elevation contours include the water elevations from the new monitoring wells. These updated groundwater elevation contours are consistent with historically developed groundwater elevation contours.

The groundwater elevations and flow directions from Figures 6 through 9 indicate the following:

- Within the DDA, the elevations and flow directions reflect consistent, ongoing LFExS operation (see Figure 5). As expected, groundwater flow within the DDA converges toward the operating LFExS wells.
- In the UPCUTZ between the DDA and pumping well PW-1(U) (see Figure 6), groundwater flow is from north-northwest to south-southeast toward well PW-1(U).
- In the upper sand of the UPA between the DDA and pumping well PW-1(U) (see Figure 7), groundwater flow is from north-northwest to south-southeast toward pumping well PW-1(U).
- In the upper and lower sand of the UPA downgradient of well PW-1(U) (see Figures 8 and 9, respectively), groundwater flow is generally from north to south consistent with operation of the downgradient AWC wellfield. However, AWC wellfield operations impact gradients as you approach well AWC-ASR at the southern extent of the monitoring area.

3.2 Sampling and Analysis

3.2.1 Well Purging

All wells that required use of a submersible pump were purged using the low-flow purging and sampling procedure[8]. The monitoring wells were purged using a decontaminated 2-inch diameter submersible pump (Grundfos® Rediflo2) and high-density polyethylene (HDPE) tubing that was dedicated to each well. Wells were purged at a rate of approximately 200 to 500 milliliters per minute. Frequent monitoring of the water level and adjustments to the flow (when necessary) minimized the drawdown during purging. A minimum of three feet of water was maintained over the pump intake to avoid entrainment of air in the pump. Pumping rate adjustments, if any, and depth(s) to water measurements were recorded on sample collection forms. Water removed during purging was collected in five-gallon buckets and disposed in the on-Site wastewater holding tank at the existing treatment building.

During purging, field parameters were monitored in-line with a Horiba U-52® water quality instrument. A flow-through cell device was used to minimize sample exposure to the atmosphere. Measurements were collected approximately every five minutes until the parameters stabilized based on three consecutive readings within the following ranges:

[8] The procedure is based upon the USEPA Region II document entitled "Groundwater Sampling Procedure, Low Stress (Low Flow) Purging and Sampling" dated March 20, 1998.

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- Temperature: +/- 10%
- pH: +/- 0.1 Standard Units
- Conductivity: +/- 3%
- Oxidation/Reduction Potential (ORP): +/- 10 millivolts (mV)
- Dissolved Oxygen (DO): +/- 10% (or +/- 0.1 milligrams per liter (mg/L) if less than 1.0 mg/L)
- Turbidity: +/- 10% (or three consecutive readings below 10 nephelometric turbidity units (NTUs))

Table 3 summarizes the stabilized field parameter measurements (temperature, pH, specific conductance, turbidity, DO, and ORP) for the monitoring wells.

Minor deviations from the planned sampling and analysis procedures are described below. These deviations do not affect the quality of data collected and are consistent with conventional practices:

- Monitoring well DGC-7C was purged and sampled using a certified-clean disposable HDPE bailer because this location goes dry during purging.
- Monitoring well location MW-18 was purged and sampled using a peristaltic pump because well MW-18 is a 1-inch diameter well.
- Extraction wells BG-1, B-4DR, C-2D, C-4D, C-18D, C-19D, C-20D, C-30, and PW-1(U) pump almost continuously. Prior to field parameter measurement and sample collection, the port at each well was purged of approximately 8 liters of water.
- AWC extraction wells are potable water supply wells. AWC allowed Golder to resume sampling these wells for a limited list of VOCs, SVOCs, and manganese during the October 2018 monitoring event. Between 2014 and October 2018, AWC monitored the wells and provided the data to the Trust. AWC provides its routine monitoring data to the Trust as well.

  Prior to Golder's field parameter measurement and sample collection, the port at each well was purged of approximately 8 liters of water. Two AWC wells (AWC-2 and AWC-6R) were sampled in early November 2019. Due to the limited operation of the well field (during 5-year maintenance activities) during the fall of 2019, Golder collected samples from the active production wells (AWC-2, AWC-7, and AWC-G3R) again in January 2020. The January 2020 data will be included in the January to June 2020 semi-annual groundwater monitoring report.
- After sampling was completed using the low-flow purging and sampling procedure, an additional 3 well volumes were purged from wells BW-2 and MW-26N and an additional sample was collected from each well. This alternate method of purging was performed to collect additional data in response to a request outlined in USEPA's letter regarding Partial Approval of PDI WP, dated November 30, 2018 (USEPA, 2018b) and as outlined in Golder's response dated December 7, 2018 (Golder, 2018) and the SAP Rev 2. The results of this sampling will be summarized in a separate data submittal along with the 3 well volume data collected during the April 2019 monitoring event.

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3.2.2 Sample Collection

TestAmerica of Edison, New Jersey supplied certified-clean sample bottles, blank bottle labels, custody seals, analyte-free water, coolers, and chain-of-custody documents for the monitoring event. The bottles were labeled prior to sample collection using a permanent-marking pen. Once purging was completed, the discharge tubing was disconnected from the flow-through cell and samples were collected directly from the end of the discharge tubing. Bottles were filled by allowing the pump discharge to flow gently down the inside of the bottle with minimal agitation. Extraction wells BG-1, C-2D, C-19D, C-20D, C-30, and PW-1(U) were sampled by filling bottles directly from the sampling ports. Monitoring location DGC-7Cwas sampled using a certified-clean disposable bailer. Well MW-18 was sampled using a peristaltic pump. AWC production wells AWC-2 and AWC-6R were sampled by filling bottles directly from the sampling port.

Each bottle was capped after it was filled. Samples for VOCs were collected first, taking steps to eliminate headspace in the vials. All samples were preserved according to method-specific requirements and were carefully packed into standard sample coolers with ice at approximately four degrees Celsius. All samples were shipped under chain-of-custody procedures via an overnight courier to TestAmerica for analysis.

In addition to the primary samples, the following quality assurance/quality control (QA/QC) samples were collected during the October 2019 monitoring event:

For PFAS samples:

- Fifteen trip blanks were sent along with the PFAS samples collected
- Two equipment rinsate blanks from decontaminated submersible pumps
- Three field blanks were collected
- Triple volumes from three wells (UPA-105A-US, B-4DR, DDA-10-US) for the analysis of matrix spike/matrix spike duplicates (MS/MSD)
- Field duplicate parameter sets from three wells (UPA-105A-LS, C-18D, DDA-10-US)

For all other samples:

- Twenty-four trip blanks were sent along with the VOC samples collected
- Three field equipment rinsate blanks from decontaminated submersible pumps
- Field duplicate parameter sets from four wells (UPA-107-US, MW-34, DDA-18-TZ, and DDA-20-TZ)
- Triple volumes from four wells (UPA-104-US, MW-18, DDA-18-US, and DDA-20-US) for the analysis of matrix spike/matrix spike duplicates (MS/MSD)

Data quality assessments for VOC, SVOC, and metals samples are included in Appendix A and data quality assessments for PFAS are included in Appendix H. Tables 1 and 2 in Appendix A and Appendix H list the types and number of samples collected for analysis and the parameters analyzed for the October 2019 monitoring event. The laboratory result forms for the validated sample data are included in Appendix A and Appendix H.

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3.2.3 Analyses

Table 3 lists the wells sampled during the October 2019 monitoring event and provides a summary of field parameters measured. Samples collected from these wells were analyzed for the parameters indicated on Table 1, which include VOCs with low-level 1,4-dioxane as needed, SVOCs with low-level BCEE as needed, total and dissolved iron, total and dissolved manganese, total dissolved cobalt, cations and anions (calcium, magnesium, potassium, sodium, alkalinity, ammonia, chloride, nitrate and sulfate for select wells) and PFAS (select wells). Well PW-1(U) and the LFExS effluent (NCC sewer discharge monitoring points) were also analyzed for discharge permit parameters (total metals including arsenic, cadmium, chromium, copper, lead, molybdenum, nickel, selenium, zinc, and mercury, and general chemistry parameters including ammonia, total cyanide, biochemical oxygen demand, and total suspended solids).

The wells sampled during the bimonthly monitoring events (August and October 2019) were analyzed for total and dissolved cobalt, total and dissolved iron, and total and dissolved manganese.

3.3 Data Quality Assessment

TestAmerica logged the samples into their laboratory information management systems (LIMS) upon receipt and scheduled the samples for preparation and analysis. Golder performed validation on all the data following guidelines provided by USEPA Contract Laboratory Program (CLP) National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (January 2017) and NFG for Inorganic Superfund Data Review (January 2017), as applicable to the above listed analytical methods as listed in Appendix A. Additional information regarding sample analysis and validation, including the Data Quality Assessment (DQA), can be found in Appendix A.

Based on the data validations and DQA, the analytical data (including estimated data) for samples collected at the Site were determined to be acceptable for their intended use. Acceptable levels of accuracy and precision, based on laboratory control samples (LCS), MS/MSD, field duplicate and surrogate recoveries, were achieved for the data. In addition, the data completeness (i.e., the ratios of the amount of valid data obtained to the amount expected, including estimated data) was 99.9 percent for the October 2019 monitoring event. Data quality summaries are presented in Appendix A Table 2 (VOCs, SVOCs, metals), and Appendix H-3 (PFAS).

3.4 Analytical Results

The detected compounds and their respective concentrations for the groundwater samples collected during the October 2019 monitoring event are summarized and compared to groundwater standards and screening levels including maximum contaminant levels (MCLs), ss-PRGs and the June 2017[9] regional screening levels (RSLs) for tapwater in Appendix B-1. The bimonthly results are summarized and compared to the same standards in Appendix B-3. PFAS results are summarized and compared to the May 19, 2016 USEPA health advisory (HA) of 70 nanograms per liter in Appendix H-1.

A summary of the analytical results relative to ss-PRGs and MCLs is provided below, and a discussion of the trends is provided in Sections 4.1.4 and 4.2.3. Appendix B provides details of the analytical results and comparison of detections to ss-PRGs, MCLs, and RSLs.

[9] In October 2017, revised ss-PRGs were developed for the Site (2017 ss-PRGs). For the next monitoring period (January to June 2018) and subsequent monitoring reports, the June 2017 RSLs are used for comparison.

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3.4.1 DDA Extraction Wells

Golder collected groundwater samples from eight DDA extraction wells during the October 2019 monitoring event. Although the 2017 ss-PRGs and/or MCLs are not applicable for the groundwater within the DDA, the 2017 ss-PRGs and/or MCLs are used as a basis for comparison and to provide context in the absence of applicable standards/goals. The following compounds were detected in DDA extraction wells above the 2017 ss-PRGs and/or MCLs (see Appendix B for details):

- VOCs – 1,2,4-trimethylbenzene (1,2,4-TMB); 1,3,5-trimethylbenzene (1,3,5-TMB); 1,4-dioxane[10]; benzene; chlorobenzene; ethylbenzene; toluene; and xylenes, total
- SVOCs – benzo[a]pyrene; BCEE; and naphthalene
- Dissolved Metals – cobalt; iron; and manganese

Isoconcentration maps for BCEE and 1,4-dioxane (considered the primary COCs at the Site) in the DDA groundwater are included in Appendix C as Figures C-1 and C-2, respectively.

3.4.2 DDA Monitoring Wells

Golder collected groundwater samples from four DDA monitoring wells, including piezometers PZ-5-EXT and PZ-11-EXT during the October 2019 monitoring event. The following compounds were detected in DDA monitoring wells above the 2017 ss-PRGs and/or MCLs (see Appendix B for details):

- VOCs – 1,2,4-TMB; 1,3,5-TMB; 1,4-dioxane; benzene; ethylbenzene; and xylenes, total
- SVOCs – BCEE; and naphthalene
- Dissolved Metals – cobalt; iron; and manganese

Isoconcentration maps for BCEE and 1,4-dioxane in the DDA groundwater are included in Appendix C as Figures C-1 and C-2, respectively.

3.4.3 PW-1(U) Monitoring Wells

Golder collected groundwater samples from monitoring wells (six wells screened in the UPCUTZ and twelve wells screened in the UPA) associated with monitoring the performance of pumping well PW-1(U) during the October 2019 monitoring event. The following sections summarize the PW-1(U) monitoring wells screened in these units.

3.4.3.1 PW-1(U) UPCUTZ Wells

The following compounds were detected in PW-1(U) UPCUTZ monitoring wells above the 2017 ss-PRGs and/or MCLs (see Appendix B for details):

- VOCs - 1,2,4-TMB; 1,4-dioxane; benzene; ethylbenzene; and xylenes, total
- SVOCs – BCEE
- Dissolved Metals – cobalt; iron; and manganese

[10] As noted in Section 2.2, 1,4-dioxane is considered an SVOC due to its fate and transport properties and is handled as such within the context of the CSM. However, since it is analyzed via a VOC analytical method, the 1,4-dioxane results are presented in Sections 3.4 and 4, and Appendix B grouped with the other VOC analytes.

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3.4.3.2 PW-1(U) Upper Sand Wells

The following compounds were detected in PW-1(U) UPA monitoring wells above the 2017 ss-PRGs and/or MCLs (see Appendix B for details):

- VOCs – 1,2,4-TMB; 1,3,5-TMB; 1,4-dioxane; benzene; ethylbenzene; and xylenes, total
- SVOCs – benzo[a]pyrene; BCEE; and naphthalene
- Dissolved Metals – cobalt; iron; and manganese

Isoconcentration maps for BCEE and 1,4-dioxane in the UPA groundwater are included in Appendix C as Figures C-3 and C-4, respectively.

3.4.4 Downgradient UPA Wells – DS&G Site & AWC wells

Golder collected groundwater samples from thirty DS&G UPA monitoring wells located downgradient of pumping well PW-1(U) and from two AWC wells in November 2019. The following compounds were detected in downgradient UPA monitoring wells above the 2017 ss-PRGs and/or MCLs (see Appendix B for details):

- VOCs – 1,4-dioxane; benzene; and tetrachloroethene
- SVOCs – BCEE; and bis(2-ethylhexyl) phthalate
- Dissolved Metals – cobalt; iron; and manganese

Golder collected groundwater samples bimonthly from four DS&G UPA monitoring wells (MW-26N, UPA-03D, AWC-E1 and AWC-E2) located immediately upgradient of well AWC-G3R in August and October 2019 for analysis of total and dissolved iron, manganese, and cobalt. Total cobalt, iron and manganese and dissolved cobalt and manganese were detected in these UPA monitoring wells above the 2017 ss-PRGs and/or MCLs (see Appendix B-3 for details).

3.4.5 NCC UPA Monitoring Wells and P-6 Vicinity

Golder collected groundwater samples from seven UPA wells associated with the ACL monitoring program and located downgradient of pumping well PW-1(U) during the October 2019 monitoring event. The following compounds were detected in these monitoring wells above the 2017 ss-PRGs and/or MCLs (see Appendix B for details):

- VOCs - 1,2,4-TMB; 1,3,5-Trimethylbenzene; 1,4-dioxane; benzene; ethylbenzene; xylenes, total
- SVOCs – BCEE; and naphthalene
- Dissolved Metals – cobalt; iron; and manganese
- Total Metals – manganese

3.4.6 PFAS

Golder collected groundwater samples from six Columbia, seven UPCUTZ and twenty-nine UPA monitoring wells for analysis of perfluorinated compounds (PFCs) during the October 2019 monitoring event. The detected PFCs and their respective concentrations for the groundwater samples collected during the October 2019 monitoring event are summarized and compared to the May 19, 2016 USEPA health advisory (HA) of 70 nanograms per liter (ng/l; parts per trillion [ppt]) for perfluorooctanoic acid (PFOA), perfluorooctane sulfonate (PFOS), and/or the

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combined concentrations of PFOA and PFOS in Appendix H-1. PFOA and PFOS were detected in downgradient Columbia, UPCUTZ and UPA monitoring wells above the May 19, 2016 HA. PFOA concentrations in the UPA upper and lower sand are shown on Figures H-2A and H-2B of Appendix H. Figures were prepared for PFOA because PFOA is observed in many more wells in the vicinity of the Site than PFOS.

4.0 LFEXS AND PW-1(U) EXTRACTION SYSTEMS

The following section presents a summary of operation and maintenance activities, contaminant concentration trends, mass removal rates and other lines of evidence to support performance evaluations and recommended operational modifications for the LFExS and well PW-1(U) extraction system.

4.1 LFExS

The LFExS currently has eight operational extraction wells (wells C-2D, C-19D, C-18D, BG-1, C-4D, B-4DR, C-30 and C-20D) that provide hydraulic containment within the DDA by inducing inward and upward gradients between the UPA and the Columbia Aquifer and remove VOC and BCEE contaminant mass from the DDA groundwater. Between the months of July 2019 and December 2019, the system operated at a monthly average extraction rate between 8.91 and 12.38 gpm. Monthly and semi-annual average extraction rates for the LFExS from startup (2009) through December 2019 are presented on Appendix D and are graphically represented on Figure 10. As shown on Figure 10, the Trust's focus on routine preventative maintenance activities and startup of Redux addition (see discussion in Section 5.2.4 of the SSC Rev 2) have improved the LFExS performance and increased the monthly average extraction rate. The monthly average extraction rates are reviewed on a semi-annual basis to assess system operation, evaluate options for maintaining an average monthly extraction rate between 8 and 10 gpm, and optimize system operation.

4.1.1 Operation and Maintenance

Operation and maintenance activities for the LFExS were conducted between July 2019 and December 2019. The following presents these items, as stated in the Trust's Quarterly OM&M Reports:

- Third quarter 2019 activities:
  - August 19-20, 2019 - Groundwater Treatment and Technology (GWTT) was on site to complete the third quarter maintenance. Third quarter maintenance consisted of:
    - Remove, clean, and reinstall LFExS well pumps based upon the performance and prior inspections. When the well pumps were removed, the drop tubing was inspected and cleaned as necessary.
    - Dismantle and clean piping from holding tank to the floor penetration including the gate valve, check pump for buildup, and check the influent and effluent flow meters.
    - Remove, inspect and clean as necessary all flowmeters located in the shed.
    - Remove, inspect and clean as necessary all check valves located in the shed.
    - Conditions of the individual pumps were as follows: B-4DR, C-2D, C-4D and C-19D were clean; C-18D had some black slime; C-30 had soft brown/orange sediment build-up.
  - July 1, August 5, and September 11, 2019 – Started new drums of Redux addition on LFExS discharge.

- September 30, 2019 – The C-20D level probe was repaired (pump had stopped running), and the pump was re-started.

- Fourth Quarter 2019 activities:
  - October 22, 2019 – Replaced C-2D pump and motor. Flushed line and inspected valves for soil or stone from the repair of the pitless adapter in June 2019. Replaced B-4DR pump (motor was good, but pump had seized). Ordered two new spare pumps and motors for LFExS wells. GWTT replaced old level probes which controlled C-20D with a Coyote control box and reconfigured the well head to eliminate the old VBVS connection.
  - December 2, 2019 - Started new drum of Redux addition on LFExS discharge.
  - December 10 and 11, 2019 - GWTT was on site to complete the fourth quarter maintenance. Fourth quarter maintenance consisted of:
    - Remove, clean, and reinstall 3 LFExS well pumps based upon their performance and prior inspections. When the well pumps were removed, the drop tubing was inspected and cleaned as necessary. C-19D was clean, C-18D had some black slime, and C-30 had soft brown/orange sediment build-up.
    - Dismantle and clean piping from holding tank to the floor penetration including the gate valve, check pump for buildup, and check the influent and effluent flow meters. Also checked sump pump piping for build-up – none was found.
    - Remove, inspect and clean as necessary shed flowmeters – cleaned C18D and C-30. C-30 meter internals were replaced.
    - Jet and vacuum the discharge line from the building towards the sewer including check valve before PW-1 connection.
    - Confirm heat trace and insulation of piping is functional for cold weather.

4.1.2 Discharge Monitoring

The effluent from the LFExS discharges directly to the NCC sewer system. In accordance with the NCC discharge permit, effluent samples are collected semi-annually and analyzed for VOCs, SVOCs, metals and total toxic organics (TTO). During the period covered by this report, one set of effluent samples was collected for VOCs, SVOCs, metals, TTO, and natural attenuation parameters (NAPs). The analytical results are submitted annually by the Trust to the NCC Department of Special Services – Engineering & Environmental Services Division in conformance with the discharge permit. An evaluation of mass loading to the NCC sewer system for the DS&G Site discharges is presented in Section 4.5.

4.1.3 Performance Evaluations

As documented in Golder's April 24, 2009 letter to the USEPA, the general strategy for achieving effective, consistent operation of the LFExS requires balancing the extraction rates from the extraction wells to comply with the current wastewater discharge permit, including flow and contaminant limits, as well as providing an additional degree of hydraulic control near the DDA slurry wall using well C-2D. The following sections present an evaluation of the LFExS system for the period between July 2019 and December 2019.

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4.1.3.1 Groundwater Contours

Figure 5 presents the contours for the groundwater elevation measurements observed within the DDA during the November 2019 monitoring event. This figure includes a blue-hatched area to indicate the approximate extent of LFExS-induced upward (vertical) gradients, based on a comparison of groundwater elevations above the UPCU within the DDA containment area versus below the UPCU (i.e., within the UPA upper sand beneath the DDA). As demonstrated by Figure 5, the extent of LFExS-induced upward (vertical) gradients includes a significant portion of the containment area of the DDA, particularly the portions of the containment area with elevated BCEE detections (Figure C-1).

4.1.3.2 Groundwater Gradient Evaluation

Appendix E presents trend plots of hydraulic head differences for groundwater elevations observed at wells and piezometers in the vicinity of the DDA. Golder calculated head differences instead of gradients because the slurry wall and confining clay (UPCU) represent hydraulic barriers, and gradients will vary depending on the location of the observation point relative to the hydraulic barrier. For example, the horizontal head difference across the slurry wall at the PZ-5 and PZ-11 piezometer pairs is similar, but the distance between the interior and the exterior wells is approximately two times farther for piezometer pair PZ-11 compared to piezometer pair PZ-5, so a calculated gradient would be two times lower for piezometer pair PZ-11.

4.1.3.2.1 Vertical Gradients

Vertical head differences are illustrated on the trend plots included in Figures E-1 through E-10 in Appendix E. For semi-annual monitoring reports prior to 2015, Golder calculated vertical head differences for DDA extraction wells BG-1, C-18D and C-20D and DDA monitoring wells B-2D, C 1D, C-3D, and C-6. To support the performance evaluation presented in the Final FS Rev 1 (Golder, 2016b), Golder also calculated vertical head differences for three additional DDA monitoring wells: B-3D, MHW-1M, and C-16.

In the semi-annual monitoring report submittals prior to 2015, the vertical head differences were calculated relative to UPA monitoring well MHW-1D, since well MHW-1D was the only UPA well screened beneath the DDA prior to September 2012. These calculated head differences were biased low because well MHW-1D is located downgradient (in the UPA) of many of the Columbia monitoring wells used for the vertical head difference calculations. For example, well MHW-1D is located in the UPA upper sand approximately 97 feet downgradient of the location of Columbia well B-2D; therefore, the UPA groundwater elevation at well MHW-1D is approximately 0.5 feet lower than the UPA upper sand groundwater elevation beneath well B-2D. Therefore, using the lower groundwater elevation at well MHW-1D results in a calculated vertical head difference at well B-2D that is lower than the actual vertical head difference at well B-2D. To give a more accurate representation of actual head differences, Golder re-calculated head differences using more proximal UPCUTZ and UPA upper sand wells installed and screened beneath the DDA between September and December 2012. Continuing the example above, well B-2D vertical head differences were re-calculated relative to UPCUTZ well DDA-08-TZ and UPA well DDA-08-US. Trend plots using these re-calculated vertical head differences are presented in Appendix E along with the original head differences calculated relative to well MHW-1D[11].

The positive vertical head differences observed since initiation of LFExS extraction in May 2009 indicate that the LFExS generally induces an upward (vertical) gradient across the most impacted portions of the DDA containment area. These areas are coincident with the DDA extraction well locations. Lesser vertical head differences (near

[11] Head differences for wells C-20D and MHW-1M are presented relative to UPA well MHW-1D because it is the nearest UPA well.

zero) were observed during groundwater gauging events that occurred during or shortly after LFExS shutdown for maintenance, such as the March 5, 2012 shutdown for the well B-4DR connection (see Appendix E). The reduced vertical head differences on the figures included in Appendix E are generally associated with water level monitoring events conducted: (1) during brief well, pump or system performance declines between quarterly maintenance events due to iron fouling, and/or (2) before, during or soon after routine, quarterly maintenance of the LFExS; therefore, they are not fully representative of the long-term vertical head differences between the Columbia Aquifer within the DDA and the UPA upper sand associated with the LFExS operation.

An exception to these observations is the neutral or slightly negative vertical head differences that have been calculated for DDA monitoring wells C-6 (see Figure E-7) and C-16 (see Figure E-10). The fluctuating vertical head differences calculated for well C-6 since 2011 are related to performance/operational issues associated with extraction well B-4DR and indicate that well C-6 is at the eastern periphery of the extraction well B-4DR and LFExS influence. Well C-6 is located in a portion of the containment area where thick UPCU is present and VOC and SVOC concentrations are low (e.g., BCEE was detected at 0.021 micrograms per liter [ug/l] in 2008, prior to LFExS startup). While head differences in the area of monitoring well C-6 are evaluated, well C-6 is outside of the target capture zone defined by BCEE and VOC impacts; therefore, the neutral or slightly negative vertical head differences at well C-6 do not represent a gap in containment. In addition, the DDA-15-US/DDA-15-TZ well pair is located in the UPA slightly downgradient of the Columbia well C-6 location, which would bias-low the calculated head differences at this location. The negative head difference observed at well C-16 in September 2015 is considered anomalous, because nearby extraction well C-30 was operating during the period of water level monitoring, which would a promote a positive gradient at well C-16.

4.1.3.2.2 Horizontal Gradients

Horizontal head differences are illustrated on the trend plots included in Appendix E Figures E-11 through E-15. Golder calculates horizontal head differences for DDA piezometer pairs PZ-2, PZ-5, PZ-6, PZ-11 and PZ-12[12]. For the purposes of this analysis, the groundwater elevation for the interior piezometer is subtracted from the exterior piezometer; therefore, a positive horizontal head difference represents an inward hydraulic gradient (i.e., the Columbia Aquifer groundwater elevation outside the slurry wall is higher than inside the slurry wall). The positive horizontal head differences observed since initiation of LFExS extraction in May 2009 suggest that the LFExS induces an inward (horizontal) gradient within the Columbia Aquifer in the vicinity of the wells located along the northeastern, southeastern and southwestern slurry walls of the DDA containment area, and across the slurry wall between the northwestern DDA partition and containment areas. The reduced horizontal head differences on the figures included in Appendix E are generally associated with water level monitoring events conducted: (1) during brief well, pump or system performance declines between quarterly maintenance events due to iron fouling, and/or (2) before, during or soon after routine, quarterly maintenance of the LFExS; therefore, they are not fully representative of the long-term horizontal head differences across the slurry walls associated with the LFExS operation.

4.1.3.2.3 Conclusion

An evaluation of the vertical and horizontal head differences presented in Appendix E demonstrates that since October 2012, the LFExS has induced:

[12] Golder calculated horizontal head differences for piezometer pair PZ-1 until April 2012 when it was determined that the exterior piezometer PZ-1-EXT is likely influenced by perched conditions.

- Inward (horizontal) gradients (from the Columbia Aquifer outside the DDA slurry walls to the Columbia Aquifer inside the DDA slurry walls).
- Upward (vertical) gradients (from the UPA upper sand into the DDA [Columbia Aquifer]) across the impacted portions of the DDA containment area.

The LFExS provides hydraulic control for the DDA by achieving inward (horizontal) head differences for the entire containment area and upward (vertical) head differences for the most impacted portions of the DDA containment area, except during brief periods of system maintenance. The Trust has implemented many measures to maintain consistent operation and improve the reliability of the system, as described in Section 2.1.4 of the Final FS Rev 1 (Golder, 2016b). The enhanced or modified LFExS, in combination with an impermeable cap over the DDA and groundwater extraction from the UPCUTZ and UPA as proposed in the Final FS Rev 1 (Golder, 2016b), will improve the overall reliability of the LFExS.

4.1.4 Contaminant Concentration Trends

To evaluate changes in groundwater quality within the DDA associated with operation of the LFExS, Golder prepared trend plots of groundwater analytical data for BCEE, 1,4-dioxane, benzene, iron, manganese, and cobalt. The trend plots prepared for DDA (LFExS) extraction wells and DDA (LFExS) monitoring wells are presented in Appendix F.

BCEE, 1,4-dioxane, benzene, iron, manganese, and cobalt were chosen for inclusion on the trend plots because they are considered as the primary risk drivers at the Site, and they are detected in the DDA groundwater as well as in groundwater within the proposed AoA. There may be additional contaminants that exceed applicable standards in various Site wells or located downgradient of the Site, but these contaminants were not included on the trend plots because they are not the primary COCs and/or they are not detected Site-wide. Trend observations for 1,4-dioxane are limited to the period from 2012 to present as 1,4-dioxane was added to the sampling program as an analytical parameter in 2012.

4.1.4.1 DDA Extraction Wells

Trend plots for BCEE, 1,4-dioxane, benzene, iron, manganese, and cobalt for the LFExS extraction wells are presented in Figures F-1A through F-1F of Appendix F. The LFExS extraction well trend plots for 1,4-dioxane, iron, and manganese show no discernible trends. The trend plots for cobalt indicates generally decreasing concentrations, with the exception of C-18D which has no discernible trend. The LFExS extraction well trend plots for BCEE and benzene indicate that concentrations generally decreased following initiation of LFExS extraction in 2009 and have been generally stable between LFExS startup and the October 2019 monitoring event, with the exception of the following:

- Well C-19D which shows an increasing trend in BCEE since October 2016
- Well C-20D which showed an increase in BCEE between October 2016 and October 2017, but returned to concentrations consistent with historical trends in October 2018
- Well B-4D and C-4D which show no discernable trend
- Well C-30 which showed an increase in BCEE in April 2018, but returned to a concentration similar to historic concentrations in October 2018

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4.1.4.2 LFExS and DDA Monitoring Wells

Trend plots for BCEE, 1,4-dioxane, benzene, iron, manganese, and cobalt for the LFExS monitoring wells are presented in Figures F-2A through F-2F of Appendix F and for the DDA monitoring wells in Figures F-3A through F-3F of Appendix F. The LFExS and DDA monitoring well trend plots for BCEE, 1,4-dioxane, benzene, iron, manganese, and cobalt indicate generally decreasing and/or stable concentrations in many wells when compared to concentrations prior to LFExS startup in May 2009 although some wells appear to have no discernible trends, with the exception of the following:

- BCEE trend plot for well MHW-1S shows an overall increasing trend from October 2012 to October 2016, likely due to the initiation of extraction from well C-20D, but shows an overall decreasing trend since October 2016
- BCEE trend plot for well B-2D shows an increase between April 2016 and April 2018, but decreased in April 2019
- BCEE trend plot for well B-3D shows an increase in October 2017, but has since returned to concentrations consistent with the historical trend
- 1,4-dioxane trend plot for well C-1D shows an increase between April 2015 and October 2018 when viewed at a scale of <100 ug/L, but decreased in April 2019
- 1,4-dioxane trend plot for well PZ-11-EXT shows an increase since April 2014 when viewed at a scale of <100 ug/L
- Benzene trend plot for well PZ-6S shows a generally increasing trend since July 2009, likely due to the initiation of extraction from well C-18D
- Iron trend plots for wells B-2D and PZ-11-EXT show generally increasing trends since October 2012
- Manganese trend plot for well MHW-1S shows a generally increasing trend from October 2010 through October 2016; however, results from the past four semi-annual events show a consistent decrease in concentrations
- Cobalt trend plot for well MHW-1S shows a generally increasing trend since April 2013 after the initiation of extraction from well C-20D began
- Cobalt trend plot for well DGC-7C showed a generally increasing trend from April 2015 to October 2018, but decreased in April 2019
- Historical low concentrations for 1,4-dioxane, manganese, and cobalt were observed in April 2018 in well PZ-6N located in the eastern area of the DDA, and have remained relatively low as compared to historical levels

The concentrations in these wells will continue to be monitored in subsequent events and the trends will continue to be evaluated semi-annually.

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4.2 PW-1(U) Extraction System

4.2.1 Operation and Maintenance

On October 15, 2012, the Trust assumed hands-on responsibility for the operation and maintenance of extraction well PW-1(U) from NCC. The well PW-1(U) system discharges directly to the NCC sanitary sewer system (POTW). The NCC sewer discharge permit was modified to include the discharge from both the LFExS and pumping well PW-1(U) with the total combined flow now permitted at 51 gpm.

On October 3, 2013, the Trust began addition of Redux 620 to reduce iron fouling in the well. Since beginning Redux 620 addition to well PW-1(U), maintenance requirements for this well have decreased significantly due to the decreased iron fouling, and more consistent extraction rates (i.e., average monthly extraction rates generally between 30 and 37 gpm) have been maintained. Extraction rates for well PW-1(U) from December 2011 through December 2019 are presented in Appendix D, and graphically represented on Figure 11. As shown on Figures 11 and 14, the Trust's focus on routine preventative maintenance activities and startup of Redux addition have improved the well PW-1(U) performance and increased the monthly average extraction rate. However, due to the decline in the average extraction rate since summer 2017, the Trust performed a chemical swabbing of well PW-1(U) in March 2018 and again in July 2019. An increase of about 5 gpm in the flow rate was obtained. Samples of the water have been given to Gary Richards for evaluation of the Redux dosage. No changes have been recommended.

Maintenance activities that took place during the third quarter included:

- July 2019 - A.C. Schultes redeveloped PW-1 by air-lifting and swabbing the well.
- July 16-17, 2019 – PW-1 was cleaned and GWTT removed the pump and set it to soak in water and Simple Green due to the iron build-up on the pump.
- August 20, 2019 – Annual O&M of PW-1 was completed. The pump was not pulled again during O&M. The piping and flowmeter in the vault was dismantled and cleaned while the discharge line was jetted by Rosey's.
- pH measurements were taken monthly in accordance with the NCC sewer discharge permit at the same time as the LFExS on July 23, August 22 and September 23, 2019.

Maintenance activities that took place during the fourth quarter included:

- November 5, 2019 – GWTT removed and cleaned the pump to prepare for aquifer testing.
- December 26, 2019 - A new drum of Redux 620 was started.
- pH measurements were taken monthly in accordance with the NCC sewer discharge permit at the same time as the LFExS on October 24, November 21 and December 19, 2019.

The annual maintenance on well PW-1(U) will be performed in the third quarter of 2020.

4.2.2 Performance Evaluation

The operational effectiveness of pumping well PW-1(U) was evaluated as part of the Performance Evaluation (Golder, 2012) and further evaluated in the SSC Rev 2 submitted in January 2016. As presented in the SSC Rev 2 Report, groundwater data (water quality and potentiometric data) indicate that pumping well PW-1(U) captures some contaminant mass within the UPA upper sand and contaminant mass migrating from the UPCUTZ groundwater to the UPA upper sand groundwater to the north and northwest of well PW-1(U). Based on the

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potentiometric surface and results of the Spring 2013 aquifer testing, the areas to the east and northeast of well PW-1(U) (eastern edge of the groundwater emanating from beneath the DDA), and to the west in the area of well DDA-16-US, appear to be outside the capture zone for well PW-1(U). Results of the numerical groundwater flow modeling in the DDA area (see Appendix B of the DAA) generally support these observations. More specifically, the results of the groundwater flow model indicate the following:

- Particles released near the DDA since shutdown of the NCC system in 2004 have been generally captured by well PW-1(U) operation[13] (see Appendix D of the Final FS Rev 1 which includes Slides 18 to 21 from Attachment 1 of Appendix B of the DAA)
- The capture zone for well PW-1(U) at a simulated extraction rate of 40 gpm encompasses more than the entire width of the DDA (see Appendix D of the Final FS Rev 1 which includes Slide 28 from Attachment 1 of Appendix B of the DAA)

4.2.3 Contaminant Concentration Trends

To evaluate changes in groundwater quality associated with the DDA and operation of the LFExS and well PW-1(U), Golder prepared trend plots of groundwater analytical data for BCEE, 1,4-dioxane, benzene, iron, manganese, and cobalt. The trend plots and discussion[14] of the contaminant concentration trends focus on the groundwater between the DDA and pumping well PW-1(U), and the UPA groundwater downgradient of well PW-1(U) to the AWC wells (AWC-7 and AWC-K1). The trend plots were prepared for: UPCUTZ monitoring wells located between the DDA and well PW-1(U) (see Figures E-4A through E-4F); pumping well PW-1(U) with associated PW-1(U) monitoring wells in the UPCUTZ and UPA (see Figures E-5A through E-5F); and downgradient UPA wells (see Figures E-6A through E-6F, E-7A through E-7F, E-8A through E-8F, E-9A through E-9F, and E-10A through E-10F).

The rationale for the choice of these constituents is presented in Section 4.1.4. There may be additional contaminants that exceed applicable standards in various wells associated with the Site or located downgradient of the Site, but these contaminants were not included on the trend plots because they are not the primary COCs associated with the Site and/or they are not detected Site-wide.

The following sections discuss the concentration trends observed in the PW-1(U) performance monitoring wells and the downgradient UPA monitoring wells. Note that these trend plots have been reorganized due to the inclusion of the additional monitoring wells installed in 2018 and 2019.

4.2.3.1 PW-1(U) Performance Monitoring Wells

Trend plots for BCEE, 1,4-dioxane, benzene, iron, manganese, and cobalt for PW-1(U) performance monitoring wells are presented in Figures F-4.1A through F-4.1F and F-4.2A through F-4.2F of Appendix F for wells screened in the UPCUTZ and in Figures F-5.1A through F-5.1F and F-5.2A through F-5.2F of Appendix F for wells screened in the UPA. The concentrations shown in the PW-1(U) performance monitoring well trend plots for which long-term data exists (wells DGC-2S, DGC-7S, DGC-5, and MHW-1D) generally indicate an initial decreasing trend after the startup of pumping well PW-1(U) in October 2004, followed by a relatively stable trend. Monitoring wells located between the DDA and pumping well PW-1(U) installed after well PW-1(U) startup (i.e., DDA-01 and

[13] The particle capture in the groundwater model was simulated with well PW-1(U) operating at 40 gpm to approximate current conditions. Based on the operational history of well PW-1(U), NCC generally operated the well at less than 30 gpm between 2005 and 2012. Figure 14 of the Semi-Annual Monitoring Report illustrates the well PW-1(U) extraction rates and changes over time.

[14] Trend observations for 1,4-dioxane are limited to the period from 2012 to present as 1,4-dioxane was added to the sampling program as an analytical parameter in 2012.

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DDA-03 installed in 2008 and the DAA-series wells installed in 2012) indicate relatively stable or decreasing trends. Exceptions to this include:

- UPCUTZ wells DDA-07-TZ (manganese), DDA-12-TZ (BCEE) and DDA-16-TZ (iron) for which the data set begins in 2012 and concentration trends appear to be fluctuating or increasing
- UPCUTZ well DGC-5 (iron, manganese and cobalt) for which the data set begins in 2004 and concentration trends appear to be fluctuating
- UPCUTZ wells DDA-09-TZ and DDA-12-TZ concentration trends for cobalt appear to be fluctuating or increasing
- UPA wells DDA-08-US (manganese), DDA-10-US (BCEE, iron, manganese, and cobalt), DDA-12-US (BCEE and iron), and DDA-17 (iron) for which the data set begins in 2012 and recent concentration trends appear to be fluctuating or increasing
- UPA wells DDA-08-US and DDA-15-US concentration trends for cobalt appear to be fluctuating or increasing for which the data set begins in 2014 and recent concentration trends appear to be fluctuating or increasing
- UPCUTZ well DDA-05 concentrations for BCEE, 1,4-dioxane and benzene increased in April 2019
- UPCUTZ and UPA wells DDA-05, DDA-09-TZ, DDA-08-TZ, DDA-08-US, and DDA-10-US concentration trends for manganese appear to be increasing
- UPCUTZ wells DDA-05, DDA-13-TZ, DDA-09-TZ, DDA-08-TZ, and DDA-14-TZ concentration trends for iron appear to be increasing
- UPCUTZ wells DDA-13-TZ and DDA-08-TZ concentration trends for cobalt appear to be increasing

The concentrations in these wells will continue to be monitored and the trends will continue to be evaluated on a semi-annual basis.

4.2.3.2 Downgradient UPA Monitoring Wells

Trend plots for BCEE, 1,4-dioxane, benzene, iron, manganese, and cobalt for select UPA monitoring wells downgradient of well PW-1(U) are presented in Figures F-6A through F-6F, F-7A through F-7F, F-8A through F-8F, F-9A through F-9F, and F-10A through F-10F[15] of Appendix F. These trend plots indicate that concentrations in these wells were relatively stable or decreasing with the exception of the following:

- A maximum 1,4-dioxane concentration[16] was observed in October 2017 in well MW-28[17] located along the eastern lobe of the ACL[18]. The concentration has since decreased to levels more similar to those detected prior to the October 2017 monitoring event.

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[15] AWC production wells were not sampled by Golder between March 2014 and October 2018 as AWC denied access to these wells. AWC commenced sampling and analysis for a limited list of VOCs and SVOCs themselves during that time period, and AWC provided the data to DS&G. Data provided by AWC for BCEE and 1,4-dioxane have been incorporated into the trend plots.

[16] The data for this monitoring event were validated and no issues with this new maximum concentration were identified. The field information forms for this event were reviewed and compared to historical forms, and no deviations from protocols used during previous monitoring events were identified.

[17] Well MW-28 has a long screen interval and is screened across the upper and lower sand of the UPA. Golder purges and samples well MW-28 from the shallow portion of the screen interval consistent with the UPA upper sand.

[18] The groundwater elevation measured in well MW-28 during this monitoring event was the lowest groundwater elevation recorded for this well by Golder since sampling and analysis for 1,4-dioxane was initiated at the Site in 2012. This new maximum concentration (120 ug/l) is consistent

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- Increasing trends in BCEE, 1,4-dioxane, benzene, iron, manganese, and cobalt have been observed in well UPA-01. Trends for BCEE have shown a decreasing trend since April 2017, iron and manganese have shown a decreasing trend since October 2016, and trends for benzene have shown a decreasing trend since October 2017.
- Well MW-26N has exhibited increasing trends in BCEE, 1,4-dioxane, manganese, and cobalt. Since the restart of AWC-G3R in 2014, 1,4-dioxane concentrations have decreased while manganese and cobalt concentration are stable or fluctuating. BCEE concentrations began to decrease in April 2016; however, increased concentrations of BCEE, 1,4-dioxane and benzene were observed in well MW-26N in October 2019.
- Well UPA-101-US exhibits increasing trends in 1,4-dioxane and benzene since October 2016. Well UPA-101-US also exhibits fluctuating trends in iron.
- Well P-6 exhibited increasing BCEE and benzene concentrations between October 2004 and October 2007 following shutdown of the NCC extraction system. Since April 2012, the COC concentrations in well P-6 have demonstrated a stable or decreasing trend, with the exception of an elevated concentration of benzene in October 2019.
- In April 2015, 1,4-dioxane, iron, and manganese increased in well MW-34 relative to concentrations observed since 2012. These trends for have remained relatively stable since the increase in April 2015. The manganese concentration in well BW-1 has been increasing since April 2015 as well.
- Decreasing trends in iron and increasing trends in manganese and cobalt have been observed at well UPA-02D since shutdown of wells AWC-G3 and AWC-K1 in early 2012. Trends in well UPA-02D have been generally increasing for iron but stable for manganese and cobalt since re-start of AWC-G3R in October 2014.
- Well P-4 has exhibited fluctuating trends for iron, manganese, and cobalt.
- Well AWC-G3 exhibited increasing BCEE and 1,4-dioxane concentrations until the restart of AWC-G3R in late 2014. Since late 2014, concentrations of BCEE and 1,4-dioxane have decreased in well AWC-G3R.
- Well AWC-E2 upper and lower screen samples exhibited increasing BCEE and 1,4-dioxane trends from the start of sampling in 2013 and 2014, respectively, through April 2018. Both wells showed decreased concentrations in April 2019.
- Upper and lower screen samples for wells AWC-E1 and AWC-E2 exhibit fluctuating iron, manganese, and cobalt trends since the start of sampling in 2012 and 2016, respectively.
- Well AWC-7 has exhibited increasing 1,4-dioxane, and manganese trends since shutdown of wells AWC-G3 and AWC-K1 in early 2012, although the April 2015 through April 2018 concentrations (based on data for wells AWC-7 and AWC-G3 provided by AWC) are below the values reported for February and March 2015.

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with the concentration detected during this event and previous events in downgradient well BW-2 (the 1,4-dioxane concentration in well BW-2 was also 120 ug/l in October 2017). The previous 1,4-dioxane maximum concentration in well BW-2 was about 4 ug/l. While the monitoring network is relatively sparse in this area, the particle tracking analysis performed in 2015 by TetraTech indicates the migration pathway for 1,4-dioxane impacts to the well BW-2 area passes from beneath the eastern lobe of ACL to the east of the well MW-28 area and down to the area of well BW-2. The 1,4-dioxane concentration in this well will continue to be monitored.

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Golder resumed sampling of AWC-7 in October 2018 and there was a slight increase in 1,4-dioxane from April 2018.

- Well UPA-03D exhibited increased Cobalt concentrations in May 2019.
- Concentration trends for benzene, iron or other parameters in AWC production wells between April 2014 and September 2018 have not been evaluated as AWC denied access to these wells, but AWC has commenced sampling and analysis for a limited list of VOCs and SVOCs and more recently manganese themselves, and has been providing the data to the Trust. AWC allowed Golder to sample extraction well AWC-7 in October 2018 (wells AWC-G3R and AWC-6R was not extracting at the time when Golder was on-site to monitor). The analytical results were consistent with historical data.

Updated plume maps that include results from the new monitoring wells were provided in a July 2019 letter report summarizing the results of this sampling event (Golder, 2019d). The concentrations in these wells will continue to be monitored and the trends will continue to be evaluated on a semi-annual basis.

4.3 LFExS Mass Removal Estimate

The SAP indicated that future reports would include estimates of the contaminant mass removed by the LFExS based on calculation of mass extracted by the LFExS and comparison of previous to current remaining mass estimates. In the June 2, 2010 DDA LFExS Memo (Golder, 2010), Golder estimated the mass of VOCs and BCEE removed for the period from system startup in May 2009 to April 2010. This mass estimate was calculated based on the volume of water discharged by the LFExS multiplied by the detected concentrations in the LFExS effluent samples. This method has been used to evaluate each six-month period since that time. As shown on Table 4, Golder estimated that the LFExS removed approximately 1.70[19] pounds (lbs) of VOCs (does not include 1,4-dioxane) and 0.25 lbs of BCEE between May 1, 2019 and October 31, 2019. The effluent analytical results are provided in Appendix F. Since system startup, it is estimated that the LFExS has removed between approximately 2.6 and 13 lbs per year of VOCs (does not include 1,4-dioxane) and between approximately 0.2 and 1.8 lbs per year of BCEE.

Figure 12 shows the changes over time in the LFExS mass removal based on the effluent analytical results. This figure shows that mass removal rates for VOCs increased to 13 lbs per year at the end of 2011 and have since remained below 10 lbs per year. The figure also shows that mass removal rates for BCEE have generally increased since the middle of 2012 and have generally remained between 0.5 and 1 lb per year since that time.

To evaluate the relative contribution of the individual extraction wells to the overall system mass removal rate, Golder estimated the mass removal for individual extraction wells by multiplying the extraction rates for those wells by the concentrations detected in those wells for six-month periods since system start-up. Golder estimated this mass contribution for the period between May 15, 2019 and October 31, 2019 for inclusion in this report. Table 5 summarizes the mass removal estimates for the individual wells and Figure 13 shows the changes over time in the mass removal rates for the system. Golder estimates that the LFExS has removed between approximately 9.1 and 34.7[20] lbs/year of VOCs (including between 3.6 and 11.0 lbs/year of 1,4-dioxane since it was added to the target analyte list in 2012), and between approximately 0.2 and 3.3 lbs/year of BCEE since

[19] The estimated VOC mass removal for the reporting period is lower than previous reporting periods. The decreased mass removal is assumed to be caused by limited and/or reduced operation of a few extraction wells just prior to and/or during the system sampling event.
[20] The 34.7 lbs/year total volatile organic compound (TVOC) mass removal based on the sum of individual extraction wells for the period between November 1, 2014 and April 30, 2015 is above recent values, largely due to an increase in the concentration of toluene in well C-18D.

startup (Table 5). During this most recent six-month period, the individual well mass removal estimates suggest the following:

- Extraction wells C-18D, C-19D, and C-20D accounted for 75% of the VOC mass removal
- Extraction wells C-4D, C-19D, C-20D, and BG-1 accounted for 85% of the BCEE mass removal
- Extraction wells C-19D and C-20D accounted for 82% of the 1,4-dioxane mass removal

Table 7 provides a summary of mass removal estimates for May 2019 to October 2019 based on the LFExS effluent samples and the LFExS individual wells.[21] On a semi-annual basis, Golder reviews the mass removal rates and recommends adjustment of extraction rates as part of the semi-annual monitoring report to improve mass removal of the LFExS system. Recommendations for adjustments of extraction rates are included in Section 4.6.1 of this report.

4.4 PW-1(U) Mass Removal Estimate

As part of the LFExS Memo and the May through December 2010 Semi-Annual Monitoring Report, Golder estimated the mass of VOCs[22] and BCEE removed by extraction well PW-1(U) on a quarterly basis for the period from system startup in November 2004 to December 2010 (see Appendix F of the LFExS Memo and Table 5 of the May-December 2010 Semi-Annual Monitoring Report (Golder, 2011a)). This mass estimate was calculated based on the extraction rate for pumping well PW-1(U) and the concentrations detected in the well PW-1(U) samples. This method has been used to evaluate each six-month period since that time. Using the October 2019 analytical data, Golder estimated the mass removal rate based on the same methodology. As shown on Tables 6 and 7, the current pumping well PW-1(U) mass removal rates are approximately 19 lbs per year for VOCs (including approximately 6.1 lbs per year of 1,4-dioxane) and 0.7 lbs per year for BCEE.

Figure 14 shows the changes over time in the well PW-1(U) mass removal rates in pounds removed per quarter and the average extraction rate of pumping well PW-1(U) since the last sample taken. As shown on the figure, the average extraction rate of pumping well PW-1(U) increased to almost 40 gpm between October 2013 and April 2014 and decreased from 31.1 to 29.4 gpm between October 2018 and October 2019, respectively.

4.5 POTW Mass Loading Rate

At the request of the USEPA (see recommendations of the Five-Year Review report for the DS&G Site dated August 28, 2015), an evaluation of the actual mass loading to the NCC sewer system versus the permitted[23] maximum permissible loading[24] to the NCC sewer system for the LFExS and the well PW-1 system were performed. Appendix Tables G-1 and G-2 summarize the following associated with the evaluation:

- Maximum permissible mass loading limits in lbs per day

[21] As noted above, these results should not be directly compared to one another because the effluent sample estimates are based on 6-month averages and the VOC total concentrations do not include 1,4 dioxane, while the individual well estimates are based on monthly snapshots and the VOC totals include 1,4 dioxane. However, the relative mass removal contributions for individual wells reflected as percentages of total system mass removal are instructive.
[22] Historically, concentrations used in the VOCs calculation only included benzene, toluene, ethylbenzene, and xylenes (BTEX) compounds. Since April 2012, data collected has been based on a revised target analyte list which includes 1,4-dioxane. Table 8 and Figure 12 present both historical BTEX and current TVOCs data.
[23] Wastewater Discharge Permit WDP 04-107, Permit Revision 5 dated July 1, 2014 between NCC and the Trust.
[24] Note that the permit limit for molybdenum is listed by NCC as 0.00000 lbs/day.

- Concentration-based limits in ug/l calculated by dividing the permitted mass loading limits by the permitted flow rates for the systems
- October 2016 through October 2019 system discharge sample analytical results[25]

The 2019 system discharge data sets were compared to the calculated concentration-based limits. Copper was detected at 5.6 ug/L, well below the permit limit of 100 ug/l, in the same sample analyzed via Method ISMO2.4; however, the copper result via Method 200.8 was reported at 111 ug/l. Copper has not been previously detected above the permit limit. Copper results will be reviewed again as part of the spring 2020 semi-annual monitoring event. Molybdenum (8.7 ug/L) was detected in the LFExS discharge sample, however, the laboratory reported contamination in the corresponding blank sample. This parameter will be reviewed again as part of the spring 2020 semi-annual monitoring event.

4.6 Recommendations

4.6.1 LFExS

The individual well mass removal estimates suggest there is significant variability in mass removal rates among the wells. The mass removal of the LFExS can be maintained and/or increased by increasing the extraction rate at wells removing a greater percentage of the contaminant mass and decreasing the extraction rate at wells removing a lower percentage of the contaminant mass. Changes in extraction rates are recommended such that hydraulic containment (inward and upward gradients) is maintained within the DDA. Based on the conclusions of the Performance Evaluation (Golder, 2012) and Appendix B of the Final FS Rev 1 (Golder, 2016b), Golder recommends maintaining the 8 to 10 gpm extraction rate for the LFExS and continued optimization of the extraction regime to maximize mass extraction while maintaining 8 to 10 gpm.

Based on a review of the mass removal rate of individual wells between May 2019 and October 2019 and contaminant concentrations within the DDA in October 2019, Golder recommends the following extraction rates for the LFExS wells:

Well	Extraction Rate Minimum	Extraction Rate Maximum
BG-1	0.5	0.75
B-4DR	0.25	0.5
C-2D	0.75	1.0
C-4D	1.0	1.25
C-18D	0.75	1.0
C-19D	0.50	0.75
C-20D	3.25	3.5
C-30	1.0	1.25

[25] The detection limit for the molybdenum and mercury analysis is above the calculated concentration-based permit limit.

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Well	Extraction Rate Minimum	Extraction Rate Maximum
Totals	**8 gpm**	**10 gpm**

These extraction rates are the same rates recommended in the previous semi-annual monitoring report.

4.6.2 PW-1(U) System

Well PW-1(U) has operated at or over 30 gpm since addition of Redux 620 started in October 3, 2013. Operation of well PW-1(U) will continue to be monitored and evaluated semi-annually. There are no recommendations for changes in well PW-1(U) OM&M at this time. However, due to the decline in the average extraction rate since summer 2017, the Trust performed a chemical swabbing of well PW-1(U) in March 2018 and in July 2019.

5.0 DATA EVALUATION AND INTERPRETATION

In their Fourth Five-Year Review Report for the Site, the USEPA provided the following recommendations/follow-up actions: "Progress toward the attainment of remedial action objectives, changes in Site conditions and opportunities for remedy optimization should be regularly evaluated using Site data and documented in regularly submitted reports. If necessary, data collection objectives should be reviewed." (USEPA, 2010) The Remedial Action Objectives (RAOs) were updated in December 2017 as part of the USEPA's Amendment No. 2 to the 1988 Record of Decision for the Site (ROD-A2; USEPA, 2017) and the data quality objectives were updated in August 2018 as part of the PDI Work Plan and SAP. The USEPA provided conditional approval of these documents, minor revisions were addressed, and the revised documents were submitted on March 28, 2019 (Golder, 2019b, Golder 2019c). The USEPA provided approval of the PDI Work Plan – Revision 2 and SAP Rev 2 via email dated April 10, 2019 (USEPA, 2019a).

The USEPA is currently performing the Fifth Five-Year Review for the Site.

5.1 Changes in Site Conditions

Golder evaluated changes in the groundwater conditions at the Site based on the October 2019 monitoring data. Sections 4.1.4 and 4.2.3 discuss COC concentration trends and Appendix F presents trend plots for the wells in the semi-annual monitoring program. Ongoing PDI activities will provide information about groundwater conditions through installation and monitoring of additional monitoring wells. Results of the monitoring indicate that the groundwater conditions are largely unchanged since the previous monitoring event. Additional discussion is provided in Section 4.1.4.2. Changes in groundwater conditions will continue to be evaluated on a semi-annual basis and reported via the semi-annual monitoring reports.

5.2 Remedy Optimization

Modifications to the LFExS have been made with the intent of optimizing the system's performance both in maintaining hydraulic containment as well as in increasing the extraction rates of the extraction wells with the highest mass removal rates. Additional modifications in the form of rebalancing individual well extraction rates are recommended, as needed, in Section 4.6.1. Hydraulic gradients and mass removal rates will continue to be evaluated on a semi-annual basis to further optimize the effectiveness of the LFExS.

Modifications to the well PW-1(U) system were previously made with the intent of optimizing the system's performance both in maintaining hydraulic control as well as capturing groundwater impacts migrating within the

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UPA upper sand and migrating from the UPCUTZ into the UPA upper sand near the DDA. Additional modifications will be made in the future as part of the Selected Remedy. Hydraulic gradients and mass removal rates will continue to be evaluated on a semi-annual basis.

5.3 Attainment of RAOs

In December 2017, the USEPA updated the RAOs for the Site through issuance of the ROD-A2. Based on the information presented in the Final FS Rev 1, the SSC Rev 2, the landfill gas monitoring reports and the semi-annual groundwater monitoring reports, progress is being made toward the attainment of the RAOs. More specifically, there are institutional and/or engineering controls in place which achieve three of the five RAOs for the Site as presented in the ROD-A2. These RAOs are:

- Prevent direct contact with contaminated soil enclosed within the slurry wall at the DDA.
- Prevent direct contact with groundwater containing contaminants from the DS&G Site at levels that exceed MCLs, non-zero MCLGs or acceptable risk- and health-based concentrations.
- Prevent contaminant migration from subsurface vapor intrusion into indoor air that would result in unacceptable levels of risk.

The remaining two RAOs are as follows and progress toward these is summarized below:

- Prevent migration of contaminants from the DDA that would cause contaminant concentrations in the groundwater of the Columbia Aquifer outside the DDA or the Upper Potomac Aquifer within the Area of Attainment (as defined below) to exceed MCLs, nonzero maximum contaminant level goals (MCLGs) or acceptable risk- and health-based concentrations.
- Restore groundwater within the Area of Attainment (throughout the contaminant plume, at and beyond the boundary of the Waste Management Area) to its beneficial use in a reasonable time frame.

The LFExS reduces the migration of COCs to groundwater from contaminated soil remaining in the DDA by lowering the water level in select areas (areas with higher relative contaminant concentrations) within the DDA. The LFExS also reduces the contaminant mass remaining in the DDA and prevents migration of impacted groundwater from the DDA to the Columbia Aquifer, UPCUTZ and the UPA groundwater. Monitoring results indicate the LFExS is providing hydraulic containment and removing VOCs and BCEE contaminant mass from the DDA. Additional discussion about the hydraulic containment and mass removal by the LFExS is provided in Appendix B of the Final FS Report Rev 1 (Golder, 2016b).

As presented in the SSC Rev 2 Report, the groundwater data indicate that pumping well PW-1(U) captures some contaminant mass within the UPA upper sand and contaminant mass migrating from the UPCUTZ groundwater to the UPA upper sand groundwater to the north and northwest of well PW-1(U).

Progress toward attainment of the remaining two RAOs will continue to be assessed on a semi-annual basis.

5.4 Data Collection Objectives

The data collection objectives are outlined in the SAP. To assist with evaluation of the Site-wide contaminant concentration trends, there is some overlap in the DS&G and ACL groundwater monitoring programs. Data is exchanged between the Trust and NCC as necessary.

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5.5 Evaluation of Tentatively Identified Compounds

On March 22, 2019, the Trust submitted to the USEPA a technical memorandum prepared by Golder regarding Review of Tentatively Identified Compounds in Groundwater (Golder, 2019a). This memorandum provided a summary of tentatively identified compounds (TICs) for the 2017 and 2018 groundwater monitoring events. Based on the review, Golder did not recommend any additions to the Site's target analyte list (TAL).

The USEPA provided concurrence with this recommendation via email dated April 12, 2019. (USEPA, 2019b) The next bi-annual review of groundwater TICs will be performed after validation of data from the October 2020 monitoring event.

5.6 Reporting

The Trust will continue to summarize the routine groundwater monitoring results and evaluate the performance of the LFExS and pumping well PW-1(U) in semi-annual monitoring reports. These reports will be prepared for monitoring periods as follows: January 1 through June 30, and July 1 through December 31. The reports will be submitted to the USEPA within 60 days of the completion of the monitoring period.

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USEPA, 2019b. USEPA email re: Approval of the 2019 TIC Memo. April 12, 2019.

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Golder appreciates the opportunity to prepare this report for submission to the USEPA on behalf of the Trust. Should you have any questions regarding this report, please contact Ms. Theresa Miller at (978) 376-8434.

Golder Associates Inc.

Brian P. Campelia, PE
Project Engineer

Theresa A. Miller, PG
Senior Consultant

TAM/BPC/drb

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Tables

TABLE 1
SEMI-ANNUAL AND ANNUAL 2019 MONITORING PROGRAM
DELAWARE SAND & GRAVEL SUPERFUND SITE
NEW CASTLE COUNTY, DELAWARE

Sample ID	Well Type/Purpose	Screened Unit	Screen Interval (ft-bgs)	Sampling Depth (ft-bgs)	Purging and Sampling Method	April 2019 Event	October 2019 Event	One-Time Event in 2019		October 2019 Event
						Routine Groundwater Monitoring		Cations and Anions	PFAS Monitoring	3 Well Volume Sample
						VOCs+II-1,4-dioxane, SVOCs+II-BCEE, d-Fe/Mn, TAL Metals, Ammonia	VOCs+II-1,4-dioxane, SVOCs+II-BCEE, d-Fe/Mn			
DDA Low-Flow Extraction System Wells										
B-4DR	Extraction - LFExS	Columbia	31-41	NA	no purge - direct draw	x	x	-	x*	-
BG-1	Extraction - LFExS	Columbia	22-42	NA	no purge - direct draw	x	x	-	-	-
C-18D	Extraction - LFExS	Columbia	31-37	NA	no purge - direct draw	x	x	-	x*	-
C-19D	Extraction - LFExS	Columbia	38-43	NA	no purge - direct draw	x	x	-	-	-
C-20D	Extraction - LFExS	Columbia	43-48	NA	no purge - direct draw	x	x	-	-	-
C-2D	Extraction - LFExS	Columbia	29-40	NA	no purge - direct draw	x	x	-	-	-
C-30	Extraction - LFExS	Columbia	27-37	NA	no purge - direct draw	x	x	-	-	-
C-4D	Extraction - LFExS	Columbia	34-42	NA	no purge - direct draw	x	x	-	-	-
DDA Monitoring Wells within Containment Area										
B-2D	Monitoring near BG-1 and C-2D	Columbia	36-46	41	submersible - low flow	x	-	-	-	-
B-3D	Monitoring near BG-1 and C-4D	Columbia	38-45	41	submersible - low flow	x	-	-	x*	-
C-1D	Monitoring along Northern Boundary	Columbia	28-38	33	submersible - low flow	x	-	-	-	-
C-22S	Monitoring above Columbia Clay	Columbia	30-38	36	submersible - low flow	x	-	-	-	-
C-3D	Monitoring along Northern Boundary	Columbia	31-44	38	submersible - low flow	x	-	-	-	-
MHW-1M	Monitoring near C-20D	Columbia	40-45	43	submersible - low flow	x	-	-	x*	-
MHW-1S	Monitoring near C-20D	Columbia	30.2-35.2	33	submersible - low flow	x	-	-	-	-
PZ-6S	Monitoring near C-30 and Partition	Columbia	26-29	27	3x - bailer	x	-	-	-	-
DDA Monitoring Wells within Partition Area										
P-4D	Monitoring - Partition	Columbia	26.5-36.5	31	submersible - low flow	x	-	-	-	-
PZ-4-INT-R	Monitoring - Partition	Columbia	29-34	32	submersible - low flow	x	-	-	-	-
PZ-6N	Monitoring - Partition	Columbia	30-33	31	3x - bailer	x	-	-	-	-
DDA to PW-1(U) Monitoring Wells										
DDA-01	Monitoring - Downgradient of DDA	UPA-Upper Sand	84-94	89	submersible - low flow	x	-	x	-	-
DDA-02	Monitoring - Downgradient of DDA	UPA-Upper Sand	84-94	89	submersible - low flow	x	x	x	x	-
DDA-03	Monitoring - Downgradient of DDA	UPA-Upper Sand	80-90	85	submersible - low flow	x	-	x	x	-
DDA-05	Monitoring - Downgradient of DDA	UPCUTZ	54-64	59	submersible - low flow	x	-	x	-	-
DDA-06	Monitoring - Downgradient of DDA	UPCUTZ	46-56	51	submersible - low flow	x	-	x	x*	-
DDA-07-TZ	Monitoring - Beneath DDA	UPCUTZ	44-49	47	submersible - low flow	x	-	-	x**	-
DDA-07-US	Monitoring - Beneath DDA	UPA-Upper Sand	63-73	68	submersible - low flow	x	-	-	x**	-
DDA-08-TZ	Monitoring - Beneath DDA	UPCUTZ	49-59	54	submersible - low flow	x	-	-	x*	-
DDA-08-US	Monitoring - Beneath DDA	UPA-Upper Sand	62-72	67	submersible - low flow	x	-	-	-	-
DDA-09-TZ	Monitoring - Downgradient of DDA	UPCUTZ	55-65	67	submersible - low flow	x	-	-	-	-
DDA-10-US	Monitoring - Downgradient of DDA	UPA-Upper Sand	42-52	47	submersible - low flow	x	x	x	x	-
DDA-11-LS	Monitoring - Downgradient of DDA	UPA-Lower Sand	105-115	110	submersible - low flow	x	-	-	x**	-
DDA-11-US	Monitoring - Downgradient of DDA	UPA-Upper Sand	75-85	80	submersible - low flow	x	-	-	-	-
DDA-12-TZ	Monitoring - Downgradient of DDA	UPCUTZ	39-54	47	submersible - low flow	x	-	-	x*	-
DDA-12-US	Monitoring - Downgradient of DDA	UPA-Upper Sand	67-77	72	submersible - low flow	x	x	x	x	-
DDA-13-TZ	Monitoring - Downgradient of DDA	UPCUTZ	48-58	53	submersible - low flow	x	-	-	-	-
DDA-14-TZ	Monitoring - Beneath DDA	UPCUTZ	49-59	54	submersible - low flow	x	-	-	-	-
DDA-15-TZ	Monitoring - Beneath DDA	UPCUTZ	54-64	59	submersible - low flow	x	-	-	x*	-
DDA-15-US	Monitoring - Beneath DDA	UPA-Upper Sand	85-95	90	submersible - low flow	x	-	-	-	-
DDA-16-TZ	Monitoring - Downgradient of DDA	UPCUTZ	51-59	56	submersible - low flow	x	-	-	x*	-
DDA-16-US	Monitoring - Downgradient of DDA	UPA-Upper Sand	63-73	68	submersible - low flow	x	-	-	x*	-
DDA-17	Monitoring - Downgradient of DDA	UPA-Upper Sand	67-77	72	submersible - low flow	x	-	-	-	-
DDA-18-TZ	Monitoring - West of Well PW-1(U)	UPCUTZ	47-54	50.5	submersible - low flow	x	x	x	-	-
DDA-18-US	Monitoring - West of Well PW-1(U)	UPA-Upper Sand	71-78	74.5	submersible - low flow	x	x	x	-	-
DDA-19-TZ	Monitoring - East of Well PW-1(U)	UPCUTZ	60-67	63.5	submersible - low flow	x	x	x	-	-
DDA-19-US	Monitoring - East of Well PW-1(U)	UPA-Upper Sand	66-73	69.5	submersible - low flow	x	x	x	-	-
DDA-20-TZ	Monitoring - Northeast of Well PW-1(U)	UPCUTZ	48-55	51.5	submersible - low flow	x	x	x	-	-
DDA-20-US	Monitoring - Northeast of Well PW-1(U)	UPA-Upper Sand	81-87	84	submersible - low flow	x	x	x	-	-
DGC-2D	Monitoring - West of DDA	UPA-Lower Sand	105-115	110	submersible - low flow	x	-	-	-	-
DGC-2S	Monitoring - West of DDA	UPA-Upper Sand	50-70	60	submersible - low flow	x	-	x	x*	-
DGC-5	Monitoring - Northern DDA Boundary	UPCUTZ	35-55	45	submersible - low flow	x	x	x	x	-
DGC-7C	Monitoring - Near Inert Area	Columbia	23-33	28	3x - bailer	x	x	-	-	-
DGC-7S	Monitoring - Near Inert Area	UPCUTZ	60-80	70	submersible - low flow	x	-	x	-	-
GA-101	Monitoring - Northern DDA Boundary	Columbia	22-28	26	submersible - low flow	x	x	-	x*	-
MHW-1D	Monitoring - Beneath DDA	UPA-Upper Sand	65-75	70	submersible - low flow	x	x	x	-	-
PW-1(U)	Extraction - PW-1(U)	UPA-Upper Sand	68-93	NA	no purge - direct draw	x	x	x	x	-
PZ-11-EXT	Monitoring - Northern DDA Boundary	Columbia	37-42	40	submersible - low flow	x	x	-	x*	-
PZ-5-EXT	Monitoring - Northern DDA Boundary	Columbia	27-30	29	submersible - low flow	x	x	-	-	-

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Sample ID	Well Type/Purpose	Screened Unit	Screen Interval (ft-bgs)	Sampling Depth (ft-bgs)	Purging and Sampling Method	April 2019 Event	October 2019 Event	One-Time Event in 2019		October 2019 Event
						Routine Groundwater Monitoring		Cations and Anions	PFAS Monitoring	3 Well Volume Sample
						VOCs+II-1,4-dioxane, SVOCs+II-BCEE, d-Fe/Mn, TAL Metals, Ammonia	VOCs+II-1,4-dioxane, SVOCs+II-BCEE, d-Fe/Mn			
Downgradient DS&G Monitoring Locations										
AWC-E1	Former Production - Upgradient of AWC	UPA-Upper Sand	122-162	132	submersible - low flow	-	x	x	x	-
AWC-E1	Former Production - Upgradient of AWC	UPA-Lower Sand	122-162	156	submersible - low flow	-	x	x	x	-
AWC-E2	Former Production - Upgradient of AWC	UPA-Upper Sand	131-173	140	submersible - low flow	-	x	x	x	-
AWC-E2	Former Production - Upgradient of AWC	UPA-Lower Sand	131-173	165	submersible - low flow	-	x	x	x	-
CA-102	Monitoring - Inert Area	Columbia	39-46	42.5	submersible - low flow	x	x	x	-	-
CA-103	Monitoring - Inert Area	Columbia	26-33	29.5	submersible - low flow	x	x	x	-	-
CA-106	Monitoring - Grantham South	Columbia	13-20	16.5	submersible - low flow	x	x	x	-	-
DGC-10D	Monitoring - Eastern AoA Boundary	UPA-Lower Sand	128-138	133	submersible - low flow	x	x	x	x	-
DGC-10S	Monitoring - Eastern AoA Boundary	UPA-Upper Sand	93-113	103	submersible - low flow	x	x	x	x	-
DGC-11D	Monitoring - Eastern AoA Boundary	UPA-Upper Sand	105-115	110	submersible - low flow	x	x	x	-	-
DGC-11S	Monitoring - Eastern AoA Boundary	UPA-Upper Sand	70-80	75	submersible - low flow	x	x	x	-	-
DGC-8C	Monitoring - Inert Area	Columbia	19-29	30	submersible - low flow	x	-	-	-	-
DGC-8D	Monitoring - Inert Area	UPA-Lower Sand	108-118	117	submersible - low flow	x	-	x	-	-
DGC-8S	Monitoring - Inert Area	UPA-Upper Sand	60-80	75	submersible - low flow	x	-	x	-	-
RT-1-UP	Monitoring	UPA-Upper Sand	91-101	100	submersible - low flow	x	x	x	x	-
UPA-01	Monitoring	UPA-Upper Sand	90-100	95	submersible - low flow	x	x	x	x	-
UPA-02D	Monitoring	UPA-Lower Sand	151-161	156	submersible - low flow	x	x	x	x	-
UPA-02S	Monitoring	UPA-Upper Sand	97-107	102	submersible - low flow	x	-	x	x	-
UPA-03D	Monitoring - Eastern AoA Boundary	UPA-Lower Sand	155-165	160	submersible - low flow	x	x	x	x	-
UPA-101-LSA	Monitoring - Well P-6 Area	UPA-Lower Sand	128-135	131.5	submersible - low flow	x	x	x	-	-
UPA-101-LSB	Monitoring - Well P-6 Area	UPA-Lower Sand	158-165	161.5	submersible - low flow	x	x	x	-	-
UPA-101-TZ	Monitoring - Well P-6 Area	UPCUTZ	73-78	75	submersible - low flow	x	-	-	-	-
UPA-101-US	Monitoring - Well P-6 Area	UPA-Upper Sand	101-111	106	submersible - low flow	x	-	-	-	-
UPA-102-TZ	Monitoring - Well P-6 Area	UPCUTZ	90-97	93.5	submersible - low flow	x	x	x	-	-
UPA-102-US	Monitoring - Well P-6 Area	UPA-Upper Sand	100-107	103.5	submersible - low flow	x	x	x	-	-
UPA-103-LS	Monitoring - Well P-6 Area	UPA-Lower Sand	116-123	119.5	submersible - low flow	x	x	x	-	-
UPA-103-TZ	Monitoring - Well P-6 Area	UPCUTZ	65-72	68.5	submersible - low flow	x	x	x	-	-
UPA-103-US	Monitoring - Well P-6 Area	UPA-Upper Sand	83-90	86.5	submersible - low flow	x	x	x	x	-
UPA-104-LS	Monitoring - Well P-6 Area	UPA-Lower Sand	124.5-131.5	128	submersible - low flow	x	-	x	-	-
UPA-104-TZ	Monitoring - Well P-6 Area	UPCUTZ	79-86	82.5	submersible - low flow	x	x	x	-	-
UPA-104-US	Monitoring - Well P-6 Area	UPA-Upper Sand	99-106	102.5	submersible - low flow	x	x	x	-	-
UPA-105A-LS	Monitoring - Well UPA-101 Area	UPA-Lower Sand	120.5-127.5	124	submersible - low flow	x	x	x	x	-
UPA-105A-TZ	Monitoring - Well UPA-101 Area	UPCUTZ	97-104	100.5	submersible - low flow	x	-	x	-	-
UPA-105A-US	Monitoring - Well UPA-101 Area	UPA-Upper Sand	104-111	107.5	submersible - low flow	x	x	x	x	-
UPA-105B-LS	Monitoring - Well UPA-101 Area	UPA-Lower Sand	120-127	123.5	submersible - low flow	x	-	x	-	-
UPA-105B-TZ	Monitoring - Well UPA-101 Area	UPCUTZ	77-83	80	submersible - low flow	x	-	x	-	-
UPA-105B-US	Monitoring - Well UPA-101 Area	UPA-Upper Sand	108-115	111.5	submersible - low flow	x	x	x	-	-
UPA-106-TZ	Monitoring - Wells MW-18/MW-34 Area	UPCUTZ	45-50	47.5	submersible - low flow	x	-	-	-	-
UPA-106-USA	Monitoring - Wells MW-18/MW-34 Area	UPA-Upper Sand	60-67	63.5	submersible - low flow	x	x	x	-	-
UPA-106-USB	Monitoring - Wells MW-18/MW-34 Area	UPA-Lower Sand	86-93	89.5	submersible - low flow	x	x	x	-	-
UPA-107-LS	Monitoring - Wells MW-18/MW-34 Area	UPA-Lower Sand	137-144	140.5	submersible - low flow	x	x	x	-	-
UPA-107-TZ	Monitoring - Wells MW-18/MW-34 Area	UPCUTZ	87-94	90.5	submersible - low flow	x	x	x	-	-
UPA-107-US	Monitoring - Wells MW-18/MW-34 Area	UPA-Upper Sand	105-112	108.5	submersible - low flow	x	x	x	-	-
UPA-108B-TZ	Monitoring - Well BW-2 Area	UPCUTZ	40-47	43.5	submersible - low flow	x	x	x	-	-
UPA-108B-US	Monitoring - Well BW-2 Area	UPA-Upper Sand	69-76	72.5	submersible - low flow	x	x	x	x	-
UPA-108B-LS	Monitoring - Well BW-2 Area	UPA-Lower Sand	90-97	93.5	submersible - low flow	x	x	x	x	-
UPA-108C-US	Monitoring - Well BW-2 Area	UPA-Upper Sand	72-79	75.5	submersible - low flow	x	x	x	x	

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						VOCs+II-1,4-dioxane, SVOCs+II-BCEE, d-Fe/Mn, TAL Metals, Ammonia	VOCs+II-1,4-dioxane, SVOCs+II-BCEE, d-Fe/Mn			
Downgradient NCC Monitoring Locations										
BW-1	Monitoring	UPA-Lower Sand	106.5 - 126.5	126	submersible - low flow	x	-	-	-	-
BW-2	Monitoring	UPA-Lower Sand	105 - 125	133	submersible - low flow	x	x	x	-	x
MW-18	Monitoring	UPA-Upper Sand	80 - 90	85	peristaltic	x	x	x	x	-
MW-26N	Monitoring	UPA-US and LS	108 - 168	138	submersible - low flow	x	x	x	x	x
MW-28	Former Extraction - ACL Eastern Lobe	UPA-US and LS	40 - 120	50	submersible - low flow	x	-	-	-	-
MW-29	Former Extraction - ACL Eastern Lobe	UPA-US and LS	34 - 113	39	submersible - low flow	x	-	-	-	-
MW-31	Former Extraction - ACL Eastern Lobe	UPA-US and LS	59 - 105	75	submersible - low flow	x	-	-	-	-
MW-34	Monitoring	UPA-US and LS	75-131.5	100	submersible - low flow	x	x	x	x	-
P-5L	Monitoring	UPA-Lower Sand	70 - 80	131	submersible - low flow	x	x	x	-	-
P-5U	Monitoring	UPA-Upper Sand	126 - 136	75	submersible - low flow	x	-	x	-	-
P-6	Monitoring	UPA-Upper Sand	100 - 110	105	submersible - low flow	x	x	x	-	-
AWC Wells - only extraction wells which are pumping at the time of the event can be sampled										
AWC-2	Production Well	UPA-Lower Sand	122-160	NA	no purge - direct draw	-	-	x	by AWC qrtrly	-
AWC-6R	Production Well	UPA-US and LS	100-140	NA	no purge - direct draw	-	-	x	by AWC qrtrly	-
AWC-G3R	Production - Southern AoA Boundary	UPA-US and LS	102-157	NA	no purge - direct draw	x	-	-	by AWC qrtrly	-
AWC-K1	Monitoring - Eastern AoA Boundary	UPA-Lower Sand	135-173	160	submersible - low flow	x	x	-	-	-

Notes:
1) "x" indicates location will be sampled for indicated parameter(s)
2) "-" indicates location will not be sampled for indicated parameters and/or location was not included as a FSWP Revision 2 sample location
3) List of cations and anions for analysis includes: calcium, magnesium, potassium, sodium, ammonia, nitrate, nitrite, sulfate, sulfide, chloride and bicarbonate.
4) * indicates EPA requested PFAS sampling location
5) ** indicates proposed additional PFAS sampling location based on EPA's April 26, 2018 email and Trust's August 2018 response
6) Frequency of "once per year" = annually; however, which semi-annual event (April or October) will depend on well installation date and ACL coordination
7) April monitoring event represents a is site-wide event and October monitoring event is limited to information needed for design
8) A synoptic round of water levels will be collected prior to sampling during each monitoring event.
9) AWC agreed to let the Golder sample AWC wells as part of semi-annual monitoring events beginning in October 2018.
10) Trip blanks will accompany each shipment of VOC samples (1 per day).
11) The following quality assurance/quality control (QA/QC) samples will be collected during each monitoring event at a rate of 1 per 20 primary samples: field duplicates, field equipment rinsate blanks, matrix spikes and matrix spike duplicates.

Prepared By: KNG
Checked By: BPC
Reviewed By: TAM

Table 2A
Groundwater Elevation Data - DDA Monitoring Wells - November 2019
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

Monitoring Point ID	Hydrogeologic Unit	Reference Elevation (feet MSL)	Date	Depth to Groundwater (feet BTOIC)	Groundwater Elevation (feet MSL)	Extraction Well Function
DDA Extraction Wells						
B-4DR	Columbia Aquifer - Columbia Sand	30.15	11/7/2019	31.55	-1.40	Extracting
BG-1	Columbia Aquifer	24.97	11/7/2019	28.20	-3.23	Extracting
C-18D	Columbia Aquifer	25.41	11/7/2019	26.94	-1.53	Extracting
C-19D	Columbia Aquifer	28.86	11/7/2019	29.68	-0.82	Extracting
C-20D	Columbia Aquifer	32.20	11/7/2019	NM	NC	Extracting
C-2D	Columbia Aquifer - Columbia Sand and Basal Gravel	22.44	11/7/2019	23.90	-1.46	Extracting
C-30	Columbia Aquifer	25.71	11/7/2019	27.23	-1.52	Extracting
C-4D	Columbia Aquifer - Columbia Sand and Basal Gravel	22.74	11/7/2019	24.25	-1.51	Extracting
DDA Monitoring Wells						
C-1D	Columbia Aquifer - Columbia Sand and Basal Gravel	22.30	11/7/2019	24.00	-1.70	-
C-3D	Columbia Aquifer	22.66	11/7/2019	24.00	-1.34	-
C-5D	Columbia Aquifer	23.20	11/7/2019	24.22	-1.02	-
C-6_DDA	Columbia Aquifer	25.32	11/7/2019	24.15	1.17	-
C-7	Columbia Aquifer	23.07	11/7/2019	20.06	3.01	-
C-8	Columbia Aquifer	23.50	11/7/2019	23.32	0.18	-
C-9	Columbia Aquifer	24.93	11/7/2019	25.85	-0.92	-
C-10	Columbia Aquifer	26.43	11/7/2019	27.70	-1.27	-
C-12	Columbia Aquifer	26.04	11/7/2019	27.12	-1.08	-
C-14	Columbia Aquifer	25.50	11/7/2019	27.08	-1.58	-
C-15D	Columbia Aquifer	23.53	11/7/2019	25.00	-1.47	-
C-16	Columbia Aquifer	24.01	11/7/2019	25.45	-1.44	-
C-17	Columbia Aquifer	24.80	11/7/2019	24.00	0.80	-
C-23	Columbia Aquifer	29.70	11/7/2019	28.40	1.30	-
C-24	Columbia Aquifer	28.28	11/7/2019	27.36	0.92	-
C-25	Columbia Aquifer	30.37	11/7/2019	28.76	1.61	-
C-27	Columbia Aquifer	29.25	11/7/2019	30.67	-1.42	-
MHW-1M	Base of Columbia Aquifer	29.83	11/7/2019	31.62	-1.79	-
MHW-1S	Columbia Aquifer	29.83	11/7/2019	31.23	-1.40	-
PZ-11-EXT	Columbia Aquifer	23.27	11/7/2019	23.20	0.07	-
PZ-11-INT-R	Columbia Aquifer	24.28	11/7/2019	25.02	-0.74	-
PZ-12-EXT	Columbia Aquifer	26.07	11/7/2019	25.07	1.00	-
PZ-12-INT	Columbia Aquifer	24.77	11/7/2019	26.10	-1.33	-
PZ-2-EXT	Columbia Aquifer	25.49	11/7/2019	24.75	0.74	-
PZ-2-INT	Columbia Aquifer	29.53	11/7/2019	29.72	-0.19	-
PZ-5-EXT	Columbia Aquifer	24.18	11/7/2019	29.70	-5.52	-
PZ-5-INT	Columbia Aquifer	24.40	11/7/2019	29.85	-5.45	-
PZ-6S	Columbia Aquifer	28.01	11/7/2019	24.43	3.58	-
DDA Monitoring Wells within Partition Area						
P-4D	Columbia Aquifer - UPCU, Columbia Clay, Basal Gravel	25.22	11/7/2019	24.00	1.22	-
P-5	Columbia Aquifer	24.30	11/7/2019	23.95	0.35	-
P-8D	Columbia Aquifer	23.55	11/7/2019	22.35	1.20	-

Table 2A
Groundwater Elevation Data - DDA Monitoring Wells - November 2019
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

Monitoring Point ID	Hydrogeologic Unit	Reference Elevation (feet MSL)	Date	Depth to Groundwater (feet BTOIC)	Groundwater Elevation (feet MSL)	Extraction Well Function
PZ-3-INT	Columbia Aquifer	21.56	11/7/2019	24.40	-2.84	-
PZ-4-EXT	Columbia Aquifer	23.98	11/7/2019	NM	NC	-
PZ-4-INT-R	Columbia Aquifer	24.11	11/7/2019	21.30	2.81	-
PZ-6N	Columbia Aquifer	27.55	11/7/2019	24.55	3.00	-
DDA to PW-1(U) Monitoring Wells						
DDA-07-TZ	UPCU - Transition Zone	25.22	11/6/2019	24.25	0.97	-
DDA-07-US	UPA - Upper Sand	25.44	11/6/2019	24.44	1.00	-
DDA-08-TZ	UPCU - Transition Zone	26.20	11/6/2019	25.53	0.67	-
DDA-08-US	UPA - Upper Sand	24.52	11/6/2019	23.68	0.84	-
DDA-15-TZ	UPCU - Transition Zone	33.98	11/6/2019	33.30	0.68	-
DDA-15-US	UPA - Upper Sand	34.58	11/6/2019	33.80	0.78	-
MHW-1D	UPA - Upper Sand	29.99	11/6/2019	29.17	0.82	-

Notes
(1) MSL = Mean Sea Level
(2) BTOIC = Below Top of Inner Casing
(3) DDA = Drum Disposal Area
(4) LFExS = Low-flow Extraction System
(5) NA = Not Available
(6) NC = Not Calculated
(7) NM = Not Measured
(8) NCC = New Castle County
(9) UPA = Upper Potomac Aquifer
(10) UPCU = Upper Potomac Confining Unit
(11) Survey data provided by Delaware Sand and Gravel Trust.
(12) Survey data updated based on 12/5/2012, 12/11/2012, 12/18/2013, and 12/3/2019-12/4/2019 surveys, where available.
(13) * = Water level data not provided by Artesian Water Company
(14) ** = Perched water table
(15) AWC = Artesian Water Company
(16) ASR = Aquifer Storage and Recovery
(17) As observed by Delaware Sand & Gravel Trust

Prepared by: TK
Checked by: KNG
Reviewed by: TAM

Table 2B
Groundwater Elevation Data - January 2020
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

Monitoring Point ID	Hydrogeologic Unit	Reference Elevation (feet MSL)	Date	Depth to Groundwater (feet BTOIC)	Groundwater Elevation (feet MSL)	Extraction Well Function
DDA Extraction Wells						
B-4DR	Columbia Aquifer - Columbia Sand	30.15	1/28/2020	NM	NC	extracting
BG-1	Columbia Aquifer	24.97	1/28/2020	NM	NC	extracting
C-18D	Columbia Aquifer	25.41	1/28/2020	NM	NC	extracting
C-19D	Columbia Aquifer	28.86	1/28/2020	NM	NC	extracting
C-20D	Columbia Aquifer	32.16	1/28/2020	NM	NC	extracting
C-2D	Columbia Aquifer - Columbia Sand and Basal Gravel	22.44	1/28/2020	NM	NC	extracting
C-30	Columbia Aquifer	25.71	1/28/2020	NM	NC	extracting
C-4D	Columbia Aquifer - Columbia Sand and Basal Gravel	22.74	1/28/2020	NM	NC	extracting
DDA Monitoring Wells						
B-1D	Columbia Aquifer	27.40	1/28/2020	NM	NC	-
B-2D	Columbia Aquifer - Columbia Sand and Basal Gravel	28.60	1/28/2020	NM	NC	-
B-3D	Columbia Aquifer	31.21	1/28/2020	NM	NC	-
C-1D	Columbia Aquifer - Columbia Sand and Basal Gravel	22.30	1/28/2020	23.32	-1.02	-
C-3D	Columbia Aquifer	22.66	1/28/2020	23.39	-0.73	-
C-5D	Columbia Aquifer	23.20	1/28/2020	NM	NC	-
C-6_DDA	Columbia Aquifer	25.32	1/28/2020	NM	NC	-
C-7	Columbia Aquifer	23.07	1/28/2020	NM	NC	-
C-8	Columbia Aquifer	23.50	1/28/2020	NM	NC	-
C-9	Columbia Aquifer	24.93	1/28/2020	NM	NC	-
C-10	Columbia Aquifer	26.43	1/28/2020	NM	NC	-
C-12	Columbia Aquifer	26.04	1/28/2020	NM	NC	-
C-14	Columbia Aquifer	25.50	1/28/2020	NM	NC	-
C-15D	Columbia Aquifer	23.53	1/28/2020	NM	NC	-
C-16	Columbia Aquifer	24.01	1/28/2020	NM	NC	-
C-17	Columbia Aquifer	24.80	1/28/2020	NM	NC	-
C-21D	Columbia Aquifer	32.42	1/28/2020	NM	NC	-
C-22D	Columbia Aquifer	33.38	1/28/2020	NM	NC	-
C-22S	Columbia Aquifer	34.55	1/28/2020	NM	NC	-
C-23	Columbia Aquifer	29.70	1/28/2020	NM	NC	-
C-24	Columbia Aquifer	28.28	1/28/2020	NM	NC	-
C-25	Columbia Aquifer	30.37	1/28/2020	NM	NC	-
C-27	Columbia Aquifer	29.25	1/28/2020	NM	NC	-
MHW-1M	Base of Columbia Aquifer	29.83	1/28/2020	NM	NC	-
MHW-1S	Columbia Aquifer	29.83	1/28/2020	NM	NC	-
PZ-11-EXT	Columbia Aquifer	23.27	1/28/2020	22.32	0.95	-
PZ-11-INT-R	Columbia Aquifer	24.28	1/28/2020	22.31	1.97	-
PZ-12-EXT	Columbia Aquifer	26.07	1/28/2020	NM	NC	-
PZ-12-INT	Columbia Aquifer	24.77	1/28/2020	NM	NC	-
PZ-2-EXT	Columbia Aquifer	25.49	1/28/2020	22.10	3.39	-
PZ-2-INT	Columbia Aquifer	29.53	1/28/2020	NM	NC	-
PZ-5-EXT	Columbia Aquifer	24.18	1/28/2020	22.91	1.27	-
PZ-5-INT	Columbia Aquifer	24.40	1/28/2020	24.38	0.02	-
PZ-6S	Columbia Aquifer	28.01	1/28/2020	28.58	-0.57	-
DDA Monitoring Wells within Partition Area						
P-4D	Columbia Aquifer - UPCU, Columbia Clay, Basal Gravel	25.22	1/28/2020	22.18	3.04	-
P-5	Columbia Aquifer	24.30	1/28/2020	22.25	2.05	-
P-8D	Columbia Aquifer	23.55	1/28/2020	20.65	2.90	-
PZ-3-INT	Columbia Aquifer	21.56	1/28/2020	20.94	0.62	-
PZ-4-EXT	Columbia Aquifer	23.98	1/28/2020	22.60	1.38	-
PZ-4-INT-R	Columbia Aquifer	24.11	1/28/2020	19.58	4.53	-
PZ-6N	Columbia Aquifer	27.55	1/28/2020	25.08	2.47	-
DDA to PW-1(U) Monitoring Wells						
GA-101	Columbia Aquifer	23.65	1/28/2020	22.35	1.30	-
DGC-7C	Columbia Aquifer	29.65	1/28/2020	26.42	3.23	-
DDA-01	UPA - Upper Sand	30.92	1/28/2020	29.53	1.39	-
DDA-02	UPA - Upper Sand	29.57	1/28/2020	28.59	0.98	-
DDA-03	UPA - Upper Sand	27.12	1/28/2020	26.37	0.75	-
DDA-04	UPA - Upper Sand	31.03	1/28/2020	30.86	0.17	-
DDA-05	UPCU - Transition Zone	28.68	1/28/2020	27.80	0.88	-
DDA-06	UPCU - Transition Zone	28.14	1/28/2020	27.53	0.61	-
DDA-07-TZ	UPCU - Transition Zone	25.22	1/28/2020	23.41	1.81	-
DDA-07-US	UPA - Upper Sand	25.44	1/28/2020	23.86	1.58	-
DDA-08-TZ	UPCU - Transition Zone	26.20	1/28/2020	25.16	1.04	-
DDA-08-US	UPA - Upper Sand	24.52	1/28/2020	23.26	1.26	-
DDA-09-TZ	UPCU - Transition Zone	30.86	1/28/2020	30.82	0.04	-
DDA-10-US	UPA - Upper Sand	24.29	1/28/2020	23.50	0.79	-
DDA-11-LS	UPA - Lower Sand	31.38	1/28/2020	30.58	0.80	-
DDA-11-US	UPA - Upper Sand	31.53	1/28/2020	30.52	1.01	-
DDA-12-TZ	UPCU - Transition Zone	27.90	1/28/2020	27.44	0.46	-
DDA-12-US	UPA - Upper Sand	28.27	1/28/2020	27.99	0.28	-
DDA-13-TZ	UPCU - Transition Zone	29.90	1/28/2020	29.48	0.42	-
DDA-14-TZ	UPCU - Transition Zone	30.32	1/28/2020	29.32	1.00	-
DDA-15-TZ	UPCU - Transition Zone	33.98	1/28/2020	33.05	0.93	-
DDA-15-US	UPA - Upper Sand	34.58	1/28/2020	33.65	0.93	-
DDA-16-TZ	UPCU - Transition Zone	28.59	1/28/2020	27.34	1.25	-
DDA-16-US	UPA - Upper Sand	29.05	1/28/2020	27.66	1.39	-
DDA-17	UPA - Upper Sand	29.39	1/28/2020	28.63	0.76	-
DGC-2D	UPA - Lower Sand	31.51	1/28/2020	30.18	1.33	-
DGC-2S	UPA - Upper Sand	31.90	1/28/2020	30.21	1.69	-
DGC-5	UPCU - Transition Zone	15.14	1/28/2020	14.02	1.12	-
DGC-7S	UPA - Upper Sand	29.74	1/28/2020	29.08	0.66	-
MHW-1D	UPA - Upper Sand	29.99	1/28/2020	28.89	1.10	-
MW-45	UPA - Upper and Lower Sand	25.85	1/28/2020	25.87	-0.02	-
PW-1(U)	UPA - Upper Sand	31.38	1/28/2020	55.58	-24.20	Extrct ~ 17gpm
PDI WP Wells						
DDA-05-TZ-EXTR	UPCU - Transition Zone	28.74	1/28/2020	27.79	0.95	not operating
DDA-06-TZ-EXTR	UPCU - Transition Zone	27.91	1/28/2020	27.17	0.74	not operating
DDA-18-TZ	UPCU - Transition Zone	31.72	1/28/2020	30.28	1.44	-
DDA-18-US	UPA - Upper Sand	31.85	1/28/2020	30.49	1.36	-
DDA-19-TZ	UPCU - Transition Zone	31.19	1/28/2020	30.98	0.21	-
DDA-19-US	UPA - Upper Sand	31.06	1/28/2020	30.85	0.21	-
DDA-20-TZ	UPCU - Transition Zone	26.15	1/28/2020	25.57	0.58	-
DDA-20-US	UPA - Upper Sand	26.09	1/28/2020	25.63	0.46	-
DDA-21-US-EXTR	UPA - Upper Sand	28.63	1/28/2020	28.01	0.62	not operating
P-6-US-EXTR	UPA - Upper Sand	45.17	1/28/2020	45.82	-0.65	not operating
UPA-01-US-EXTR	UPA - Upper Sand	35.87	1/28/2020	39.68	-3.81	not operating
UPA-101-LSA	UPA - Lower Sand	47.01	1/28/2020	50.19	-3.18	
UPA-101-LSB	UPA - Lower Sand	47.27	1/28/2020	50.40	-3.13	-
CA-102	Columbia Aquifer	49.31	1/28/2020	44.21	5.10	-
UPA-102-TZ	UPCU - Transition Zone	50.02	1/28/2020	50.13	-0.12	-
UPA-102-US	UPA - Upper Sand	50.40	1/28/2020	50.53	-0.13	-
CA-103	Columbia Aquifer	23.52	1/28/2020	14.53	8.99	-
UPA-103-TZ	UPCU - Transition Zone	25.72	1/28/2020	25.10	0.62	-
UPA-103-US	UPA - Upper Sand	24.94	1/28/2020	24.23	0.71	-
UPA-103-LS	UPA - Lower Sand	23.74	1/28/2020	23.65	0.09	-
UPA-104-TZ	UPCU - Transition Zone	38.92	1/28/2020	42.31	-3.39	-

Table 2B
Groundwater Elevation Data - January 2020
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

Monitoring Point ID	Hydrogeologic Unit	Reference Elevation (feet MSL)	Date	Depth to Groundwater (feet BTOIC)	Groundwater Elevation (feet MSL)	Extraction Well Function
UPA-104-US	UPA - Upper Sand	39.14	1/28/2020	42.61	-3.48	-
UPA-104-LS	UPA - Lower Sand	39.64	1/28/2020	43.20	-3.56	-
UPA-105A-TZ	UPCU - Transition Zone	42.54	1/28/2020	46.18	-3.64	-
UPA-105A-US	UPA - Upper Sand	42.33	1/28/2020	46.19	-3.86	-
UPA-105A-LS	UPA - Lower Sand	42.41	1/28/2020	45.72	-3.31	-
UPA-105B-TZ	UPCU - Transition Zone	35.04	1/28/2020	38.04	-3.00	-
UPA-105B-US	UPA - Upper Sand	34.34	1/28/2020	38.63	-4.29	-
UPA-105B-LS	UPA - Lower Sand	34.70	1/28/2020	38.30	-3.60	-
CA-106	Columbia Aquifer	14.41	1/28/2020	10.34	4.07	-
UPA-106-TZ	UPCU - Transition Zone	14.82	1/28/2020	14.82	0.00	-
UPA-106-USA	UPA - Upper Sand	15.51	1/28/2020	15.47	0.04	-
UPA-106-USB	UPA - Upper Sand	15.22	1/28/2020	15.19	0.03	-
UPA-106-LS	UPA - Lower Sand	15.46	1/28/2020	16.43	-0.97	-
UPA-107-TZ	UPCU - Transition Zone	47.83	1/28/2020	54.13	-6.30	-
UPA-107-US	UPA - Upper Sand	47.76	1/28/2020	53.74	-5.98	-
UPA-107-LS	UPA - Lower Sand	47.36	1/28/2020	51.25	-3.89	-
UPA-108B-TZ	UPCU - Transition Zone	8.99	1/28/2020	9.16	-0.17	-
UPA-108B-US	UPA - Upper Sand	9.72	1/28/2020	10.03	-0.31	-
UPA-108B-LS	UPA - Lower Sand	8.88	1/28/2020	9.26	-0.38	-
UPA-108C-US	UPA - Upper Sand	19.83	1/28/2020	19.55	0.28	-
UPA-109-USA	UPA - Upper Sand	23.10	1/28/2020	22.71	0.39	-
UPA-109-USB	UPA - Upper Sand	22.13	1/28/2020	21.81	0.32	-
UPA-109-LS	UPA - Lower Sand	23.90	1/28/2020	23.56	0.34	-
CA-110	Columbia Aquifer	13.98	1/28/2020	10.30	3.68	-
UPA-110-US	UPA - Upper Sand	15.30	1/28/2020	11.75	3.55	-
CA-111	Columbia Aquifer	10.64	1/28/2020	7.23	3.41	-
UPA-111-LSA	UPA - Lower Sand	11.05	1/28/2020	9.23	1.82	-
UPA-111-LSB	UPA - Lower Sand	10.74	1/28/2020	9.50	1.24	-
UPA-112-TZ	UPCU - Transition Zone	27.90	1/28/2020	29.60	-1.70	-
UPA-112-US	UPA - Upper Sand	28.09	1/28/2020	23.12*	NC	-
UPA-112-LS	UPA - Lower Sand	28.31	1/28/2020	30.62	-2.31	-
Downgradient DS&G Monitoring Locations						
DGC-8C	Columbia Aquifer	24.57	1/28/2020	19.84	4.73	-
DGC-15**	Columbia Aquifer	42.48	1/28/2020	28.79	13.69	-
DGC-8D	UPA - Lower Sand	24.41	1/28/2020	23.69	0.72	-
DGC-8S	UPA - Upper Sand	24.61	1/28/2020	20.84*	NC	-
DGC-10D	UPA - Lower Sand	41.77	1/28/2020	47.23	-5.46	-
DGC-10S	UPA - Upper Sand	41.92	1/28/2020	47.24	-5.32	-
DGC-11D	UPA - Upper Sand	38.93	1/28/2020	44.95	-6.02	-
DGC-11S	UPA - Upper Sand	38.54	1/28/2020	41.68	-3.14	-
RT-1-UP	UPA - Upper Sand	39.11	1/28/2020	41.99	-2.88	-
UPA-01	UPA - Upper Sand	35.77	1/28/2020	38.53	-2.76	-
UPA-02D	UPA - Lower Sand	44.15	1/28/2020	49.65	-5.50	-
UPA-02S	UPA - Upper Sand	44.37	1/28/2020	49.80	-5.43	-
UPA-03D	UPA - Lower Sand	30.14	1/28/2020	39.51	-9.37	-
UPA-101-TZ	UPCU - Transition Zone	46.08	1/28/2020	46.91	-0.83	-
UPA-101-US	UPA - Upper Sand	46.18	1/28/2020	46.58	-0.40	-
NCC UPA Monitoring Wells and P-6 Vicinity						
BW-1	UPA - Lower Sand	30.33	1/28/2020	35.13	-4.80	-
BW-2	UPA - Lower Sand	33.70	1/28/2020	38.08	-4.38	-
BW-3	UPA - Lower Sand	6.25	1/28/2020	8.71	-2.46	-
MW-18	UPA - Upper Sand	6.97	1/28/2020	9.88	-2.91	-
MW-22N	UPA - Lower Sand	51.68	1/28/2020	57.88	-6.20	-
MW-22NU	UPA - Upper Sand	52.19	1/28/2020	57.94	-5.75	-
MW-26N	UPA - Upper and Lower Sand	36.76	1/28/2020	43.85	-7.09	-
MW-28	UPA - Upper and Lower Sand	20.74	1/28/2020	20.29	0.45	-
MW-29	UPA - Upper and Lower Sand	16.99	1/28/2020	16.29	0.70	-
MW-31	UPA - Upper and Lower Sand	13.05	1/28/2020	11.71	1.34	-
MW-34	UPA - Upper and Lower Sand	7.20	1/28/2020	10.19	-2.99	-
MW-38N	UPA - Upper and Lower Sand	35.55	1/28/2020	38.60	-3.05	-
MW-40	UPA - Lower Sand	36.39	1/28/2020	38.46	-2.07	-
MW-49N	UPA - Upper and Lower Sand	51.41	1/28/2020	58.60	-7.19	-
P-4 (18)	UPA - Upper Sand	48.45	1/28/2020	52.87	-4.42	-
P-4L	UPA - Lower Sand	50.16	1/28/2020	54.59	-4.43	-
P-5L	UPA - Lower Sand	23.80	1/28/2020	27.89	-4.09	-
P-5U	UPA - Upper Sand	23.10	1/28/2020	25.60	-2.50	-
WL-1U	UPA - Upper Sand	47.58	1/28/2020	51.98	-4.40	-
WL-1L	UPA - Lower Sand	47.34	1/28/2020	53.15	-5.81	-
WL-2U	UPA - Upper Sand	52.44	1/28/2020	55.05	-2.61	-
WL-2L	UPA - Lower Sand	53.96	1/28/2020	56.48	-2.52	-
P-6_UPA	UPA - Upper Sand	43.01	1/28/2020	44.48	-1.47	-
RW-2	UPA - Upper Sand	6.97	1/28/2020	10.34	-3.37	-
RW-5	UPA - Upper Sand	33.15	1/28/2020	35.20	-2.05	-
RW-6	UPA - Upper Sand	14.98	1/28/2020	NM/NC - appears to be partially abandoned		
RW-10	UPA - Upper Sand	9.58	1/28/2020	10.11	-0.53	-
AWC Wells						
AWC-E1	UPA - Upper and Lower Sand	40.50	1/28/2020	51.19	-10.69	-
AWC-E2	UPA - Upper and Lower Sand	34.00	1/28/2020	44.53	-10.53	-
AWC-J1	UPA - Upper and Lower Sand	11.58	1/28/2020	23.32	-11.74	-
AWC-K1	UPA - Lower Sand	29.56	1/28/2020	40.12	-10.56	-
AWC-MW-1	UPA - Lower Sand	10.34	1/28/2020	19.05	-8.71	-
AWC-MW-2	UPA - Upper Sand	10.50	1/28/2020	20.86	-10.36	-
AWC-MW-3	UPA - Lower Sand	9.65	1/28/2020	19.92	-10.27	-
AWC-MW-4	UPA - Lower Sand	12.49	1/28/2020	22.85	-10.36	-
AWC-MW-5	UPA - Upper Sand	12.49	1/28/2020	23.56	-11.07	-
AWC-MW-6	UPA - Lower Sand	18.58	1/28/2020	35.61	-17.03	-
AWC-2*	UPA - Lower Sand	64.58	1/28/2020	These wells are Not Gauged because they are used for potable water supply.		Extrct ~275 gpm
AWC-6R*	UPA - Upper and Lower Sand	-	1/28/2020			not operating
AWC-7*	UPA - Upper and Lower Sand	47.98	1/28/2020			Extrct ~255 gpm
AWC-G3R*	UPA - Upper and Lower Sand	19.70	1/28/2020			Extrct ~600 gpm
AWC-ASR*	UPA - Lower Sand	-	1/28/2020	Not Gauged - Injection ongoing @250 gpm since 12/22/2019		

Notes

(1) MSL = Mean Sea Level
(2) BTOIC = Below Top of Inner Casing
(3) DDA = Drum Disposal Area
(4) LFExS = Low-flow Extraction System
(5) NA = Not Available
(6) NC = Not Calculated
(7) NM = Not Measured
(8) NCC = New Castle County
(9) UPA = Upper Potomac Aquifer
(10) UPCU = Upper Potomac Confining Unit
(11) Survey data provided by Delaware Sand and Gravel Trust.
(12) Survey data updated based on 12/5/2012, 12/11/2012, 12/18/2013, and 12/3/2019-12/4/2019 surveys, where available.
(13) * = Water level appears to be erroneous
(14) ** = Perched water table
(15) AWC = Artesian Water Company
(16) ASR = Aquifer Storage and Recovery
(17) As observed by Delaware Sand & Gravel Trust
(18) Golder replaced the expandable well cap on well P-4_UPA in May 2015. During the March-April 2015 monitoring event, Golder observed that the expandable well cap could not expand to correctly seal the well from water infiltration. Well P-4 is located in a localized topographic low point and, potentially susceptible to surface water infiltration.

Prepared by: ERW
Checked by: KNG
Reviewed by: TAM

Table 3
Groundwater Field Parameter Summary
June-November 2019
Delaware Sand Gravel Superfund Site
New Castle County, Delaware

Monitoring Point ID	Note Number	Date Sampled	Hydrogeologic Unit	Temperature [°C]	pH (std)	Specific Conductance (mS/cm)	Dissolved Oxygen (mg/L)	Redox Potential [mV]	Turbidity (ntu)	Volume Purged[1] [liters]	Depth to Water[2] [ft-btoic]
DDA Low-Flow Extraction System Wells											
B-4DR	3	10/25/2019	Columbia Aquifer - Columbia Sand	15.70	5.93	0.770	0.00	53	36.7	8	-
BG-1	3	10/25/2019	Columbia Aquifer	15.73	6.82	0.471	2.08	-32	7.4	8	-
C-18D	3	10/25/2019	Columbia Aquifer	16.18	6.54	0.450	0.00	-51	0.0	8	-
C-19D	3	10/25/2019	Columbia Aquifer	16.10	6.69	0.416	0.00	-60	0.0	8	-
C-20D	3	10/25/2019	Columbia Aquifer	15.49	6.63	0.489	1.87	-43	0.0	8	-
C-2D	3	10/25/2019	Columbia Aquifer - Columbia Sand and Basal Gravel	16.40	6.80	0.355	0.00	-63	32.7	8	-
C-30	3	10/25/2019	Columbia Aquifer	16.30	6.78	0.400	0.00	-71	0.0	8	-
C-4D	3	10/25/2019	Columbia Aquifer - Columbia Sand and Basal Gravel	16.92	6.84	0.508	0.63	-75	0.0	8	-
DDA Monitoring Wells within Containment Area											
B-3D		10/28/2019	Columbia Aquifer	15.58	6.82	0.409	0.00	-113	0.0	12	32.95
MHW-1M		10/28/2019	Base of Columbia Aquifer	16.84	7.57	0.586	1.32	-151	0.0	12	31.02
PZ-11-EXT		10/24/2019	Columbia Aquifer	16.18	6.61	0.282	0.00	-121	0.0	22	24.87
PZ-5-EXT		10/24/2019	Columbia Aquifer	16.01	6.44	0.243	1.00	-91	0.0	20	24.94
DDA to PW-1(U) Monitoring Wells											
GA-101		10/9/2019	Columbia Aquifer	17.07	6.87	0.538	0.00	-49	0.0	10	21.35
DGC-7C	4	10/30/2019	Columbia Aquifer	16.79	7.06	0.798	0.96	-125	57.2	12	28.02
DDA-01		10/28/2019	UPA - Upper Sand	14.47	6.26	0.252	0.00	-13	0.7	10	31.25
DDA-02		10/2/2019	UPA - Upper Sand	15.63	6.42	0.268	0.00	-13	50.0	32	30.02
DDA-03		10/22/2019	UPA - Upper Sand	15.82	6.25	0.306	0.00	92	0.0	14	27.85
DDA-05		10/28/2019	UPCU - Transition Zone	16.00	6.61	0.223	0.00	-114	0.0	10	22.75
DDA-06		10/22/2019	UPCU - Transition Zone	17.16	8.94	0.409	0.00	-244	29.1	26	23.00
DDA-07-TZ		10/23/2019	UPCU - Transition Zone	15.54	6.78	0.370	1.51	-82	4.4	14	19.98
DDA-07-US		10/23/2019	UPA - Upper Sand	15.08	5.93	0.224	0.00	51	0.0	14	29.19
DDA-08-TZ		10/23/2019	UPCU - Transition Zone	16.87	7.18	0.314	0.00	-199	11.2	14	28.80
DDA-10-US		10/23/2019	UPA - Upper Sand	15.06	7.25	0.526	0.96	-126	35.6	10	24.35
DDA-11-LS		10/22/2019	UPA - Lower Sand	14.15	5.69	0.262	8.40	240	0.0	16	31.90
DDA-12-TZ		10/21/2019	UPCU - Transition Zone	15.39	7.56	0.358	7.23	-141	48.1	26	28.02
DDA-12-US		10/21/2019	UPA - Upper Sand	14.28	7.52	0.294	6.32	-148	17.9	14	28.20
DDA-15-TZ		10/28/2019	UPCU - Transition Zone	16.05	7.11	0.302	0.00	-173	0.0	12	34.10
DDA-16-TZ		10/22/2019	UPCU - Transition Zone	15.36	6.71	0.359	0.00	-60	17.1	40	28.02
DDA-16-US		10/22/2019	UPA - Upper Sand	15.00	6.36	0.206	0.00	5	0.0	12	23.00
DDA-18-TZ		10/25/2019	UPCU - Transition Zone	18.26	6.20	0.385	0.00	-20	0.0	14	31.82
DDA-18-US		10/25/2019	UPA - Upper Sand	14.71	6.81	0.286	0.78	-83	40.1	20	32.00
DDA-19-TZ		10/24/2019	UPCU - Transition Zone	15.41	7.44	0.324	0.00	-147	180.0	36	32.59
DDA-19-US		10/25/2019	UPA - Upper Sand	16.33	7.37	0.371	0.24	-170	0.4	18	32.38
DDA-20-TZ		10/29/2019	UPCU - Transition Zone	18.33	7.15	0.405	0.00	-131	16.7	24	26.56
DDA-20-US		10/29/2019	UPA - Upper Sand	15.40	5.70	0.198	0.00	29	0.0	14	27.00
DGC-2S		10/23/2019	UPA - Upper Sand	15.11	6.09	0.133	0.80	104	0.0	18	31.60
DGC-5		10/24/2019	UPCU - Transition Zone	14.11	6.19	0.394	0.00	1	37.2	14	15.43
DGC-5		10/24/2019	UPCU - Transition Zone	14.21	6.20	0.404	0.00	-11	7.5	16	15.95
DGC-7S		10/30/2019	UPCU - Transition Zone	15.94	6.51	0.228	0.00	-93	0.0	12	30.00
MHW-1D		10/28/2019	UPA - Upper Sand	14.72	6.50	0.280	0.00	-21	0.0	12	28.02
MHW-1D		10/28/2019	UPA - Upper Sand	14.72	6.50	0.280	0.00	-21	0.0	10	30.02
PW-1(U)	3	10/22/2019	UPA - Upper Sand	16.95	6.53	0.344	17.34	45	0.0	19	-
Downgradient DS&G Monitroing Locations											
DGC-8D		10/14/2019	UPA - Lower Sand	17.09	5.64	0.173	0.00	175	0.0	8	24.90
DGC-8S		10/14/2019	UPA - Upper Sand	16.01	6.91	0.656	0.84	-93	38.2	12	25.10
DGC-10D		10/7/2019	UPA - Lower Sand	20.38	5.57	0.177	0.08	222	0.0	14	49.80
DGC-10S		10/7/2019	UPA - Upper Sand	19.83	5.87	0.149	0.00	138	51.4	38	49.16
DGC-11D		10/7/2019	UPA - Upper Sand	15.16	5.33	0.183	0.00	267	0.0	12	48.22
DGC-11S		10/7/2019	UPA - Upper Sand	16.08	5.75	0.065	0.77	238	0.0	12	47.02
RT-1-UP		10/21/2019	UPA - Upper Sand	15.15	6.09	0.119	0.00	49	16.1	10	43.02
UPA-01		10/21/2019	UPA - Upper Sand	18.61	6.73	0.000	0.00	-84	39.5	48	42.65
UPA-02D		10/14/2019	UPA - Lower Sand	14.14	6.58	0.347	0.27	-53	7.1	26	51.48
UPA-02S		10/14/2019	UPA - Upper Sand	16.19	5.21	0.274	0.32	188	0.0	20	51.70
UPA-03D		10/14/2019	UPA - Lower Sand	13.09	5.68	0.179	0.00	234	6.2	8	43.12
UPA-101-LSA		10/18/2019	UPA - Lower Sand	16.44	7.79	0.438	0.00	-258	33.2	24	-
UPA-101-LSB		10/18/2019	UPA - Lower Sand	16.61	6.81	0.421	0.00	-88	77.6	20	-
CA-102		10/18/2019	Columbia Aquifer	19.86	6.39	0.894	0.00	-33	20.8	14	42.82
UPA-102-TZ		10/18/2019	UPCU - Transition Zone	18.33	6.64	0.926	0.00	-90	0.0	14	52.15
UPA-102-US		10/14/2019	UPA - Upper Sand	18.09	7.24	0.672	0.00	-215	0.0	16	52.15
CA-103		10/9/2019	Columbia Aquifer	17.29	5.88	0.237	1.19	189	28.7	16	20.70
UPA-103-LS		10/4/2019	UPA - Lower Sand	16.72	6.04	0.315	0.26	-22	2.0	22	25.90
UPA-103-TZ		10/4/2019	UPCU - Transition Zone	16.71	6.13	0.356	0.00	-36	9.7	20	27.02
UPA-103-US		10/7/2019	UPA - Upper Sand	17.56	7.04	0.421	0.88	-124	33.7	14	25.70
UPA-104-LS		10/1/2019	UPA - Lower Sand	16.01	6.59	0.388	0.00	-202	3.0	10	46.20
UPA-104-TZ		10/2/2019	UPCU - Transition Zone	20.11	6.01	0.180	2.87	-41	0.0	18	44.85
UPA-104-US		10/2/2019	UPA - Upper Sand	21.47	7.87	0.317	0.00	-129	0.0	14	44.75
UPA-105A-LS		10/17/2019	UPA - Lower Sand	15.81	6.08	0.282	0.00	174	16.3	18	44.02
UPA-105A-TZ		10/1/2019	UPCU - Transition Zone	19.68	6.46	0.125	0.00	-100	239.0	34	50.03
UPA-105A-US		10/18/2019	UPA - Upper Sand	15.39	6.48	0.178	1.90	-48	11.4	20	-
UPA-105B-LS		10/1/2019	UPA - Lower Sand	19.58	12.30	0.433	0.00	-144	33.3	18	40.55
UPA-105B-TZ		10/1/2019	UPCU - Transition Zone	20.16	9.93	0.320	0.00	-159	8.0	24	43.42
UPA-105B-US		9/30/2019	UPA - Upper Sand	16.47	5.34	0.192	0.30	198	0.0	14	41.02
CA-106		10/8/2019	Columbia Aquifer	17.68	6.27	0.955	0.00	21	41.0	18	11.30
UPA-106-LS		10/8/2019	UPA - Lower Sand	14.89	7.39	0.451	1.58	-174	40.7	52	18.00
UPA-106-USA		10/4/2019	UPA - Upper Sand	16.58	6.03	0.395	0.00	40	0.5	16	17.15
UPA-106-USB		10/8/2019	UPA - Upper Sand	15.73	7.28	0.541	2.01	-148	9.8	16	16.02
UPA-107-LS		10/3/2019	UPA - Lower Sand	14.86	7.05	0.375	0.05	-159	0.0	16	55.67
UPA-107-TZ		10/2/2019	UPCU - Transition Zone	19.01	6.73	0.291	1.26	-83	45.8	22	54.02
UPA-107-US		10/21/2019	UPA - Upper Sand	16.93	6.33	0.433	0.01	-128	0.0	12	53.20
UPA-108B-LS		10/10/2019	UPA - Lower Sand	13.91	7.37	0.526	4.00	-189	57.3	26	12.02
UPA-108B-TZ		10/10/2019	UPCU - Transition Zone	14.89	7.06	0.547	0.00	-133	0.0	14	12.10
UPA-108B-US		10/10/2019	UPA - Upper Sand	14.75	7.57	0.423	0.00	-185	0.0	14	11.25
UPA-108-C-US		10/16/2019	UPA - Upper Sand	15.59	6.94	0.522	0.00	-123	1.5	14	27.10
Downgradient NCC Monitoring Locations											
BW-2 (128)		10/11/2019	UPA - Lower Sand	15.67	7.03	0.362	1.69	-59	52.9	20	40.05
BW-2 (138)		10/11/2019	UPA - Lower Sand	15.72	6.93	0.349	0.76	-57	37.3	14	39.40
MW-18		10/15/2019	UPA - Upper Sand	14.00	6.80	0.576	0.00	-83	7.3	16	-
MW-26N (165)		10/9/2019	UPA - Upper and Lower Sand	15.09	6.03	0.289	0.00	118	0.0	12	46.82
MW-26N (128)		10/17/2019	UPA - Upper and Lower Sand	15.08	5.77	0.242	3.31	242	0.0	16	45.90
MW-26N (138)		10/17/2019	UPA - Upper and Lower Sand	15.54	6.36	0.295	0.00	180	0.0	14	45.90
MW-34 (60)		10/15/2019	UPA - Upper and Lower Sand	13.48	6.41	0.240	0.00	49	62.3	28	12.08
MW-34 (110)		10/15/2019	UPA - Upper and Lower Sand	13.67	6.51	0.263	0.20	15	100.0	16	11.96
MW-34 (124)		10/16/2019	UPA - Upper and Lower Sand	12.93	6.51	0.259	0.83	14	171.0	34	8.52
P5-L		10/3/2019	UPA - Upper Sand	15.50	6.22	0.160	1.86	136	0.0	14	30.38
P5-U		10/3/2019	UPA - Upper Sand	15.79	6.00	0.767	3.98	174	0.0	12	27.02
P-6		10/8/2019	UPA - Upper Sand	16.74	16.74	16.740	16.74	16.74	16.7	10	46.00

Table 3
Groundwater Field Parameter Summary
June-November 2019
Delaware Sand Gravel Superfund Site
New Castle County, Delaware

Monitoring Point ID	Note Number	Date Sampled	Hydrogeologic Unit	Temperature [°C]	pH (std)	Specific Conductance (mS/cm)	Dissolved Oxygen (mg/L)	Redox Potential [mV]	Turbidity (ntu)	Volume Purged(1) [liters]	Depth to Water(2) [ft-btoic]
AWC Wells											
AWC-E1 (132)		10/28/2019	UPA - Upper Sand	13.71	7.02	0.372	0.00	-2	46.0	16	38.02
AWC-E1 (132)		11/7/2019	UPA - Upper Sand	14.25	6.23	0.463	0.91	6	12.7	8	45.00
AWC-E1 (156)		10/28/2019	UPA - Upper Sand	13.61	6.64	0.371	0.00	-11	3.1	10	56.20
AWC-E1 (156)		11/7/2019	UPA - Upper Sand	14.24	6.25	0.465	0.65	9	22.9	12	45.75
AWC-E2 (140)		10/29/2019	UPA - Upper Sand	13.55	6.72	0.320	0.20	-32	2.1	10	39.72
AWC-E2 (140)		11/7/2019	UPA - Upper Sand	14.39	6.37	0.304	0.57	-43	0.0	10	39.15
AWC-E2 (165)		10/28/2019	UPA - Upper Sand	13.22	6.65	0.356	0.00	-6	0.0	10	39.72
AWC-E2 (165)		11/7/2019	UPA - Upper Sand	14.56	6.24	0.392	0.56	19	7.6	14	39.20
AWC-K1		10/29/2019	UPA - Lower Sand	12.20	7.12	0.312	0.00	-71	361.0	44	39.20
AWC-2		11/7/2019	#N/A	14.98	5.93	0.212	6.55	208	0.7	2	-
AWC-6R		11/7/2019	#N/A	15.01	5.84	0.299	5.41	206	0.7	2	-

Prepared by: ERW
Checked by: BPC
Reviewed by: TAM

Notes:
(1) All wells were purged using the low-flow purging and sampling procedure based upon the USEPA Region II document entitled "Groundwater Sampling Procedure, Low Stress (Low Flow) Purging and Sampling" dated March 20, 1998 except as noted below.
(2) Depth to water measurements were made prior to purging the wells. These values are not the same as the values measured during the synoptic round of water level measurements.
(3) Wells B-4DR, BG-1, C-2D, C-4D, C-18D, C-19D, C-20D, C-30 and PW-1(U) are extraction wells that typically run continuously. Wells AWC-6R and AWC-7 are production wells operated by Artesian Water Company that run continuously. The
(4) Well DGC-7C was purged and sampled with an HDPE bailer using the conventional 3 well volume method due to insufficient recharge for low flow purging.

Abbreviations:
'-' = Not Measured
AWC = Artesian Water Company
DDA = Drum Disposal Area
°C = Degrees Celsius
ft-btoic = Feet Below Top of Inner Casing
mg/L = Milligrams per Liter
mS/cm = Millisiemens per Centimeter
mV = Millivolts
NCC = New Castle County
ntu = Nephelometric Turbidity Units
std = Standard Units
TTO = Total Toxic Organics
UPA = Upper Potomac Aquifer
UPCU = Upper Potomac Confining Unit

Table 4
DDA Combined LFExS Mass Removal Estimate
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

Flow Rate							Analytical Results			Detected Concentrations			Mass Removed		Average Mass Removal Rate					
Period of Mass Calculation	Days in period	Days of System Operation	Percent Operation	Total Volume for Period	Average Flow Rate(9)	Adjusted Average Flow Rate(10)	Sample Date	Total VOCs	BCEE	Total VOCs	BCEE	Concentration Note	Total VOCs	BCEE	Total VOCs			BCEE		
			%	Gallons	GPM	GPM		ug/l	ug/l	ug/l	ug/l		lb	lb	lb/day	lb/6-mo	lb/year	lb/day	lb/6-mo	lb/year
5/4/2009 - 10/31/2009	180	180	100%	629,891	**2.43**	**2.43**	5/26/2009	455.4	280			*Startup date 5/4/2009*								
							10/15/2009	166.1	53	311	167	Average of 5/26/2009 and 10/15/2009 values	1.63	0.88	9.07E-03	1.66	3.31	4.87E-03	0.89	1.78
11/1/2009 - 4/30/2010	180	180	100%	768,957	**2.97**	**2.97**	4/14/2010	225.1	0	196	27	Average of 10/15/2009 and 4/14/2010 values	1.26	0.17	6.98E-03	1.27	2.55	9.62E-04	0.18	0.35
5/1/2010 - 10/31/2010	183	183	100%	1,280,274	**4.86**	**4.86**	10/11/2010	635.3	20	430.0	10	Average of 4/14/2010 and 10/11/2010 values	4.59	0.11	2.51E-02	4.58	9.15	5.83E-04	0.11	0.21
11/1/2010 - 4/30/2011	180	176	98%	1,292,178	**4.99**	**5.10**	4/4/2011	287.3	20	461	20	Average of 10/11/2010 and 4/4/2011 values	4.97	0.22	2.76E-02	5.04	10.07	1.20E-03	0.22	0.44
5/1/2011 - 10/31/2011	183	183	100%	1,741,056	**6.61**	**6.61**	10/6/2011	450.0	15	369	18	Average of 4/4/2011 and 10/6/2011 values	5.36	0.26	2.93E-02	5.34	10.68	1.43E-03	0.26	0.52
11/1/2011 - 4/30/2012	181	177	98%	1,993,749	**7.65**	**7.82**	4/2/2012	324.3	13	387	14	Average of 10/6/2011 and 4/2/12 values	6.43	0.23	3.55E-02	6.49	12.97	1.29E-03	0.23	0.47
5/1/2012 - 10/31/2012	183	183	100%	1,796,158	**6.82**	**6.82**	10/8/2012	128.6	7.0	226	10	Average of 4/2/12 and 10/8/12 values	3.38	0.15	1.85E-02	3.38	6.75	8.18E-04	0.15	0.30
11/1/2012 - 4/30/2013	180	179	99%	2,397,889	**9.25**	**9.30**	3/18/2013	221.4	9.5	175	8.0	Average of 10/8/12 and 3/18/13 values	3.50	0.16	1.94E-02	3.55	7.09	8.88E-04	0.16	0.32
5/1/2013 - 10/31/2013	183	180	98%	2,592,490	**9.84**	**10.0**	9/30/2013	230.0	14	226	12	Average of 3/18/13 and 9/30/13 values	4.88	0.26	2.67E-02	4.87	9.74	1.42E-03	0.26	0.52
11/1/2013 - 4/30/2014	180	179	99%	2,340,780	**8.98**	**9.03**	3/24/2014	170.5	9.7	200	12	Average of 9/30/13 and 3/24/14 values	3.91	0.23	2.17E-02	3.97	7.94	1.29E-03	0.24	0.47
5/1/2014 - 10/31/2014	183	182	99%	2,639,447	**10.08**	**10.14**	9/30/2014	119.4	13	145	11	Average of 3/24/14 and 9/30/14 values	3.19	0.25	1.74E-02	3.19	6.37	1.37E-03	0.25	0.50
11/1/2014 - 4/30/2015	180	180	100%	2,379,788	**9.13**	**9.13**	3/30/2015	103.1	20	111	17	Average of 9/30/14 and 3/30/15-4/2/15 values (note 12)	2.21	0.33	1.23E-02	2.24	4.48	1.82E-03	0.34	0.66
5/1/2015 - 10/31/2015	183	182	99%	2,486,638	**9.38**	**9.44**	9/28/2015	99.1	27	101	24	Average of 3/30/15-4/2/15 (note 12) and 9/30/15 values	2.10	0.49	1.15E-02	2.09	4.19	2.66E-03	0.49	0.97
11/1/2015 - 4/30/2016	181	180	99%	1,916,462	**7.31**	**7.35**	4/7/2016	135.6	26	117	27	Average of 9/28/15 and 3/30/2016 values	1.88	0.42	1.04E-02	1.89	3.79	2.34E-03	0.43	0.85
5/1/2016 - 10/31/2016	183	182	99%	2,282,164	**8.61**	**8.66**	9/30/2016	181.6	19	159	23	Average of 4/7/2016 and 9/30/2016 values	3.02	0.43	1.65E-02	3.02	6.03	2.34E-03	0.43	0.85
11/1/2016 - 4/30/2017	180	180	100%	1,722,069	**6.61**	**6.61**	3/27/2017	295.8	14	239	17	Average of 9/30/2016 and 3/27/2017 values	3.43	0.24	1.91E-02	3.48	6.96	1.32E-03	0.25	0.48
5/1/2017 - 10/31/2017	183	182	99%	2,760,164	**10.42**	**10.48**	10/9/2017	116.0	23	206	19	Average of 3/27/2017 and 10/9/2017 values	4.74	0.43	2.59E-02	4.73	9.47	2.33E-03	0.43	0.85
11/1/2017 - 4/30/2018	180	178	99%	2,454,085	**9.42**	**9.52**	4/12/2018	99.6	17	108	20	Average of 10/9/2017 and 4/12/2018 values	2.21	0.41	1.23E-02	2.24	4.48	2.28E-03	0.42	0.83
5/1/2018 - 10/31/2018	183	180	98%	2,678,397	**10.11**	**10.28**	10/8/2018	211.3	14	155	16	Average of 4/12/2018 and 10/8/2018 values	3.47	0.35	1.90E-02	3.47	6.94	1.89E-03	0.35	0.69
11/1/2018 - 4/30/2019	180	180	100%	2,263,303	**8.68**	**8.68**	5/13/2019	133.1	13	172	14	Average of 10/8/2018 and 5/13/2019 values	3.25	0.25	1.81E-02	3.30	6.60	1.42E-03	0.26	0.52
5/1/2019 - 10/31/2019	183	180	98%	2,937,408	**11.09**	**11.27**	10/28/2019	5.5	7	69	10	Average of 5/13/2019 and 10/28/2019 values	1.70	0.25	9.28E-03	1.69	3.39	1.34E-03	0.25	0.49

NOTES
(1) The low flow extraction system (LFExS) began operation on May 4, 2009
(2) Analytical results used in the mass removal calculation are based on unvalidated effluent data for the total toxic organics sample and do not include tentatively identified compounds (TICs)
(3) Flow volume and average values based on totalizer volume spreadsheet provided by DS&G Remedial Trust
(4) ug/l = micrograms per liter
(5) lb = pound
(6) GPM = gallons per minute
(7) VOCs = volatile organic compounds
(8) BCEE = bis(2-chloroethyl)ether
(9) Average flow rate represents system discharge rate to sewer
(10) Adjusted average flow rate represents system flow for periods of system operation, excluding down-time
(11) Total VOCs based on 624 analysis that does not include 1,4-dioxane
(12) Primary sample collected on March 30, 2015 and re-sampled for SVOC analysis on April 2, 2015

Prepared by: AMH
Checked by: BPC
Reviewed by: TAM

Table 5
Individual LFExS Well Mass Removal Estimate
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

Well	Avg Flow prior to sample (GPM)	Days in Period	(hide) Days System Down	Days of System Operation	Percent Operation (%)	Adjusted Flow Rate (GPM)	Average Flow Period	Sample Date	Total Detected VOC Concentration (Revised analyte list) (ug/l)	Total Detected VOC Concentration (Historical analyte list) (ug/l)	1,4-Dioxane Concentration (ug/l)	BCEE Concentration (ug/l)	Adjusted TVOC Mass Removal (Revised analyte list) (lb/day)	Adjusted TVOC Mass Removal (Historical analyte list) (lb/day)	Adjusted 1,4-Dioxane Mass Removal (lb/day)	Adjusted BCEE Mass Removal (lb/day)	Adjusted TVOC Mass Removal (Revised analyte list) (lb/year)	Adjusted TVOC Mass Removal (Historical analyte list) (lb/year)	Adjusted 1,4-Dioxane Mass Removal (lb/year)	Adjusted BCEE Mass Removal (lb/year)	TVOC Mass Removal (% of Total)	BCEE Mass Removal (% of Total)	1,4-Dioxane Mass Removal (% of Total)
5/4/2009	**through**	**10/31/2009**																					
B4D	0.94	180	0	180	100%	0.94	05/06/09 - 06/15/09	7/10/2009	NA	224	NA	500	NA	2.53E-03		5.64E-03	NA	0.92	NA	2.06	9%	63%	NA
C2D	0.86	180	0	180	100%	0.86	05/06/09 - 06/15/09	7/10/2009	NA	199	NA	29	NA	2.05E-03		2.99E-04	NA	0.75	NA	0.11	7%	3%	NA
C4D	1.02	180	0	180	100%	1.02	05/06/09 - 06/15/09	7/10/2009	NA	49	NA	140	NA	5.96E-04		1.71E-03	NA	0.22	NA	0.63	2%	19%	NA
C18D	0.59	180	0	180	100%	0.59	05/06/09 - 06/15/09	7/10/2009	NA	1884	NA	63	NA	1.33E-02		4.46E-04	NA	4.87	NA	0.16	47%	5%	NA
C19D	0.86	180	0	180	100%	0.86	05/06/09 - 06/15/09	7/10/2009	NA	46	NA	30	NA	4.70E-04		3.10E-04	NA	0.17	NA	0.11	2%	3%	NA
BG-1	0.49	180	0	180	100%	0.49	05/06/09 - 06/15/09	7/10/2009	NA	1649	NA	90	NA	9.70E-03		5.29E-04	NA	3.54	NA	0.19	34%	6%	NA
TOTAL=	**4.76**											**TOTAL=**		**2.87E-02**		**8.94E-03**	NA	**10.47**	NA	**3.26**	**100%**	**100%**	
11/1/2009	**through**	**4/30/2010**																					
B4D	0.62	180	0	180	100%	0.62	03/31/10 - 04/12/10	4/14/2010	NA	280	NA	51	NA	2.08E-03		3.80E-04	NA	0.76	NA	0.14	5%	27%	NA
C2D	0.39	180	0	180	100%	0.39	03/31/10 - 04/12/10	4/14/2010	NA	35	NA	14	NA	1.65E-04		6.55E-05	NA	0.06	NA	0.02	0%	5%	NA
C4D	0.81	180	0	180	100%	0.81	03/31/10 - 04/12/10	4/14/2010	NA	207	NA	46	NA	2.01E-03		4.47E-04	NA	0.73	NA	0.16	5%	32%	NA
C18D	0.75	180	0	180	100%	0.75	03/31/10 - 04/12/10	4/14/2010	NA	4371	NA	46	NA	3.94E-02		4.14E-04	NA	14.37	NA	0.15	89%	30%	NA
C19D	1.02	180	0	180	100%	1.02	03/31/10 - 04/12/10	4/14/2010	NA	40	NA	7	NA	4.90E-04		8.57E-05	NA	0.18	NA	0.03	1%	6%	NA
BG-1	0	180	14	166	92%	0.00	03/31/10 - 04/12/10	4/14/2010	NA	561	NA	22	NA	0.00E+00		0.00E+00	NA	0.00	NA	0.00	0%	0%	NA
TOTAL=	**3.59**											**TOTAL=**		**4.41E-02**		**1.39E-03**	NA	**16.10**	NA	**0.50**	**100%**	**100%**	
5/1/2010	**through**	**10/31/2010**																					
B4D	0.05	183	69	114	62%	0.03	12/02/10 - 12/16/2010	12/16/2010	NA	402	NA	140	NA	1.50E-04		5.24E-05	NA	0.05	NA	0.02	0%	6%	NA
C2D	0.85	183	8	175	96%	0.81	12/02/10 - 12/16/2010	12/16/2010	NA	65	NA	6.3	NA	6.36E-04		6.15E-05	NA	0.23	NA	0.02	1%	7%	NA
C4D	1.00	183	25	158	86%	0.86	12/02/10 - 12/16/2010	12/16/2010	NA	106	NA	29	NA	1.10E-03		3.01E-04	NA	0.40	NA	0.11	2%	33%	NA
C18D	1.09	183	73	110	60%	0.66	12/02/10 - 12/16/2010	12/16/2010	NA	5198	NA	46	NA	4.09E-02		3.62E-04	NA	14.92	NA	0.13	77%	40%	NA
C19D	0.06	183	27	156	85%	0.05	12/02/10 - 12/16/2010	12/16/2010	NA	20	NA	9.3	NA	1.22E-05		5.71E-06	NA	0.00	NA	0.00	0%	1%	NA
C30	0.06	183	18	165	90%	0.05	12/02/10 - 12/16/2010	12/16/2010	NA	4124	NA	11	NA	2.68E-03		7.14E-06	NA	0.98	NA	0.00	5%	1%	NA
BG-1	0.40	183	0	183	100%	0.40	12/02/10 - 12/16/2010	12/16/2010	NA	1578	NA	23		7.58E-03		1.10E-04	NA	2.77	NA	0.04	14%	12%	NA
TOTAL=	**3.51**											**TOTAL=**		**5.30E-02**		**9.00E-04**		**19.30**		**0.30**	**100%**	**100%**	
11/1/2010	**through**	**4/30/2011**																					
B4D	0.61	180	16	164	91%	0.56	3/21/2011 - 4/7/2011	4/6/2011	NA	397	NA	74	NA	2.65E-03		4.94E-04	NA	0.97	NA	0.18	8%	45%	NA
C2D	0.54	180	4	176	98%	0.53	3/21/2011 - 4/7/2011	4/6/2011	NA	111	NA	2.7	NA	7.02E-04		1.71E-05	NA	0.26	NA	0.01	2%	2%	NA
C4D	0.57	180	9	171	95%	0.54	3/21/2011 - 4/7/2011	4/6/2011	NA	602	NA	26	NA	3.91E-03		1.69E-04	NA	1.43	NA	0.06	11%	15%	NA
C18D	0.63	180	19	161	89%	0.56	3/21/2011 - 4/7/2011	4/6/2011	NA	1996	NA	21	NA	1.35E-02		1.42E-04	NA	4.93	NA	0.05	39%	13%	NA
C19D	0.57	180	38	142	79%	0.45	3/21/2011 - 4/7/2011	4/6/2011	NA	8.77	NA	9.2	NA	4.73E-05		4.97E-05	NA	0.02	NA	0.02	0%	5%	NA
C30	0.70	180	13	167	93%	0.65	3/21/2011 - 4/7/2011	4/6/2011	NA	827	NA	9.1	NA	6.45E-03		7.10E-05	NA	2.35	NA	0.03	19%	6%	NA
BG-1	1.30	180	14	166	92%	1.20	3/21/2011 - 4/7/2011	4/6/2011	NA	492	NA	11		7.09E-03		1.58E-04	NA	2.59	NA	0.06	21%	14%	NA
TOTAL=	**4.92**											**TOTAL=**		**3.44E-02**		**1.10E-03**		**11.58**		**0.23**	**100%**	**100%**	
5/1/2011	**through**	**10/31/2011**																					
B4D	1.11	183	59	124	68%	0.75	9/22/2011 - 10/6/2011	10/5/2011	NA	676	NA	32	NA	6.10E-03		2.89E-04	NA	2.23	NA	0.11	17%	26%	NA
C2D	1.01	183	0	183	100%	1.01	9/22/2011 - 10/6/2011	10/5/2011	NA	59	NA	2.9	NA	7.21E-04		3.52E-05	NA	0.26	NA	0.01	2%	5%	NA
C4D	0.95	183	25	158	86%	0.82	9/22/2011 - 10/6/2011	10/5/2011	NA	480	NA	21	NA	4.72E-03		2.07E-04	NA	1.72	NA	0.08	13%	20%	NA
C18D	1.08	183	38	145	79%	0.86	9/22/2011 - 10/6/2011	10/5/2011	NA	1507	NA	14	NA	1.55E-02		1.44E-04	NA	5.65	NA	0.05	44%	14%	NA
C19D	1.14	183	0	183	100%	1.14	9/22/2011 - 10/6/2011	10/5/2011	NA	21	NA	8.1	NA	2.92E-04		1.11E-04	NA	0.11	NA	0.04	1%	11%	NA
C30	1.27	183	0	183	100%	1.27	9/22/2011 - 10/6/2011	10/5/2011	NA	438	NA	7.9	NA	6.69E-03		1.20E-04	NA	2.44	NA	0.04	19%	12%	NA
BG-1	1.06	183	8	175	96%	1.01	7/1/2011 - 9/6/2011	10/3/2011	NA	91	NA	8.5		1.11E-03		1.03E-04	NA	0.40	NA	0.04	3%	10%	NA
TOTAL=	**7.62**											**TOTAL=**		**3.51E-02**		**1.01E-03**		**10.58**		**0.26**	**100%**	**100%**	
11/1/2011	**through**	**4/30/2012**																					
B4DR	0.17	181	34	147	81%	0.14	3/15/12 - 4/12/12	4/2/2012	1935	NA	810	14	3.30E-03	NA	1.38E-03	2.38E-05	1.20	NA	0.50	0.01	6%	2%	10%
C2D	1.21	181	4	177	98%	1.19	3/12/12 - 4/12/12	4/2/2012	84	NA	0	3.4	1.20E-03	NA	0.00E+00	4.84E-05	0.44	NA	0.00	0.02	2%	4%	0%
C4D	1.00	181	4	177	98%	0.97	3/12/12 - 4/12/12	4/2/2012	1222	NA	130	25	1.43E-02	NA	1.52E-03	2.92E-04	5.22	NA	0.55	0.11	27%	27%	11%
C18D	1.29	181	4	177	98%	1.27	3/12/12 - 4/12/12	4/2/2012	1122	NA	120	24	1.70E-02	NA	1.82E-03	3.65E-04	6.22	NA	0.67	0.13	32%	34%	14%
C19D	0.93	181	22	159	88%	0.82	3/12/12 - 4/12/12	4/2/2012	284	NA	270	8.6	2.80E-03	NA	2.66E-03	8.46E-05	1.02	NA	0.97	0.03	5%	8%	20%
C30	0.98	181	4	177	98%	0.96	3/12/12 - 4/12/12	4/2/2012	779	NA	360	9.8	8.99E-03	NA	4.15E-03	1.13E-04	3.28	NA	1.52	0.04	17%	10%	31%
BG-1	1.49	181	34	147	81%	1.21	3/12/12 - 4/12/12	4/3/2012	347	NA	120	11	5.04E-03	NA	1.74E-03	1.60E-04	1.84	NA	0.64	0.06	10%	15%	13%
TOTAL=	**7.08**											**TOTAL=**	**5.27E-02**		**1.33E-02**	**1.09E-03**	**19.22**		**4.85**	**0.39**	**100%**	**100%**	**100%**
5/1/2012	**through**	**10/31/2012**																					
B4DR	0.10	183	61	122	67%	0.07	8/30/2012 - 10/1/2012	10/2/2012	1766	NA	770	22	1.48E-03	NA	6.45E-04	1.84E-05	0.54	NA	0.24	0.01	4%	2%	6%
C2D	1.15	183	53	130	71%	0.82	9/10/2012 - 10/1/2012	10/2/2012	39	NA	0	3.0	3.83E-04	NA	0.00E+00	2.94E-05	0.14	NA	0.00	0.01	1%	2%	6%
C4D	0.84	183	7	176	96%	0.81	8/30/2012 - 10/1/2012	10/2/2012	680	NA	240	47	6.59E-03	NA	2.33E-03	4.55E-04	2.41	NA	0.85	0.17	18%	37%	21%
C18D	0.62	183	0	183	100%	0.62	9/24/2012 - 10/1/2012	10/2/2012	1371	NA	89	26	1.02E-02	NA	6.65E-04	1.94E-04	3.74	NA	0.24	0.07	27%	16%	6%
C19D	0.66	183	8	175	96%	0.63	9/10/2012 - 10/1/2012	10/2/2012	259	NA	230	14	1.96E-03	NA	1.74E-03	1.06E-04	0.72	NA	0.64	0.04	5%	9%	16%
C20D	NA	NA	NA	NA	NA	NA	NA	10/2/2012	309	NA	280	7.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C30	1.05	183	7	176	96%	1.01	9/10/2012 - 10/1/2012	10/2/2012	743	NA	240	9.2	9.01E-03	NA	2.91E-03	1.12E-04	3.29	NA	1.06	0.04	24%	9%	26%
BG-1	2.13	183	0	183	100%	2.13	9/27/2012 - 10/1/2012	10/2/2012	306	NA	110	12	7.83E-03	NA	2.82E-03	3.07E-04	2.86	NA	1.03	0.11	21%	25%	25%
TOTAL=	**6.56**											**TOTAL=**	**3.75E-02**		**1.11E-02**	**1.22E-03**	**13.70**		**4.06**	**0.44**	**100%**	**100%**	**100%**

Table 5
Individual LFExS Well Mass Removal Estimate
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

Well	Avg Flow prior to sample (GPM)	Days in Period	(hide) Days System Down	Days of System Operation	Percent Operation (%)	Adjusted Flow Rate (GPM)	Average Flow Period	Sample Date	Total Detected VOC Concentration (Revised analyte list) (ug/l)	Total Detected VOC Concentration (Historical analyte list) (ug/l)	1,4-Dioxane Concentration (ug/l)	BCEE Concentration (ug/l)	Adjusted TVOC Mass Removal (Revised analyte list) (lb/day)	Adjusted TVOC Mass Removal (Historical analyte list) (lb/day)	Adjusted 1,4-Dioxane Mass Removal (lb/day)	Adjusted BCEE Mass Removal (lb/day)	Adjusted TVOC Mass Removal (Revised analyte list) (lb/year)	Adjusted TVOC Mass Removal (Historical analyte list) (lb/year)	Adjusted 1,4-Dioxane Mass Removal (lb/year)	Adjusted BCEE Mass Removal (lb/year)	TVOC Mass Removal (% of Total)	BCEE Mass Removal (% of Total)	1,4-Dioxane Mass Removal (% of Total)
11/1/2012	**through**	**4/30/2013**																					
B4DR	0.27	180	109	71	39%	0.11	3/4/2013 - 3/18/2013	3/19/2013	1554.30	NA	300	22	1.99E-03	NA	3.84E-04	2.81E-05	0.73	NA	0.14	0.01	3%	2%	2%
C2D	1.36	180	0	180	100%	1.36	3/4/2013 - 3/18/2013	3/19/2013	136.14	NA	56	2.7	2.22E-03	NA	9.14E-04	4.41E-05	0.81	NA	0.33	0.02	3%	3%	4%
C4D	1.15	180	0	180	100%	1.15	3/4/2013 - 3/18/2013	3/19/2013	1020.46	NA	100	15	1.41E-02	NA	1.38E-03	2.07E-04	5.14	NA	0.50	0.08	22%	16%	7%
C18D	1.00	180	0	180	100%	1.00	3/4/2013 - 3/18/2013	3/19/2013	1422.60	NA	110	20	1.71E-02	NA	1.32E-03	2.40E-04	6.23	NA	0.48	0.09	27%	19%	6%
C19D	1.35	180	0	180	100%	1.35	3/4/2013 - 3/18/2013	3/19/2013	181.53	NA	160	8.0	2.94E-03	NA	2.59E-03	1.30E-04	1.07	NA	0.95	0.05	5%	10%	13%
C20D	2.55	180	13	167	93%	2.37	3/4/2013 - 3/18/2013	3/20/2013	169.88	NA	160	5.1	4.83E-03	NA	4.54E-03	1.45E-04	1.76	NA	1.66	0.05	8%	11%	22%
C30	1.75	180	0	180	100%	1.75	3/4/2013 - 3/18/2013	3/19/2013	729.42	NA	310	8.6	1.53E-02	NA	6.51E-03	1.81E-04	5.59	NA	2.38	0.07	24%	14%	32%
BG-1	0.76	180	22	158	88%	0.67	3/4/2013 - 3/18/2013	3/19/2013	694.29	NA	380	38	5.56E-03	NA	3.04E-03	3.04E-04	2.03	NA	1.11	0.11	9%	24%	15%
TOTAL=	**10.19**											**TOTAL=**	**6.40E-02**		**2.07E-02**	**1.28E-03**	**23.36**		**7.55**	**0.48**	**100%**	**100%**	**100%**
5/1/2013	**through**	**10/31/2013**																					
B4DR	0.32	183	44	139	76%	0.25	9/16/2013 - 10/3/2013	10/4/2013	1873.09	NA	580	51	5.52E-03	NA	1.71E-03	1.50E-04	2.01	NA	0.62	0.05	10%	12%	8%
C2D	1.08	183	0	183	100%	1.08	9/16/2013 - 10/3/2013	10/4/2013	119.39	NA	53	3.2	1.55E-03	NA	6.87E-04	4.15E-05	0.57	NA	0.25	0.02	3%	3%	3%
C4D	0.95	183	4	179	98%	0.93	9/16/2013 - 10/3/2013	10/4/2013	1062.31	NA	88	20	1.19E-02	NA	9.84E-04	2.24E-04	4.33	NA	0.36	0.08	21%	18%	5%
C18D	1.07	183	42	141	77%	0.83	9/16/2013 - 10/3/2013	10/4/2013	1830.45	NA	210	28	1.82E-02	NA	2.09E-03	2.78E-04	6.64	NA	0.76	0.10	32%	22%	10%
C19D	1.24	183	10	173	95%	1.17	9/16/2013 - 10/3/2013	10/4/2013	539.76	NA	520	9.8	7.58E-03	NA	7.31E-03	1.38E-04	2.77	NA	2.67	0.05	13%	11%	35%
C20D	2.49	183	27	156	85%	2.12	9/19/2013 - 10/7/2013	10/7/2013	262.47	NA	250	7.5	6.69E-03	NA	6.37E-03	1.91E-04	2.44	NA	2.32	0.07	12%	15%	30%
C30	0.09	183	6	177	97%	0.09	9/3/2013 - 10/3/2013	10/4/2013	1136.02	NA	220	15	1.17E-03	NA	2.26E-04	1.54E-05	0.43	NA	0.08	0.01	2%	1%	1%
BG-1	1.05	183	12	171	93%	0.98	9/19/2013 - 10/7/2013	10/7/2013	344.97	NA	140	17	4.06E-03	NA	1.65E-03	2.00E-04	1.48	NA	0.60	0.07	7%	16%	8%
TOTAL=	**8.29**											**TOTAL=**	**5.66E-02**		**2.10E-02**	**1.24E-03**	**20.67**		**7.66**	**0.45**	**100%**	**100%**	**100%**
11/1/2013	**through**	**4/30/2014**																					
B4DR	0.00	180	155	25	14%	NA	10/3/2013 - 3/27/2014	NS	NA	NA	NA	NA	NA	NA		NA	NA	NA	0.00	NA	NA	NA	0%
C2D	0.62	180	9	171	95%	0.59	3/6/2014 - 3/24/2014	3/25/2014	88.46	NA	24	2.3	6.29E-04	NA	1.71E-04	1.64E-05	0.23	NA	0.06	0.01	1%	3%	1%
C4D	0.99	180	9	171	95%	0.94	3/10/2014 - 3/27/2014	3/28/2014	1074.65	NA	67	0.19	1.22E-02	NA	7.59E-04	2.15E-06	4.44	NA	0.28	0.00	18%	0%	4%
C18D	1.04	180	9	171	95%	0.99	3/10/2014 - 3/27/2014	3/28/2014	2536.12	NA	70	22	3.01E-02	NA	8.30E-04	2.61E-04	10.98	NA	0.30	0.10	44%	41%	5%
C19D	1.01	180	13	167	93%	0.93	3/10/2014 - 3/27/2014	3/28/2014	193.20	NA	180	9.3	2.17E-03	NA	2.02E-03	1.04E-04	0.79	NA	0.74	0.04	3%	16%	11%
C20D	3.02	180	28	152	84%	2.55	3/10/2014 - 3/27/2014	3/28/2014	330.50	NA	320	4.3	1.01E-02	NA	9.78E-03	1.31E-04	3.69	NA	3.57	0.05	15%	21%	54%
C30	0.97	180	23	157	87%	0.84	3/10/2014 - 3/27/2014	3/28/2014	1208.54	NA	390	7.3	1.23E-02	NA	3.95E-03	7.40E-05	4.47	NA	1.44	0.03	18%	12%	22%
BG-1	0.68	180	64	116	64%	0.44	3/10/2014 - 3/27/2014	3/28/2014	266.09	NA	91	9.3	1.39E-03	NA	4.75E-04	4.86E-05	0.51	NA	0.17	0.02	2%	8%	3%
TOTAL=	**8.32**											**TOTAL=**	**6.88E-02**		**1.80E-02**	**6.38E-04**	**25.11**		**6.56**	**0.25**	**100%**	**100%**	**100%**
5/1/2014	**through**	**10/31/2014**																					
B4DR	0.15	183	92	91	50%	0.08	9/15/2014-10/13/2014	10/13/2014	2916.21	NA	1100	85	2.66E-03	NA	1.00E-03	7.77E-05	0.97	NA	0.37	0.03	4%	6%	3%
C2D	1.57	183	0	183	100%	1.57	9/29/2014-10/13/2014	10/13/2014	116.43	NA	89	1.8	2.20E-03	NA	1.68E-03	3.40E-05	0.80	NA	0.61	0.01	3%	3%	6%
C4D	0.39	183	38	145	79%	0.31	8/4/2014-10/13/2014	10/14/2014	438.10	NA	170	42	1.62E-03	NA	6.29E-04	1.55E-04	0.59	NA	0.23	0.06	3%	13%	2%
C18D	0.75	183	10	173	95%	0.70	9/29/2014-10/13/2014	10/13/2014	975.24	NA	95	29	8.25E-03	NA	8.03E-04	2.45E-04	3.01	NA	0.29	0.09	13%	21%	3%
C19D	1.43	183	0	183	100%	1.43	9/29/2014-10/13/2014	10/13/2014	233.60	NA	220	6.4	4.02E-03	NA	3.79E-03	1.10E-04	1.47	NA	1.38	0.04	6%	9%	13%
C20D	3.31	183	2	181	99%	3.27	9/29/2014-10/13/2014	10/14/2014	662.24	NA	420	7.2	2.60E-02	NA	1.65E-02	2.83E-04	9.50	NA	6.02	0.10	41%	24%	55%
C30	1.44	183	0	183	100%	1.44	9/29/2014-10/13/2014	10/13/2014	869.36	NA	220	11	1.51E-02	NA	3.81E-03	1.91E-04	5.50	NA	1.39	0.07	24%	16%	13%
BG-1	0.98	183	18	165	90%	0.88	9/29/2014-10/13/2014	10/14/2014	329.29	NA	190	9.4	3.49E-03	NA	2.02E-03	9.97E-05	1.27	NA	0.74	0.04	6%	8%	7%
TOTAL=	**10.03**											**TOTAL=**	**6.33E-02**		**3.02E-02**	**1.20E-03**	**23.11**		**11.03**	**0.44**	**100%**	**100%**	**100%**
11/1/2014	**through**	**4/30/2015**																					
B4DR	0.23	180	31	146	81%	0.19	1/22/15-3/26/15	3/30/2015	1341.00	NA	110	210	3.00E-03	NA	2.46E-04	4.69E-04	1.09	NA	0.09	0.17	3%	28%	1%
C2D	1.16	180	0	180	100%	1.16	3/12/15-3/26/15	3/30/2015	67.77	NA	19	2	9.42E-04	NA	2.64E-04	2.78E-05	0.34	NA	0.10	0.01	1%	2%	1%
C4D	0.90	180	0	180	100%	0.90	3/12/15-3/26/15	3/30/2015	1293.67	NA	54	31	1.39E-02	NA	5.82E-04	3.34E-04	5.09	NA	0.21	0.12	15%	20%	2%
C18D	1.19	180	0	180	100%	1.19	3/12/15-3/26/15	3/30/2015	3052.27	NA	77	21	4.34E-02	NA	1.10E-03	2.99E-04	15.85	NA	0.40	0.11	46%	18%	4%
C19D	1.04	180	0	180	100%	1.04	3/12/15-3/26/15	3/30/2015	169.14	NA	160	7.8	2.12E-03	NA	2.01E-03	9.78E-05	0.77	NA	0.73	0.04	2%	6%	8%
C20D	3.38	180	0	180	100%	3.38	3/12/15-3/26/15	3/30/2015	423.20	NA	400	5.2	1.72E-02	NA	1.62E-02	2.11E-04	6.26	NA	5.92	0.08	18%	13%	63%
C30	1.13	180	0	180	100%	1.13	3/12/15-3/26/15	3/30/2015	892.53	NA	330	8.6	1.21E-02	NA	4.48E-03	1.17E-04	4.42	NA	1.63	0.04	13%	7%	17%
BG-1	0.61	180	10	170	94%	0.57	3/12/15-3/26/15	3/30/2015	329.82	NA	140	16	2.27E-03	NA	9.62E-04	1.10E-04	0.83	NA	0.35	0.04	2%	7%	4%
TOTAL=	**9.63**											**TOTAL=**	**9.49E-02**		**2.58E-02**	**1.66E-03**	**34.65**		**9.43**	**0.61**	**100%**	**100%**	**100%**
5/1/2015	**through**	**10/31/2015**																					
B4DR	0.14	183	0	183	100%	0.14	7/20/15-9/21/15	9/30/2015	2099.39	NA	82	95	3.52E-03	NA	1.37E-04	1.59E-04	1.28	NA	0.05	0.06	5%	18%	1%
C2D	0.86	183	0	183	100%	0.86	9/08/15-9/21/15	9/30/2015	28.28	NA	12	1.4	2.92E-04	NA	1.24E-04	1.44E-05	0.11	NA	0.05	0.01	0%	2%	1%
C4D	1.25	183	7	176	96%	1.20	9/08/15-9/21/15	9/30/2015	167.13	NA	130	6.4	2.40E-03	NA	1.87E-03	9.20E-05	0.88	NA	0.68	0.03	3%	10%	7%
C18D	0.72	183	0	183	100%	0.72	9/08/15-9/21/15	9/30/2015	3498.40	NA	71	18	3.02E-02	NA	6.14E-04	1.56E-04	11.04	NA	0.22	0.06	43%	17%	2%
C19D	0.93	183	0	183	100%	0.93	9/08/15-9/21/15	9/30/2015	131.23	NA	120	5.2	1.47E-03	NA	1.35E-03	5.83E-05	0.54	NA	0.49	0.02	2%	6%	5%
C20D	3.33	183	3	180	98%	3.28	9/08/15-9/21/15	9/30/2015	376.76	NA	360	5.9	1.48E-02	NA	1.42E-02	2.32E-04	5.41	NA	5.17	0.08	21%	26%	55%
C30	1.29	183	26	157	86%	1.11	9/08/15-9/21/15	9/30/2015	731.10	NA	320	10	9.72E-03	NA	4.26E-03	1.33E-04	3.55	NA	1.55	0.05	14%	15%	16%
BG-1	0.54	183	3	180	98%	0.53	9/08/15-9/21/15	9/30/2015	1132.90	NA	510	10	7.22E-03	NA	3.25E-03	6.38E-05	2.64	NA	1.19	0.02	10%	7%	13%
TOTAL=	**9.06**											**TOTAL=**	**6.97E-02**		**2.58E-02**	**9.08E-04**	**25.45**		**9.40**	**0.33**	**100%**	**100%**	**100%**
11/1/2015	**through**	**4/30/2016**																					
B4DR	0.05	181	0	106	59%	0.03	3/24/16-4/7/16	4/7/2016	429.48	NA	41	180	1.51E-04	NA	1.44E-05	6.33E-05	0.06	NA	0.01	0.02	0%	2%	0%
C2D	1.22	181	0	181	100%	1.22	3/24/16-4/7/16	4/7/2016	25.61	NA	13	2.3	3.75E-04	NA	1.90E-04	3.37E-05	0.14	NA	0.07	0.01	1%	1%	1%
C4D	1.04	181	7	169	93%	0.97	3/24/16-4/7/16	4/7/2016	1238.14	NA	60	150	1.44E-02	NA	6.99E-04	1.75E-03	5.27	NA	0.26	0.64	26%	67%	4%
C18D	0.63	181	0	181	100%	0.63	3/24/16-4/7/16	4/7/2016	2262.80	NA	69	19	1.71E-02	NA	5.22E-04	1.44E-04	6.25	NA	0.19	0.05	31%	6%	3%
C19D	1.08	181	0	176	97%	1.05	3/24/16-4/7/16	4/7/2016	242.39	NA	230	7.7	3.06E-03	NA	2.90E-03	9.71E-05	1.12	NA	1.06	0.04	6%	4%	17%
C20D	3.31	181	3	180	99%	3.29	3/24/16-4/7/16	4/7/2016	240.53	NA	220	4.4	9.51E-03	NA	8.69E-03	1.74E-04	3.47	NA	3.17	0.06	17%	7%	59%
C30	0.94	181	26	180	99%	0.93	3/24/16-4/7/16	4/7/2016	583.38	NA	200	6.7	6.55E-03	NA	2.24E-03	7.52E-05	2.39	NA	0.82	0.03	12%	3%	13%
BG-1	0.73	181	3	177	98%	0.72	3/28/16-4/11/16	4/12/2016	384.58	NA	260	31	3.31E-03	NA	2.24E-03	2.67E-04	1.21	NA	0.82	0.10	6%	10%	13%
TOTAL=	**9.00**											**TOTAL=**	**5.45E-02**		**1.75E-02**	**2.60E-03**	**19.91**		**6.40**	**0.95**	**100%**	**100%**	**100%**

Table 5
Individual LFExS Well Mass Removal Estimate
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

Well	Avg Flow prior to sample (GPM)	Days in Period	(hide) Days System Down	Days of System Operation	Percent Operation (%)	Adjusted Flow Rate (GPM)	Average Flow Period	Sample Date	Total Detected VOC Concentration (Revised analyte list) (ug/l)	Total Detected VOC Concentration (Historical analyte list) (ug/l)	1,4-Dioxane Concentration (ug/l)	BCEE Concentration (ug/l)	Adjusted TVOC Mass Removal (Revised analyte list) (lb/day)	Adjusted TVOC Mass Removal (Historical analyte list) (lb/day)	Adjusted 1,4-Dioxane Mass Removal (lb/day)	Adjusted BCEE Mass Removal (lb/day)	Adjusted TVOC Mass Removal (Revised analyte list) (lb/year)	Adjusted TVOC Mass Removal (Historical analyte list) (lb/year)	Adjusted 1,4-Dioxane Mass Removal (lb/year)	Adjusted BCEE Mass Removal (lb/year)	TVOC Mass Removal (% of Total)	BCEE Mass Removal (% of Total)	1,4-Dioxane Mass Removal (% of Total)
5/1/2016	**through**	**10/31/2016**																					
B4DR	0.19	183	101	82	45%	0.09	9/15/16-9/29/16	9/30/2016	940.27	NA	290	15	9.81E-04	NA	3.03E-04	1.56E-05	0.36	NA	0.11	0.01	3%	1%	3%
C2D	1.04	183	11	172	94%	0.98	9/15/16-9/29/16	9/30/2016	89.18	NA	43	3.1	1.05E-03	NA	5.05E-04	3.64E-05	0.38	NA	0.18	0.01	3%	3%	5%
C4D	0.88	183	0	183	100%	0.88	9/15/16-9/29/16	9/30/2016	1220.77	NA	58	76	1.28E-02	NA	6.10E-04	7.99E-04	4.69	NA	0.22	0.29	37%	72%	6%
C18D	0.52	183	0	183	100%	0.52	9/15/16-9/29/16	9/30/2016	986.03	NA	290	13	6.15E-03	NA	1.81E-03	8.11E-05	2.25	NA	0.66	0.03	18%	7%	18%
C19D	0.38	183	0	183	100%	0.38	9/29/16-10/13/16	10/13/2016	171.72	NA	160	7.9	7.85E-04	NA	7.32E-04	3.61E-05	0.29	NA	0.27	0.01	2%	3%	8%
C20D	0.90	183	14	169	92%	0.83	9/19/16-10/3/16	10/4/2016	324.39	NA	310	4.0	3.25E-03	NA	3.10E-03	4.00E-05	1.18	NA	1.13	0.01	9%	4%	32%
C30	0.79	183	0	183	100%	0.79	9/15/16-9/29/16	9/30/2016	920.70	NA	250	9.3	8.71E-03	NA	2.36E-03	8.79E-05	3.18	NA	0.86	0.03	25%	8%	24%
BG-1	0.53	183		183	100%	0.53	9/15/16-9/29/16	9/30/2016	90.93	NA	59	2.3	5.82E-04	NA	3.78E-04	1.47E-05	0.21	NA	0.14	0.01	2%	1%	4%
TOTAL=	**5.23**											**TOTAL=**	**3.43E-02**		**9.80E-03**	**1.11E-03**	**12.54**		**3.57**	**0.40**	**100%**	**100%**	**100%**
11/1/2016	**through**	**4/30/2017**																					
B4DR	0.11	180	4	176	98%	0.11	3/13/17-3/27/17	3/27/2017	4369.60	NA	140	13	5.55E-03	NA	1.78E-04	1.65E-05	2.02	NA	0.06	0.01	8%	2%	1%
C2D	0.04	180	26	154	86%	0.03	3/13/17-3/27/17	3/27/2017	76.42	NA	27	1.7	2.84E-05	NA	1.00E-05	6.32E-07	0.01	NA	0.00	0.00	0%	0%	0%
C4D	0.21	180	11	169	94%	0.20	3/13/17-3/27/17	3/27/2017	677.60	NA	82	95	1.59E-03	NA	1.93E-04	2.23E-04	0.58	NA	0.07	0.08	2%	27%	1%
C18D	0.02	180	68	112	62%	0.01	3/13/17-3/27/17	3/27/2017	3730.78	NA	150	10	5.81E-04	NA	2.33E-05	1.56E-06	0.21	NA	0.01	0.00	1%	0%	0%
C19D	0.08	180	7	173	96%	0.08	3/13/17-3/27/17	3/27/2017	199.09	NA	140	24	1.87E-04	NA	1.31E-04	2.25E-05	0.07	NA	0.05	0.01	0%	3%	1%
C20D	3.85	180	0	180	100%	3.85	3/13/17-3/27/17	3/29/2017	285.46	NA	230	6.6	1.32E-02	NA	1.06E-02	3.05E-04	4.81	NA	3.88	0.11	20%	36%	72%
C30	0.20	180	19	161	89%	0.18	3/13/17-3/27/17	3/27/2017	3193.07	NA	140	9.2	6.84E-03	NA	3.00E-04	1.97E-05	2.50	NA	0.11	0.01	10%	2%	2%
BG-1	4.54	180	0	180	100%	4.54	3/13/17-3/27/17	3/27/2017	716.32	NA	60	4.6	3.90E-02	NA	3.27E-03	2.51E-04	14.25	NA	1.19	0.09	58%	30%	22%
TOTAL=	**9.04**											**TOTAL=**	**6.70E-02**		**1.47E-02**	**8.39E-04**	**24.45**		**5.37**	**0.31**	**100%**	**100%**	**100%**
5/1/2017	**through**	**10/31/2017**																					
B4DR	0.06	183	22	161	88%	0.05	9/28/17-10/12/17	10/12/2017	2683.20	NA	30	16	1.73E-03	NA	1.93E-05	1.03E-05	0.63	NA	0.01	0.00	2%	1%	0%
C2D	0.15	183	18	165	90%	0.13	9/28/17-10/12/17	10/12/2017	247.66	NA	150	16.0	3.94E-04	NA	2.38E-04	2.54E-05	0.14	NA	0.09	0.01	0%	1%	1%
C4D	0.00	183	144	39	21%	0.00	9/28/17-10/12/17	10/12/2017	332.53	NA	79	94	0.00E+00	NA	0.00E+00	0.00E+00	0.00	NA	0.00	0.00	0%	0%	0%
C18D	0.41	183	5	178	97%	0.40	9/21/17-10/5/17	10/9/2017	4952.20	NA	120	16	2.36E-02	NA	5.72E-04	7.63E-05	8.62	NA	0.21	0.03	28%	4%	2%
C19D	0.76	183	0	183	100%	0.76	9/25/17-10/9/2017	10/9/2017	250.11	NA	210	17	2.29E-03	NA	1.92E-03	1.56E-04	0.84	NA	0.70	0.06	3%	6%	8%
C20D	3.67	183	0	183	100%	3.67	9/25/17-10/9/17	10/9/2017	432.56	NA	410	32.0	1.90E-02	NA	1.81E-02	1.41E-03	6.95	NA	6.59	0.51	22%	69%	75%
C30	0.54	183	8	175	96%	0.52	9/25/17-10/9/17	10/9/2017	4050.70	NA	200	12.0	2.53E-02	NA	1.25E-03	7.48E-05	9.22	NA	0.46	0.03	30%	4%	5%
BG-1	3.52	183	0	183	100%	3.52	9/21/17-10/5/17	10/9/2017	293.44	NA	45	7.1	1.24E-02	NA	1.90E-03	3.00E-04	4.53	NA	0.69	0.11	15%	15%	8%
TOTAL=	**9.11**											**TOTAL=**	**8.47E-02**		**2.40E-02**	**2.05E-03**	**30.93**		**8.75**	**0.75**	**100%**	**100%**	**100%**
11/1/2017	**through**	**4/30/2018**																					
B4DR	0.14	180	21	159	88%	0.12	3/30/18-4/13/18	4/13/2018	3513.50	NA	41	120	5.20E-03	NA	6.07E-05	1.78E-04	1.90	NA	0.02	0.06	19%	13%	0%
C2D	0.16	180	50	130	72%	0.12	3/30/18-4/13/18	4/13/2018	73.88	NA	25	2.1	1.05E-04	NA	3.54E-05	2.97E-06	0.04	NA	0.01	0.00	0%	0%	0%
C4D	0.18	180	57	123	68%	0.12	3/30/18-4/13/18	4/13/2018	451.50	NA	72	36	6.66E-04	NA	1.06E-04	5.31E-05	0.24	NA	0.04	0.02	2%	4%	1%
C18D	NA	180	101	79	44%	NA	3/30/18-4/13/18	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C19D	0.28	180	10	170	94%	0.27	3/30/18-4/13/18	4/13/2018	332.06	NA	250	30	1.06E-03	NA	7.97E-04	9.57E-05	0.39	NA	0.29	0.03	4%	7%	6%
C20D	4.89	180	0	180	100%	4.89	3/30/18-4/13/18	4/13/2018	210.61	NA	180	14.0	1.24E-02	NA	1.06E-02	8.21E-04	4.51	NA	3.85	0.30	45%	59%	80%
C30	0.07	180	48	132	73%	0.05	3/30/18-4/13/18	4/13/2018	3186.84	NA	40	130.0	2.05E-03	NA	2.57E-05	8.35E-05	0.75	NA	0.01	0.03	7%	6%	0%
BG-1	4.10	180	0	180	100%	4.10	3/30/18-4/13/18	4/13/2018	121.14	NA	32	3.4	5.96E-03	NA	1.58E-03	1.67E-04	2.18	NA	0.57	0.06	22%	12%	12%
TOTAL=	**9.82**											**TOTAL=**	**2.74E-02**		**1.32E-02**	**1.40E-03**	**10.01**		**4.79**	**0.50**	**100%**	**100%**	**100%**
5/1/2018	**through**	**10/31/2018**																					
B4DR	0.00	183	32	151	83%	0.00	9/25/18-10/9/18	10/9/2018	1380.80	NA	71	14	6.65E-05	NA	3.42E-06	6.74E-07	0.02	NA	0.00	0.00	0%	0%	0%
C2D	0.76	183	4	179	98%	0.74	9/25/18-10/9/18	10/9/2018	70.70	NA	40	3.2	6.28E-04	NA	3.55E-04	2.84E-05	0.23	NA	0.13	0.01	1%	2%	2%
C4D	0.65	183	3	180	98%	0.64	9/25/18-10/9/18	10/9/2018	748.19	NA	57	56	5.71E-03	NA	4.35E-04	4.28E-04	2.08	NA	0.16	0.16	12%	37%	2%
C18D	0.74	183	31	152	83%	0.61	9/25/18-10/9/18	10/9/2018	2115.10	NA	110	22	1.55E-02	NA	8.07E-04	1.61E-04	5.67	NA	0.29	0.06	53%	14%	4%
C19D	0.73	183	0	183	100%	0.73	9/25/18-10/9/18	10/9/2018	302.24	NA	290	6.9	2.67E-03	NA	2.56E-03	6.09E-05	0.97	NA	0.93	0.02	6%	5%	13%
C20D	3.01	183	0	183	100%	3.01	9/25/18-10/9/18	10/9/2018	396.37	NA	360	8.9	1.43E-02	NA	1.30E-02	3.22E-04	5.23	NA	4.75	0.12	30%	28%	65%
C30	0.29	183	17	166	91%	0.26	9/25/18-10/9/18	10/9/2018	918.30	NA	210	5.5	2.91E-03	NA	6.65E-04	1.74E-05	1.06	NA	0.24	0.01	6%	2%	3%
BG-1	3.30	183	0	183	100%	3.30	9/25/18-10/9/18	10/9/2018	142.19	NA	54	3.3	5.63E-03	NA	2.14E-03	1.31E-04	2.06	NA	0.78	0.05	12%	11%	11%
TOTAL=	**9.48**											**TOTAL=**	**4.75E-02**		**2.00E-02**	**1.15E-03**	**17.32**		**7.28**	**0.43**	**100%**	**100%**	**100%**
11/1/2018	**through**	**5/14/2019**																					
B4DR	0.53	194	0	194	100%	0.53	4/25/19-5/9/19	5/13/2019	1601.30	NA	110	340	1.02E-02	NA	7.00E-04	2.16E-03	3.72	NA	0.26	0.79	13%	61%	4%
C2D	0.26	194	21	173	89%	0.23	4/25/19-5/9/19	5/13/2019	147.17	NA	28	3.8	4.10E-04	NA	7.79E-05	1.06E-05	0.15	NA	0.03	0.00	1%	0%	0%
C4D	0.83	194	0	194	100%	0.83	4/25/19-5/9/19	5/13/2019	301.20	NA	51	38	3.00E-03	NA	5.08E-04	3.79E-04	1.10	NA	0.19	0.14	4%	11%	3%
C18D	0.74	194	7	187	96%	0.71	4/25/19-5/9/19	5/13/2019	3672.70	NA	180	48	3.15E-02	NA	1.54E-03	4.11E-04	11.48	NA	0.56	0.15	56%	12%	9%
C19D	0.64	194	0	194	100%	0.64	4/25/19-5/9/19	5/13/2019	398.93	NA	370	18.0	3.07E-03	NA	2.84E-03	1.38E-04	1.12	NA	1.04	0.05	4%	4%	17%
C20D	3.91	194	0	194	100%	3.91	4/25/19-5/9/19	5/14/2019	227.78	NA	190	6.3	1.07E-02	NA	8.92E-03	2.96E-04	3.90	NA	3.26	0.11	13%	8%	53%
C30	0.74	194	0	194	100%	0.74	4/25/19-5/9/19	5/13/2019	1623.79	NA	96	3.7	1.44E-02	NA	8.53E-04	3.29E-05	5.27	NA	0.31	0.01	18%	1%	5%
BG-1	2.50	194	0	194	100%	2.50	4/25/19-5/9/19	5/14/2019	225.03	NA	42	4.4	6.75E-03	NA	1.26E-03	1.32E-04	2.47	NA	0.46	0.05	8%	4%	8%
TOTAL=	**10.15**											**TOTAL=**	**8.00E-02**		**1.67E-02**	**3.56E-03**	**29.21**		**6.11**	**1.30**	**100%**	**100%**	**100%**
5/15/2019	**through**	**10/31/2019**																					
B4DR	0.04	169	21	148	87.57%	0.04	10/10/19-10/24/19	10/24/2019	1963.6	NA	77	85	8.26E-04	NA	3.24E-05	3.57E-05	0.30	NA	0.01	0.01	3%	4%	0%
C2D	0.19	169	25	144	85.21%	0.16	10/10/19-10/24/19	10/25/2019	437.04	NA	18	1.2	8.49E-04	NA	3.50E-05	2.33E-06	0.31	NA	0.01	0.00	3%	0%	0%
C4D	0.23	169	0	169	100.00%	0.23	10/10/19-10/24/19	10/25/2019	74.54	NA	31	59	2.06E-04	NA	8.56E-05	1.63E-04	0.08	NA	0.03	0.06	1%	18%	1%
C18D	0.41	169	3	166	98.22%	0.40	10/10/19-10/24/19	10/25/2019	1800.8	NA	130	19	8.71E-03	NA	6.29E-04	9.19E-05	3.18	NA	0.23	0.03	35%	10%	6%
C19D	1.41	169	0	169	100.00%	1.41	10/10/19-10/24/19	10/25/2019	218.03	NA	190	17	3.69E-03	NA	3.22E-03	2.88E-04	1.35	NA	1.17	0.11	15%	32%	30%
C20D	3.3	169	0	169	100.00%	3.30	10/10/19-10/24/19	10/25/2019	158.89	NA	140	5.1	6.29E-03	NA	5.55E-03	2.02E-04	2.30	NA	2.02	0.07	25%	22%	52%
C30	0.19	169	3	166	98.22%	0.19	10/10/19-10/24/19	10/25/2019	842.3	NA	68	2.2	1.89E-03	NA	1.52E-04	4.93E-06	0.69	NA	0.06	0.00	8%	1%	2%
BG-1	2.37	169	0	169	100.00%	2.37	10/10/19-10/24/19	10/25/2019	85.61	NA	35	4.3	2.44E-03	NA	9.96E-04	1.22E-04	0.89	NA	0.36	0.04	10%	13%	9%
TOTAL=	**8.14**											**TOTAL=**	**2.49E-02**		**1.07E-02**	**9.10E-04**	**9.10**		**3.89**	**0.32**	**100%**	**100%**	**100%**

Table 5
Individual LFExS Well Mass Removal Estimate
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

Prepared by:	KNG
Checked by:	AH
Reviewed by:	TAM

Notes:
1) GPM = gallons per minute
2) VOC = volatile organic compound
3) ug/l = micrograms per liter (ppb)
4) BCEE = bis(2-chloroethyl) ether
5) TVOC = total volatile organic compounds
6) lb/day = pounds per day
7) lb/year = pounds per year
8) 'Average flow prior to sample' is calculated over an approximate two-week period with variability due to when totalizer readings are available, with the exception of the following:
- '5/4/2009 through 10/31/2009' period which is calculated over the entire duration due to limited available totalizer data
- '5/1/2011 through 10/31/2011' period for BG-1 is based on flow rate early in the semi-annual monitoring period prior to pump failure in late September 2011.
- '5/1/2012 through 10/31/2012' period for B4DR and C4D are based on a flow rate calculated over a period of approximately one-month due to pump shutdowns in the two-week period skewing the flow rate
- '5/1/2013 through 10/31/2013' period for C30 is based on a flow rate calculated over a period of approximately one-month due to pump shutdowns in the two-week period skewing the flow rate.
- '10/3/2013 through 3/27/2014' period for B4DR is based upon a flow rate calculated over a period of approximately five months due to pump shutdown.
- '4/28/2014 through 9/29/2014' period for C4D is based upon a flow rate calculated over a period of approximately four months due to pump shutdowns in the two-week period skewing the flow rate.
9) Adjusted flow rate is calculated using flow rate prior to sample collection and percent of system operation.
10) TVOC and BCEE mass removal rates are calculated using adjusted flow rates.
11) B4D was replaced by B4DR on January 19, 2012.
12) Total VOC prior to the April 2012 data is based on a historical VOC analyte list. Since that time, the analyte list was revised to include additional compounds, including 1,4-dioxane.
13) In April 2017, the VOC analyte list was revised to include 1,2,3-Trimethylbenzene, Dichlorofluoromethane and Indane.
14) C20D was brought online as an extraction well on September 27, 2012; however, was not fully operational until December 4, 2012.

Table 6
Well PW-1(U) Mass Removal Estimate
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

		System Startup																		
	Sample Month		**Nov-04**	**Jan-05**	**May-05**	**Jul-05**	**Oct-05**	**Apr-06**	**Jul-06**	**Oct-06**	**Jan-07**	**May-07**	**Oct-07**	**Jan-08**	**Apr-08**	**Jul-08**	**Oct-08**	**Jan-09**	**Apr-09**	**Jul-09**
	Sample Date		**11/3/2004**	**1/31/2005**	**5/2/2005**	**7/20/2005**	**10/27/2005**	**4/27/2006**	**7/11/2006**	**10/13/2006**	**1/10/2007**	**5/7/2007**	**10/1/2007**	**1/1/2008**	**4/1/2008**	**7/1/2008**	**10/1/2008**	**1/1/2009**	**4/1/2009**	**7/13/2009**
	Sampler		**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Ruth**	**Ruth**	**Ruth**	**Ruth**	**Ruth**	**Ruth**	**Ruth**	**Golder**
Date of PW-1(U) totalizer reading		**10/28/2004**	11/5/2004	2/2/2005	5/2/2005	7/21/2005	11/3/2005	4/27/2006	7/10/2006	10/12/2006	1/10/2007	4/26/2007	10/1/2007	1/8/2008	4/2/2008	7/15/2008	9/25/2008	1/5/2009	3/25/2009	7/12/2009
PW-1(U) Totalizer Reading (NCC)	gal	**0**	189257	1824351	3775923	7129794	11076040	16932640	20085882	23875940	26443467	30852010	38824424	43129074	47051554	50533666	53833997	57254018	60456235	64458411
PW-1(U) Totalizer Reading (DS&G)	gal		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gallons pumped since last sample	gal	**0**	189257	1635094	1951572	3353871	3946246	5856600	3153242	3790058	2567527	4408543	7972414	4304650	3922480	3482112	3300331	3420021	3202217	4002176
Days since last sample	days	**0**	8	89	89	80	105	175	74	94	90	106	158	99	85	104	72	102	79	109
Average Flow Rate Since Last Sample	gpm	**0**		12.8	15.2	29.1	26.1	23.2	29.6	28.0	19.8	28.9	35.0	30.2	32.1	23.3	31.8	23.3	28.2	25.5
Targeted Volatile Organic Compounds																				
Benzene	ug/l	NA	150	350	230	150	180	250	260	260	240	250	220	140	160	140	81	120	130	110
Toluene	ug/l	NA	18	25	170	170	270	510	560	570	460	490	420	400	490	220	210	260	300	290
Ethylbenzene	ug/l	NA	95	150	160	85	100	120	140	140	110	96	63	59	75	39	41	47	66	64
Xylenes, Total	ug/l	NA	230	530	460	320	360	360	340	360	310	280	230	180	230	140	130	140	190	170
1,4-Dioxane	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Targeted VOCs (BTEX)	ug/l	NA	493	1055	1020	725	910	1240	1300	1330	1120	1116	933	779	955	539	462	567	686	634
Total Analyzed VOCs (Total VOCs)	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimated Mass Removal (BTEX)	*lb/day*	NA	*0.00*	*0.16*	*0.19*	*0.25*	*0.29*	*0.35*	*0.46*	*0.45*	*0.27*	*0.39*	*0.39*	*0.28*	*0.37*	*0.15*	*0.18*	*0.16*	*0.23*	*0.19*
Estimated Mass Removal (BTEX)	*lb/quarter*	NA	*0*	*15*	*17*	*23*	*26*	*31*	*42*	*40*	*24*	*35*	*35*	*25*	*33*	*14*	*16*	*14*	*21*	*17*
Estimated Mass Removal (BTEX)	***lb/year***	NA	***0***	***58***	***67***	***91***	***103***	***125***	***166***	***161***	***96***	***139***	***141***	***102***	***132***	***54***	***64***	***57***	***83***	***70***
Estimated Mass Removal (1,4-Dioxane)	*lb/day*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimated Mass Removal (1,4-Dioxane)	*lb/quarter*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimated Mass Removal (1,4-Dioxane)	***lb/year***	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimated Mass Removal (Total VOC)	***lb/day***	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimated Mass Removal (Total VOC)	***lb/quarter***	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Estimated Mass Removal (Total VOC)	***lb/year***	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Targeted Semi-Volatile Organic Compounds																				
Bis(2-chloroethyl) Ether	ug/l	NA	74	96	24	28	43	44	48	45	37	44	40	31	37	43	31	34	27	31
Estimated Mass Removal	*lb/day*	NA	*0.000*	*0.015*	*0.004*	*0.010*	*0.013*	*0.012*	*0.017*	*0.015*	*0.009*	*0.015*	*0.017*	*0.011*	*0.014*	*0.012*	*0.012*	*0.010*	*0.009*	*0.009*
Estimated Mass Removal	*lb/quarter*	NA	*0.0*	*1.3*	*0.39*	*0.88*	*1.2*	*1.1*	*1.5*	*1.4*	*0.8*	*1.4*	*1.5*	*1.0*	*1.3*	*1.1*	*1.1*	*0.9*	*0.82*	*0.9*
Estimated Mass Removal	***lb/year***	NA	***0.0***	***5.3***	***1.6***	***3.5***	***4.8***	***4.4***	***6.1***	***5.4***	***3.2***	***5.5***	***6.1***	***4.0***	***5.1***	***4.3***	***4.3***	***3.4***	***3.3***	***3.4***

Table 6
Well PW-1(U) Mass Removal Estimate
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

	Sample Month	Oct-09	Apr-10	Jul-10	Apr-11	Oct-11	Feb-12	Apr-12	Oct-12	Mar-13	Oct-13	Apr-14	Oct-14	Mar-15	Oct-15	Apr-16	Sep-16	Apr-17	Oct-17	Apr-18	Oct-18	May-19	Oct-19
	Sample Date	**10/13/2009**	**4/14/2010**	**7/8/2010**	**4/11/2011**	**10/6/2011**	**2/23/2012**	**4/4/2012**	**10/2/2012**	**3/19/2013**	**9/30/2013**	**4/2/2014**	**9/30/2014**	**3/30/2015**	**9/28/2015**	**4/7/2016**	**9/30/2016**	**4/11/2017**	**10/9/2017**	**4/12/2018**	**10/8/2018**	**5/14/2019**	**10/22/2019**
	Sampler	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**	**Golder**
Date of PW-1(U) totalizer reading		10/12/2009	4/12/2010	7/15/2010	4/26/2011	10/6/2011	2/17/2012	4/16/2012	10/4/2012	4/17/2013	9/25/2013	4/2/2014	9/30/2014	3/30/2015	9/30/2015	4/7/2016	9/29/2016	4/11/2017	10/9/2017	4/12/2018	10/8/2018	5/14/2019	10/22/2019
PW-1(U) Totalizer Reading (NCC)	gal	67732261	74703485	78349021	87701433	93961997	98241721	100496869	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PW-1(U) Totalizer Reading (DS&G)	gal	NA	NA	NA	NA	NA	46351520	48266516	753247	7393803	13670142	9439024	19286181	28467313	38013099	47798444	56115498	65482679	74114433	82206929	90216280	99728955	106552611
Gallons pumped since last sample	gal	3273850	6971224	3645536	6308868	6260564	4279724	2255148	4837281	6640556	6276339	9439024	9847157	9181132	9545786	9785345	8317054	9367181	8631754	8092496	8009351	9512675	6823656
Days since last sample	days	92	182	94	195	163	134	59	183	195	161	167	181	181	184	190	175	194	181	185	179	218	161
Average Flow Rate Since Last Sample	gpm	24.7	26.6	26.9	22.5	26.7	22.2	26.5	18.4	23.7	27.1	39.3	37.8	35.2	36.0	35.8	33.0	33.5	33.1	30.4	31.1	30.3	29.4
Targeted Volatile Organic Compounds																							
Benzene	ug/l	120	96	88	58	90	61	74	50	38	38	35	37	30	28	21	22	14	14	11	11	10	15
Toluene	ug/l	250	170	180	27	67.5	75	98	65	24	15	2.4	1.5	ND	0.29	0.33	0.68	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	59	60	62	19	35.6	39	56	49	23	33	24	19	19	11	20	8.4	4.3	2.3	2.8	2.2	2.1	3
Xylenes, Total	ug/l	170	150	160	50	102	86	120	110	48	63	47	34	42	31	47	25	15	11	15	12	14	17
1,4-Dioxane	ug/l	NA	NA	NA	NA	NA	NA	95	68	56	68	45	79	67	79	60	61	65	100	73	65	48	47
Total Targeted VOCs (BTEX)	ug/l	599	476	490	154	295	261	348	274	133	149	108	92	91	70	88	56	33	27	29	25	26	35
Total Analyzed VOCs (Total VOCs)	ug/l	NA	NA	NA	NA	NA	NA	521	411	227	265	192	204	201	181	203	155	130[13]	157	134	118	97	149
Estimated Mass Removal (BTEX)	*lb/day*	*0.18*	*0.15*	*0.16*	*0.04*	*0.09*	*0.07*	*0.11*	*0.06*	*0.04*	*0.05*	*0.05*	*0.04*	*0.04*	*0.03*	*0.04*	*0.02*	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*
Estimated Mass Removal (BTEX)	*lb/quarter*	*16*	*14*	*14*	*4*	*8*	*6*	*10*	*5*	*3*	*4*	*5*	*4*	*3*	*3*	*3*	*2*	*1*	*1*	*1*	*1*	*1*	*1*
Estimated Mass Removal (BTEX)	***lb/year***	***64***	***55***	***57***	***15***	***34***	***25***	***40***	***22***	***14***	***18***	***19***	***15***	***14***	***11***	***14***	***8.1***	***4.8***	***3.9***	***3.9***	***3.4***	***3.5***	***4.5***
Estimated Mass Removal (1,4-Dioxane)	*lb/day*	NA	NA	NA	NA	NA	NA	*0.03*	*0.01*	*0.02*	*0.02*	*0.02*	*0.04*	*0.03*	*0.03*	*0.03*	*0.02*	*0.03*	*0.04*	*0.03*	*0.02*	*0.02*	*0.02*
Estimated Mass Removal (1,4-Dioxane)	*lb/quarter*	NA	NA	NA	NA	NA	NA	*3*	*1*	*1*	*2*	*2*	*3*	*3*	*3*	*2*	*2*	*2*	*4*	*2*	*2*	*2*	*1*
Estimated Mass Removal (1,4-Dioxane)	***lb/year***	NA	NA	NA	NA	NA	NA	***11***	***5.5***	***5.8***	***8.1***	***7.7***	***13***	***10***	***12***	***9.4***	***8.8***	***9.5***	***14.5***	***9.7***	***8.8***	***6.4***	***6.1***
Estimated Mass Removal (Total VOC)	***lb/day***	NA	NA	NA	NA	NA	NA	*0.17*	*0.09*	*0.06*	*0.09*	*0.09*	*0.09*	*0.09*	*0.08*	*0.09*	*0.06*	*0.05*	*0.06*	*0.05*	*0.04*	*0.04*	*0.05*
Estimated Mass Removal (Total VOC)	***lb/quarter***	NA	NA	NA	NA	NA	NA	*15*	*8*	*6*	*8*	*8*	*8*	*8*	*7*	*8*	*6*	*5*	*6*	*4*	*4*	*3*	*5*
Estimated Mass Removal (Total VOC)	***lb/year***	NA	NA	NA	NA	NA	NA	***61***	***33***	***24***	***31***	***33***	***34***	***31***	***29***	***32***	***22***	***19***	***23***	***18***	***16***	***13***	***19***
Targeted Semi-Volatile Organic Compounds																							
Bis(2-chloroethyl) Ether	ug/l	25	31	24	15	26	26	24	23	14	14	13	15	13	16	15	11	11	10	8.4	9.1	6.2	5.6
Estimated Mass Removal	*lb/day*	*0.007*	*0.010*	*0.008*	*0.004*	*0.008*	*0.007*	*0.008*	*0.005*	*0.004*	*0.005*	*0.006*	*0.007*	*0.005*	*0.007*	*0.006*	*0.004*	*0.004*	*0.004*	*0.003*	*0.003*	*0.002*	*0.002*
Estimated Mass Removal	*lb/quarter*	*0.67*	*0.9*	*0.70*	*0.36*	*0.75*	*0.62*	*0.69*	*0.46*	*0.36*	*0.41*	*0.55*	*0.61*	*0.49*	*0.62*	*0.58*	*0.39*	*0.40*	*0.36*	*0.28*	*0.31*	*0.20*	*0.18*
Estimated Mass Removal	***lb/year***	***2.7***	***3.6***	***2.8***	***1.5***	***3.0***	***2.5***	***2.8***	***1.8***	***1.5***	***1.7***	***2.2***	***2.5***	***2.0***	***2.5***	***2.4***	***1.6***	***1.6***	***1.5***	***1.1***	***1.2***	***0.8***	***0.7***

Table 6
Well PW-1(U) Mass Removal Estimate
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

Notes
1) lbs = pounds
2) gal = gallons
3) gpm = gallons per minute
4) VOC = volatile organic compounds
5) ug/l = micrograms per liter
6) NA= not applicable
7) NCC = New Castle County; operated extraction well PW-1(U) until October 15, 2012
8) DS&G = Delaware Sand and Gravel; operators of extraction well PW-1(U) since October 15, 2012
9) Targeted compounds excludes compounds that are not consistently detected
10) Historic PW-1(U) totalizer readings were provided to Golder on June 11, 2012 by Ruth; therefore, approximate flow rates were removed and historic mass removals were re-calculated. Prior calculations were based on a flow rate of 30 gpm
11) On September 9, 2012, a new totalizer was installed on PW-1(U). The last available totalizer reading prior to the change out was 52,350,550 gallons
12) On September 26, 2013, the power to the well PW-1(U) pump and totalizer were interrupted. The totalizer was reset and the equipment was restarted on October 17, 2013.
13) In April 2017, the VOC analyte list was revised to include 1,2,3-Trimethylbenzene, Dichlorofluoromethane and Indane.

Prepared by:	AMH
Checked by:	BPC
Reviewed by:	TAM

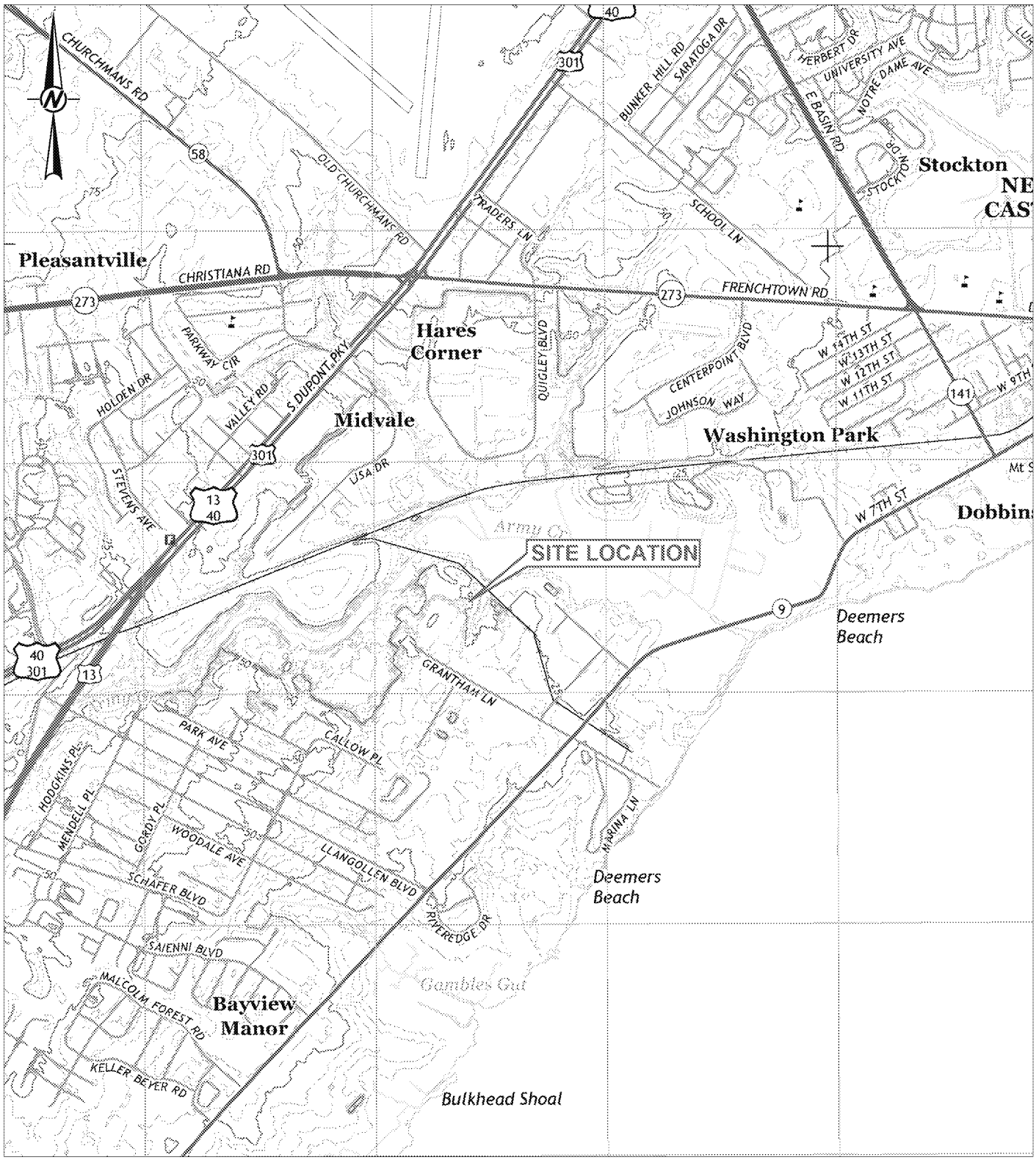
Table 7
Summary of Mass Removal Estimates
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

	PW-1(U) Mass Removal	DDA Combined LFExS Mass Removal	Individual LFExS Well Mass Removal
Period of Calculation	May 2019 - October 2019	May 2019 - October 2019	May 2019 - October 2019
TVOC Mass Removal Estimate	19 lb/year	3.39 lb/year*	9.10 lb/year
BCEE Mass Removal Estimate	0.7 lb/year	0.49 lb/year	0.32 lb/year
1,4-Dioxane Mass Removal Estimate	6.1 lb/year	N/A	3.89 lb/year
Average System Flow Rate	29.4 gpm	11.27 gpm	8.14 gpm
Notes	Mass removal calculated based on the sum of targeted VOCs and BCEE and an average flow rate.	Mass removal calculated based on the sum of targeted VOCs and BCEE from system effluent samples and the system extraction volume which is based on the difference between totalizer readings. System effluent samples are collected after the balancing tank; therefore, some VOC volatilization may occur. Calculated average flow rates are based on totalizer readings over a 6-month period including system down-time.	Mass removal calculated based on the sum of targeted VOCs and BCEE from individual well samples and average instantaneous flow rate for each well over a nearly one month period during almost continuous system operation. This calculation is intended as a comparison of mass removal by individual wells to the estimated total mass removed by the system based on the effluent sample results.

Notes:
1) LFExS = low-flow extraction system
2) lbs = pounds
3) gpm = gallons per minute
4) TVOC = total volatile organic compounds (based on target analyte list that includes 1,4-dioxane)
5) BCEE = bis(2-chloroethyl) ether
6) *does not include 1,4-dioxane in mass removal estimate

Prepared by: BPC 2/20/20
Checked by: KNG 2/20/2020
Reviewed by: TAM 2/25/2020

Figures



REFERENCE(S)

1. BASE MAP TAKEN FROM USGS 7.5 MINUTE QUADRANGLE OF WILMINGTON SOUTH, DELAWARE, DATED 2014.

0 1000 2000
1" = 2000' FEET

CLIENT
DELAWARE SAND & GRAVEL SUPERFUND SITE
NEW CASTLE COUNTY, DELAWARE

PROJECT
SEMI-ANNUAL REPORT

CONSULTANT
GOLDER

YYYY-MM-DD	2018-08-30
DESIGNED	MBS
PREPARED	GLS
REVIEWED	BAR
APPROVED	TAM

TITLE
SITE LOCATION MAP

PROJECT NO	CONTROL	REV.	FIGURE
0136052.14	0001-001	0	1

REFERENCE(S)

1. AERIAL PHOTOGRAPH COURTESY OF © 2018 MICROSOFT CORPORATION, BING

0 400 800
1" = 800' FEET

CLIENT
DELAWARE SAND & GRAVEL SUPERFUND SITE
NEW CASTLE COUNTY, DELAWARE

PROJECT
SEMI-ANNUAL REPORT

CONSULTANT

GOLDER

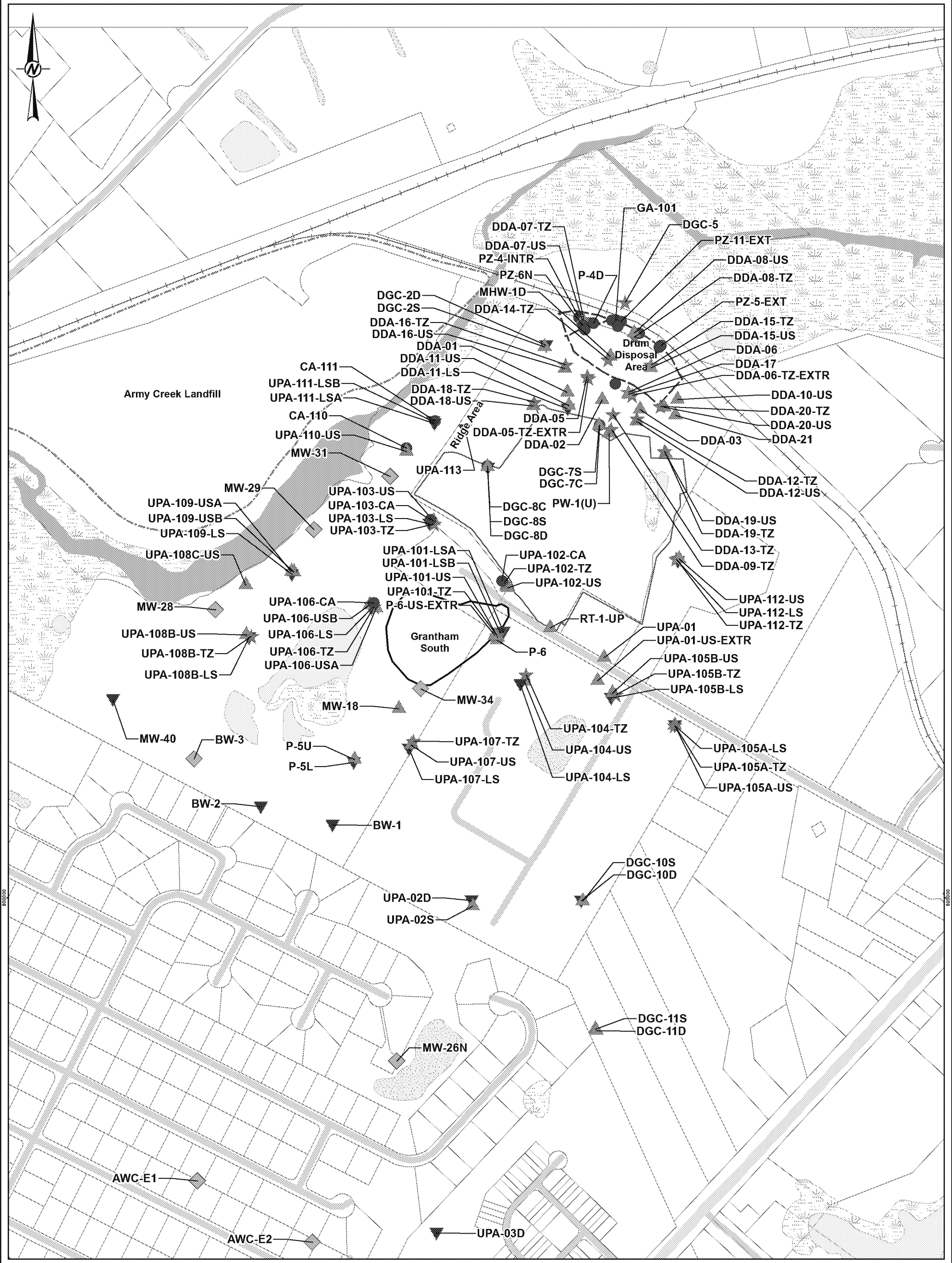
YYYY-MM-DD	2018-08-30
DESIGNED	MBS
PREPARED	GLS
REVIEWED	BAR
APPROVED	TAM

TITLE
GENERAL SITE LAYOUT

PROJECT NO.	CONTROL	REV.	FIGURE
0136052.14	0001-002	0	2

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A

ED_004821A_00011884-00060



LEGEND

- Columbia Monitoring Location
- Transition Zone Monitoring Location
- Upper Sand Monitoring Location
- Upper Sand and Lower Sand Monitoring Location
- Lower Sand Monitoring Location

0 200 400
1 " = 400 feet Feet

NOTE(S)

1. LOCATIONS OF WELLS AND BORINGS ARE BASED ON SURVEY BY TAYLOR WISEMAN & TAYLOR (REVISED 2019)

REFERENCE(S)

1. BASE DATA TAKEN FROM NEW CASTLE COUNTY DELAWARE, DEPARTMENT OF LAND USE, "EPARCEL VIEW MAP" WEB SITE GIS DATA DOWNLOAD. DATA ACQUIRED 07/29/2013.

CLIENT
DELAWARE SAND & GRAVEL SUPERFUND SITE
NEW CASTLE COUNTY, DELAWARE

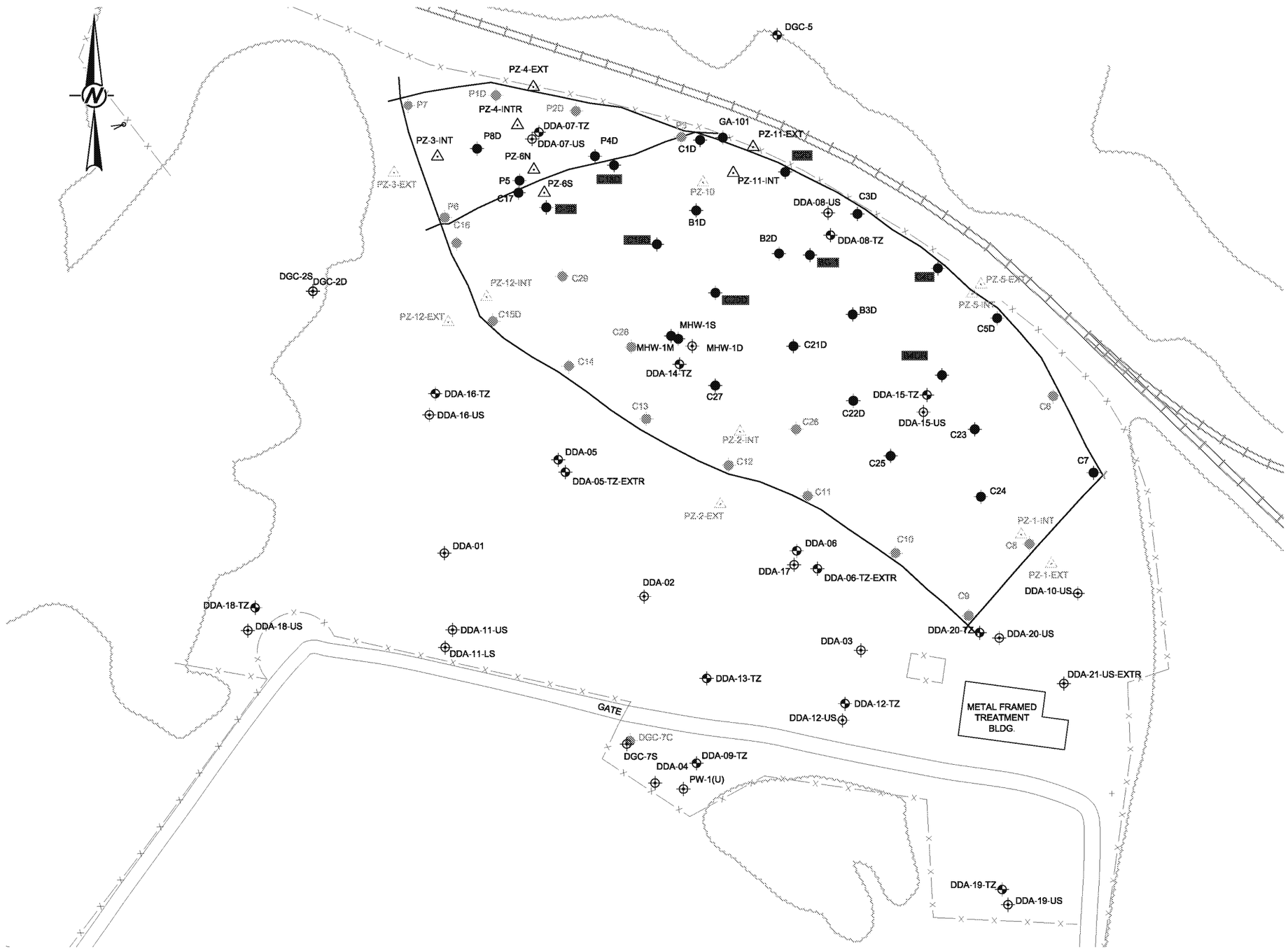
PROJECT
SEMI-ANNUAL REPORT

CONSULTANT
GOLDER

YYYY-MM-DD	2/24/2020
DESIGNED	BPC
PREPARED	SHL
REVIEWED	RWB
APPROVED	TAM

TITLE
DOWNGRADIENT MONITORING LOCATIONS

PROJECT NO	CONTROL	REV.	FIGURE
013605214	-	-	3



LEGEND

- FENCELINE
- CENTERLINE OF SLURRY WALL AROUND DRUM DISPOSAL AREA
- RAILROAD
- DDA LOW-FLOW EXTRACTION SYSTEM (LFExS) WELL
- DGC-2S — MONITORING WELL SCREENED IN UPPER POTOMAC AQUIFER
- DDA-05 — UPPER POTOMAC CONFINING UNIT TRANSITION ZONE MONITORING WELLS
- PZ-10 — DDA PIEZOMETERS
- PZ-5 — DDA PIEZOMETERS (NOT INCLUDED IN MONITORING PROGRAM)
- C1D — COLUMBIA MONITORING WELLS
- C2D — COLUMBIA MONITORING WELLS (NOT INCLUDED IN MONITORING PROGRAM)

NOTE(S)

1.) LOCATIONS OF WELLS AND BORING ARE BASED ON SURVEY BY TAYLOR WISEMAN & TAYLOR (REVISED 2019)
2.) GROUNDWATER ELEVATION CONTOURS (ft-msl) BASED ON JANUARY 2020 GROUNDWATER LEVEL MEASUREMENTS
3.) ft-msl = ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL

REFERENCE(S)

1.) BASE MAP TAKEN FROM DIGITAL U.S.G.S. 7.5 MINUTE QUADRANGLES OF WILMINGTON SOUTH, DELAWARE/NEW JERSEY (DATED 1984), DELAWARE CITY, DELAWARE (DATED 1984), NEWARK EAST, DELAWARE (DATED 1984) AND SAINT GEORGES, DELAWARE (DATED 1984).

CLIENT
DELAWARE SAND & GRAVEL SUPERFUND SITE
NEW CASTLE COUNTY, DELAWARE

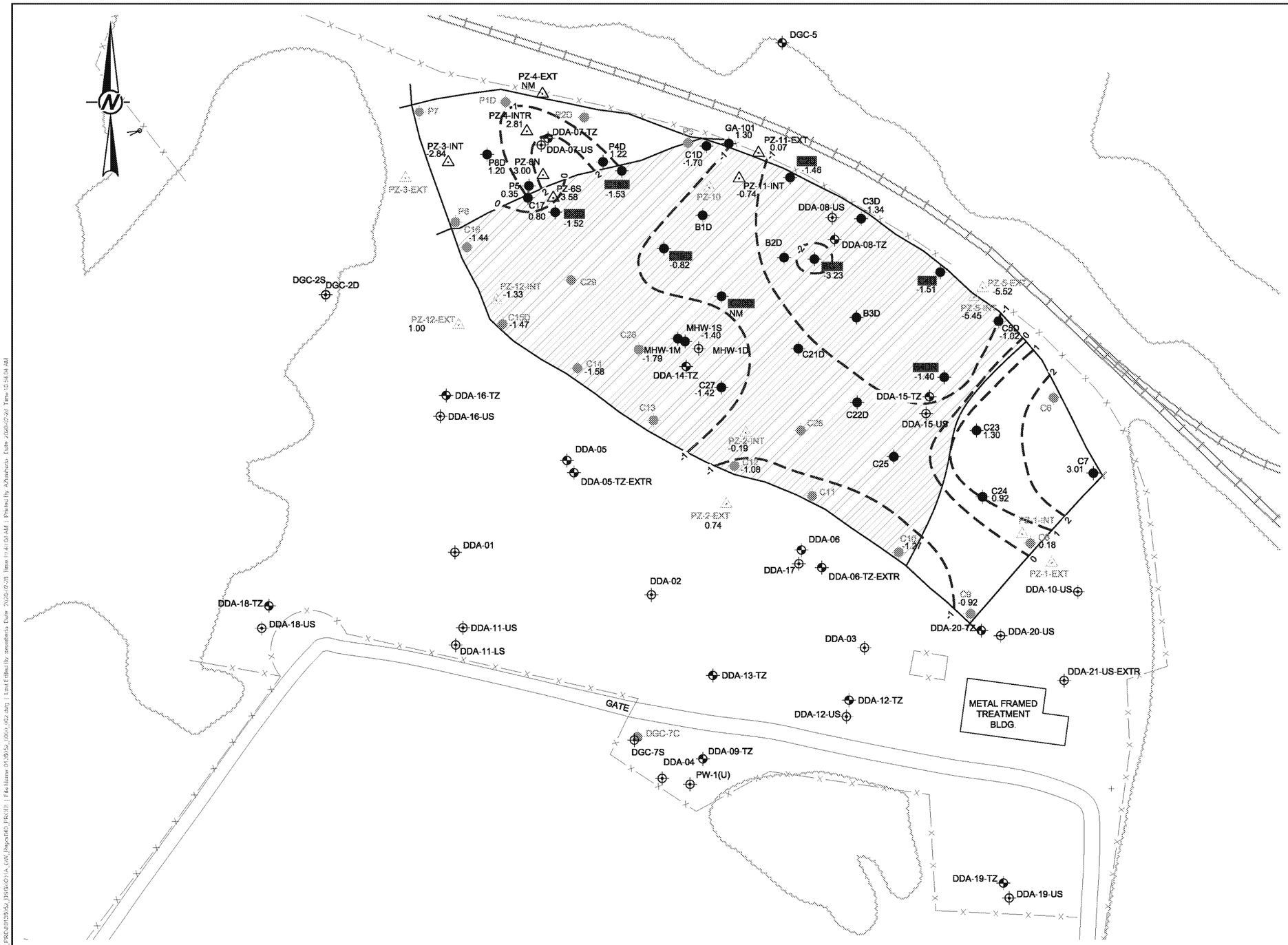
PROJECT
SEMI-ANNUAL REPORT

CONSULTANT
GOLDER

YYYY-MM-DD	2020-02-17
DESIGNED	BPC
PREPARED	AAZ
REVIEWED	TAM
APPROVED	TAM

TITLE
LFExS WELLS AND DDA VICINITY MONITORING LOCATIONS

PROJECT NO.	PHASE	REV.	FIGURE
013605214	0001A	A	4



LEGEND

- FENCELINE
- CENTERLINE OF SLURRY WALL AROUND DRUM DISPOSAL AREA
- RAILROAD
- DDA LOW-FLOW EXTRACTION SYSTEM (LFExS) WELL
- DGC-2S — MONITORING WELL SCREENED IN UPPER POTOMAC AQUIFER
- DDA-05 — UPPER POTOMAC CONFINING UNIT TRANSITION ZONE MONITORING WELLS
- PZ-10 — DDA PIEZOMETERS
- PZ-5 — DDA PIEZOMETERS (NOT INCLUDED IN MONITORING PROGRAM)
- C1D — COLUMBIA MONITORING WELLS
- C2D — COLUMBIA MONITORING WELLS (NOT INCLUDED IN MONITORING PROGRAM)
- INFERRED LFExS GROUNDWATER ELEVATION CONTOUR (ft-msl)
- APPROXIMATE EXTENT OF LFEXS-INDUCED UPWARD VERTICAL GRADIENTS (SEE NOTE 2)
- -1.95 — LFExS GROUNDWATER ELEVATION (ft-msl) * INDICATES ELEVATIONS NOT INCLUDED IN CONTOURS
- NR = NOT RUNNING

NOTE(S)

1.) LOCATIONS OF WELLS AND BORING ARE BASED ON SURVEY BY TAYLOR WISEMAN & TAYLOR (REVISED 2019)
2.) GROUNDWATER ELEVATION CONTOURS (ft-msl) BASED ON NOVEMBER 2019 GROUNDWATER LEVEL MEASUREMENTS
3.) ft-msl = ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL

REFERENCE(S)

1.) BASE MAP TAKEN FROM DIGITAL U.S.G.S. 7.5 MINUTE QUADRANGLES OF WILMINGTON SOUTH, DELAWARE/NEW JERSEY (DATED 1984), DELAWARE CITY, DELAWARE (DATED 1984), NEWARK EAST, DELAWARE (DATED 1984) AND SAINT GEORGES, DELAWARE (DATED 1984).

0 40 80
SCALE FEET

CLIENT
DELAWARE SAND & GRAVEL SUPERFUND STE
NEW CASTLE COUNTY, DELAWARE

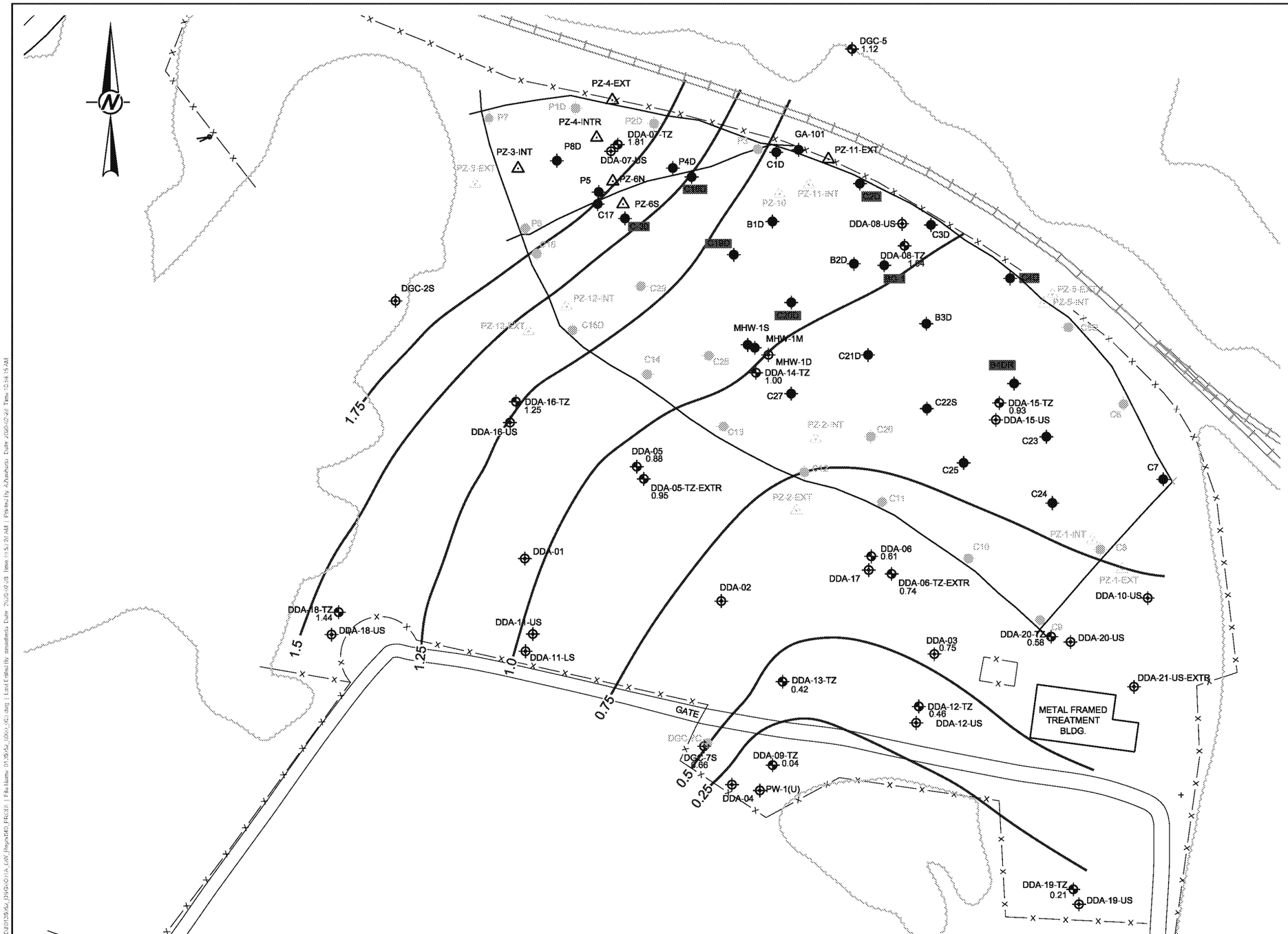
PROJECT
SEMI-ANNUAL REPORT

CONSULTANT
GOLDER

YYYY-MM-DD	2020-02-17
DESIGNED	BPC
PREPARED	AAZ
REVIEWED	TAM
APPROVED	TAM

TITLE
LFExS GROUNDWATER ELEVATION
DDA, COLUMBIA CONTOURS
NOVEMBER 2019

PROJECT NO.	PHASE	REV.	FIGURE
013605214	0001A	A	5



LEGEND

—x—x—x—	FENCELINE
———	CENTERLINE OF SLURRY WALL AROUND DRUM DISPOSAL AREA
·····	RAILROAD
	DDA LOW-FLOW EXTRACTION SYSTEM (LFExS) WELL
DGC-2S	MONITORING WELL SCREENED IN UPPER POTOMAC AQUIFER
DDA-05	UPPER POTOMAC CONFINING UNIT TRANSITION ZONE MONITORING WELLS
PZ-10	DDA PIEZOMETERS
PZ-5	DDA PIEZOMETERS (NOT INCLUDED IN MONITORING PROGRAM)
C1D	COLUMBIA MONITORING WELLS
C10	COLUMBIA MONITORING WELLS (NOT INCLUDED IN MONITORING PROGRAM)
———	GROUNDWATER ELEVATION CONTOURS (ft-msl) (DASHED WHERE INFERRED)
-1.95	GROUNDWATER ELEVATION (ft-msl)

NOTE(S)

1.) LOCATIONS OF WELLS AND BORING ARE BASED ON SURVEY BY TAYLOR WISEMAN & TAYLOR (REVISED 2019)
2.) GROUNDWATER ELEVATION CONTOURS (ft-msl) BASED ON JANUARY 2020 GROUNDWATER LEVEL MEASUREMENTS
3.) ft-msl = ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL

REFERENCE(S)

1.) BASE MAP TAKEN FROM DIGITAL U.S.G.S. 7.5 MINUTE QUADRANGLES OF WILMINGTON SOUTH, DELAWARE/NEW JERSEY (DATED 1984), DELAWARE CITY, DELAWARE (DATED 1984), NEWARK EAST, DELAWARE (DATED 1984) AND SAINT GEORGES, DELAWARE (DATED 1984).

CLIENT
DELAWARE SAND & GRAVEL SUPERFUND SITE
NEW CASTLE COUNTY, DELAWARE

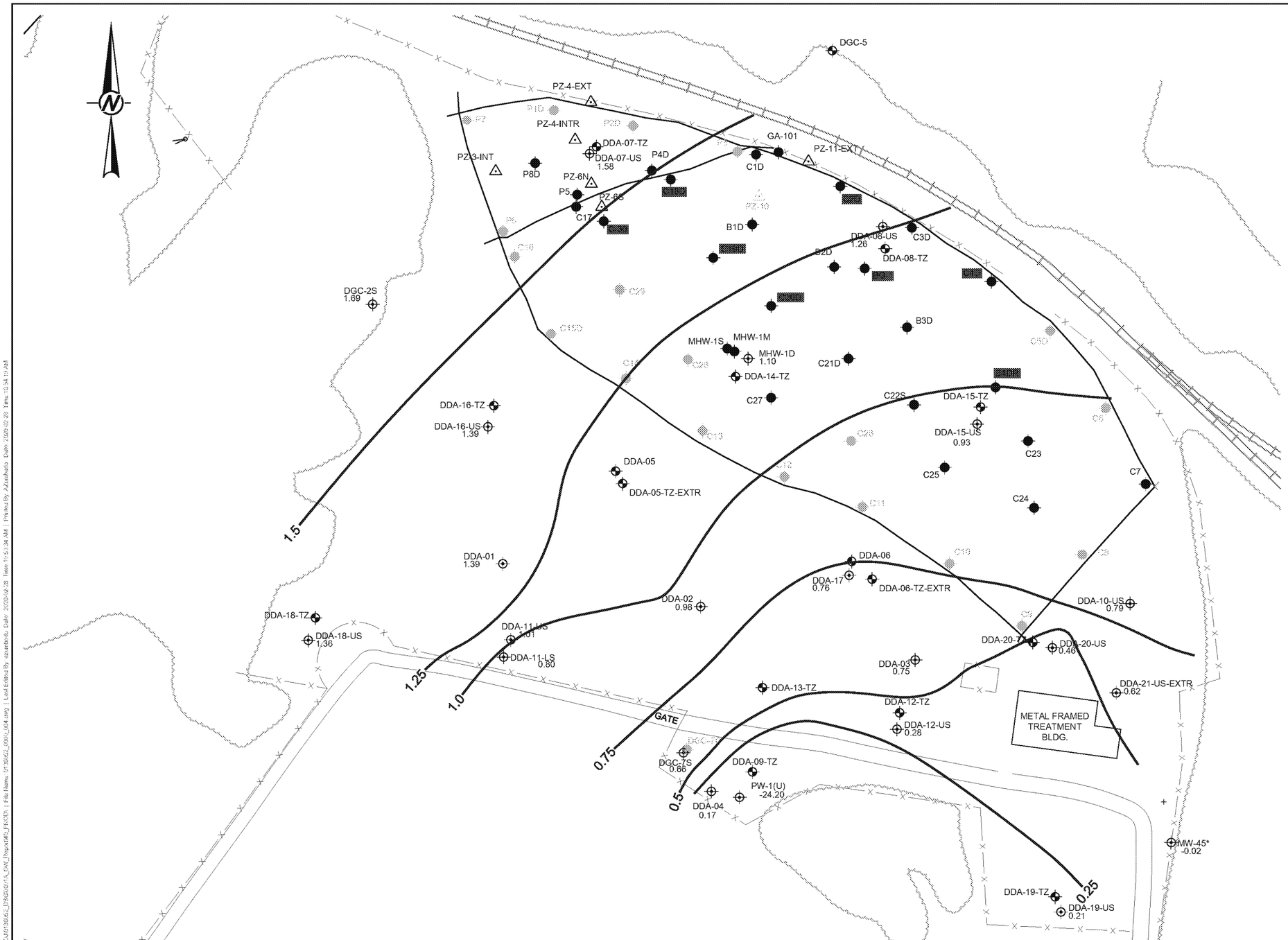
PROJECT
SEMI-ANNUAL REPORT

CONSULTANT
GOLDER

YYYY-MM-DD	2020-02-17
DESIGNED	BPC
PREPARED	AAZ
REVIEWED	TAM
APPROVED	TAM

TITLE
DDA TO WELL PW-1(U)
UPCU TRANSITION ZONE GROUNDWATER ELEVATION CONTOUR
JANUARY 2020

PROJECT NO.	PHASE	REV.	FIGURE
013605214	0001A	A	6



LEGEND

- FENCELINE
- CENTERLINE OF SLURRY WALL AROUND DRUM DISPOSAL AREA
- RAILROAD
- DDA LOW-FLOW EXTRACTION SYSTEM (LFExS) WELL
- DGC-2S — MONITORING WELL SCREENED IN UPPER POTOMAC AQUIFER
- DDA-05 — UPPER POTOMAC CONFINING UNIT TRANSITION ZONE MONITORING WELLS
- PZ-10 — DDA PIEZOMETERS
- PZ-5 — DDA PIEZOMETERS (NOT INCLUDED IN MONITORING PROGRAM)
- C1D — COLUMBIA MONITORING WELLS
- C1D — COLUMBIA MONITORING WELLS (NOT INCLUDED IN MONITORING PROGRAM)
- GROUNDWATER ELEVATION CONTOURS (ft-msl) (DASHED WHERE INFERRED)
- -1.95 — GROUNDWATER ELEVATION (ft-msl)
- * — INDICATES NOT USED IN CONTAINING

NOTE(S)

1.) LOCATIONS OF WELLS AND BORING ARE BASED ON SURVEY BY TAYLOR WISEMAN & TAYLOR (REVISED 2019)
2.) GROUNDWATER ELEVATION CONTOURS (ft-msl) BASED ON JANUARY 2020 GROUNDWATER LEVEL MEASUREMENTS
3.) ft-msl = ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL

REFERENCE(S)

1.) BASE MAP TAKEN FROM DIGITAL U.S.G.S. 7.5 MINUTE QUADRANGLES OF WILMINGTON SOUTH, DELAWARE/NEW JERSEY (DATED 1984), DELAWARE CITY, DELAWARE (DATED 1984), NEWARK EAST, DELAWARE (DATED 1984) AND SAINT GEORGES, DELAWARE (DATED 1984).

CLIENT
DELAWARE SAND & GRAVEL SUPERFUND SITE
NEW CASTLE COUNTY, DELAWARE

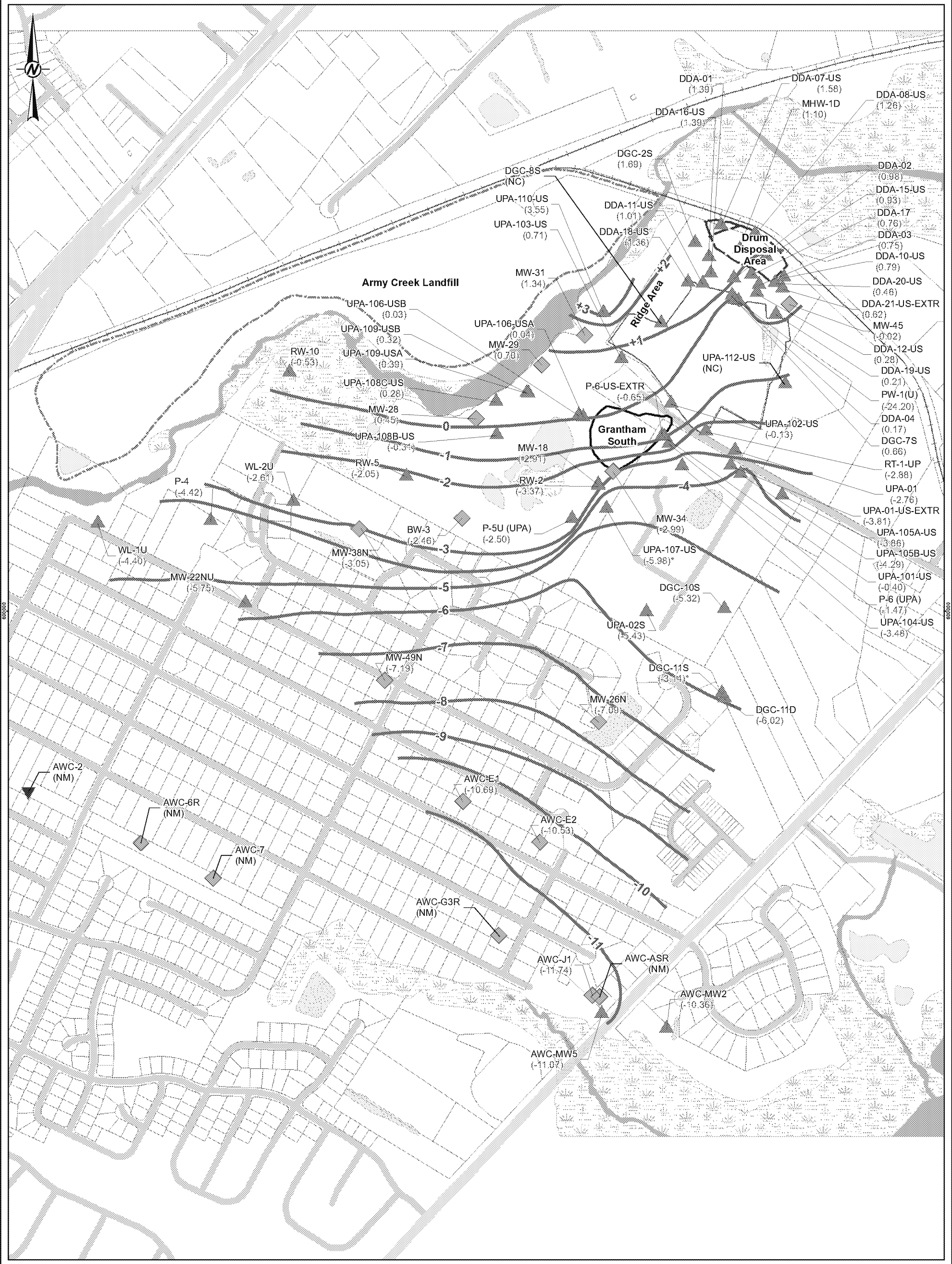
PROJECT
SEMI-ANNUAL REPORT

CONSULTANT
GOLDER

YYYY-MM-DD	2020-02-17
DESIGNED	BPC
PREPARED	AAZ
REVIEWED	TAM
APPROVED	TAM

TITLE
DDA TO WELL PW-1(U)
UPA GROUNDWATER ELEVATION CONTOURS
JANUARY 2020

PROJECT NO.	PHASE	REV.	FIGURE
013605214	0001A	A	7



LEGEND

- Columbia Monitoring Location
- Transition Zone Monitoring Location
- Upper Sand Monitoring Location
- Upper Sand and Lower Sand Monitoring Location
- Lower Sand Monitoring Location
- UPA Upper Sand Groundwater Contours - January 2020
- -5.22 Groundwater Elevation (ft-msl)

0 300 600
1 " = 600 feet Feet

NOTE(S)
1. LOCATIONS OF WELLS AND BORINGS ARE BASED ON SURVEY BY TAYLOR WISEMAN & TAYLOR (REVISED 2019)
2. NA = MEASURED, BUT IS NOT APPLICABLE TO THE GEOLOGIC UNIT DEPICTED
3. * - INDICATES DATAPOINT NOT USED IN CONTOURING
4. BASED ON JANUARY 2020 GROUNDWATER LEVEL MEASUREMENTS
5. FT-MSL = ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL
6. NM = NOT MEASURED
7. NC = NOT CALCULATED

REFERENCE(S)
1. BASE DATA TAKEN FROM NEW CASTLE COUNTY DELAWARE, DEPARTMENT OF LAND USE, "EPARCEL VIEW MAP" WEB SITE GIS DATA DOWNLOAD. DATA ACQUIRED 07/29/2013.

CLIENT
DELAWARE SAND & GRAVEL SUPERFUND SITE
NEW CASTLE COUNTY, DELAWARE

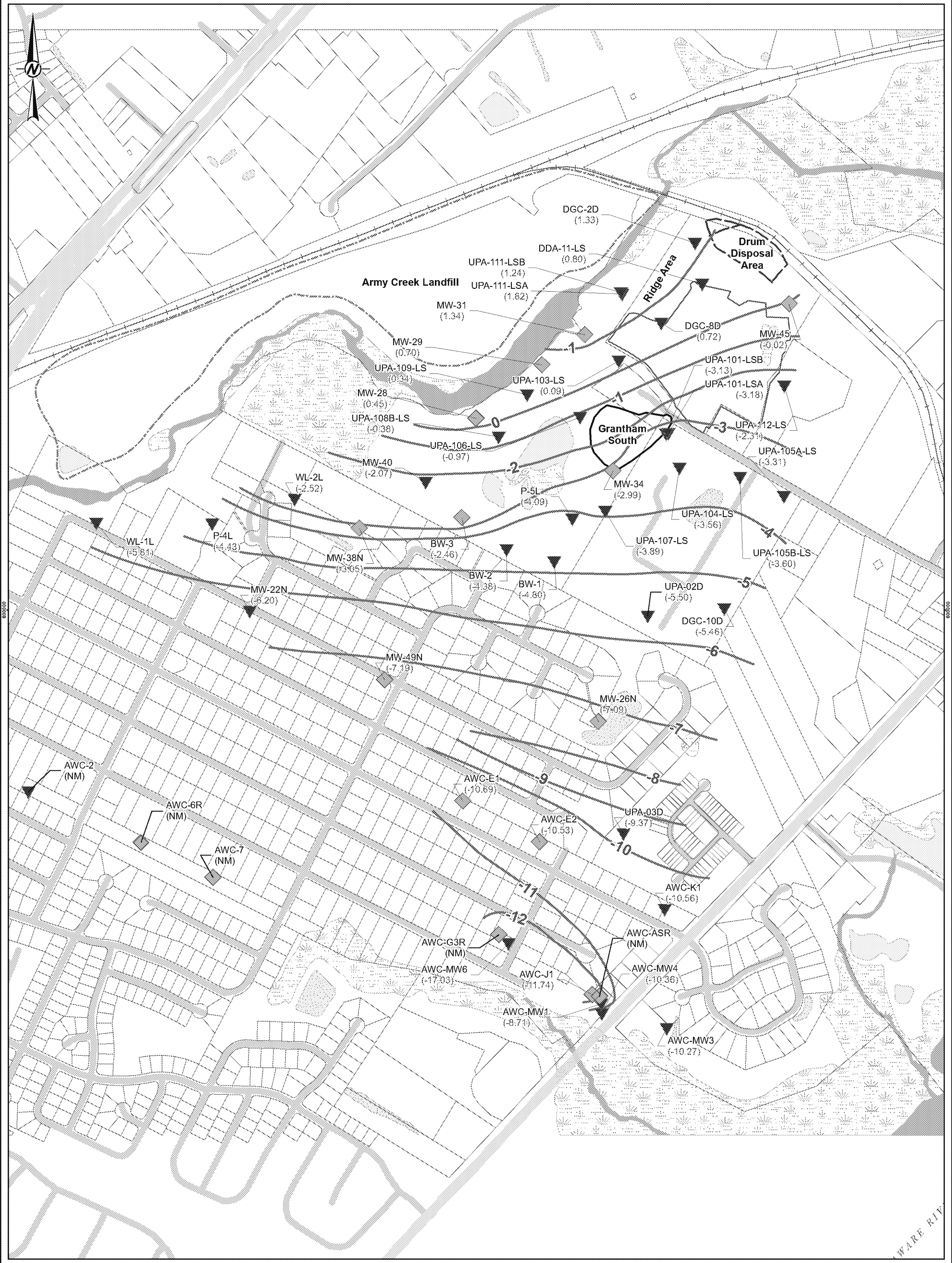
PROJECT
SEMI-ANNUAL REPORT

CONSULTANT
GOLDER

YYYY-MM-DD	2/24/2020
DESIGNED	BPC
PREPARED	SHL
REVIEWED	TAM
APPROVED	TAM

TITLE
UPA UPPER SAND GROUNDWATER ELEVATION CONTOURS JANUARY 2020

PROJECT NO.	CONTROL	REV.	FIGURE
013605214	-	-	8



LEGEND

- Columbia Monitoring Location
- Transition Zone Monitoring Location
- Upper Sand Monitoring Location
- Upper Sand and Lower Sand Monitoring Location
- Lower Sand Monitoring Location
- UPA Lower Sand Groundwater Contours - January 2020
- -5.22 Groundwater Elevation (ft-msl)

NOTE(S)

1. LOCATIONS OF WELLS AND BORINGS ARE BASED ON SURVEY BY TAYLOR WISEMAN & TAYLOR (REVISED 2019)
2. NA = MEASURED, BUT IS NOT APPLICABLE TO THE GEOLOGIC UNIT DEPICTED
3. * - INDICATES DATA POINT NOT USED IN CONTOURING
4. BASED ON JANUARY 2020 GROUNDWATER LEVEL MEASUREMENTS
5. FT-MSL = ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL
6. NM = NOT MEASURED

REFERENCE(S)

1. BASE DATA TAKEN FROM NEW CASTLE COUNTY DELAWARE, DEPARTMENT OF LAND USE, "EPARCEL VIEW MAP" WEB SITE GIS DATA DOWNLOAD. DATA ACQUIRED 07/29/2013.

CLIENT
DELAWARE SAND & GRAVEL SUPERFUND SITE
NEW CASTLE COUNTY, DELAWARE

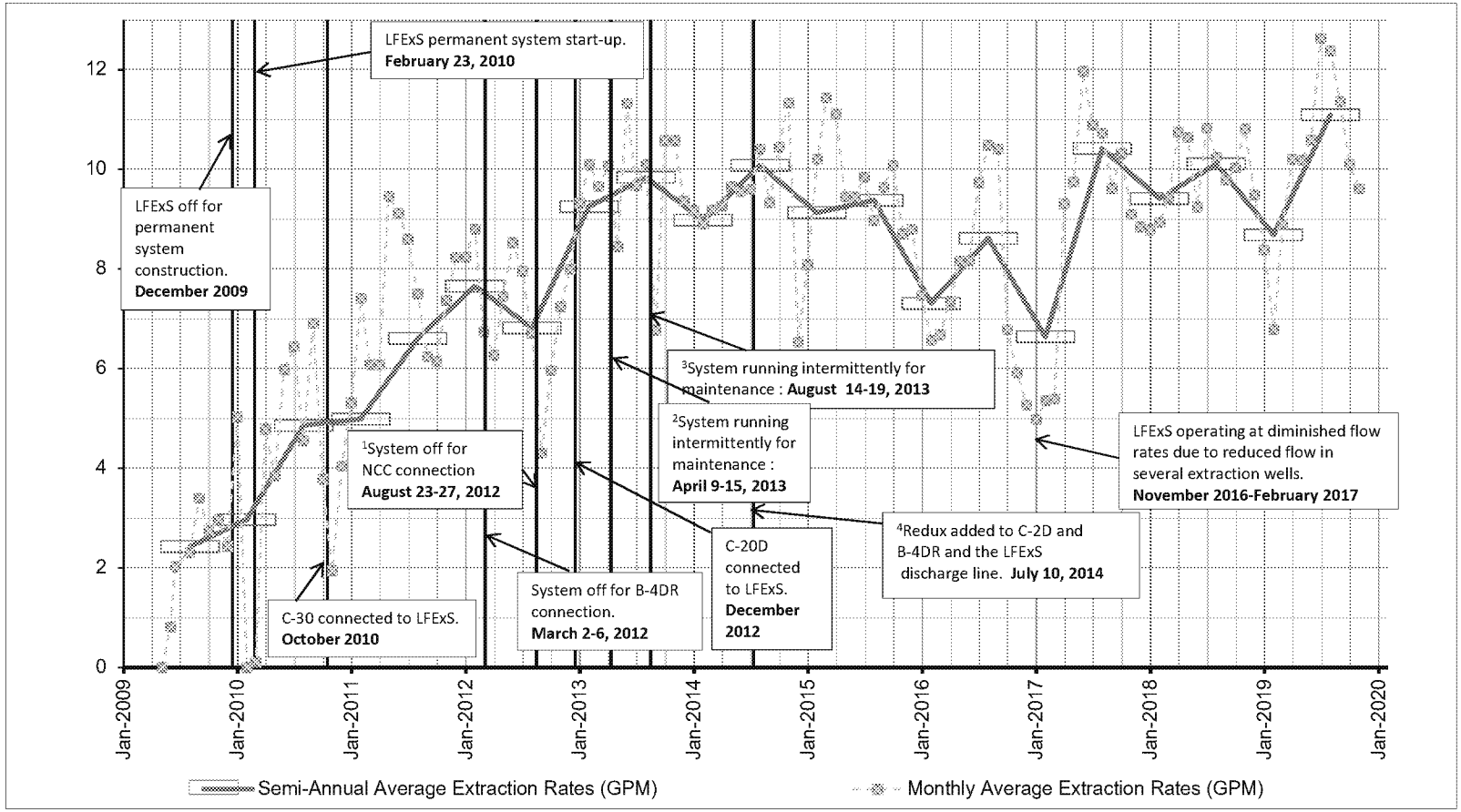
PROJECT
SEMI-ANNUAL REPORT

CONSULTANT
GOLDER

YYYY-MM-DD	2/24/2020
DESIGNED	BPC
PREPARED	SHL
REVIEWED	TAM
APPROVED	TAM

TITLE
UPA LOWER SAND GROUNDWATER ELEVATION CONTOURS JANUARY 2020

PROJECT NO.	CONTROL	REV.	FIGURE
013605214	-	-	9



Notes:

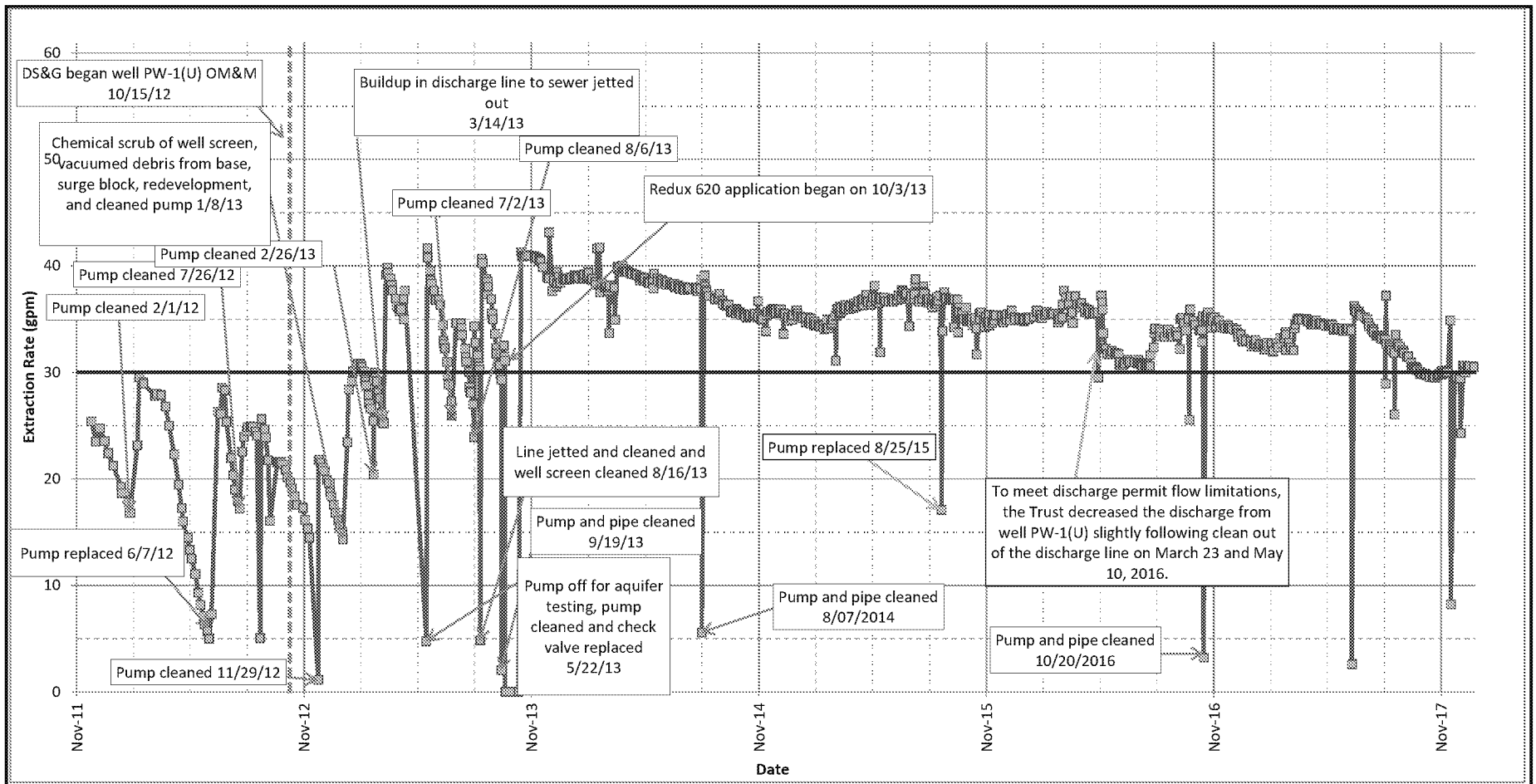
1) System off for NCC sewer force main connection (August 23-27, 2012).
2) System off for quarterly maintenance (April 9-11, 2013) and running at reduced flow rate until prior to discharge pump repair on April 15, 2013.
3) System off for maintenance (August 14-15, 2013) and tank cleaning (August 19, 2013).
4) Addition of Redux to pumping wells C-2D and B-4DR and the LFExS discharge line via the balancing tank (July 10, 2014).

LFExS Monthly and Semi-Annual Extraction Rates

GOLDER

Project Number:	013-6052	
Prepared by:	BPC	2/21/2020
Checked by:	ERW	2/21/2020
Reviewed by:	TAM	2/25/2020

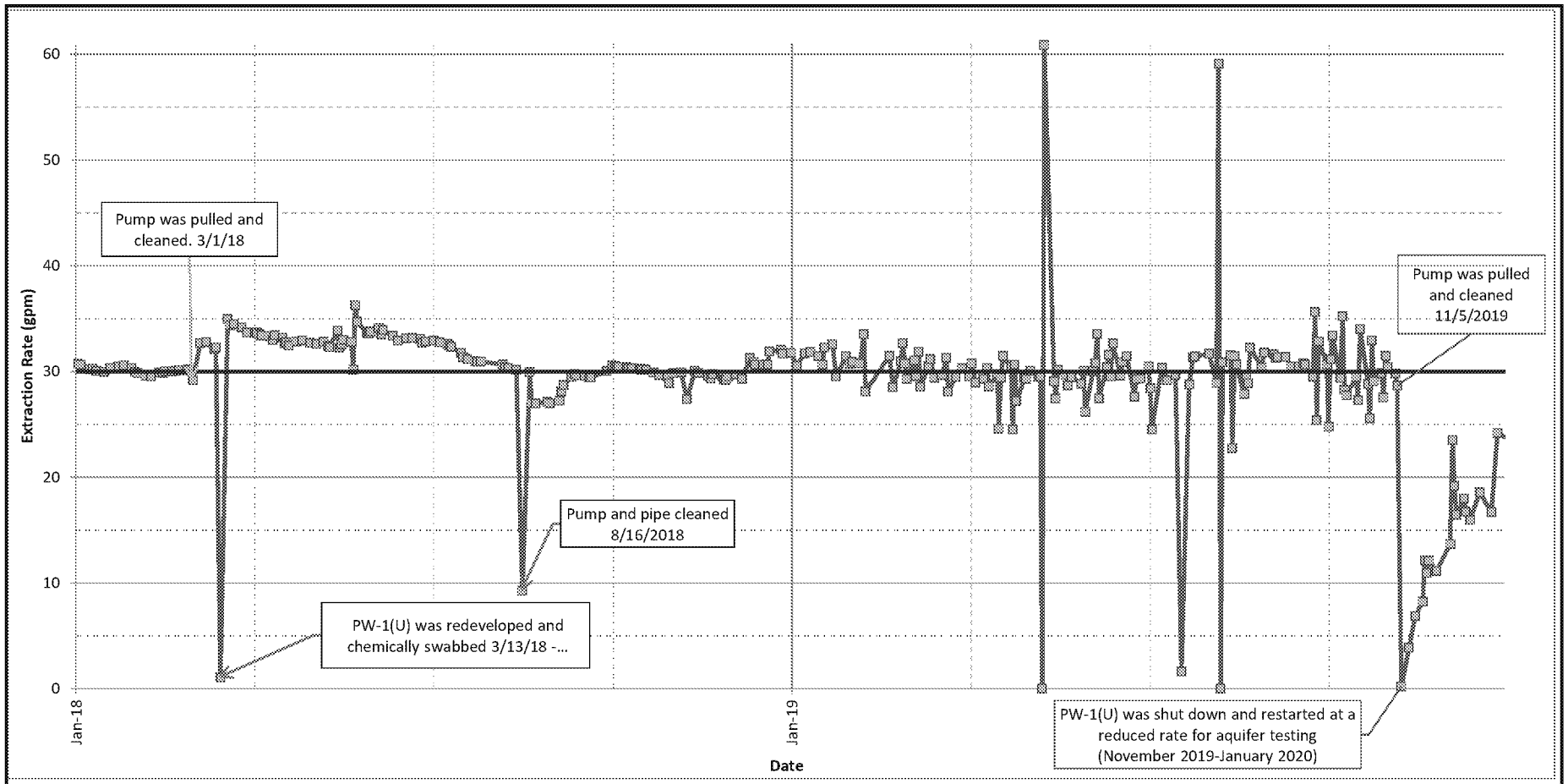
FIGURE 10



Well PW-1(U) Operation and Maintenance Summary - 2011 Through 2017

GOLDER

Project Number:	013-6052		FIGURE 11A
Prepared by:	BPC	2/21/2020	
Checked by:	ERW	2/21/2020	Notes:
Reviewed by:	TAM	2/28/2020	

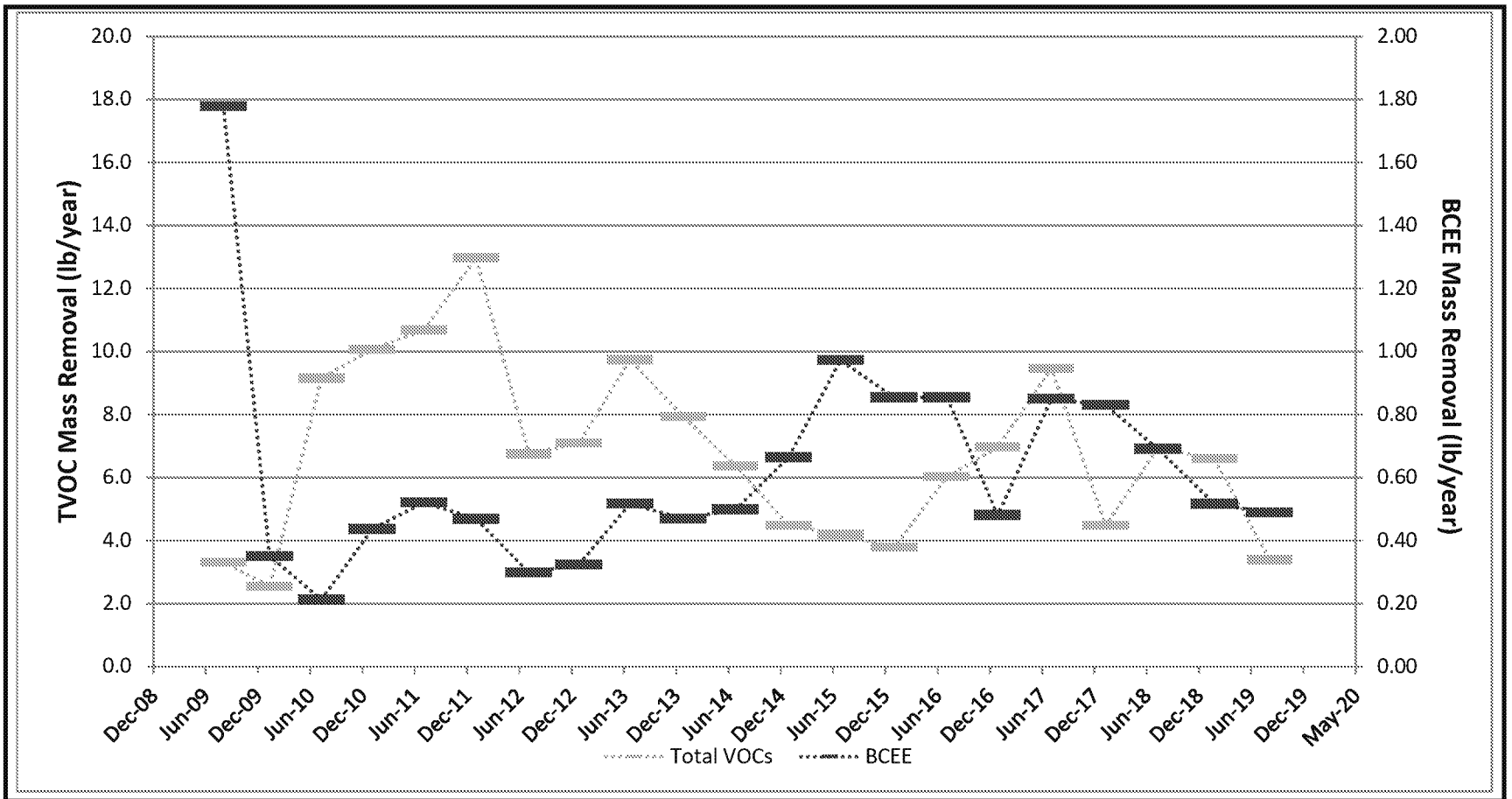


Well PW-1(U) Operation and Maintenance Summary - 2018 to Present

GOLDER

Project Number:	013-6052		FIGURE 11B
Prepared by:	BPC	2/21/2020	
Checked by:	ERW	2/21/2020	Notes:
Reviewed by:	TAM	2/28/2020	

DDA Combined LFExS Mass Removal Estimate
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

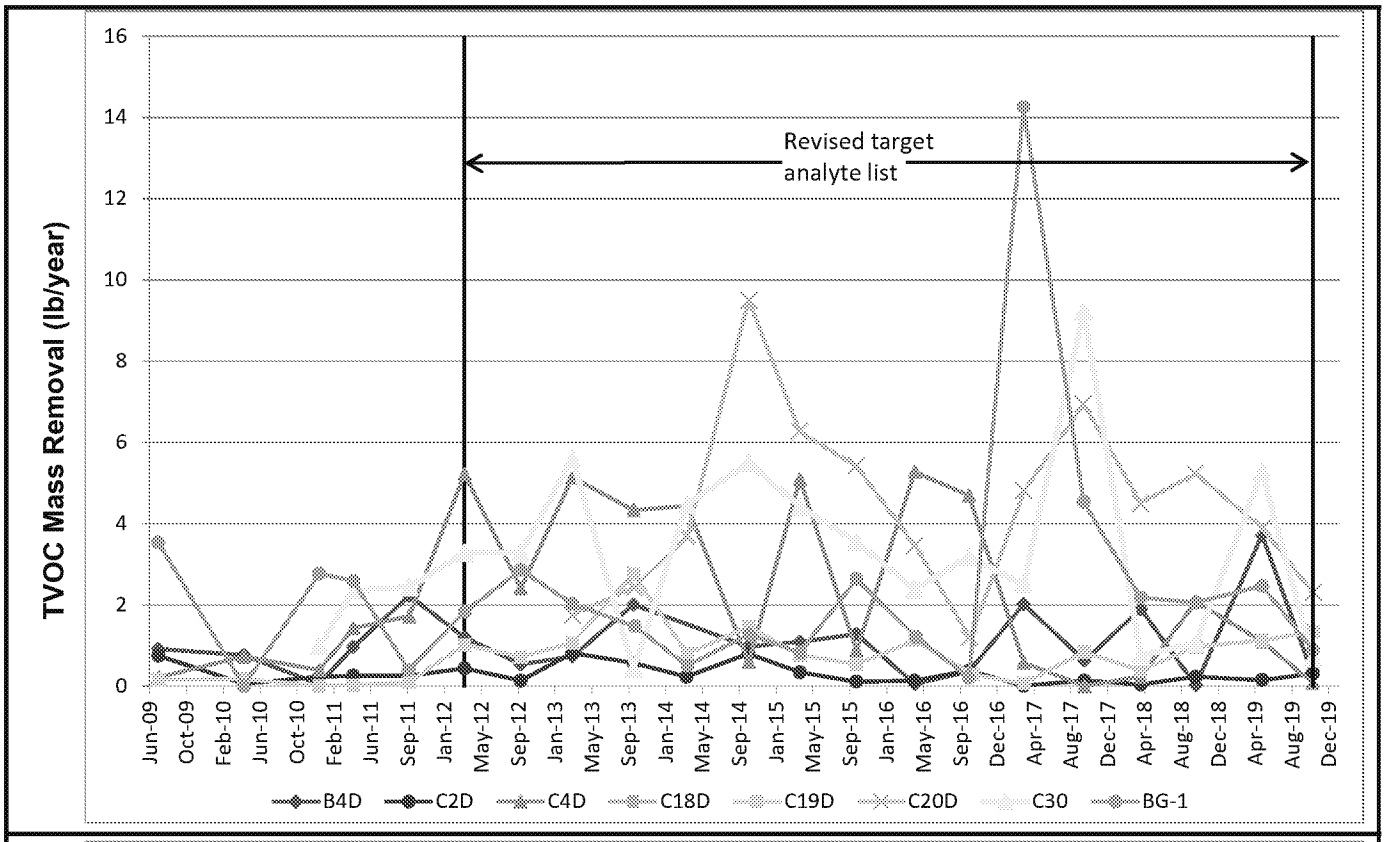


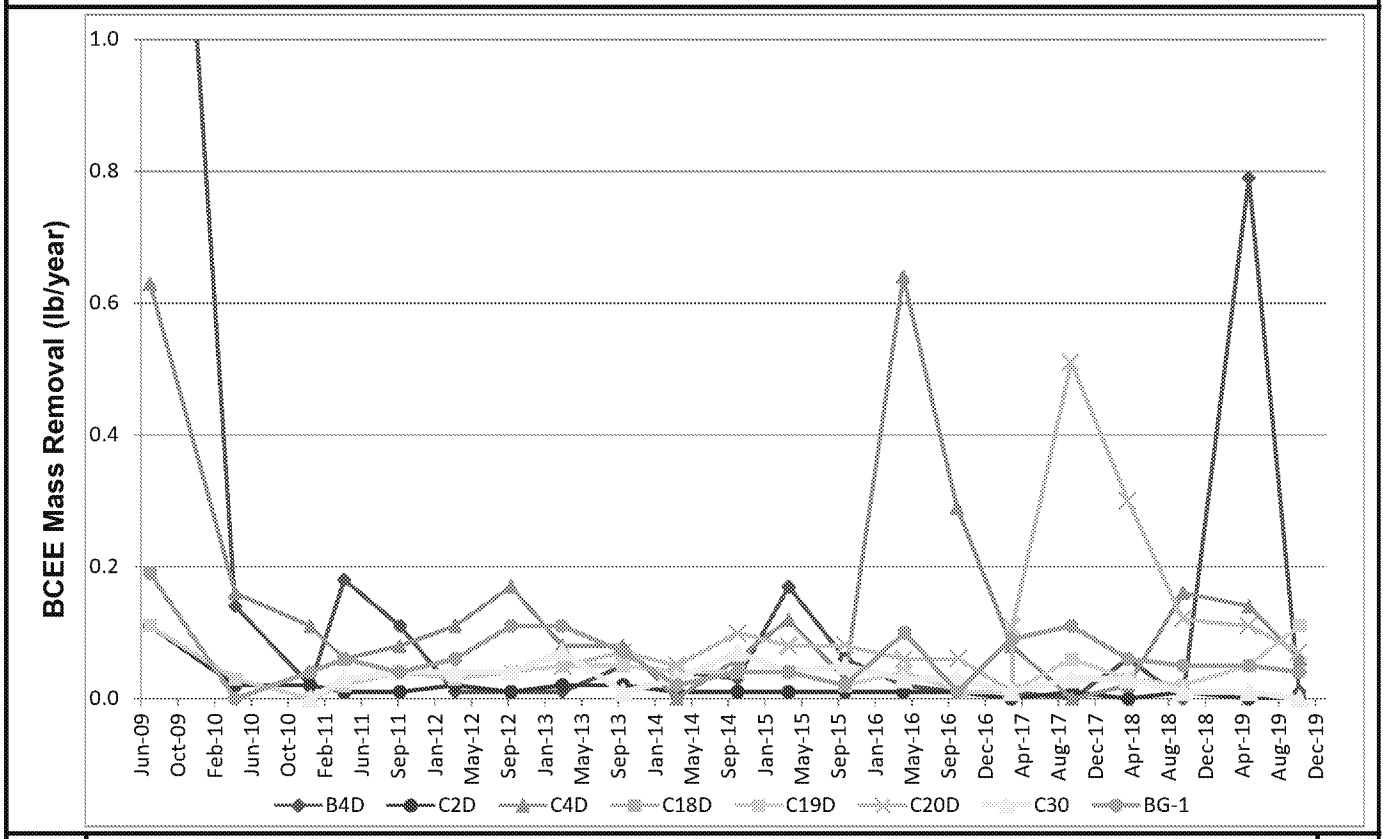
DDA Combined LFExS Mass Removal Rates

GOLDER

Project Number:	013-6052		**FIGURE 12**
Prepared by:	AMH	2/10/2020	
Checked by:	BPC	2/17/2020	Notes: Mass removal rate represents discharge to sewer and is calculated from an average of two consecutive sampling events.
Reviewed by:	TAM	2/25/2020	

Note: TVOC mass removal does not include 1,4, dioxane in calculation since it is not analyzed for in the TTO sample.

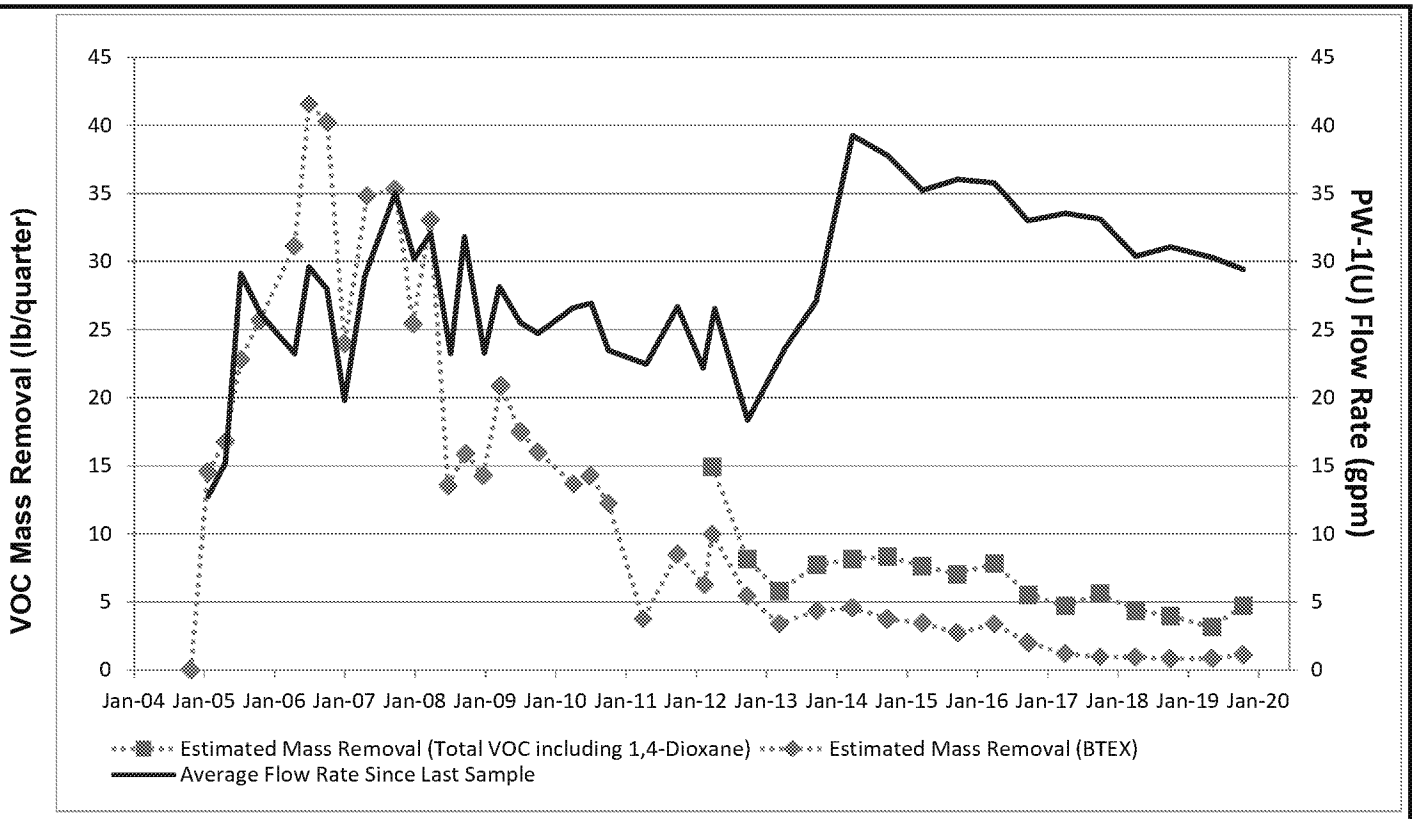


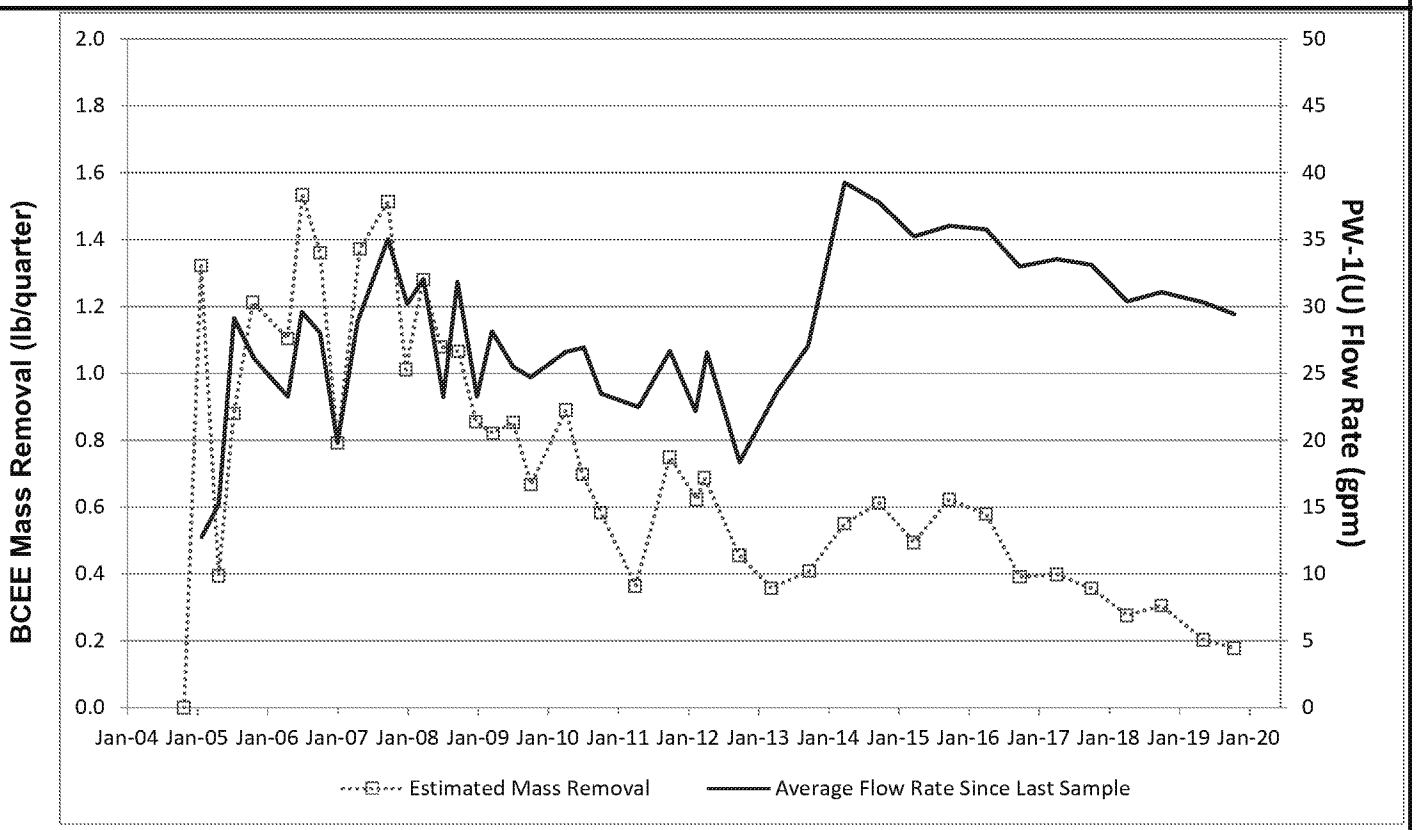


Individual LFExS Well Mass Removal Rates

GOLDER

Project Number:	013-6052		FIGURE 13
Prepared by:	KNG	2/19/2020	
Checked by:	AH	2/19/2020	Notes:
Reviewed by:	TAM	2/25/2020	





Well PW-1(U) Mass Removal Rates

GOLDER

Project Number:	013-6052		FIGURE 14
Prepared by:	AMH	2/12/2020	
Checked by:	BPC	2/18/2020	Notes:
Reviewed by:	TAM	2/25/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Reports\Semi-Annual Reports\2019\2019Q3Q4\Draft\Tables\
Table 6 PW-1-U and Figure 14_Mass Removal with DIOXANE.xlsx
2/26/2020

APPENDIX A

Data Quality Assessments - October/ November 2019 (includes Form 1s)

Data Quality Assessment
October 2019 Semi-Annual Groundwater Monitoring Event
Delaware Sand and Gravel Superfund Site
New Castle, DE

This report presents the findings of the data quality assessment performed on the analyses of environmental samples collected for the *Semi-Annual Monitoring Report, October 2019.* The groundwater monitoring was conducted at the Delaware Sand and Gravel (DS&G) Superfund Site (Site), located in New Castle, Delaware. Samples for this Monitoring Event were collected between September 30, 2019 and November 1, 2019. The chemical data for samples collected at the Site were evaluated to identify data quality issues which could affect the use of the data for decision making purposes. A total of 97 primary samples and the following Quality Assurance/Quality Control (QA/QC) samples were collected:

- Twenty-four (24) trip blanks;
- Three (3) equipment rinsate blanks;
- Four (4) matrix spike / matrix spike duplicate (MS/MSD) pairs; and
- Four (4) field duplicate samples.

Samples were analyzed for Target Compound List (TCL) Volatile Organic Compounds (VOCs), TCL Semivolatile Organic Compounds (SVOCs), Target Analyte List (TAL) total metals (including mercury), total metals (cobalt, iron, and manganese), dissolved metals (cobalt, iron, manganese), ammonia, cations (calcium, magnesium, sodium, potassium), anions (nitrate, nitrite, sulfate, chloride), sulfide, and carbonate/bicarbonate alkalinity. Not all samples were analyzed for all listed parameters. Refer to Table 1 for the specific analyses for each sample. Test America of Edison, New Jersey performed all chemical analyses utilizing the following methodology:

- TCL VOCs by United States Environmental Protection Agency (USEPA) SW846[1] Method 8260C/8260C Selected Ion Monitoring (SIM) Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) (December 1996);
- TCL SVOCs by USEPA SW846 Method 8270D/8270D SIM Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) (January 1998);
- TAL Total Metals by USEPA Method 200.8 Determination of Trace Elements in Waters and Wastes by Inductively Coupled Plasma-Mass Spectrometry (1994);
- Total Mercury by USEPA Method 245.1 Determination of Mercury in Water by Cold Vapor Atomic Absorption Spectrometry (1994);
- Total and Dissolved Iron, Manganese, Cobalt by USEPA SW846 Method 6010D Inductively Coupled Plasma-Atomic Emission Spectrometry (November 2000);
- Ammonia by Standard Method SM4500 NH3 H Ammonia by Selective Electrode (2011);

[1] USEPA, 1996, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846): 3rd edition, Environmental Protection Agency, National Center for Environmental Publications, Cincinnati, Ohio, accessed at URL https://www.epa.gov/hw-sw846/sw-846-compendium.

- Total Calcium, Magnesium, Sodium, Potassium by USEPA Method 200.8 Determination of Trace Elements in Waters and Wastes by Inductively Coupled Plasma-Mass Spectrometry (1994);
- Nitrate, Nitrite, Sulfate, Chloride by USEPA Method 300.0 Determination of Inorganic Anions by Ion Chromatography (1993);
- Sulfide by Standard Method 4500-S2-F Standard Methods for the Examination of Water and Wastewater: Iodometric Method (2005);
- Carbonate and Bicarbonate Alkalinity by Standard Method 2320B Standard Methods for the Examination of Water and Wastewater: Titration Method (2005).

Information regarding the sample point identifications, analytical methods, Quality Control (QC) samples, sampling dates, and contract laboratory sample delivery group (SDG) designations are summarized in Table 1.

All groundwater results were validated following guidelines provided by USEPA Contract Laboratory Program (CLP) National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (January 2017) and NFG for Inorganic Superfund Data Review (January 2017), as applicable to the above listed analytical methods. In general, chemical results for the samples collected at the Site were qualified on the basis of outlying precision or accuracy parameters, or on the basis of professional judgment. The following definitions provide a brief explanation of the qualifiers which may have been assigned to data during the data evaluation process.

J	The analyte is present; however, the reported value may not be accurate or precise.
J-	The analyte is present; however, the reported value may not be accurate or precise. The result is biased low.
J+	The analyte is present; however, the reported value may not be accurate or precise. The result is biased high.
R	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
U	The analyte was analyzed for but was not detected above the sample reporting limit.
UJ	The analyte was not detected above the sample reporting limit. However, the reporting limit is approximate.

The data generated during this Monitoring Event met the QC criteria established in the respective analytical methods and CLP guidelines, except as noted below. Qualifications may not have been required for all samples. Table 2 summarizes detailed qualifications applied to the data. A summary of the analytical detections is presented in Appendix A of the *Semi-Annual Monitoring Report, October 2019*.

- The nitrate and nitrite results for sample DGC-5 (40) were rejected (R) as the analysis was performed more than 2x outside the method holding time.
- Certain non-detect SVOC results were rejected (R) when an MS/MSD recovered grossly below QC criteria.
- Certain detected acetone results were qualified as non-detect (U) and reported at the sample result due to trip blank contamination.

- The ammonia result for sample AWC-K1 was qualified as non-detect (U) at the sample reporting limit due to method blank contamination.
- Certain detected ammonia results were qualified as estimated, biased high (J+) due to method blank contamination.
- Certain detected 1,4-dioxane results were qualified as estimated, biased low (J-) as associated surrogate recoveries were below QC criteria.
- The phenol result for sample UPA-102-TZ, detected between the method detection limit (MDL) and reporting limit (RL), was qualified as estimated without bias (J) when associated LCS/LCSD recovery was above QC criteria.
- Certain non-detect VOC and SVOC results were qualified as estimated (UJ) when associated LCS/LCSD recoveries were below QC criteria.
- Certain detected SVOC results were qualified as estimated, biased high (J+) when associated LCS/LCSD recoveries were above QC criteria.
- Certain detected VOC, chloride, and sulfate results were qualified as estimated, biased low (J-) when associated MS/MSD recoveries were below or grossly below QC criteria.
- The sulfate result for sample UPA-104-US was qualified as estimated, biased high (J+) when associated MS/MSD recoveries were above QC criteria.
- Certain non-detect VOC, SVOC, and nitrite results were qualified as estimated (UJ) when associated MS/MSD recoveries were below QC criteria.

Based on the data evaluations and data quality assessment, the analytical data for samples collected at the Site were determined to be acceptable (including estimated data) for their intended use. Generally acceptable levels of accuracy and precision, based on LCS, MS/MSD, field duplicate and surrogate recoveries, were achieved for the data. In addition, the data completeness (i.e. the ratio of the amount of valid data obtained to the amount expected, including estimated data, was 99.9%.

Table 1
Sample Point Identifications
October 2019 Semi-Annual Groundwater Monitoring Event
Delaware Sand Gravel Superfund Site
New Castle, Delaware

						Parameters / Methods									
SDG	Field Identification	Matrix	Lab Identification	QC Samples	Collection Date	TCL VOCs via 8260C & 8260C SIM	TCL SVOCs via 8270D & 8270D SIM	TAL Total Metals + Hg via 200.8 / 245.1	Total Metals (Co, Fe, Mn) via 6010D	Dissolved Metals (Co, Fe, Mn) via 6010D	Ammonia via SM4500	Cations (Ca, Mg, Na, K) via 200.8	Anions (Nitrate, Nitrite, Sulfate, Chloride) via 300.0	Sulfide via SM4500	Carbonate and Bicarbonate Alkalinity via 2320B
460-192645-1	UPA-105B-US	WG	460-192645-1; 460-192645-2	--	9/30/2019	X	X	--	--	X	X	X	X	X	X
460-192645-1	TBGW_093019	WQ	460-192645-3	TB	9/30/2019	X	--	--	--	--	--	--	--	--	--
460-192645-1	UPA-105B-TZ	WG	460-192721-1	--	10/1/2019	--	--	--	--	--	X	X	X	X	X
460-192645-1	UPA-105A-TZ	WG	460-192721-2	--	10/1/2019	--	--	--	--	--	X	X	X	X	X
460-192645-1	UPA-105B-LS	WG	460-192721-3	--	10/1/2019	--	--	--	--	--	X	X	X	X	X
460-192645-1	UPA-104-LS	WG	460-192721-4	--	10/1/2019	--	--	--	--	--	X	X	X	X	X
460-192645-1	TBGW_100119	WQ	460-192721-9	TB	10/1/2019	X	--	--	--	--	--	--	--	--	--
460-192645-1	UPA-104-US	WG	460-192902-1	MS/MSD	10/2/2019	X	X	--	--	X	X	X	X	X	X
460-192645-1	UPA-107-US	WG	460-192902-2	--	10/2/2019	X	X	--	--	X	X	X	X	X	X
460-192645-1	UPA-104-TZ	WG	460-192902-3	--	10/2/2019	X	X	--	--	X	X	X	X	X	X
460-192645-1	UPA-107-TZ	WG	460-192902-4	--	10/2/2019	X	X	--	--	X	X	X	X	X	X
460-192645-1	FDGW_100219	WG	460-192902-5	FD (UPA-107-US)	10/2/2019	X	X	--	--	X	X	X	X	X	X
460-192645-1	TBGW_100219	WQ	460-192902-6	TB	10/2/2019	X	--	--	--	--	--	--	--	--	--
460-193027-1	P-5L	WG	460-193027-1	--	10/3/2019	X	X	--	--	X	X	X	X	X	X
460-193027-1	P-5U	WG	460-193027-2	--	10/3/2019	-	-	--	--	-	X	X	X	X	X
460-193027-1	UPA-107-LS	WG	460-193027-3	--	10/3/2019	X	X	--	--	X	X	X	X	X	X
460-193027-1	TBGW_100319	WQ	460-193027-4	TB	10/3/2019	X	-	--	--	-	-	-	-	-	-
460-193027-1	UPA-106-USA	WG	460-193074-1	--	10/4/2019	X	X	--	--	X	X	X	X	X	X
460-193027-1	UPA-103-TZ	WG	460-193074-2	--	10/4/2019	X	X	--	--	X	X	X	X	X	X
460-193027-1	UPA-103-LS	WG	460-193074-3	--	10/4/2019	X	X	--	--	X	X	X	X	X	X
460-193027-1	TBGW_100419	WQ	460-193074-4	TB	10/4/2019	X	-	--	--	-	-	-	-	-	-
460-193027-1	DGC-11S	WG	460-193280-1	--	10/7/2019	X	X	--	--	X	X	X	X	X	X
460-193027-1	DGC-11D	WG	460-193280-2	--	10/7/2019	X	X	--	--	X	X	X	X	X	X
460-193027-1	UPA-103-US	WG	460-193280-3	--	10/7/2019	X	X	--	--	X	X	X	X	X	X

Table 1
Sample Point Identifications
October 2019 Semi-Annual Groundwater Monitoring Event
Delaware Sand Gravel Superfund Site
New Castle, Delaware

						Parameters / Methods									
SDG	Field Identification	Matrix	Lab Identification	QC Samples	Collection Date	TCL VOCs via 8260C & 8260C SIM	TCL SVOCs via 8270D & 8270D SIM	TAL Total Metals + Hg via 200.8 / 245.1	Total Metals (Co, Fe, Mn) via 6010D	Dissolved Metals (Co, Fe, Mn) via 6010D	Ammonia via SM4500	Cations (Ca, Mg, Na, K) via 200.8	Anions (Nitrate, Nitrite, Sulfate, Chloride) via 300.0	Sulfide via SM4500	Carbonate and Bicarbonate Alkalinity via 2320B
460-193027-1	DGC-10D	WG	460-193280-4	--	10/7/2019	X	X	--	--	X	X	X	X	X	X
460-193027-1	DGC-10S	WG	460-193280-5	--	10/7/2019	X	X	--	--	X	X	X	X	X	X
460-193027-1	TBGW_100719	WQ	460-193280-6	TB	10/7/2019	X	-	--	--	-	-		-	-	-
460-193027-1	UPA-106-CA	WG	460-193375-1	--	10/8/2019	X	X	--	--	X	X	X	X	X	X
460-193027-1	UPA-106-USB	WG	460-193375-2	--	10/8/2019	X	X	--	--	X	X	X	X	X	X
460-193027-1	UPA-106-LS	WG	460-193375-3	--	10/8/2019	X	X	--	--	X	X	X	X	X	X
460-193027-1	P-6	WG	460-193375-4	--	10/8/2019	X	X	--	--	X	X	X	X	X	X
460-193027-1	TBGW_100819	WQ	460-193375-5	TB	10/8/2019	X	-	--	--	-	-	-	-	-	-
460-193458-1	UPA-102-CA	WG	460-193458-1	--	10/9/2019	X	X	--	--	X	X	X	X	X	X
460-193458-1	UPA-103-CA	WG	460-193458-2	--	10/9/2019	X	X	--	--	X	X	X	X	X	X
460-193458-1	MW-26N	WG	460-193458-3	--	10/9/2019	X	X	--	--	X	X	X	X	X	X
460-193458-1	GA-101	WG	460-193458-4	--	10/9/2019	X	X	--	--	X	X	--	--	--	--
460-193458-1	TBGW_100919	WQ	460-193458-5	TB	10/9/2019	X	--	--	--	--	--	--	--	--	--
460-193458-1	UPA-108B-US	WG	460-193634-1	--	10/10/2019	X	X	--	--	X	X	X	X	X	X
460-193458-1	UPA-108B-LS	WG	460-193634-2	--	10/10/2019	X	X	--	--	X	X	X	X	X	X
460-193458-1	UPA-108B-TZ	WG	460-193634-3	--	10/10/2019	X	X	--	--	X	X	X	X	X	X
460-193458-1	UPA-102-TZ	WG	460-193634-4	--	10/10/2019	X	X	--	--	X	X	X	X	X	X
460-193458-1	TBGW_101019	WQ	460-193634-5	TB	10/10/2019	X	--	--	--	--	--	--	--	--	--
460-193458-1	BW-2(128)	WG	460-193677-1	--	10/11/2019	X	X	--	--	X	X	X	X	X	X
460-193458-1	BW-2(138)	WG	460-193677-2	--	10/11/2019	X	X	--	--	X	X	X	X	X	X
460-193458-1	BW-2(3X)	WG	460-193677-3	--	10/11/2019	X	X	--	--	X	X	X	X	X	X
460-193458-1	TBGW_101119	WQ	460-193677-4	TB	10/11/2019	X	--	--	--	--	--	--	--	--	--
460-193458-1	UPA-03D	WG	460-193869-1	--	10/14/2019	X	X	--	X	X	X	X	X	X	X
460-193458-1	DGC-8D	WG	460-193869-2	--	10/14/2019	--	--	--	--	--	X	X	X	X	X
460-193458-1	DGC-8S	WG	460-193869-3	--	10/14/2019	--	--	--	--	--	X	X	X	X	X

Table 1
Sample Point Identifications
October 2019 Semi-Annual Groundwater Monitoring Event
Delaware Sand Gravel Superfund Site
New Castle, Delaware

						Parameters / Methods									
SDG	Field Identification	Matrix	Lab Identification	QC Samples	Collection Date	TCL VOCs via 8260C & 8260C SIM	TCL SVOCs via 8270D & 8270D SIM	TAL Total Metals + Hg via 200.8 / 245.1	Total Metals (Co, Fe, Mn) via 6010D	Dissolved Metals (Co, Fe, Mn) via 6010D	Ammonia via SM4500	Cations (Ca, Mg, Na, K) via 200.8	Anions (Nitrate, Nitrite, Sulfate, Chloride) via 300.0	Sulfide via SM4500	Carbonate and Bicarbonate Alkalinity via 2320B
460-193458-1	UPA-02D	WG	460-193869-4	--	10/14/2019	X	X	--	X	X	X	X	X	X	X
460-193458-1	UPA-02S	WG	460-193869-5	--	10/14/2019	--	--	--	--	--	X	X	X	X	X
460-193458-1	UPA-102-US	WG	460-193869-6	--	10/14/2019	X	X	--	--	X	X	X	X	X	X
460-193458-1	TBGW_101419	WQ	460-193869-7	TB	10/14/2019	X	--	--	--	--	--	--	--	--	--
460-194006-1	MW-18	WG	460-194006-1	MS/MSD	10/15/2019	X	X	--	--	X	X	X	X	X	X
460-194006-1	MW-34 (80)	WG	460-194006-2	--	10/15/2019	X	X	--	--	X	X	X	X	X	X
460-194006-1	MW-34 (110)	WG	460-194006-3	--	10/15/2019	X	X	--	--	X	X	X	X	X	X
460-194006-1	FDGW_101519	WG	460-194006-4	FD (MW-34 (80))	10/15/2019	X	X	--	--	X	X	X	X	X	X
460-194006-1	TBGW_101519	WQ	460-194006-5	TB	10/15/2019	X	--	--	--	--	--	--	--	--	--
460-194006-1	MW-34(124)	WG	460-194064-1	--	10/16/2019	X	X	--	--	X	X	X	X	X	X
460-194006-1	UPA-108C-US	WG	460-194064-2	--	10/16/2019	X	X	--	--	X	X	X	X	X	X
460-194006-1	RBGW_101619	WQ	460-194064-3	RB	10/16/2019	X	X	--	--	X	X	X	X	X	X
460-194006-1	TBGW_101619	WQ	460-194064-4	TB	10/16/2019	X	--	--	--	--	--	--	--	--	--
460-194006-1	MW-26N_128	WG	460-194233-1	--	10/17/2019	X	X	--	--	X	X	X	X	X	X
460-194006-1	MW-26N_138	WG	460-194233-2	--	10/17/2019	X	X	--	X	X	X	X	X	X	X
460-194006-1	MW-26N_3X	WG	460-194233-3	--	10/17/2019	X	X	X	--	X	X	X	X	X	X
460-194006-1	TBGW_101719	WQ	460-194233-4	TB	10/17/2019	X	--	--	--	--	--	--	--	--	--
460-194006-1	UPA-105A-LS	WG	460-194328-1	--	10/18/2019	X	X	--	--	X	X	X	X	X	X
460-194006-1	UPA-105A-US	WG	460-194328-2	--	10/18/2019	X	X	--	--	X	X	X	X	X	X
460-194006-1	UPA-101A-LSA	WG	460-194328-3	--	10/18/2019	X	X	--	--	X	X	X	X	X	X
460-194006-1	UPA-101A-LSB	WG	460-194328-4	--	10/18/2019	X	X	--	--	X	X	X	X	X	X
460-194006-1	TBGW_101819	WQ	460-194328-5	TB	10/18/2019	X	--	--	--	--	--	--	--	--	--
460-194514-1	RT-1-UP	WG	460-194514-1	--	10/21/2019	X	X	--	--	X	X	X	X	X	X
460-194514-1	UPA-01	WG	460-194514-2	--	10/21/2019	X	X	--	--	X	X	X	X	X	X
460-194514-1	DDA-12-US	WG	460-194514-3	--	10/21/2019	X	X	--	--	X	X	X	X	X	X

Table 1
Sample Point Identifications
October 2019 Semi-Annual Groundwater Monitoring Event
Delaware Sand Gravel Superfund Site
New Castle, Delaware

						Parameters / Methods									
SDG	Field Identification	Matrix	Lab Identification	QC Samples	Collection Date	TCL VOCs via 8260C & 8260C SIM	TCL SVOCs via 8270D & 8270D SIM	TAL Total Metals + Hg via 200.8 / 245.1	Total Metals (Co, Fe, Mn) via 6010D	Dissolved Metals (Co, Fe, Mn) via 6010D	Ammonia via SM4500	Cations (Ca, Mg, Na, K) via 200.8	Anions (Nitrate, Nitrite, Sulfate, Chloride) via 300.0	Sulfide via SM4500	Carbonate and Bicarbonate Alkalinity via 2320B
460-194514-1	DDA-02	WG	460-194514-4	--	10/21/2019	X	X	--	--	X	X	X	X	X	X
460-194514-1	TBGW_102119	WQ	460-194514-5	TB	10/21/2019	X	--	--	--	--	--	--	--	--	--
460-194514-1	DDA-03	WG	460-194632-1	--	10/22/2019	--	--	--	--	--	X	X	X	X	X
460-194514-1	DDA-06	WG	460-194632-2	--	10/22/2019	--	--	--	--	--	X	X	X	X	X
460-194514-1	PW-1(U)	WG	460-194632-3	--	10/22/2019	X	X	--	--	X	X	X	X	X	X
460-194514-1	TBGW_102219	WQ	460-194632-4	TB	10/22/2019	X	--	--	--	--	--	--	--	--	--
460-194514-1	DGC-2S	WG	460-194732-1	--	10/23/2019	--	--	--	--	--	X	X	X	X	X
460-194514-1	PZ-5-EXT	WG	460-194826-3	--	10/24/2019	X	X	--	--	X	X	--	--	--	--
460-194514-1	PZ-11-EXT	WG	460-194826-3	--	10/24/2019	X	X	--	--	X	X	--	--	--	--
460-194514-1	DDA-19-TZ	WG	460-194826-3	--	10/24/2019	X	X	--	--	X	X	X	X	X	X
460-194514-1	DDA-19-US	WG	460-194826-3	--	10/24/2019	X	X	--	--	X	X	X	X	X	X
460-194514-1	TBGW_102419	WQ	460-194826-3	TB	10/24/2019	X	--	--	--	--	--	--	--	--	--
460-194826-2	DGC-5 (40)	WG	460-194826-1	--	10/24/2019	X	X	--	--	X	X	X	X	X	X
460-194826-2	DGC-5 (50)	WG	460-194826-2	--	10/24/2019	X	X	--	--	X	X	--	--	--	--
460-194826-2	DGC-2S	WG	460-194921-1	--	10/24/2019	--	--	--	--	--	--	--	X	--	--
460-194826-2	B-4DR	WG	460-194921-2	--	10/24/2019	X	X	--	--	X	X	--	--	--	--
460-194826-2	BG-1	WG	460-194921-3	--	10/25/2019	X	X	--	--	X	X	--	--	--	--
460-194826-2	C-4D	WG	460-194921-4	--	10/25/2019	X	X	--	--	X	X	--	--	--	--
460-194826-2	C-18D	WG	460-194921-5	--	10/25/2019	X	X	--	--	X	X	--	--	--	--
460-194826-2	C-19D	WG	460-194921-6	--	10/25/2019	X	X	--	--	X	X	--	--	--	--
460-194826-2	C-20D	WG	460-194921-7	--	10/25/2019	X	X	--	--	X	X	--	--	--	--
460-194826-2	C-30	WG	460-194921-8	--	10/25/2019	X	X	--	--	X	X	--	--	--	--
460-194826-2	DDA-18-TZ	WG	460-194921-9	--	10/25/2019	X	X	--	--	X	X	X	X	X	X
460-194826-2	DDA-18-US	WG	460-194921-10	MS/MSD	10/25/2019	X	X	--	--	X	X	X	X	X	X
460-194826-2	FDGW_102519	WG	460-194921-11	FD (DDA-18-TZ)	10/25/2019	X	X	--	--	X	X	X	X	X	X

Table 1
Sample Point Identifications
October 2019 Semi-Annual Groundwater Monitoring Event
Delaware Sand Gravel Superfund Site
New Castle, Delaware

						Parameters / Methods									
SDG	Field Identification	Matrix	Lab Identification	QC Samples	Collection Date	TCL VOCs via 8260C & 8260C SIM	TCL SVOCs via 8270D & 8270D SIM	TAL Total Metals + Hg via 200.8 / 245.1	Total Metals (Co, Fe, Mn) via 6010D	Dissolved Metals (Co, Fe, Mn) via 6010D	Ammonia via SM4500	Cations (Ca, Mg, Na, K) via 200.8	Anions (Nitrate, Nitrite, Sulfate, Chloride) via 300.0	Sulfide via SM4500	Carbonate and Bicarbonate Alkalinity via 2320B
460-194826-2	RBGW_102519	WQ	460-194921-12	RB	10/25/2019	X	X	--	--	X	X	X	X	X	X
460-194826-2	TBGW_102519-A	WQ	460-194921-13	TB	10/25/2019	X	--	--	--	--	--	--	--	--	--
460-194826-2	C-2D	WG	460-194926-1	--	10/25/2019	X	X	--	--	X	X	--	--	--	--
460-194826-2	TBGW_102519-B	WQ	460-194926-2	TB	10/25/2019	X	--	--	--	--	--	--	--	--	--
460-195120-1	DDA-01	WG	460-195120-1	--	10/28/2019	--	--	--	--	--	X	X	X	X	X
460-195120-1	DDA-05	WG	460-195120-2	--	10/28/2019	--	--	--	--	--	X	X	X	X	X
460-195120-1	MHW-1D	WG	460-195120-3	--	10/28/2019	X	X	--	--	X	X	X	X	X	X
460-195120-1	TBGW_102819	WQ	460-195120-4	TB	10/28/2019	X	--	--	--	--	--	--	--	--	--
460-195120-1	DDA-20-US	WG	460-195187-1	MS/MSD	10/29/2019	X	X	--	--	X	X	X	X	X	X
460-195120-1	DDA-20-TZ	WG	460-195187-2	--	10/29/2019	X	X	--	--	X	X	X	X	X	X
460-195120-1	AWC-E1(132)	WG	460-195187-3	--	10/29/2019	--	--	--	X	X	--	--	--	--	--
460-195120-1	AWC-E1(156)	WG	460-195187-4	--	10/29/2019	--	--	--	X	X	--	--	--	--	--
460-195120-1	AWC-E2(140)	WG	460-195187-5	--	10/29/2019	--	--	--	X	X	--	--	--	--	--
460-195120-1	AWC-E2(165)	WG	460-195187-6	--	10/29/2019	--	--	--	X	X	--	--	--	--	--
460-195120-1	AWC-K1	WG	460-195187-7	--	10/29/2019	X	X	--	--	X	X	--	--	--	--
460-195120-1	FDGW_102919	WG	460-195187-8	FD (DDA-20-TZ)	10/29/2019	X	--	--	--	X	--	X	X	X	--
460-195120-1	TBGW_102919	WQ	460-195187-9	TB	10/29/2019	X	--	--	--	--	--	--	--	--	--
460-195120-1	DGC-7S	WG	460-195259-1	--	10/30/2019	--	--	--	--	--	X	X	X	X	X
460-195120-1	DGC-7C	WG	460-195259-2	--	10/30/2019	X	X	--	--	X	X	--	--	--	--
460-195120-1	DDA-10-US	WG	460-195259-3	--	10/30/2019	X	X	--	--	X	X	X	X	X	X
460-195120-1	RBGW_103019	WQ	460-195259-4	RB	10/30/2019	X	X	--	--	X	X	X	X	X	X
460-195120-1	TBGW_103019	WQ	460-195259-5	TB	10/30/2019	X	--	--	--	--	--	--	--	--	--
460-195926-1	AWC-E1 (132)	WG	460-195926-1	--	11/1/2019	--	--	--	--	--	X	X	X	X	X
460-195926-1	AWC-E1 (156)	WG	460-195926-2	--	11/1/2019	--	--	--	--	--	X	X	X	X	X
460-195926-1	AWC-E2 (140)	WG	460-195926-3	--	11/1/2019	--	--	--	--	--	X	X	X	X	X

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Sample Point Identifications
October 2019 Semi-Annual Groundwater Monitoring Event
Delaware Sand Gravel Superfund Site
New Castle, Delaware

						Parameters / Methods									
SDG	Field Identification	Matrix	Lab Identification	QC Samples	Collection Date	TCL VOCs via 8260C & 8260C SIM	TCL SVOCs via 8270D & 8270D SIM	TAL Total Metals + Hg via 200.8 / 245.1	Total Metals (Co, Fe, Mn) via 6010D	Dissolved Metals (Co, Fe, Mn) via 6010D	Ammonia via SM4500	Cations (Ca, Mg, Na, K) via 200.8	Anions (Nitrate, Nitrite, Sulfate, Chloride) via 300.0	Sulfide via SM4500	Carbonate and Bicarbonate Alkalinity via 2320B
460-195926-1	AWC-E2 (165)	WG	460-195926-4	--	11/1/2019	--	--	--	--	--	X	X	X	X	X
460-195926-1	AWC-2	WG	460-195926-5	--	11/1/2019	--	--	--	--	--	X	X	X	X	X
460-195926-1	AWC-6R	WG	460-195926-6	--	11/1/2019	--	--	--	--	--	X	X	X	X	X
460-195926-1	TBGW_11719	WQ	460-195926-7	TB	11/1/2019	X	--	--	--	--	--	--	--	--	--

Abbreviations:
Co - Cobalt
FB - Field Blank
FD - Field Duplicate
Fe - Iron
Hg - Mercury
Mn - Manganese
MS - Matrix Spike
MSD - Matrix Spike Duplicate
QC - Quality Control
RB - Rinsate Blank
SDG - Sample Delivery Group
SIM - Selected Ion Monitoring
SVOCs - Semivolatile Organic Compounds
TAL - Target Analyte List
TB - Trip Blank
TCL - Target Compound List
VOCs - Volatile Organic Compounds
WG - Groundwater
WQ - Water, Quality Control

Table 2
Data Qualifications
October 2019 Semi-Annual Groundwater Monitoring Event
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

SDG	Sample Name	Fraction	Constituent	New Result	New RL	Qualifier	Reason
460-194826-2	DGC-5 (40)	N	Nitrate	--	--	R	Sample analyzed more than 2x outside holding time
460-194826-2	DGC-5 (40)	N	Nitrite	--	--	R	Sample analyzed more than 2x outside holding time
460-192645-1	UPA-104-US	N	Acetone	--	5.1	U	Trip blank contamination
460-193027-1	UPA-103-LS	N	Acetone	--	5.5	U	Trip blank contamination
460-193027-1	UPA-106-LS	N	Acetone	--	5.8	U	Trip blank contamination
460-193027-1	P-6	N	Acetone	--	6.2	U	Trip blank contamination
460-193458-1	GA-101	N	Acetone	--	13	U	Trip blank contamination
460-194006-1	UPA-101A-LSA	N	Acetone	--	5.8	U	Trip blank contamination
460-195120-1	DGC-7C	N	Acetone	--	17	U	Trip blank contamination
460-195120-1	DDA-10-US	N	Acetone	--	5.8	U	Trip blank contamination
460-195120-1	AWC-K1	N	Ammonia	0.1	--	U	Method blank contamination
460-195120-1	DGC-7S	N	Ammonia	--	--	J+	Method blank contamination
460-195120-1	DDA-10-US	N	Ammonia	--	--	J+	Method blank contamination
460-195120-1	DDA-20-US	N	2,4-Dinitrophenol	--	--	R	MS/MSD recovery grossly below QC criteria
460-195120-1	DDA-20-US	N	4-Nitrophenol	--	--	R	MS/MSD recovery grossly below QC criteria
460-195120-1	DDA-20-US	N	Bisphenol-A	--	--	R	MS/MSD recovery grossly below QC criteria
460-195120-1	DDA-20-US	N	Phenol	--	--	R	MS/MSD recovery grossly below QC criteria
460-195120-1	DDA-20-US	N	Chloride	--	--	R	MS/MSD recovery grossly below QC criteria
460-192645-1	UPA-104-US	N	Chloride	--	--	J-	MS/MSD recovery grossly below QC criteria
460-192645-1	UPA-104-US	N	Benzene	--	--	J-	MS/MSD recovery below QC criteria
460-194006-1	MW-18	N	Chloride	--	--	J-	MS/MSD recovery below QC criteria
460-194826-2	DDA-18-US	N	Chloride	--	--	J-	MS/MSD recovery below QC criteria
460-194826-2	DDA-18-US	N	Sulfate	--	--	J-	MS/MSD recovery below QC criteria
460-195120-1	DDA-20-US	N	Sulfate	--	--	J-	MS/MSD recovery below QC criteria
460-192645-1	UPA-104-US	N	Nitrite	--	--	UJ	MS/MSD recovery below QC criteria
460-192645-1	UPA-104-US	N	Carbon disulfide	--	--	UJ	MS/MSD recovery below QC criteria
460-192645-1	UPA-104-US	N	2,4-Dinitrotoluene	--	--	UJ	MS/MSD recovery below QC criteria
460-192645-1	UPA-104-US	N	3,3'-Dichlorobenzidine	--	--	UJ	MS/MSD recovery below QC criteria
460-192645-1	UPA-104-US	N	Benzo[a]pyrene	--	--	UJ	MS/MSD recovery below QC criteria
460-192645-1	UPA-104-US	N	n,n'-Dimethylaniline	--	--	UJ	MS/MSD recovery below QC criteria
460-192645-1	UPA-104-US	N	N-Methylaniline	--	--	UJ	MS/MSD recovery below QC criteria
460-194826-2	DDA-18-US	N	Nitrite	--	--	UJ	MS/MSD recovery below QC criteria
460-194826-2	DDA-18-US	N	1,2,4-Trimethylbenzene	--	--	UJ	MS/MSD recovery below QC criteria
460-194826-2	DDA-18-US	N	1,3,5-Trimethylbenzene	--	--	UJ	MS/MSD recovery below QC criteria
460-194826-2	DDA-18-US	N	Indane	--	--	UJ	MS/MSD recovery below QC criteria
460-194826-2	DDA-18-US	N	N-Propylbenzene	--	--	UJ	MS/MSD recovery below QC criteria
460-194826-2	DDA-18-US	N	3,3'-Dichlorobenzidine	--	--	UJ	MS/MSD recovery below QC criteria
460-194826-2	DDA-18-US	N	3-Nitroaniline	--	--	UJ	MS/MSD recovery below QC criteria
460-194826-2	DDA-18-US	N	Benzo[a]pyrene	--	--	UJ	MS/MSD recovery below QC criteria
460-194826-2	DDA-18-US	N	N-Methylaniline	--	--	UJ	MS/MSD recovery below QC criteria
460-195120-1	DDA-20-US	N	2,4,5-Trichlorophenol	--	--	UJ	MS/MSD recovery below QC criteria

Table 2
Data Qualifications
October 2019 Semi-Annual Groundwater Monitoring Event
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

SDG	Sample Name	Fraction	Constituent	New Result	New RL	Qualifier	Reason
460-195120-1	DDA-20-US	N	2,4,6-Trichlorophenol	--	--	UJ	MS/MSD recovery below QC criteria
460-195120-1	DDA-20-US	N	2,4-Dimethylphenol	--	--	UJ	MS/MSD recovery below QC criteria
460-195120-1	DDA-20-US	N	2-Chlorophenol	--	--	UJ	MS/MSD recovery below QC criteria
460-195120-1	DDA-20-US	N	2-Methylphenol	--	--	UJ	MS/MSD recovery below QC criteria
460-195120-1	DDA-20-US	N	2-Nitrophenol	--	--	UJ	MS/MSD recovery below QC criteria
460-195120-1	DDA-20-US	N	4,6-Dinitro-2-methylphenol	--	--	UJ	MS/MSD recovery below QC criteria
460-195120-1	DDA-20-US	N	4-Chloro-3-methylphenol	--	--	UJ	MS/MSD recovery below QC criteria
460-195120-1	DDA-20-US	N	4-Methylphenol	--	--	UJ	MS/MSD recovery below QC criteria
460-195120-1	DDA-20-US	N	Anthracene	--	--	UJ	MS/MSD recovery below QC criteria
460-195120-1	DDA-20-US	N	Benzo[a]anthracene	--	--	UJ	MS/MSD recovery below QC criteria
460-195120-1	DDA-20-US	N	Benzo[a]pyrene	--	--	UJ	MS/MSD recovery below QC criteria
460-195120-1	DDA-20-US	N	Benzo[b]fluoranthene	--	--	UJ	MS/MSD recovery below QC criteria
460-195120-1	DDA-20-US	N	Benzo[k]fluoranthene	--	--	UJ	MS/MSD recovery below QC criteria
460-195120-1	DDA-20-US	N	Bis(2-chloroethoxy)methane	--	--	UJ	MS/MSD recovery below QC criteria
460-195120-1	DDA-20-US	N	Bis(2-chloroethyl)ether	--	--	UJ	MS/MSD recovery below QC criteria
460-195120-1	DDA-20-US	N	Di-n-octyl phthalate	--	--	UJ	MS/MSD recovery below QC criteria
460-195120-1	DDA-20-US	N	N-Methylaniline	--	--	UJ	MS/MSD recovery below QC criteria
460-195120-1	DDA-20-US	N	N-Nitrosodiphenylamine	--	--	UJ	MS/MSD recovery below QC criteria
460-195120-1	DDA-20-US	N	Pentachlorophenol	--	--	UJ	MS/MSD recovery below QC criteria
460-195120-1	DDA-20-US	N	Phenanthrene	--	--	UJ	MS/MSD recovery below QC criteria
460-195120-1	DDA-20-US	N	Nitrite	--	--	UJ	MS/MSD recovery below QC criteria
460-192645-1	UPA-104-US	N	Sulfate	--	--	J+	MS/MSD recovery above QC criteria
460-194514-1	DDA-12-US	N	1,4-Dioxane	--	--	J-	Surrogate recovery below QC criteria
460-194514-1	PZ-11-EXT	N	1,4-Dioxane	--	--	J-	Surrogate recovery below QC criteria
460-194826-2	C-2D	N	1,4-Dioxane	--	--	J-	Surrogate recovery below QC criteria
460-193458-1	UPA-102-CA	N	Caprolactam	--	--	UJ	LCS/LCSD recovery below QC criteria
460-193458-1	MW-26N	N	Caprolactam	--	--	UJ	LCS/LCSD recovery below QC criteria
460-193458-1	GA-101	N	Caprolactam	--	--	UJ	LCS/LCSD recovery below QC criteria
460-194006-1	MW-34(124)	N	1,3,5-Trimethylbenzene	--	--	UJ	LCS/LCSD recovery below QC criteria
460-192645-1	UPA-105B-US	N	Benzo[b]fluoranthene	--	--	UJ	LCS/LCSD recovery below QC criteria
460-192645-1	UPA-105B-US	N	Benzo[a]pyrene	--	--	UJ	LCS/LCSD recovery below QC criteria
460-192645-1	UPA-104-US	N	2,4-Dinitrophenol	--	--	UJ	LCS/LCSD recovery below QC criteria
460-192645-1	UPA-104-US	N	2,4-Dinitrotoluene	--	--	UJ	LCS/LCSD recovery below QC criteria
460-192645-1	UPA-104-US	N	Benzo[a]pyrene	--	--	UJ	LCS/LCSD recovery below QC criteria
460-192645-1	UPA-104-US	N	4,6-Dinitro-2-methylphenol	--	--	UJ	LCS/LCSD recovery below QC criteria
460-192645-1	UPA-104-US	N	2-Nitrophenol	--	--	UJ	LCS/LCSD recovery below QC criteria
460-192645-1	UPA-104-TZ	N	2,4-Dinitrophenol	--	--	UJ	LCS/LCSD recovery below QC criteria
460-192645-1	UPA-104-TZ	N	2,4-Dinitrotoluene	--	--	UJ	LCS/LCSD recovery below QC criteria
460-192645-1	UPA-104-TZ	N	Benzo[a]pyrene	--	--	UJ	LCS/LCSD recovery below QC criteria
460-192645-1	UPA-104-TZ	N	4,6-Dinitro-2-methylphenol	--	--	UJ	LCS/LCSD recovery below QC criteria
460-192645-1	UPA-104-TZ	N	2-Nitrophenol	--	--	UJ	LCS/LCSD recovery below QC criteria

Table 2
Data Qualifications
October 2019 Semi-Annual Groundwater Monitoring Event
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

SDG	Sample Name	Fraction	Constituent	New Result	New RL	Qualifier	Reason
460-192645-1	UPA-107-US	N	2,4-Dinitrophenol	--	--	UJ	LCS/LCSD recovery below QC criteria
460-192645-1	UPA-107-US	N	2,4-Dinitrotoluene	--	--	UJ	LCS/LCSD recovery below QC criteria
460-192645-1	UPA-107-US	N	Benzo[a]pyrene	--	--	UJ	LCS/LCSD recovery below QC criteria
460-192645-1	UPA-107-US	N	4,6-Dinitro-2-methylphenol	--	--	UJ	LCS/LCSD recovery below QC criteria
460-192645-1	UPA-107-US	N	2-Nitrophenol	--	--	UJ	LCS/LCSD recovery below QC criteria
460-192645-1	UPA-107-TZ	N	2,4-Dinitrophenol	--	--	UJ	LCS/LCSD recovery below QC criteria
460-192645-1	UPA-107-TZ	N	2,4-Dinitrotoluene	--	--	UJ	LCS/LCSD recovery below QC criteria
460-192645-1	UPA-107-TZ	N	Benzo[a]pyrene	--	--	UJ	LCS/LCSD recovery below QC criteria
460-192645-1	UPA-107-TZ	N	4,6-Dinitro-2-methylphenol	--	--	UJ	LCS/LCSD recovery below QC criteria
460-192645-1	UPA-107-TZ	N	2-Nitrophenol	--	--	UJ	LCS/LCSD recovery below QC criteria
460-193027-1	DGC-11S	N	Dibromochloromethane	--	--	UJ	LCS/LCSD recovery below QC criteria
460-193027-1	DGC-11D	N	Dibromochloromethane	--	--	UJ	LCS/LCSD recovery below QC criteria
460-193027-1	UPA-103-US	N	Dibromochloromethane	--	--	UJ	LCS/LCSD recovery below QC criteria
460-193027-1	DGC-10D	N	Dibromochloromethane	--	--	UJ	LCS/LCSD recovery below QC criteria
460-193027-1	DGC-10S	N	Dibromochloromethane	--	--	UJ	LCS/LCSD recovery below QC criteria
460-193027-1	DGC-11S	N	Bisphenol-A	--	--	UJ	LCS/LCSD recovery below QC criteria
460-193027-1	DGC-11D	N	Bisphenol-A	--	--	UJ	LCS/LCSD recovery below QC criteria
460-193027-1	UPA-103-US	N	Bisphenol-A	--	--	UJ	LCS/LCSD recovery below QC criteria
460-193027-1	DGC-10D	N	Bisphenol-A	--	--	UJ	LCS/LCSD recovery below QC criteria
460-193027-1	DGC-10S	N	Bisphenol-A	--	--	UJ	LCS/LCSD recovery below QC criteria
460-193027-1	UPA-106-CA	N	Caprolactam	--	--	UJ	LCS/LCSD recovery below QC criteria
460-193027-1	UPA-106-USB	N	Caprolactam	--	--	UJ	LCS/LCSD recovery below QC criteria
460-193027-1	UPA-106-LS	N	Caprolactam	--	--	UJ	LCS/LCSD recovery below QC criteria
460-193027-1	P-6	N	Caprolactam	--	--	UJ	LCS/LCSD recovery below QC criteria
460-194514-1	PW-1(U)	N	Caprolactam	--	--	UJ	LCS/LCSD recovery below QC criteria
460-194514-1	PZ-5-EXT	N	Caprolactam	--	--	UJ	LCS/LCSD recovery below QC criteria
460-194514-1	PZ-11-EXT	N	Caprolactam	--	--	UJ	LCS/LCSD recovery below QC criteria
460-194514-1	DDA-19-TZ	N	Caprolactam	--	--	UJ	LCS/LCSD recovery below QC criteria
460-194514-1	DDA-19-US	N	Caprolactam	--	--	UJ	LCS/LCSD recovery below QC criteria
460-194514-1	PZ-5-EXT	N	Pentachlorophenol	--	--	UJ	LCS/LCSD recovery below QC criteria
460-194514-1	PZ-11-EXT	N	Pentachlorophenol	--	--	UJ	LCS/LCSD recovery below QC criteria
460-194514-1	DDA-19-TZ	N	Pentachlorophenol	--	--	UJ	LCS/LCSD recovery below QC criteria
460-194514-1	DDA-19-US	N	Pentachlorophenol	--	--	UJ	LCS/LCSD recovery below QC criteria
460-194826-2	C-20D	N	Pentachlorophenol	--	--	UJ	LCS/LCSD recovery below QC criteria
460-194826-2	C-30	N	Pentachlorophenol	--	--	UJ	LCS/LCSD recovery below QC criteria
460-194826-2	DDA-18-TZ	N	Pentachlorophenol	--	--	UJ	LCS/LCSD recovery below QC criteria
460-194826-2	C-2D	N	Pentachlorophenol	--	--	UJ	LCS/LCSD recovery below QC criteria
460-194826-2	DGC-5 (40)	N	Pentachlorophenol	--	--	UJ	LCS/LCSD recovery below QC criteria
460-194826-2	DGC-5 (50)	N	Pentachlorophenol	--	--	UJ	LCS/LCSD recovery below QC criteria
460-194826-2	B-4DR	N	Benzo[a]anthracene	--	--	J+	LCS/LCSD recovery above QC criteria
460-194826-2	C-4D	N	Benzo[a]anthracene	--	--	J+	LCS/LCSD recovery above QC criteria

Table 2
Data Qualifications
October 2019 Semi-Annual Groundwater Monitoring Event
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

SDG	Sample Name	Fraction	Constituent	New Result	New RL	Qualifier	Reason
460-194826-2	C-18D	N	Benzo[a]anthracene	--	--	J+	LCS/LCSD recovery above QC criteria
460-194826-2	C-19D	N	Benzo[a]anthracene	--	--	J+	LCS/LCSD recovery above QC criteria
460-194826-2	B-4DR	N	Benzo[b]fluoranthene	--	--	J+	LCS/LCSD recovery above QC criteria
460-194826-2	C-4D	N	Benzo[b]fluoranthene	--	--	J+	LCS/LCSD recovery above QC criteria
460-194826-2	C-18D	N	Benzo[b]fluoranthene	--	--	J+	LCS/LCSD recovery above QC criteria
460-194826-2	C-19D	N	Benzo[b]fluoranthene	--	--	J+	LCS/LCSD recovery above QC criteria
460-193458-1	UPA-102-TZ	N	Phenol	--	--	J	LCS/LCSD above QC criteria, Sample result between MDL and RL
All SDGs	All samples	--	All results	-	--	-	Laboratory applied U-qualifiers indicating non-detect results and J-qualifiers indicating results Below the reporting limit are retained unless other qualifications are indicated in this table. All other laboratory qualifiers are removed.

Abbreviations:
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MDL - Method Detection Limit
MS - Matrix Spike
MSD - Matrix Spike Duplicate
QC - Quality Control
RL - Reporting Limit
SDG - Sample Delivery Group

Fraction:
N: No Fraction / Not Applicable

Qualifier Definitions:
J: Estimated Result
J-: Estimated Result, Biased Low
J+: Estimated Result, Biased High
R: Rejected Result
U: Non-Detect Result
UJ: Non-Detect Result; RL is Estimated

Client Sample Results

Client: Golder Associates Inc. Job ID: 460-192645-1
Project/Site: DS&G Semi-Annual Groundwater

Client Sample ID: UPA-105B-US — Lab Sample ID: 460-192645-1

Date Collected: 09/30/19 15:00 Matrix: Water
Date Received: 09/30/19 19:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**2.76**		0.10	0.056	mg/L			10/01/19 15:14	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/01/19 15:14	1
Sulfate	**11.1**		0.60	0.35	mg/L			10/01/19 15:14	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**42.1**	D	1.92	0.22	mg/L			10/01/19 16:29	16

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**13200**		250	233	ug/L		10/03/19 09:36	10/03/19 16:47	5
Potassium	**2890**		250	73.5	ug/L		10/03/19 09:36	10/03/19 16:47	5
Magnesium	**5270**		250	24.8	ug/L		10/03/19 09:36	10/03/19 16:47	5
Sodium	**20600**		250	66.8	ug/L		10/03/19 09:36	10/03/19 16:47	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.068	U	0.10	0.068	mg/L			10/01/19 15:56	1
Bicarbonate Alkalinity as CaCO3	**16.7**		5.0	5.0	mg/L			10/03/19 10:54	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/03/19 10:54	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/03/19 15:48	1

Client Sample ID: UPA-105B-US — Lab Sample ID: 460-192645-2

Date Collected: 09/30/19 15:00 Matrix: Water
Date Received: 09/30/19 19:30

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**3.0**		0.40	0.20	ug/L			10/03/19 18:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*101*		*72 - 133*		*10/03/19 18:51*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/04/19 07:24	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/04/19 07:24	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/04/19 07:24	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/04/19 07:24	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/04/19 07:24	1
Acetone	4.4	U	5.0	4.4	ug/L			10/04/19 07:24	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/04/19 07:24	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/04/19 07:24	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/04/19 07:24	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/04/19 07:24	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/04/19 07:24	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/04/19 07:24	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/04/19 07:24	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/04/19 07:24	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/04/19 07:24	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/04/19 07:24	1

Client Sample ID: UPA-105B-US Lab Sample ID: 460-192645-2

Date Collected: 09/30/19 15:00 **Matrix: Water**
Date Received: 09/30/19 19:30

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/04/19 07:24	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/04/19 07:24	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/04/19 07:24	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/04/19 07:24	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/04/19 07:24	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/04/19 07:24	1
Benzene	0.20	U	1.0	0.20	ug/L			10/04/19 07:24	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/04/19 07:24	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/04/19 07:24	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/04/19 07:24	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/04/19 07:24	1
Tetrachloroethene	**6.2**		1.0	0.25	ug/L			10/04/19 07:24	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/04/19 07:24	1
Toluene	0.38	U	1.0	0.38	ug/L			10/04/19 07:24	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/04/19 07:24	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/04/19 07:24	1
Styrene	0.42	U	1.0	0.42	ug/L			10/04/19 07:24	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/04/19 07:24	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/04/19 07:24	1
MTBE	0.47	U	1.0	0.47	ug/L			10/04/19 07:24	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/04/19 07:24	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/04/19 07:24	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/04/19 07:24	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/04/19 07:24	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/04/19 07:24	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/04/19 07:24	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/04/19 07:24	1
Indane	0.35	U	1.0	0.35	ug/L			10/04/19 07:24	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/04/19 07:24	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/04/19 07:24	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/04/19 07:24*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*74 - 132*		*10/04/19 07:24*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/04/19 07:24*	*1*
4-Bromofluorobenzene	*99*		*77 - 124*		*10/04/19 07:24*	*1*
Dibromofluoromethane (Surr)	*99*		*72 - 131*		*10/04/19 07:24*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/03/19 09:39	10/04/19 01:45	1
Benzo[a]pyrene	0.022	UUJ	0.050	0.022	ug/L		10/03/19 09:39	10/04/19 01:45	1
Benzo[b]fluoranthene	0.024	U UJ	0.050	0.024	ug/L		10/03/19 09:39	10/04/19 01:45	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/03/19 09:39	10/04/19 01:45	1
Pentachlorophenol	0.15	U	0.20	0.15	ug/L		10/03/19 09:39	10/04/19 01:45	1
Bis(2-chloroethyl)ether	**0.53**		0.030	0.026	ug/L		10/03/19 09:39	10/04/19 01:45	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-192645-1

Client Sample ID: UPA-105B-US

Lab Sample ID: 460-192645-2

Date Collected: 09/30/19 15:00
Date Received: 09/30/19 19:30

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/03/19 09:39	10/03/19 22:49	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/03/19 09:39	10/03/19 22:49	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/03/19 09:39	10/03/19 22:49	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/03/19 09:39	10/03/19 22:49	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/03/19 09:39	10/03/19 22:49	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/03/19 09:39	10/03/19 22:49	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/03/19 09:39	10/03/19 22:49	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/03/19 09:39	10/03/19 22:49	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/03/19 09:39	10/03/19 22:49	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/03/19 09:39	10/03/19 22:49	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/03/19 09:39	10/03/19 22:49	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/03/19 09:39	10/03/19 22:49	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/03/19 09:39	10/03/19 22:49	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/03/19 09:39	10/03/19 22:49	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/03/19 09:39	10/03/19 22:49	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/03/19 09:39	10/03/19 22:49	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/03/19 09:39	10/03/19 22:49	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/03/19 09:39	10/03/19 22:49	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/03/19 09:39	10/03/19 22:49	1
Isophorone	0.80	U	10	0.80	ug/L		10/03/19 09:39	10/03/19 22:49	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/03/19 09:39	10/03/19 22:49	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/03/19 09:39	10/03/19 22:49	1
Naphthalene	1.1	U	10	1.1	ug/L		10/03/19 09:39	10/03/19 22:49	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/03/19 09:39	10/03/19 22:49	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/03/19 09:39	10/03/19 22:49	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/03/19 09:39	10/03/19 22:49	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/03/19 09:39	10/03/19 22:49	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/03/19 09:39	10/03/19 22:49	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/03/19 09:39	10/03/19 22:49	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/03/19 09:39	10/03/19 22:49	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/03/19 09:39	10/03/19 22:49	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/03/19 09:39	10/03/19 22:49	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/03/19 09:39	10/03/19 22:49	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/03/19 09:39	10/03/19 22:49	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/03/19 09:39	10/03/19 22:49	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/03/19 09:39	10/03/19 22:49	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/03/19 09:39	10/03/19 22:49	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/03/19 09:39	10/03/19 22:49	1
Fluorene	0.91	U	10	0.91	ug/L		10/03/19 09:39	10/03/19 22:49	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/03/19 09:39	10/03/19 22:49	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/03/19 09:39	10/03/19 22:49	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/03/19 09:39	10/03/19 22:49	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/03/19 09:39	10/03/19 22:49	1
Anthracene	0.63	U	10	0.63	ug/L		10/03/19 09:39	10/03/19 22:49	1
Carbazole	0.68	U	10	0.68	ug/L		10/03/19 09:39	10/03/19 22:49	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/03/19 09:39	10/03/19 22:49	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/03/19 09:39	10/03/19 22:49	1
Pyrene	1.6	U	10	1.6	ug/L		10/03/19 09:39	10/03/19 22:49	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/03/19 09:39	10/03/19 22:49	1

Client Sample ID: UPA-105B-US — Lab Sample ID: 460-192645-2

Date Collected: 09/30/19 15:00 **Matrix: Water**
Date Received: 09/30/19 19:30

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/03/19 09:39	10/03/19 22:49	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/03/19 09:39	10/03/19 22:49	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/03/19 09:39	10/03/19 22:49	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/03/19 09:39	10/03/19 22:49	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/03/19 09:39	10/03/19 22:49	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/03/19 09:39	10/03/19 22:49	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/03/19 09:39	10/03/19 22:49	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/03/19 09:39	10/03/19 22:49	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/03/19 09:39	10/03/19 22:49	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/03/19 09:39	10/03/19 22:49	1
Caprolactam	0.68	U	10	0.68	ug/L		10/03/19 09:39	10/03/19 22:49	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/03/19 09:39	10/03/19 22:49	1
Bisphenol-A	9.9	U *	10	9.9	ug/L		10/03/19 09:39	10/03/19 22:49	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/03/19 09:39	10/03/19 22:49	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/03/19 09:39*	*10/03/19 22:49*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*77*		*51 - 108*	*10/03/19 09:39*	*10/03/19 22:49*	*1*
Phenol-d5 (Surr)	*19*		*14 - 39*	*10/03/19 09:39*	*10/03/19 22:49*	*1*
Terphenyl-d14 (Surr)	*75*		*40 - 148*	*10/03/19 09:39*	*10/03/19 22:49*	*1*
2,4,6-Tribromophenol (Surr)	*87*		*26 - 139*	*10/03/19 09:39*	*10/03/19 22:49*	*1*
2-Fluorophenol (Surr)	*33*		*25 - 58*	*10/03/19 09:39*	*10/03/19 22:49*	*1*
2-Fluorobiphenyl (Surr)	*71*		*45 - 107*	*10/03/19 09:39*	*10/03/19 22:49*	*1*

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**64.8**		50.0	1.7	ug/L		10/04/19 08:13	10/04/19 15:45	1
Iron, Dissolved	**44.7**	J	150	34.2	ug/L		10/04/19 08:13	10/04/19 15:45	1
Manganese, Dissolved	**1310**		15.0	0.99	ug/L		10/04/19 08:13	10/04/19 15:45	1

Client Sample ID: TBGW_093019 — Lab Sample ID: 460-192645-3

Date Collected: 09/30/19 00:00 **Matrix: Water**
Date Received: 09/30/19 19:30

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/03/19 02:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*96*		*72 - 133*		*10/03/19 02:10*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/04/19 14:05	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/04/19 14:05	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/04/19 14:05	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/04/19 14:05	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/04/19 14:05	1
Acetone	**13**		5.0	4.4	ug/L			10/04/19 14:05	1

Client Sample ID: TBGW_093019 Lab Sample ID: 460-192645-3

Date Collected: 09/30/19 00:00 **Matrix: Water**
Date Received: 09/30/19 19:30

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/04/19 14:05	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/04/19 14:05	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/04/19 14:05	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/04/19 14:05	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/04/19 14:05	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/04/19 14:05	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/04/19 14:05	1
2-Butanone	1.9	U	5.0	1.9	ug/L			10/04/19 14:05	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/04/19 14:05	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/04/19 14:05	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/04/19 14:05	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/04/19 14:05	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/04/19 14:05	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/04/19 14:05	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/04/19 14:05	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/04/19 14:05	1
Benzene	0.20	U	1.0	0.20	ug/L			10/04/19 14:05	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/04/19 14:05	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/04/19 14:05	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/04/19 14:05	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/04/19 14:05	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/04/19 14:05	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/04/19 14:05	1
Toluene	0.38	U	1.0	0.38	ug/L			10/04/19 14:05	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/04/19 14:05	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/04/19 14:05	1
Styrene	0.42	U	1.0	0.42	ug/L			10/04/19 14:05	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/04/19 14:05	1
Ethyl ether	0.21	U	1.0	0.21	ug/L			10/04/19 14:05	1
MTBE	0.47	U	1.0	0.47	ug/L			10/04/19 14:05	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/04/19 14:05	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/04/19 14:05	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/04/19 14:05	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/04/19 14:05	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/04/19 14:05	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/04/19 14:05	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/04/19 14:05	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/04/19 14:05	1
Indane	0.35	U	1.0	0.35	ug/L			10/04/19 14:05	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/04/19 14:05	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/04/19 14:05*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*74 - 132*		*10/04/19 14:05*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/04/19 14:05*	*1*
Bromofluorobenzene	*100*		*77 - 124*		*10/04/19 14:05*	*1*
Dibromofluoromethane (Surr)	*100*		*72 - 131*		*10/04/19 14:05*	*1*

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-192645-1

Client Sample ID: UPA-105B-TZ

Lab Sample ID: 460-192721-1

Date Collected: 10/01/19 11:55
Date Received: 10/01/19 20:00

Matrix: Water

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/04/19 10:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*93*		*72 - 133*		*10/04/19 10:15*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/04/19 16:10	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/04/19 16:10	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/04/19 16:10	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/04/19 16:10	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/04/19 16:10	1
Acetone	4.4	U	5.0	4.4	ug/L			10/04/19 16:10	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/04/19 16:10	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/04/19 16:10	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/04/19 16:10	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/04/19 16:10	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/04/19 16:10	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/04/19 16:10	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/04/19 16:10	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/04/19 16:10	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/04/19 16:10	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/04/19 16:10	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/04/19 16:10	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/04/19 16:10	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/04/19 16:10	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/04/19 16:10	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/04/19 16:10	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/04/19 16:10	1
Benzene	0.20	U	1.0	0.20	ug/L			10/04/19 16:10	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/04/19 16:10	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/04/19 16:10	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/04/19 16:10	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/04/19 16:10	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/04/19 16:10	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/04/19 16:10	1
Toluene	0.38	U	1.0	0.38	ug/L			10/04/19 16:10	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/04/19 16:10	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/04/19 16:10	1
Styrene	0.42	U	1.0	0.42	ug/L			10/04/19 16:10	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/04/19 16:10	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/04/19 16:10	1
MTBE	0.47	U	1.0	0.47	ug/L			10/04/19 16:10	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/04/19 16:10	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/04/19 16:10	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/04/19 16:10	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/04/19 16:10	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/04/19 16:10	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/04/19 16:10	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/04/19 16:10	1

Client Sample ID: UPA-105B-TZ — Lab Sample ID: 460-192721-1

Date Collected: 10/01/19 11:55 **Matrix: Water**
Date Received: 10/01/19 20:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Indane	0.35	U	1.0	0.35	ug/L			10/04/19 16:10	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/04/19 16:10	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/04/19 16:10	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/04/19 16:10*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*74 - 132*		*10/04/19 16:10*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*10/04/19 16:10*	*1*
4-Bromofluorobenzene	*97*		*77 - 124*		*10/04/19 16:10*	*1*
Dibromofluoromethane (Surr)	*96*		*72 - 131*		*10/04/19 16:10*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/04/19 10:15	10/05/19 00:51	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/04/19 10:15	10/05/19 00:51	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/04/19 10:15	10/05/19 00:51	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/04/19 10:15	10/05/19 00:51	1
Pentachlorophenol	0.15	U	0.20	0.15	ug/L		10/04/19 10:15	10/05/19 00:51	1
Bis(2-chloroethyl)ether	0.026	U	0.030	0.026	ug/L		10/04/19 10:15	10/05/19 00:51	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/04/19 10:15	10/04/19 19:52	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/04/19 10:15	10/04/19 19:52	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/04/19 10:15	10/04/19 19:52	1
4-Methylphenol	**9.4**	**J**	10	0.24	ug/L		10/04/19 10:15	10/04/19 19:52	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/04/19 10:15	10/04/19 19:52	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/04/19 10:15	10/04/19 19:52	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/04/19 10:15	10/04/19 19:52	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/04/19 10:15	10/04/19 19:52	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/04/19 10:15	10/04/19 19:52	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/04/19 10:15	10/04/19 19:52	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/04/19 10:15	10/04/19 19:52	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/04/19 10:15	10/04/19 19:52	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/04/19 10:15	10/04/19 19:52	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/04/19 10:15	10/04/19 19:52	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/04/19 10:15	10/04/19 19:52	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/04/19 10:15	10/04/19 19:52	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/04/19 10:15	10/04/19 19:52	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/04/19 10:15	10/04/19 19:52	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/04/19 10:15	10/04/19 19:52	1
Isophorone	0.80	U	10	0.80	ug/L		10/04/19 10:15	10/04/19 19:52	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/04/19 10:15	10/04/19 19:52	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/04/19 10:15	10/04/19 19:52	1
Naphthalene	1.1	U	10	1.1	ug/L		10/04/19 10:15	10/04/19 19:52	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/04/19 10:15	10/04/19 19:52	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/04/19 10:15	10/04/19 19:52	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/04/19 10:15	10/04/19 19:52	1

Client Sample ID: UPA-105B-TZ Lab Sample ID: 460-192721-1

Date Collected: 10/01/19 11:55 **Matrix: Water**
Date Received: 10/01/19 20:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/04/19 10:15	10/04/19 19:52	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/04/19 10:15	10/04/19 19:52	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/04/19 10:15	10/04/19 19:52	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/04/19 10:15	10/04/19 19:52	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/04/19 10:15	10/04/19 19:52	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/04/19 10:15	10/04/19 19:52	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/04/19 10:15	10/04/19 19:52	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/04/19 10:15	10/04/19 19:52	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/04/19 10:15	10/04/19 19:52	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/04/19 10:15	10/04/19 19:52	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/04/19 10:15	10/04/19 19:52	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/04/19 10:15	10/04/19 19:52	1
Fluorene	0.91	U	10	0.91	ug/L		10/04/19 10:15	10/04/19 19:52	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/04/19 10:15	10/04/19 19:52	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/04/19 10:15	10/04/19 19:52	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/04/19 10:15	10/04/19 19:52	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/04/19 10:15	10/04/19 19:52	1
Anthracene	0.63	U	10	0.63	ug/L		10/04/19 10:15	10/04/19 19:52	1
Carbazole	0.68	U	10	0.68	ug/L		10/04/19 10:15	10/04/19 19:52	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/04/19 10:15	10/04/19 19:52	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/04/19 10:15	10/04/19 19:52	1
Pyrene	1.6	U	10	1.6	ug/L		10/04/19 10:15	10/04/19 19:52	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/04/19 10:15	10/04/19 19:52	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/04/19 10:15	10/04/19 19:52	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/04/19 10:15	10/04/19 19:52	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/04/19 10:15	10/04/19 19:52	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/04/19 10:15	10/04/19 19:52	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/04/19 10:15	10/04/19 19:52	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/04/19 10:15	10/04/19 19:52	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/04/19 10:15	10/04/19 19:52	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/04/19 10:15	10/04/19 19:52	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/04/19 10:15	10/04/19 19:52	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/04/19 10:15	10/04/19 19:52	1
Caprolactam	0.68	U	10	0.68	ug/L		10/04/19 10:15	10/04/19 19:52	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/04/19 10:15	10/04/19 19:52	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/04/19 10:15	10/04/19 19:52	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/04/19 10:15	10/04/19 19:52	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Butanoic acid, 3-methyl-	*10*	*J N*	*ug/L*		*2.92*	*503-74-2*	*10/04/19 10:15*	*10/04/19 19:52*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*80*		*51 - 108*	*10/04/19 10:15*	*10/04/19 19:52*	*1*
Phenol-d5 (Surr)	*26*		*14 - 39*	*10/04/19 10:15*	*10/04/19 19:52*	*1*
Terphenyl-d14 (Surr)	*62*		*40 - 148*	*10/04/19 10:15*	*10/04/19 19:52*	*1*
2,4,6-Tribromophenol (Surr)	*92*		*26 - 139*	*10/04/19 10:15*	*10/04/19 19:52*	*1*
2-Fluorophenol (Surr)	*39*		*25 - 58*	*10/04/19 10:15*	*10/04/19 19:52*	*1*
2-Fluorobiphenyl (Surr)	*73*		*45 - 107*	*10/04/19 10:15*	*10/04/19 19:52*	*1*

Client Sample ID: UPA-105B-TZ — Lab Sample ID: 460-192721-1

Date Collected: 10/01/19 11:55 **Matrix: Water**
Date Received: 10/01/19 20:00

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**17.6**		0.72	0.084	mg/L			10/02/19 14:34	6
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/02/19 13:34	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/02/19 13:34	1
Sulfate	0.35	U	0.60	0.35	mg/L			10/02/19 13:34	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**24000**		250	233	ug/L		10/03/19 09:36	10/03/19 18:19	5
Potassium	**4580**		250	73.5	ug/L		10/03/19 09:36	10/03/19 18:19	5
Magnesium	**6780**		250	24.8	ug/L		10/03/19 09:36	10/03/19 18:19	5
Sodium	**21300**		250	66.8	ug/L		10/03/19 09:36	10/03/19 18:19	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	1.7	U	50.0	1.7	ug/L		10/07/19 08:20	10/07/19 19:13	1
Iron, Dissolved	**14200**		150	34.2	ug/L		10/07/19 08:20	10/07/19 19:13	1
Manganese, Dissolved	**221**		15.0	0.99	ug/L		10/07/19 08:20	10/07/19 19:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.068	U	0.10	0.068	mg/L			10/03/19 11:30	1
Bicarbonate Alkalinity as CaCO3	**102**		5.0	5.0	mg/L			10/03/19 11:29	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/03/19 11:29	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/03/19 15:48	1

Client Sample ID: UPA-105A-TZ — Lab Sample ID: 460-192721-2

Date Collected: 10/01/19 12:30 **Matrix: Water**
Date Received: 10/01/19 20:00

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/04/19 11:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*93*		*72 - 133*		*10/04/19 11:05*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/04/19 16:28	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/04/19 16:28	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/04/19 16:28	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/04/19 16:28	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/04/19 16:28	1
Acetone	4.4	U	5.0	4.4	ug/L			10/04/19 16:28	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/04/19 16:28	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/04/19 16:28	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/04/19 16:28	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/04/19 16:28	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/04/19 16:28	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/04/19 16:28	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/04/19 16:28	1

Client Sample ID: UPA-105A-TZ Lab Sample ID: 460-192721-2

Date Collected: 10/01/19 12:30 **Matrix: Water**
Date Received: 10/01/19 20:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/04/19 16:28	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/04/19 16:28	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/04/19 16:28	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/04/19 16:28	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/04/19 16:28	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/04/19 16:28	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/04/19 16:28	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/04/19 16:28	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/04/19 16:28	1
Benzene	0.20	U	1.0	0.20	ug/L			10/04/19 16:28	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/04/19 16:28	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/04/19 16:28	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/04/19 16:28	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/04/19 16:28	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/04/19 16:28	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/04/19 16:28	1
Toluene	0.38	U	1.0	0.38	ug/L			10/04/19 16:28	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/04/19 16:28	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/04/19 16:28	1
Styrene	0.42	U	1.0	0.42	ug/L			10/04/19 16:28	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/04/19 16:28	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/04/19 16:28	1
MTBE	0.47	U	1.0	0.47	ug/L			10/04/19 16:28	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/04/19 16:28	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/04/19 16:28	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/04/19 16:28	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/04/19 16:28	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/04/19 16:28	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/04/19 16:28	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/04/19 16:28	1
Indane	0.35	U	1.0	0.35	ug/L			10/04/19 16:28	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/04/19 16:28	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/04/19 16:28	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/04/19 16:28*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*74 - 132*		*10/04/19 16:28*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*10/04/19 16:28*	*1*
4-Bromofluorobenzene	*96*		*77 - 124*		*10/04/19 16:28*	*1*
Dibromofluoromethane (Surr)	*94*		*72 - 131*		*10/04/19 16:28*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/04/19 10:15	10/05/19 01:12	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/04/19 10:15	10/05/19 01:12	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/04/19 10:15	10/05/19 01:12	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/04/19 10:15	10/05/19 01:12	1
Pentachlorophenol	0.15	U	0.20	0.15	ug/L		10/04/19 10:15	10/05/19 01:12	1

Client Sample ID: UPA-105A-TZ Lab Sample ID: 460-192721-2

Date Collected: 10/01/19 12:30 **Matrix: Water**
Date Received: 10/01/19 20:00

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethyl)ether	0.026	U	0.030	0.026	ug/L		10/04/19 10:15	10/05/19 01:12	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/04/19 10:15	10/04/19 20:14	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/04/19 10:15	10/04/19 20:14	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/04/19 10:15	10/04/19 20:14	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/04/19 10:15	10/04/19 20:14	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/04/19 10:15	10/04/19 20:14	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/04/19 10:15	10/04/19 20:14	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/04/19 10:15	10/04/19 20:14	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/04/19 10:15	10/04/19 20:14	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/04/19 10:15	10/04/19 20:14	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/04/19 10:15	10/04/19 20:14	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/04/19 10:15	10/04/19 20:14	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/04/19 10:15	10/04/19 20:14	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/04/19 10:15	10/04/19 20:14	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/04/19 10:15	10/04/19 20:14	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/04/19 10:15	10/04/19 20:14	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/04/19 10:15	10/04/19 20:14	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/04/19 10:15	10/04/19 20:14	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/04/19 10:15	10/04/19 20:14	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/04/19 10:15	10/04/19 20:14	1
Isophorone	0.80	U	10	0.80	ug/L		10/04/19 10:15	10/04/19 20:14	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/04/19 10:15	10/04/19 20:14	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/04/19 10:15	10/04/19 20:14	1
Naphthalene	1.1	U	10	1.1	ug/L		10/04/19 10:15	10/04/19 20:14	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/04/19 10:15	10/04/19 20:14	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/04/19 10:15	10/04/19 20:14	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/04/19 10:15	10/04/19 20:14	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/04/19 10:15	10/04/19 20:14	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/04/19 10:15	10/04/19 20:14	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/04/19 10:15	10/04/19 20:14	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/04/19 10:15	10/04/19 20:14	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/04/19 10:15	10/04/19 20:14	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/04/19 10:15	10/04/19 20:14	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/04/19 10:15	10/04/19 20:14	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/04/19 10:15	10/04/19 20:14	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/04/19 10:15	10/04/19 20:14	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/04/19 10:15	10/04/19 20:14	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/04/19 10:15	10/04/19 20:14	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/04/19 10:15	10/04/19 20:14	1
Fluorene	0.91	U	10	0.91	ug/L		10/04/19 10:15	10/04/19 20:14	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/04/19 10:15	10/04/19 20:14	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/04/19 10:15	10/04/19 20:14	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/04/19 10:15	10/04/19 20:14	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/04/19 10:15	10/04/19 20:14	1
Anthracene	0.63	U	10	0.63	ug/L		10/04/19 10:15	10/04/19 20:14	1
Carbazole	0.68	U	10	0.68	ug/L		10/04/19 10:15	10/04/19 20:14	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/04/19 10:15	10/04/19 20:14	1

Client Sample ID: UPA-105A-TZ — Lab Sample ID: 460-192721-2

Date Collected: 10/01/19 12:30 **Matrix: Water**
Date Received: 10/01/19 20:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	0.84	U	10	0.84	ug/L		10/04/19 10:15	10/04/19 20:14	1
Pyrene	1.6	U	10	1.6	ug/L		10/04/19 10:15	10/04/19 20:14	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/04/19 10:15	10/04/19 20:14	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/04/19 10:15	10/04/19 20:14	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/04/19 10:15	10/04/19 20:14	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/04/19 10:15	10/04/19 20:14	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/04/19 10:15	10/04/19 20:14	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/04/19 10:15	10/04/19 20:14	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/04/19 10:15	10/04/19 20:14	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/04/19 10:15	10/04/19 20:14	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/04/19 10:15	10/04/19 20:14	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/04/19 10:15	10/04/19 20:14	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/04/19 10:15	10/04/19 20:14	1
Caprolactam	0.68	U	10	0.68	ug/L		10/04/19 10:15	10/04/19 20:14	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/04/19 10:15	10/04/19 20:14	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/04/19 10:15	10/04/19 20:14	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/04/19 10:15	10/04/19 20:14	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/04/19 10:15*	*10/04/19 20:14*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*70*		*51 - 108*	*10/04/19 10:15*	*10/04/19 20:14*	*1*
Phenol-d5 (Surr)	*23*		*14 - 39*	*10/04/19 10:15*	*10/04/19 20:14*	*1*
Terphenyl-d14 (Surr)	*55*		*40 - 148*	*10/04/19 10:15*	*10/04/19 20:14*	*1*
2,4,6-Tribromophenol (Surr)	*78*		*26 - 139*	*10/04/19 10:15*	*10/04/19 20:14*	*1*
2-Fluorophenol (Surr)	*34*		*25 - 58*	*10/04/19 10:15*	*10/04/19 20:14*	*1*
2-Fluorobiphenyl (Surr)	*65*		*45 - 107*	*10/04/19 10:15*	*10/04/19 20:14*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5.56**		0.12	0.014	mg/L			10/02/19 13:49	1
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/02/19 13:49	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/02/19 13:49	1
Sulfate	**15.1**		0.60	0.35	mg/L			10/02/19 13:49	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**14800**		250	233	ug/L		10/03/19 04:26	10/03/19 18:21	5
Potassium	**3950**		250	73.5	ug/L		10/03/19 04:26	10/03/19 18:21	5
Magnesium	**2930**		250	24.8	ug/L		10/03/19 04:26	10/03/19 18:21	5
Sodium	**10100**		250	66.8	ug/L		10/03/19 04:26	10/03/19 18:21	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	1.7	U	50.0	1.7	ug/L		10/07/19 08:20	10/07/19 19:21	1
Iron, Dissolved	**3200**		150	34.2	ug/L		10/07/19 08:20	10/07/19 19:21	1
Manganese, Dissolved	**93.6**		15.0	0.99	ug/L		10/07/19 08:20	10/07/19 19:21	1

Client Sample ID: UPA-105A-TZ — Lab Sample ID: 460-192721-2

Date Collected: 10/01/19 12:30 **Matrix: Water**
Date Received: 10/01/19 20:00

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.068	U	0.10	0.068	mg/L			10/03/19 11:32	1
Bicarbonate Alkalinity as CaCO3	**55.0**		5.0	5.0	mg/L			10/03/19 11:36	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/03/19 11:36	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/03/19 15:48	1

Client Sample ID: UPA-105B-LS — Lab Sample ID: 460-192721-3

Date Collected: 10/01/19 15:35 **Matrix: Water**
Date Received: 10/01/19 20:00

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**1.4**		0.40	0.20	ug/L			10/04/19 11:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*93*		*72 - 133*		*10/04/19 11:31*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/04/19 16:46	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/04/19 16:46	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/04/19 16:46	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/04/19 16:46	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/04/19 16:46	1
Acetone	4.4	U	5.0	4.4	ug/L			10/04/19 16:46	1
Carbon disulfide	**6.4**		1.0	0.82	ug/L			10/04/19 16:46	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/04/19 16:46	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/04/19 16:46	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/04/19 16:46	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/04/19 16:46	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/04/19 16:46	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/04/19 16:46	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/04/19 16:46	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/04/19 16:46	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/04/19 16:46	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/04/19 16:46	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/04/19 16:46	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/04/19 16:46	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/04/19 16:46	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/04/19 16:46	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/04/19 16:46	1
Benzene	0.20	U	1.0	0.20	ug/L			10/04/19 16:46	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/04/19 16:46	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/04/19 16:46	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/04/19 16:46	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/04/19 16:46	1
Tetrachloroethene	**3.3**		1.0	0.25	ug/L			10/04/19 16:46	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/04/19 16:46	1
Toluene	0.38	U	1.0	0.38	ug/L			10/04/19 16:46	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/04/19 16:46	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/04/19 16:46	1

Client Sample ID: UPA-105B-LS Lab Sample ID: 460-192721-3

Date Collected: 10/01/19 15:35 **Matrix: Water**
Date Received: 10/01/19 20:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	0.42	U	1.0	0.42	ug/L			10/04/19 16:46	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/04/19 16:46	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/04/19 16:46	1
MTBE	0.47	U	1.0	0.47	ug/L			10/04/19 16:46	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/04/19 16:46	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/04/19 16:46	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/04/19 16:46	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/04/19 16:46	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/04/19 16:46	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/04/19 16:46	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/04/19 16:46	1
Indane	0.35	U	1.0	0.35	ug/L			10/04/19 16:46	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/04/19 16:46	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/04/19 16:46	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/04/19 16:46*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*74 - 132*		*10/04/19 16:46*	*1*
Toluene-d8 (Surr)	*105*		*80 - 120*		*10/04/19 16:46*	*1*
4-Bromofluorobenzene	*96*		*77 - 124*		*10/04/19 16:46*	*1*
Dibromofluoromethane (Surr)	*96*		*72 - 131*		*10/04/19 16:46*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/04/19 10:15	10/05/19 01:33	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/04/19 10:15	10/05/19 01:33	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/04/19 10:15	10/05/19 01:33	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/04/19 10:15	10/05/19 01:33	1
Pentachlorophenol	0.15	U	0.20	0.15	ug/L		10/04/19 10:15	10/05/19 01:33	1
Bis(2-chloroethyl)ether	**0.11**		0.030	0.026	ug/L		10/04/19 10:15	10/05/19 01:33	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/04/19 10:15	10/04/19 20:35	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/04/19 10:15	10/04/19 20:35	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/04/19 10:15	10/04/19 20:35	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/04/19 10:15	10/04/19 20:35	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/04/19 10:15	10/04/19 20:35	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/04/19 10:15	10/04/19 20:35	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/04/19 10:15	10/04/19 20:35	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/04/19 10:15	10/04/19 20:35	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/04/19 10:15	10/04/19 20:35	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/04/19 10:15	10/04/19 20:35	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/04/19 10:15	10/04/19 20:35	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/04/19 10:15	10/04/19 20:35	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/04/19 10:15	10/04/19 20:35	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/04/19 10:15	10/04/19 20:35	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/04/19 10:15	10/04/19 20:35	1

Client Sample ID: UPA-105B-LS Lab Sample ID: 460-192721-3

Date Collected: 10/01/19 15:35 **Matrix: Water**
Date Received: 10/01/19 20:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/04/19 10:15	10/04/19 20:35	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/04/19 10:15	10/04/19 20:35	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/04/19 10:15	10/04/19 20:35	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/04/19 10:15	10/04/19 20:35	1
Isophorone	0.80	U	10	0.80	ug/L		10/04/19 10:15	10/04/19 20:35	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/04/19 10:15	10/04/19 20:35	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/04/19 10:15	10/04/19 20:35	1
Naphthalene	1.1	U	10	1.1	ug/L		10/04/19 10:15	10/04/19 20:35	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/04/19 10:15	10/04/19 20:35	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/04/19 10:15	10/04/19 20:35	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/04/19 10:15	10/04/19 20:35	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/04/19 10:15	10/04/19 20:35	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/04/19 10:15	10/04/19 20:35	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/04/19 10:15	10/04/19 20:35	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/04/19 10:15	10/04/19 20:35	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/04/19 10:15	10/04/19 20:35	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/04/19 10:15	10/04/19 20:35	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/04/19 10:15	10/04/19 20:35	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/04/19 10:15	10/04/19 20:35	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/04/19 10:15	10/04/19 20:35	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/04/19 10:15	10/04/19 20:35	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/04/19 10:15	10/04/19 20:35	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/04/19 10:15	10/04/19 20:35	1
Fluorene	0.91	U	10	0.91	ug/L		10/04/19 10:15	10/04/19 20:35	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/04/19 10:15	10/04/19 20:35	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/04/19 10:15	10/04/19 20:35	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/04/19 10:15	10/04/19 20:35	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/04/19 10:15	10/04/19 20:35	1
Anthracene	0.63	U	10	0.63	ug/L		10/04/19 10:15	10/04/19 20:35	1
Carbazole	0.68	U	10	0.68	ug/L		10/04/19 10:15	10/04/19 20:35	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/04/19 10:15	10/04/19 20:35	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/04/19 10:15	10/04/19 20:35	1
Pyrene	1.6	U	10	1.6	ug/L		10/04/19 10:15	10/04/19 20:35	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/04/19 10:15	10/04/19 20:35	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/04/19 10:15	10/04/19 20:35	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/04/19 10:15	10/04/19 20:35	1
Bis(2-ethylhexyl) phthalate	**20**		2.0	1.7	ug/L		10/04/19 10:15	10/04/19 20:35	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/04/19 10:15	10/04/19 20:35	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/04/19 10:15	10/04/19 20:35	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/04/19 10:15	10/04/19 20:35	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/04/19 10:15	10/04/19 20:35	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/04/19 10:15	10/04/19 20:35	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/04/19 10:15	10/04/19 20:35	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/04/19 10:15	10/04/19 20:35	1
Caprolactam	0.68	U	10	0.68	ug/L		10/04/19 10:15	10/04/19 20:35	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/04/19 10:15	10/04/19 20:35	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/04/19 10:15	10/04/19 20:35	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/04/19 10:15	10/04/19 20:35	1

Client Sample ID: UPA-105B-LS — Lab Sample ID: 460-192721-3

Date Collected: 10/01/19 15:35 **Matrix: Water**
Date Received: 10/01/19 20:00

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L				10/04/19 10:15	10/04/19 20:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	65		51 - 108	10/04/19 10:15	10/04/19 20:35	1
Phenol-d5 (Surr)	34		14 - 39	10/04/19 10:15	10/04/19 20:35	1
Terphenyl-d14 (Surr)	52		40 - 148	10/04/19 10:15	10/04/19 20:35	1
2,4,6-Tribromophenol (Surr)	74		26 - 139	10/04/19 10:15	10/04/19 20:35	1
2-Fluorophenol (Surr)	44		25 - 58	10/04/19 10:15	10/04/19 20:35	1
2-Fluorobiphenyl (Surr)	60		45 - 107	10/04/19 10:15	10/04/19 20:35	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**42.5**		1.92	0.22	mg/L			10/02/19 14:49	16
Nitrate as N	**1.37**		0.10	0.056	mg/L			10/02/19 14:04	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/02/19 14:04	1
Sulfate	**17.4**		0.60	0.35	mg/L			10/02/19 14:04	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**31000**		250	233	ug/L		10/03/19 09:36	10/03/19 18:36	5
Potassium	**4220**		250	73.5	ug/L		10/03/19 09:36	10/03/19 18:36	5
Magnesium	**3380**		250	24.8	ug/L		10/03/19 09:36	10/03/19 18:36	5
Sodium	**34500**		250	66.8	ug/L		10/03/19 09:36	10/03/19 18:36	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	1.7	U	50.0	1.7	ug/L		10/07/19 08:20	10/07/19 19:25	1
Iron, Dissolved	**926**		150	34.2	ug/L		10/07/19 08:20	10/07/19 19:25	1
Manganese, Dissolved	**145**		15.0	0.99	ug/L		10/07/19 08:20	10/07/19 19:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.20**		0.10	0.068	mg/L			10/03/19 11:34	1
Bicarbonate Alkalinity as CaCO3	**74.1**		5.0	5.0	mg/L			10/03/19 11:44	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/03/19 11:44	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/03/19 15:48	1

Client Sample ID: UPA-104-LS — Lab Sample ID: 460-192721-4

Date Collected: 10/01/19 14:55 **Matrix: Water**
Date Received: 10/01/19 20:00

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**40**		0.40	0.20	ug/L			10/04/19 11:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	91		72 - 133		10/04/19 11:56	1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/04/19 17:05	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/04/19 17:05	1

Client Sample ID: UPA-104-LS Lab Sample ID: 460-192721-4

Date Collected: 10/01/19 14:55 **Matrix: Water**
Date Received: 10/01/19 20:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/04/19 17:05	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/04/19 17:05	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/04/19 17:05	1
Acetone	4.4	U	5.0	4.4	ug/L			10/04/19 17:05	1
Carbon disulfide	**1.2**		1.0	0.82	ug/L			10/04/19 17:05	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/04/19 17:05	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/04/19 17:05	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/04/19 17:05	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/04/19 17:05	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/04/19 17:05	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/04/19 17:05	1
2-Butanone (MEK)	**17**		5.0	1.9	ug/L			10/04/19 17:05	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/04/19 17:05	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/04/19 17:05	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/04/19 17:05	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/04/19 17:05	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/04/19 17:05	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/04/19 17:05	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/04/19 17:05	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/04/19 17:05	1
Benzene	**0.40**	**J**	1.0	0.20	ug/L			10/04/19 17:05	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/04/19 17:05	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/04/19 17:05	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/04/19 17:05	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/04/19 17:05	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/04/19 17:05	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/04/19 17:05	1
Toluene	0.38	U	1.0	0.38	ug/L			10/04/19 17:05	1
Chlorobenzene	**8.4**		1.0	0.38	ug/L			10/04/19 17:05	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/04/19 17:05	1
Styrene	0.42	U	1.0	0.42	ug/L			10/04/19 17:05	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/04/19 17:05	1
Diethyl ether	**4.0**		1.0	0.21	ug/L			10/04/19 17:05	1
MTBE	**2.3**		1.0	0.47	ug/L			10/04/19 17:05	1
Tetrahydrofuran	**3.3**		2.0	1.0	ug/L			10/04/19 17:05	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/04/19 17:05	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/04/19 17:05	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/04/19 17:05	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/04/19 17:05	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/04/19 17:05	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/04/19 17:05	1
Indane	0.35	U	1.0	0.35	ug/L			10/04/19 17:05	1
Dichlorofluoromethane	**0.39**	**J**	1.0	0.34	ug/L			10/04/19 17:05	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/04/19 17:05	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/04/19 17:05*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*74 - 132*		*10/04/19 17:05*	*1*

Client Sample ID: UPA-104-LS Lab Sample ID: 460-192721-4

Date Collected: 10/01/19 14:55 **Matrix: Water**
Date Received: 10/01/19 20:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*104*		*80 - 120*		*10/04/19 17:05*	*1*
4-Bromofluorobenzene	*96*		*77 - 124*		*10/04/19 17:05*	*1*
Dibromofluoromethane (Surr)	*96*		*72 - 131*		*10/04/19 17:05*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/04/19 10:15	10/05/19 01:54	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/04/19 10:15	10/05/19 01:54	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/04/19 10:15	10/05/19 01:54	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/04/19 10:15	10/05/19 01:54	1
Pentachlorophenol	0.15	U	0.20	0.15	ug/L		10/04/19 10:15	10/05/19 01:54	1
Bis(2-chloroethyl)ether	**7.5**		0.030	0.026	ug/L		10/04/19 10:15	10/05/19 01:54	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/04/19 10:15	10/04/19 20:56	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/04/19 10:15	10/04/19 20:56	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/04/19 10:15	10/04/19 20:56	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/04/19 10:15	10/04/19 20:56	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/04/19 10:15	10/04/19 20:56	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/04/19 10:15	10/04/19 20:56	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/04/19 10:15	10/04/19 20:56	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/04/19 10:15	10/04/19 20:56	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/04/19 10:15	10/04/19 20:56	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/04/19 10:15	10/04/19 20:56	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/04/19 10:15	10/04/19 20:56	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/04/19 10:15	10/04/19 20:56	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/04/19 10:15	10/04/19 20:56	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/04/19 10:15	10/04/19 20:56	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/04/19 10:15	10/04/19 20:56	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/04/19 10:15	10/04/19 20:56	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/04/19 10:15	10/04/19 20:56	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/04/19 10:15	10/04/19 20:56	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/04/19 10:15	10/04/19 20:56	1
Isophorone	0.80	U	10	0.80	ug/L		10/04/19 10:15	10/04/19 20:56	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/04/19 10:15	10/04/19 20:56	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/04/19 10:15	10/04/19 20:56	1
Naphthalene	1.1	U	10	1.1	ug/L		10/04/19 10:15	10/04/19 20:56	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/04/19 10:15	10/04/19 20:56	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/04/19 10:15	10/04/19 20:56	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/04/19 10:15	10/04/19 20:56	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/04/19 10:15	10/04/19 20:56	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/04/19 10:15	10/04/19 20:56	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/04/19 10:15	10/04/19 20:56	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/04/19 10:15	10/04/19 20:56	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/04/19 10:15	10/04/19 20:56	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/04/19 10:15	10/04/19 20:56	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/04/19 10:15	10/04/19 20:56	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/04/19 10:15	10/04/19 20:56	1

Client Sample ID: UPA-104-LS Lab Sample ID: 460-192721-4

Date Collected: 10/01/19 14:55 **Matrix: Water**
Date Received: 10/01/19 20:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	1.1	U	10	1.1	ug/L		10/04/19 10:15	10/04/19 20:56	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/04/19 10:15	10/04/19 20:56	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/04/19 10:15	10/04/19 20:56	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/04/19 10:15	10/04/19 20:56	1
Fluorene	0.91	U	10	0.91	ug/L		10/04/19 10:15	10/04/19 20:56	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/04/19 10:15	10/04/19 20:56	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/04/19 10:15	10/04/19 20:56	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/04/19 10:15	10/04/19 20:56	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/04/19 10:15	10/04/19 20:56	1
Anthracene	0.63	U	10	0.63	ug/L		10/04/19 10:15	10/04/19 20:56	1
Carbazole	0.68	U	10	0.68	ug/L		10/04/19 10:15	10/04/19 20:56	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/04/19 10:15	10/04/19 20:56	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/04/19 10:15	10/04/19 20:56	1
Pyrene	1.6	U	10	1.6	ug/L		10/04/19 10:15	10/04/19 20:56	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/04/19 10:15	10/04/19 20:56	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/04/19 10:15	10/04/19 20:56	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/04/19 10:15	10/04/19 20:56	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/04/19 10:15	10/04/19 20:56	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/04/19 10:15	10/04/19 20:56	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/04/19 10:15	10/04/19 20:56	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/04/19 10:15	10/04/19 20:56	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/04/19 10:15	10/04/19 20:56	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/04/19 10:15	10/04/19 20:56	1
Diphenyl ether	**4.1**	**J**	10	1.2	ug/L		10/04/19 10:15	10/04/19 20:56	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/04/19 10:15	10/04/19 20:56	1
Caprolactam	0.68	U	10	0.68	ug/L		10/04/19 10:15	10/04/19 20:56	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/04/19 10:15	10/04/19 20:56	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/04/19 10:15	10/04/19 20:56	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/04/19 10:15	10/04/19 20:56	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1-Hexanol, 2-ethyl-	*7.4*	*~~J N~~*	*ug/L*		*4.44*	*104-76-7*	*10/04/19 10:15*	*10/04/19 20:56*	*1*
Unknown	*6.9*	*J*	*ug/L*		*7.01*		*10/04/19 10:15*	*10/04/19 20:56*	*1*
Unknown	*20*	*J*	*ug/L*		*9.86*		*10/04/19 10:15*	*10/04/19 20:56*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*91*		*51 - 108*	*10/04/19 10:15*	*10/04/19 20:56*	*1*
Phenol-d5 (Surr)	*28*		*14 - 39*	*10/04/19 10:15*	*10/04/19 20:56*	*1*
Terphenyl-d14 (Surr)	*66*		*40 - 148*	*10/04/19 10:15*	*10/04/19 20:56*	*1*
2,4,6-Tribromophenol (Surr)	*104*		*26 - 139*	*10/04/19 10:15*	*10/04/19 20:56*	*1*
2-Fluorophenol (Surr)	*43*		*25 - 58*	*10/04/19 10:15*	*10/04/19 20:56*	*1*
2-Fluorobiphenyl (Surr)	*85*		*45 - 107*	*10/04/19 10:15*	*10/04/19 20:56*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**38.8**		1.80	0.21	mg/L			10/02/19 15:04	15
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/02/19 14:19	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/02/19 14:19	1
Sulfate	**8.54**		0.60	0.35	mg/L			10/02/19 14:19	1

Client Sample ID: UPA-104-LS — Lab Sample ID: 460-192721-4

Date Collected: 10/01/19 14:55 **Matrix: Water**
Date Received: 10/01/19 20:00

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**21400**		250	233	ug/L		10/03/19 09:36	10/03/19 18:38	5
Potassium	**15200**		250	73.5	ug/L		10/03/19 09:36	10/03/19 18:38	5
Magnesium	**10200**		250	24.8	ug/L		10/03/19 09:36	10/03/19 18:38	5
Sodium	**39600**		250	66.8	ug/L		10/03/19 09:36	10/03/19 18:38	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**13.4**	J	50.0	1.7	ug/L		10/07/19 08:20	10/07/19 19:29	1
Iron, Dissolved	**39200**		150	34.2	ug/L		10/07/19 08:20	10/07/19 19:29	1
Manganese, Dissolved	**2840**		15.0	0.99	ug/L		10/07/19 08:20	10/07/19 19:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.76**		0.10	0.068	mg/L			10/03/19 11:35	1
Bicarbonate Alkalinity as CaCO3	**140**		5.0	5.0	mg/L			10/03/19 11:51	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/03/19 11:51	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/03/19 15:48	1

Client Sample ID: TBGW_100119 — Lab Sample ID: 460-192721-9

Date Collected: 10/01/19 00:00 **Matrix: Water**
Date Received: 10/01/19 20:00

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/04/19 08:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*94*		*72 - 133*		*10/04/19 08:33*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/04/19 15:52	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/04/19 15:52	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/04/19 15:52	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/04/19 15:52	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/04/19 15:52	1
Acetone	**12**		5.0	4.4	ug/L			10/04/19 15:52	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/04/19 15:52	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/04/19 15:52	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/04/19 15:52	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/04/19 15:52	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/04/19 15:52	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/04/19 15:52	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/04/19 15:52	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/04/19 15:52	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/04/19 15:52	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/04/19 15:52	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/04/19 15:52	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/04/19 15:52	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/04/19 15:52	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/04/19 15:52	1

Client Sample ID: TBGW_100119 Lab Sample ID: 460-192721-9

Date Collected: 10/01/19 00:00 **Matrix: Water**
Date Received: 10/01/19 20:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/04/19 15:52	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/04/19 15:52	1
Benzene	0.20	U	1.0	0.20	ug/L			10/04/19 15:52	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/04/19 15:52	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/04/19 15:52	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/04/19 15:52	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/04/19 15:52	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/04/19 15:52	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/04/19 15:52	1
Toluene	0.38	U	1.0	0.38	ug/L			10/04/19 15:52	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/04/19 15:52	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/04/19 15:52	1
Styrene	0.42	U	1.0	0.42	ug/L			10/04/19 15:52	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/04/19 15:52	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/04/19 15:52	1
MTBE	0.47	U	1.0	0.47	ug/L			10/04/19 15:52	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/04/19 15:52	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/04/19 15:52	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/04/19 15:52	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/04/19 15:52	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/04/19 15:52	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/04/19 15:52	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/04/19 15:52	1
Indane	0.35	U	1.0	0.35	ug/L			10/04/19 15:52	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/04/19 15:52	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/04/19 15:52	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/04/19 15:52*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*74 - 132*		*10/04/19 15:52*	*1*
Toluene-d8 (Surr)	*106*		*80 - 120*		*10/04/19 15:52*	*1*
4-Bromofluorobenzene	*98*		*77 - 124*		*10/04/19 15:52*	*1*
Dibromofluoromethane (Surr)	*95*		*72 - 131*		*10/04/19 15:52*	*1*

Client Sample ID: UPA-104-US Lab Sample ID: 460-192902-1

Date Collected: 10/02/19 11:20 **Matrix: Water**
Date Received: 10/02/19 21:20

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/06/19 23:04	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/06/19 23:04	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/06/19 23:04	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/06/19 23:04	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/06/19 23:04	1
Acetone	**5.1**	U	~~5.0~~ 5.1	4.4	ug/L			10/06/19 23:04	1
Carbon disulfide	0.82	~~U F1~~ UJ	1.0	0.82	ug/L			10/06/19 23:04	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/06/19 23:04	1

Client Sample ID: UPA-104-US Lab Sample ID: 460-192902-1

Date Collected: 10/02/19 11:20 **Matrix: Water**
Date Received: 10/02/19 21:20

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/06/19 23:04	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/06/19 23:04	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/06/19 23:04	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/06/19 23:04	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/06/19 23:04	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/06/19 23:04	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/06/19 23:04	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/06/19 23:04	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/06/19 23:04	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/06/19 23:04	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/06/19 23:04	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/06/19 23:04	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/06/19 23:04	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/06/19 23:04	1
Benzene	**67**	~~E1~~ J-	1.0	0.20	ug/L			10/06/19 23:04	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/06/19 23:04	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/06/19 23:04	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/06/19 23:04	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/06/19 23:04	1
Tetrachloroethene	**0.62**	**J**	1.0	0.25	ug/L			10/06/19 23:04	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/06/19 23:04	1
Toluene	0.38	U	1.0	0.38	ug/L			10/06/19 23:04	1
Chlorobenzene	**3.4**		1.0	0.38	ug/L			10/06/19 23:04	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/06/19 23:04	1
Styrene	0.42	U	1.0	0.42	ug/L			10/06/19 23:04	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/06/19 23:04	1
Diethyl ether	**2.0**		1.0	0.21	ug/L			10/06/19 23:04	1
MTBE	**0.62**	**J**	1.0	0.47	ug/L			10/06/19 23:04	1
Tetrahydrofuran	**1.3**	**J**	2.0	1.0	ug/L			10/06/19 23:04	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/06/19 23:04	1
1,4-Dioxane	**170**		50	28	ug/L			10/06/19 23:04	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/06/19 23:04	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/06/19 23:04	1
Isopropylbenzene	**1.5**		1.0	0.34	ug/L			10/06/19 23:04	1
N-Propylbenzene	**0.52**	**J**	1.0	0.32	ug/L			10/06/19 23:04	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/06/19 23:04	1
Indane	**0.46**	**J**	1.0	0.35	ug/L			10/06/19 23:04	1
Dichlorofluoromethane	**1.7**		1.0	0.34	ug/L			10/06/19 23:04	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/06/19 23:04	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/06/19 23:04*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*74 - 132*		*10/06/19 23:04*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*10/06/19 23:04*	*1*
4-Bromofluorobenzene	*82*		*77 - 124*		*10/06/19 23:04*	*1*
Dibromofluoromethane (Surr)	*89*		*72 - 131*		*10/06/19 23:04*	*1*

Client Sample ID: UPA-104-US Lab Sample ID: 460-192902-1

Date Collected: 10/02/19 11:20 **Matrix: Water**
Date Received: 10/02/19 21:20

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	**0.11**	**J**	0.25	0.078	ug/L		10/04/19 09:28	10/07/19 06:45	5
Benzo[a]pyrene	0.11	~~U~~ UJ	0.25	0.11	ug/L		10/04/19 09:28	10/07/19 06:45	5
Benzo[b]fluoranthene	0.12	U	0.25	0.12	ug/L		10/04/19 09:28	10/07/19 06:45	5
Hexachlorobenzene	0.066	U	0.10	0.066	ug/L		10/04/19 09:28	10/07/19 06:45	5
Pentachlorophenol	0.77	U	1.0	0.77	ug/L		10/04/19 09:28	10/07/19 06:45	5
Bis(2-chloroethyl)ether	**29**		0.15	0.13	ug/L		10/04/19 09:28	10/07/19 06:45	5

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	**2.6**	**J**	10	0.29	ug/L		10/04/19 09:28	10/04/19 20:43	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/04/19 09:28	10/04/19 20:43	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/04/19 09:28	10/04/19 20:43	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/04/19 09:28	10/04/19 20:43	1
2-Nitrophenol	0.75	~~U *~~ UJ	10	0.75	ug/L		10/04/19 09:28	10/04/19 20:43	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/04/19 09:28	10/04/19 20:43	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/04/19 09:28	10/04/19 20:43	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/04/19 09:28	10/04/19 20:43	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/04/19 09:28	10/04/19 20:43	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/04/19 09:28	10/04/19 20:43	1
2,4-Dinitrophenol	14	~~U *~~ UJ	20	14	ug/L		10/04/19 09:28	10/04/19 20:43	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/04/19 09:28	10/04/19 20:43	1
4,6-Dinitro-2-methylphenol	13	~~U *~~ UJ	20	13	ug/L		10/04/19 09:28	10/04/19 20:43	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/04/19 09:28	10/04/19 20:43	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/04/19 09:28	10/04/19 20:43	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/04/19 09:28	10/04/19 20:43	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/04/19 09:28	10/04/19 20:43	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/04/19 09:28	10/04/19 20:43	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/04/19 09:28	10/04/19 20:43	1
Isophorone	0.80	U	10	0.80	ug/L		10/04/19 09:28	10/04/19 20:43	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/04/19 09:28	10/04/19 20:43	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/04/19 09:28	10/04/19 20:43	1
Naphthalene	1.1	U	10	1.1	ug/L		10/04/19 09:28	10/04/19 20:43	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/04/19 09:28	10/04/19 20:43	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/04/19 09:28	10/04/19 20:43	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/04/19 09:28	10/04/19 20:43	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/04/19 09:28	10/04/19 20:43	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/04/19 09:28	10/04/19 20:43	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/04/19 09:28	10/04/19 20:43	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/04/19 09:28	10/04/19 20:43	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/04/19 09:28	10/04/19 20:43	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/04/19 09:28	10/04/19 20:43	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/04/19 09:28	10/04/19 20:43	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/04/19 09:28	10/04/19 20:43	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/04/19 09:28	10/04/19 20:43	1
2,4-Dinitrotoluene	1.0	~~U * F1~~ UJ	2.0	1.0	ug/L		10/04/19 09:28	10/04/19 20:43	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/04/19 09:28	10/04/19 20:43	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/04/19 09:28	10/04/19 20:43	1
Fluorene	0.91	U	10	0.91	ug/L		10/04/19 09:28	10/04/19 20:43	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/04/19 09:28	10/04/19 20:43	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/04/19 09:28	10/04/19 20:43	1

Client Sample ID: UPA-104-US Lab Sample ID: 460-192902-1

Date Collected: 10/02/19 11:20 **Matrix: Water**
Date Received: 10/02/19 21:20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/04/19 09:28	10/04/19 20:43	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/04/19 09:28	10/04/19 20:43	1
Anthracene	0.63	U	10	0.63	ug/L		10/04/19 09:28	10/04/19 20:43	1
Carbazole	0.68	U	10	0.68	ug/L		10/04/19 09:28	10/04/19 20:43	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/04/19 09:28	10/04/19 20:43	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/04/19 09:28	10/04/19 20:43	1
Pyrene	1.6	U	10	1.6	ug/L		10/04/19 09:28	10/04/19 20:43	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/04/19 09:28	10/04/19 20:43	1
3,3'-Dichlorobenzidine	1.4	~~U F1~~ UJ	10	1.4	ug/L		10/04/19 09:28	10/04/19 20:43	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/04/19 09:28	10/04/19 20:43	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/04/19 09:28	10/04/19 20:43	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/04/19 09:28	10/04/19 20:43	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/04/19 09:28	10/04/19 20:43	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/04/19 09:28	10/04/19 20:43	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/04/19 09:28	10/04/19 20:43	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/04/19 09:28	10/04/19 20:43	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/04/19 09:28	10/04/19 20:43	1
n,n'-Dimethylaniline	0.91	~~U F1 F2~~ UJ	1.0	0.91	ug/L		10/04/19 09:28	10/04/19 20:43	1
Caprolactam	0.68	U	10	0.68	ug/L		10/04/19 09:28	10/04/19 20:43	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/04/19 09:28	10/04/19 20:43	1
Bisphenol-A	9.9	U ~~*~~	10	9.9	ug/L		10/04/19 09:28	10/04/19 20:43	1
N-Methylaniline	0.48	~~U F1~~ UJ	5.0	0.48	ug/L		10/04/19 09:28	10/04/19 20:43	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane	*46*	*F1*	*ug/L*		*1.65*	*123-91-1*	*10/04/19 09:28*	*10/04/19 20:43*	*1*
Unknown	*16*	*J*	*ug/L*		*6.85*		*10/04/19 09:28*	*10/04/19 20:43*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*88*		*51 - 108*	*10/04/19 09:28*	*10/04/19 20:43*	*1*
Phenol-d5 (Surr)	*30*		*14 - 39*	*10/04/19 09:28*	*10/04/19 20:43*	*1*
Terphenyl-d14 (Surr)	*92*		*40 - 148*	*10/04/19 09:28*	*10/04/19 20:43*	*1*
2,4,6-Tribromophenol (Surr)	*90*		*26 - 139*	*10/04/19 09:28*	*10/04/19 20:43*	*1*
2-Fluorophenol (Surr)	*46*		*25 - 58*	*10/04/19 09:28*	*10/04/19 20:43*	*1*
2-Fluorobiphenyl (Surr)	*86*		*45 - 107*	*10/04/19 09:28*	*10/04/19 20:43*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.056	U ~~F1~~	0.10	0.056	mg/L			10/03/19 21:32	1
Nitrite as N	0.076	~~U F1~~ UJ	0.12	0.076	mg/L			10/03/19 21:32	1
Sulfate	**7.78**	~~F1~~ J+	0.60	0.35	mg/L			10/03/19 21:32	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**41.1**	~~D F1~~ J-	1.80	0.21	mg/L			10/04/19 03:15	15

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**22100**		250	233	ug/L		10/07/19 08:22	10/08/19 20:54	5
Potassium	**2480**		250	73.5	ug/L		10/07/19 08:22	10/08/19 20:54	5
Magnesium	**7380**		250	24.8	ug/L		10/07/19 08:22	10/08/19 20:54	5
Sodium	**21500**		250	66.8	ug/L		10/07/19 08:22	10/08/19 20:54	5

Client Sample ID: UPA-104-US — Lab Sample ID: 460-192902-1

Date Collected: 10/02/19 11:20 **Matrix: Water**
Date Received: 10/02/19 21:20

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**32.8**	**J**	50.0	1.7	ug/L		10/04/19 08:13	10/04/19 15:21	1
Iron, Dissolved	**14300**		150	34.2	ug/L		10/04/19 08:13	10/04/19 15:21	1
Manganese, Dissolved	**4510**		15.0	0.99	ug/L		10/04/19 08:13	10/04/19 15:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.31**		0.10	0.068	mg/L			10/04/19 14:10	1
Bicarbonate Alkalinity as CaCO3	**79.9**		5.0	5.0	mg/L			10/04/19 11:17	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/04/19 11:17	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/04/19 14:25	1

Client Sample ID: UPA-107-US — Lab Sample ID: 460-192902-2

Date Collected: 10/02/19 11:30 **Matrix: Water**
Date Received: 10/02/19 21:20

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**4.4**		0.40	0.20	ug/L			10/05/19 06:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*72 - 133*		*10/05/19 06:26*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/06/19 23:27	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/06/19 23:27	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/06/19 23:27	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/06/19 23:27	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/06/19 23:27	1
Acetone	4.4	U	5.0	4.4	ug/L			10/06/19 23:27	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/06/19 23:27	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/06/19 23:27	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/06/19 23:27	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/06/19 23:27	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/06/19 23:27	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/06/19 23:27	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/06/19 23:27	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/06/19 23:27	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/06/19 23:27	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/06/19 23:27	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/06/19 23:27	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/06/19 23:27	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/06/19 23:27	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/06/19 23:27	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/06/19 23:27	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/06/19 23:27	1
Benzene	0.20	U	1.0	0.20	ug/L			10/06/19 23:27	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/06/19 23:27	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/06/19 23:27	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/06/19 23:27	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/06/19 23:27	1

Client Sample ID: UPA-107-US Lab Sample ID: 460-192902-2

Date Collected: 10/02/19 11:30 **Matrix: Water**
Date Received: 10/02/19 21:20

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/06/19 23:27	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/06/19 23:27	1
Toluene	0.38	U	1.0	0.38	ug/L			10/06/19 23:27	1
Chlorobenzene	**6.6**		1.0	0.38	ug/L			10/06/19 23:27	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/06/19 23:27	1
Styrene	0.42	U	1.0	0.42	ug/L			10/06/19 23:27	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/06/19 23:27	1
Diethyl ether	**11**		1.0	0.21	ug/L			10/06/19 23:27	1
MTBE	0.47	U	1.0	0.47	ug/L			10/06/19 23:27	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/06/19 23:27	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/06/19 23:27	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/06/19 23:27	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/06/19 23:27	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/06/19 23:27	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/06/19 23:27	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/06/19 23:27	1
Indane	0.35	U	1.0	0.35	ug/L			10/06/19 23:27	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/06/19 23:27	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/06/19 23:27	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/06/19 23:27*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*74 - 132*		*10/06/19 23:27*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*		*10/06/19 23:27*	*1*
4-Bromofluorobenzene	*86*		*77 - 124*		*10/06/19 23:27*	*1*
Dibromofluoromethane (Surr)	*92*		*72 - 131*		*10/06/19 23:27*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/04/19 09:28	10/05/19 05:31	1
Benzo[a]pyrene	0.022	~~U~~ UJ	0.050	0.022	ug/L		10/04/19 09:28	10/05/19 05:31	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/04/19 09:28	10/05/19 05:31	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/04/19 09:28	10/05/19 05:31	1
Pentachlorophenol	0.15	U	0.20	0.15	ug/L		10/04/19 09:28	10/05/19 05:31	1
Bis(2-chloroethyl)ether	**0.091**		0.030	0.026	ug/L		10/04/19 09:28	10/05/19 05:31	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/04/19 09:28	10/04/19 21:46	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/04/19 09:28	10/04/19 21:46	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/04/19 09:28	10/04/19 21:46	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/04/19 09:28	10/04/19 21:46	1
2-Nitrophenol	0.75	~~U~~* UJ	10	0.75	ug/L		10/04/19 09:28	10/04/19 21:46	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/04/19 09:28	10/04/19 21:46	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/04/19 09:28	10/04/19 21:46	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/04/19 09:28	10/04/19 21:46	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/04/19 09:28	10/04/19 21:46	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/04/19 09:28	10/04/19 21:46	1

Client Sample ID: UPA-107-US Lab Sample ID: 460-192902-2

Date Collected: 10/02/19 11:30 **Matrix: Water**
Date Received: 10/02/19 21:20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dinitrophenol	14	~~U*~~ UJ	20	14	ug/L		10/04/19 09:28	10/04/19 21:46	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/04/19 09:28	10/04/19 21:46	1
4,6-Dinitro-2-methylphenol	13	~~U*~~ UJ	20	13	ug/L		10/04/19 09:28	10/04/19 21:46	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/04/19 09:28	10/04/19 21:46	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/04/19 09:28	10/04/19 21:46	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/04/19 09:28	10/04/19 21:46	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/04/19 09:28	10/04/19 21:46	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/04/19 09:28	10/04/19 21:46	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/04/19 09:28	10/04/19 21:46	1
Isophorone	0.80	U	10	0.80	ug/L		10/04/19 09:28	10/04/19 21:46	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/04/19 09:28	10/04/19 21:46	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/04/19 09:28	10/04/19 21:46	1
Naphthalene	1.1	U	10	1.1	ug/L		10/04/19 09:28	10/04/19 21:46	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/04/19 09:28	10/04/19 21:46	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/04/19 09:28	10/04/19 21:46	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/04/19 09:28	10/04/19 21:46	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/04/19 09:28	10/04/19 21:46	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/04/19 09:28	10/04/19 21:46	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/04/19 09:28	10/04/19 21:46	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/04/19 09:28	10/04/19 21:46	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/04/19 09:28	10/04/19 21:46	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/04/19 09:28	10/04/19 21:46	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/04/19 09:28	10/04/19 21:46	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/04/19 09:28	10/04/19 21:46	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/04/19 09:28	10/04/19 21:46	1
2,4-Dinitrotoluene	1.0	~~U*~~ UJ	2.0	1.0	ug/L		10/04/19 09:28	10/04/19 21:46	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/04/19 09:28	10/04/19 21:46	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/04/19 09:28	10/04/19 21:46	1
Fluorene	0.91	U	10	0.91	ug/L		10/04/19 09:28	10/04/19 21:46	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/04/19 09:28	10/04/19 21:46	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/04/19 09:28	10/04/19 21:46	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/04/19 09:28	10/04/19 21:46	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/04/19 09:28	10/04/19 21:46	1
Anthracene	0.63	U	10	0.63	ug/L		10/04/19 09:28	10/04/19 21:46	1
Carbazole	0.68	U	10	0.68	ug/L		10/04/19 09:28	10/04/19 21:46	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/04/19 09:28	10/04/19 21:46	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/04/19 09:28	10/04/19 21:46	1
Pyrene	1.6	U	10	1.6	ug/L		10/04/19 09:28	10/04/19 21:46	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/04/19 09:28	10/04/19 21:46	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/04/19 09:28	10/04/19 21:46	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/04/19 09:28	10/04/19 21:46	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/04/19 09:28	10/04/19 21:46	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/04/19 09:28	10/04/19 21:46	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/04/19 09:28	10/04/19 21:46	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/04/19 09:28	10/04/19 21:46	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/04/19 09:28	10/04/19 21:46	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/04/19 09:28	10/04/19 21:46	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/04/19 09:28	10/04/19 21:46	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/04/19 09:28	10/04/19 21:46	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-192645-1

Client Sample ID: UPA-107-US

Lab Sample ID: 460-192902-2

Date Collected: 10/02/19 11:30
Date Received: 10/02/19 21:20

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	0.68	U	10	0.68	ug/L		10/04/19 09:28	10/04/19 21:46	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/04/19 09:28	10/04/19 21:46	1
Bisphenol-A	9.9	U *	10	9.9	ug/L		10/04/19 09:28	10/04/19 21:46	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/04/19 09:28	10/04/19 21:46	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/04/19 09:28*	*10/04/19 21:46*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*91*		*51 - 108*	*10/04/19 09:28*	*10/04/19 21:46*	*1*
Phenol-d5 (Surr)	*31*		*14 - 39*	*10/04/19 09:28*	*10/04/19 21:46*	*1*
Terphenyl-d14 (Surr)	*87*		*40 - 148*	*10/04/19 09:28*	*10/04/19 21:46*	*1*
2,4,6-Tribromophenol (Surr)	*96*		*26 - 139*	*10/04/19 09:28*	*10/04/19 21:46*	*1*
2-Fluorophenol (Surr)	*46*		*25 - 58*	*10/04/19 09:28*	*10/04/19 21:46*	*1*
2-Fluorobiphenyl (Surr)	*86*		*45 - 107*	*10/04/19 09:28*	*10/04/19 21:46*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/03/19 23:11	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/03/19 23:11	1
Sulfate	**16.2**		0.60	0.35	mg/L			10/03/19 23:11	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**49.5**	D	2.52	0.29	mg/L			10/04/19 04:14	21

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**29300**		250	233	ug/L		10/07/19 08:22	10/08/19 21:45	5
Potassium	**8670**		250	73.5	ug/L		10/07/19 08:22	10/08/19 21:45	5
Magnesium	**12300**		250	24.8	ug/L		10/07/19 08:22	10/08/19 21:45	5
Sodium	**32000**		250	66.8	ug/L		10/07/19 08:22	10/08/19 21:45	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**20.9**	J	50.0	1.7	ug/L		10/04/19 10:03	10/05/19 15:26	1
Iron, Dissolved	**9150**		150	34.2	ug/L		10/04/19 10:03	10/05/19 15:26	1
Manganese, Dissolved	**3400**		15.0	0.99	ug/L		10/04/19 10:03	10/05/19 15:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**10.3**		0.10	0.068	mg/L			10/04/19 14:28	1
Bicarbonate Alkalinity as CaCO3	**149**		5.0	5.0	mg/L			10/04/19 11:55	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/04/19 11:55	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/04/19 14:25	1

Client Sample Results

Client: Golder Associates Inc. Job ID: 460-192645-1
Project/Site: DS&G Semi-Annual Groundwater

Client Sample ID: UPA-104-TZ Lab Sample ID: 460-192902-3

Date Collected: 10/02/19 15:10 **Matrix: Water**
Date Received: 10/02/19 21:20

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/06/19 23:50	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/06/19 23:50	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/06/19 23:50	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/06/19 23:50	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/06/19 23:50	1
Acetone	4.4	U	5.0	4.4	ug/L			10/06/19 23:50	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/06/19 23:50	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/06/19 23:50	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/06/19 23:50	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/06/19 23:50	1
cis-1,2-Dichloroethene	**0.24**	**J**	1.0	0.22	ug/L			10/06/19 23:50	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/06/19 23:50	1
1,2-Dichloroethane	**1.2**		1.0	0.43	ug/L			10/06/19 23:50	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/06/19 23:50	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/06/19 23:50	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/06/19 23:50	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/06/19 23:50	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/06/19 23:50	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/06/19 23:50	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/06/19 23:50	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/06/19 23:50	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/06/19 23:50	1
Benzene	**36**		1.0	0.20	ug/L			10/06/19 23:50	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/06/19 23:50	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/06/19 23:50	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/06/19 23:50	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/06/19 23:50	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/06/19 23:50	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/06/19 23:50	1
Toluene	0.38	U	1.0	0.38	ug/L			10/06/19 23:50	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/06/19 23:50	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/06/19 23:50	1
Styrene	0.42	U	1.0	0.42	ug/L			10/06/19 23:50	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/06/19 23:50	1
Diethyl ether	**0.92**	**J**	1.0	0.21	ug/L			10/06/19 23:50	1
MTBE	0.47	U	1.0	0.47	ug/L			10/06/19 23:50	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/06/19 23:50	1
Cyclohexane	**0.46**	**J**	1.0	0.32	ug/L			10/06/19 23:50	1
1,4-Dioxane	**69**		50	28	ug/L			10/06/19 23:50	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/06/19 23:50	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/06/19 23:50	1
Isopropylbenzene	**0.64**	**J**	1.0	0.34	ug/L			10/06/19 23:50	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/06/19 23:50	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/06/19 23:50	1
Indane	0.35	U	1.0	0.35	ug/L			10/06/19 23:50	1
Dichlorofluoromethane	**4.3**		1.0	0.34	ug/L			10/06/19 23:50	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/06/19 23:50	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/06/19 23:50*	*1*

Client Sample Results

Client: Golder Associates Inc. Job ID: 460-192645-1
Project/Site: DS&G Semi-Annual Groundwater

Client Sample ID: UPA-104-TZ Lab Sample ID: 460-192902-3

Date Collected: 10/02/19 15:10 **Matrix: Water**
Date Received: 10/02/19 21:20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*74 - 132*		*10/06/19 23:50*	*1*
Toluene-d8 (Surr)	*92*		*80 - 120*		*10/06/19 23:50*	*1*
4-Bromofluorobenzene	*84*		*77 - 124*		*10/06/19 23:50*	*1*
Dibromofluoromethane (Surr)	*91*		*72 - 131*		*10/06/19 23:50*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	**0.040**	**J**	0.10	0.031	ug/L		10/04/19 09:28	10/07/19 07:06	2
Benzo[a]pyrene	0.043	~~U~~ UJ	0.10	0.043	ug/L		10/04/19 09:28	10/07/19 07:06	2
Benzo[b]fluoranthene	0.048	U	0.10	0.048	ug/L		10/04/19 09:28	10/07/19 07:06	2
Hexachlorobenzene	0.026	U	0.040	0.026	ug/L		10/04/19 09:28	10/07/19 07:06	2
Pentachlorophenol	0.31	U	0.40	0.31	ug/L		10/04/19 09:28	10/07/19 07:06	2
Bis(2-chloroethyl)ether	**12**		0.060	0.052	ug/L		10/04/19 09:28	10/07/19 07:06	2

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/04/19 09:28	10/04/19 22:07	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/04/19 09:28	10/04/19 22:07	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/04/19 09:28	10/04/19 22:07	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/04/19 09:28	10/04/19 22:07	1
2-Nitrophenol	0.75	~~U~~ * UJ	10	0.75	ug/L		10/04/19 09:28	10/04/19 22:07	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/04/19 09:28	10/04/19 22:07	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/04/19 09:28	10/04/19 22:07	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/04/19 09:28	10/04/19 22:07	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/04/19 09:28	10/04/19 22:07	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/04/19 09:28	10/04/19 22:07	1
2,4-Dinitrophenol	14	~~U~~ * UJ	20	14	ug/L		10/04/19 09:28	10/04/19 22:07	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/04/19 09:28	10/04/19 22:07	1
4,6-Dinitro-2-methylphenol	13	~~U~~ * UJ	20	13	ug/L		10/04/19 09:28	10/04/19 22:07	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/04/19 09:28	10/04/19 22:07	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/04/19 09:28	10/04/19 22:07	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/04/19 09:28	10/04/19 22:07	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/04/19 09:28	10/04/19 22:07	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/04/19 09:28	10/04/19 22:07	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/04/19 09:28	10/04/19 22:07	1
Isophorone	0.80	U	10	0.80	ug/L		10/04/19 09:28	10/04/19 22:07	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/04/19 09:28	10/04/19 22:07	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/04/19 09:28	10/04/19 22:07	1
Naphthalene	1.1	U	10	1.1	ug/L		10/04/19 09:28	10/04/19 22:07	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/04/19 09:28	10/04/19 22:07	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/04/19 09:28	10/04/19 22:07	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/04/19 09:28	10/04/19 22:07	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/04/19 09:28	10/04/19 22:07	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/04/19 09:28	10/04/19 22:07	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/04/19 09:28	10/04/19 22:07	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/04/19 09:28	10/04/19 22:07	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/04/19 09:28	10/04/19 22:07	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/04/19 09:28	10/04/19 22:07	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/04/19 09:28	10/04/19 22:07	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/04/19 09:28	10/04/19 22:07	1

Client Sample ID: UPA-104-TZ — Lab Sample ID: 460-192902-3

Date Collected: 10/02/19 15:10 **Matrix: Water**
Date Received: 10/02/19 21:20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	1.1	U	10	1.1	ug/L		10/04/19 09:28	10/04/19 22:07	1
2,4-Dinitrotoluene	1.0	~~U *~~ UJ	2.0	1.0	ug/L		10/04/19 09:28	10/04/19 22:07	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/04/19 09:28	10/04/19 22:07	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/04/19 09:28	10/04/19 22:07	1
Fluorene	0.91	U	10	0.91	ug/L		10/04/19 09:28	10/04/19 22:07	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/04/19 09:28	10/04/19 22:07	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/04/19 09:28	10/04/19 22:07	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/04/19 09:28	10/04/19 22:07	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/04/19 09:28	10/04/19 22:07	1
Anthracene	0.63	U	10	0.63	ug/L		10/04/19 09:28	10/04/19 22:07	1
Carbazole	0.68	U	10	0.68	ug/L		10/04/19 09:28	10/04/19 22:07	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/04/19 09:28	10/04/19 22:07	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/04/19 09:28	10/04/19 22:07	1
Pyrene	1.6	U	10	1.6	ug/L		10/04/19 09:28	10/04/19 22:07	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/04/19 09:28	10/04/19 22:07	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/04/19 09:28	10/04/19 22:07	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/04/19 09:28	10/04/19 22:07	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/04/19 09:28	10/04/19 22:07	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/04/19 09:28	10/04/19 22:07	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/04/19 09:28	10/04/19 22:07	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/04/19 09:28	10/04/19 22:07	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/04/19 09:28	10/04/19 22:07	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/04/19 09:28	10/04/19 22:07	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/04/19 09:28	10/04/19 22:07	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/04/19 09:28	10/04/19 22:07	1
Caprolactam	0.68	U	10	0.68	ug/L		10/04/19 09:28	10/04/19 22:07	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/04/19 09:28	10/04/19 22:07	1
Bisphenol-A	9.9	U *	10	9.9	ug/L		10/04/19 09:28	10/04/19 22:07	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/04/19 09:28	10/04/19 22:07	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*17*	*J*	*ug/L*		*6.00*		*10/04/19 09:28*	*10/04/19 22:07*	*1*
Benzylamine	*8.2*	*J N*	*ug/L*		*7.14*	*100-46-9*	*10/04/19 09:28*	*10/04/19 22:07*	*1*
Unknown	*10*	*J*	*ug/L*		*9.66*		*10/04/19 09:28*	*10/04/19 22:07*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*99*		*51 - 108*	*10/04/19 09:28*	*10/04/19 22:07*	*1*
Phenol-d5 (Surr)	*34*		*14 - 39*	*10/04/19 09:28*	*10/04/19 22:07*	*1*
Terphenyl-d14 (Surr)	*107*		*40 - 148*	*10/04/19 09:28*	*10/04/19 22:07*	*1*
2,4,6-Tribromophenol (Surr)	*107*		*26 - 139*	*10/04/19 09:28*	*10/04/19 22:07*	*1*
2-Fluorophenol (Surr)	*51*		*25 - 58*	*10/04/19 09:28*	*10/04/19 22:07*	*1*
2-Fluorobiphenyl (Surr)	*96*		*45 - 107*	*10/04/19 09:28*	*10/04/19 22:07*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/03/19 23:26	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/03/19 23:26	1
Sulfate	**6.87**		0.60	0.35	mg/L			10/03/19 23:26	1

Client Sample ID: UPA-104-TZ — Lab Sample ID: 460-192902-3

Date Collected: 10/02/19 15:10 **Matrix: Water**
Date Received: 10/02/19 21:20

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**21.2**	D	0.96	0.11	mg/L			10/04/19 04:29	8

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**12000**		250	233	ug/L		10/07/19 08:22	10/08/19 21:48	5
Potassium	**4110**		250	73.5	ug/L		10/07/19 08:22	10/08/19 21:48	5
Magnesium	**3230**		250	24.8	ug/L		10/07/19 08:22	10/08/19 21:48	5
Sodium	**13600**		250	66.8	ug/L		10/07/19 08:22	10/08/19 21:48	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**16.5**	J	50.0	1.7	ug/L		10/04/19 10:03	10/05/19 15:30	1
Iron, Dissolved	**6650**		150	34.2	ug/L		10/04/19 10:03	10/05/19 15:30	1
Manganese, Dissolved	**352**		15.0	0.99	ug/L		10/04/19 10:03	10/05/19 15:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.068	U	0.10	0.068	mg/L			10/04/19 14:29	1
Bicarbonate Alkalinity as CaCO3	**44.1**		5.0	5.0	mg/L			10/04/19 12:01	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/04/19 12:01	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/04/19 14:25	1

Client Sample ID: UPA-107-TZ — Lab Sample ID: 460-192902-4

Date Collected: 10/02/19 15:00 **Matrix: Water**
Date Received: 10/02/19 21:20

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**25**		0.40	0.20	ug/L			10/04/19 14:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*93*		*72 - 133*		*10/04/19 14:03*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/07/19 00:14	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/07/19 00:14	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/07/19 00:14	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/07/19 00:14	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/07/19 00:14	1
Acetone	4.4	U	5.0	4.4	ug/L			10/07/19 00:14	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/07/19 00:14	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/07/19 00:14	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/07/19 00:14	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/07/19 00:14	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/07/19 00:14	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/07/19 00:14	1
1,2-Dichloroethane	**3.0**		1.0	0.43	ug/L			10/07/19 00:14	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/07/19 00:14	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/07/19 00:14	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/07/19 00:14	1

Client Sample ID: UPA-107-TZ Lab Sample ID: 460-192902-4

Date Collected: 10/02/19 15:00 **Matrix: Water**
Date Received: 10/02/19 21:20

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/07/19 00:14	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/07/19 00:14	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/07/19 00:14	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/07/19 00:14	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/07/19 00:14	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/07/19 00:14	1
Benzene	**0.88**	**J**	1.0	0.20	ug/L			10/07/19 00:14	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/07/19 00:14	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/07/19 00:14	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/07/19 00:14	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/07/19 00:14	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/07/19 00:14	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/07/19 00:14	1
Toluene	0.38	U	1.0	0.38	ug/L			10/07/19 00:14	1
Chlorobenzene	**0.98**	**J**	1.0	0.38	ug/L			10/07/19 00:14	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/07/19 00:14	1
Styrene	0.42	U	1.0	0.42	ug/L			10/07/19 00:14	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/07/19 00:14	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/07/19 00:14	1
MTBE	0.47	U	1.0	0.47	ug/L			10/07/19 00:14	1
Tetrahydrofuran	**4.7**		2.0	1.0	ug/L			10/07/19 00:14	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/07/19 00:14	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/07/19 00:14	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/07/19 00:14	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/07/19 00:14	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/07/19 00:14	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/07/19 00:14	1
Indane	0.35	U	1.0	0.35	ug/L			10/07/19 00:14	1
Dichlorofluoromethane	**1.3**		1.0	0.34	ug/L			10/07/19 00:14	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/07/19 00:14	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/07/19 00:14*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*74 - 132*		*10/07/19 00:14*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*10/07/19 00:14*	*1*
4-Bromofluorobenzene	*92*		*77 - 124*		*10/07/19 00:14*	*1*
Dibromofluoromethane (Surr)	*98*		*72 - 131*		*10/07/19 00:14*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/04/19 09:28	10/05/19 06:13	1
Benzo[a]pyrene	0.022	~~U~~ UJ	0.050	0.022	ug/L		10/04/19 09:28	10/05/19 06:13	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/04/19 09:28	10/05/19 06:13	1
Hexachlorobenzene	**0.020**		0.020	0.013	ug/L		10/04/19 09:28	10/05/19 06:13	1
Pentachlorophenol	0.15	U	0.20	0.15	ug/L		10/04/19 09:28	10/05/19 06:13	1
Bis(2-chloroethyl)ether	**2.8**		0.030	0.026	ug/L		10/04/19 09:28	10/05/19 06:13	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-192645-1

Client Sample ID: UPA-107-TZ

Lab Sample ID: 460-192902-4

Date Collected: 10/02/19 15:00
Date Received: 10/02/19 21:20

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/04/19 09:28	10/04/19 22:28	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/04/19 09:28	10/04/19 22:28	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/04/19 09:28	10/04/19 22:28	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/04/19 09:28	10/04/19 22:28	1
2-Nitrophenol	0.75	~~U*~~ UJ	10	0.75	ug/L		10/04/19 09:28	10/04/19 22:28	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/04/19 09:28	10/04/19 22:28	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/04/19 09:28	10/04/19 22:28	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/04/19 09:28	10/04/19 22:28	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/04/19 09:28	10/04/19 22:28	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/04/19 09:28	10/04/19 22:28	1
2,4-Dinitrophenol	14	~~U*~~ UJ	20	14	ug/L		10/04/19 09:28	10/04/19 22:28	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/04/19 09:28	10/04/19 22:28	1
4,6-Dinitro-2-methylphenol	13	~~U*~~ UJ	20	13	ug/L		10/04/19 09:28	10/04/19 22:28	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/04/19 09:28	10/04/19 22:28	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/04/19 09:28	10/04/19 22:28	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/04/19 09:28	10/04/19 22:28	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/04/19 09:28	10/04/19 22:28	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/04/19 09:28	10/04/19 22:28	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/04/19 09:28	10/04/19 22:28	1
Isophorone	0.80	U	10	0.80	ug/L		10/04/19 09:28	10/04/19 22:28	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/04/19 09:28	10/04/19 22:28	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/04/19 09:28	10/04/19 22:28	1
Naphthalene	1.1	U	10	1.1	ug/L		10/04/19 09:28	10/04/19 22:28	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/04/19 09:28	10/04/19 22:28	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/04/19 09:28	10/04/19 22:28	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/04/19 09:28	10/04/19 22:28	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/04/19 09:28	10/04/19 22:28	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/04/19 09:28	10/04/19 22:28	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/04/19 09:28	10/04/19 22:28	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/04/19 09:28	10/04/19 22:28	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/04/19 09:28	10/04/19 22:28	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/04/19 09:28	10/04/19 22:28	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/04/19 09:28	10/04/19 22:28	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/04/19 09:28	10/04/19 22:28	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/04/19 09:28	10/04/19 22:28	1
2,4-Dinitrotoluene	1.0	~~U*~~UJ	2.0	1.0	ug/L		10/04/19 09:28	10/04/19 22:28	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/04/19 09:28	10/04/19 22:28	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/04/19 09:28	10/04/19 22:28	1
Fluorene	0.91	U	10	0.91	ug/L		10/04/19 09:28	10/04/19 22:28	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/04/19 09:28	10/04/19 22:28	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/04/19 09:28	10/04/19 22:28	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/04/19 09:28	10/04/19 22:28	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/04/19 09:28	10/04/19 22:28	1
Anthracene	0.63	U	10	0.63	ug/L		10/04/19 09:28	10/04/19 22:28	1
Carbazole	0.68	U	10	0.68	ug/L		10/04/19 09:28	10/04/19 22:28	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/04/19 09:28	10/04/19 22:28	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/04/19 09:28	10/04/19 22:28	1
Pyrene	1.6	U	10	1.6	ug/L		10/04/19 09:28	10/04/19 22:28	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/04/19 09:28	10/04/19 22:28	1

Client Sample ID: UPA-107-TZ — Lab Sample ID: 460-192902-4

Date Collected: 10/02/19 15:00 **Matrix: Water**
Date Received: 10/02/19 21:20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/04/19 09:28	10/04/19 22:28	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/04/19 09:28	10/04/19 22:28	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/04/19 09:28	10/04/19 22:28	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/04/19 09:28	10/04/19 22:28	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/04/19 09:28	10/04/19 22:28	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/04/19 09:28	10/04/19 22:28	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/04/19 09:28	10/04/19 22:28	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/04/19 09:28	10/04/19 22:28	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/04/19 09:28	10/04/19 22:28	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/04/19 09:28	10/04/19 22:28	1
Caprolactam	0.68	U	10	0.68	ug/L		10/04/19 09:28	10/04/19 22:28	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/04/19 09:28	10/04/19 22:28	1
Bisphenol-A	9.9	U *	10	9.9	ug/L		10/04/19 09:28	10/04/19 22:28	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/04/19 09:28	10/04/19 22:28	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/04/19 09:28*	*10/04/19 22:28*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*99*		*51 - 108*	*10/04/19 09:28*	*10/04/19 22:28*	*1*
Phenol-d5 (Surr)	*35*		*14 - 39*	*10/04/19 09:28*	*10/04/19 22:28*	*1*
Terphenyl-d14 (Surr)	*104*		*40 - 148*	*10/04/19 09:28*	*10/04/19 22:28*	*1*
2,4,6-Tribromophenol (Surr)	*104*		*26 - 139*	*10/04/19 09:28*	*10/04/19 22:28*	*1*
2-Fluorophenol (Surr)	*52*		*25 - 58*	*10/04/19 09:28*	*10/04/19 22:28*	*1*
2-Fluorobiphenyl (Surr)	*96*		*45 - 107*	*10/04/19 09:28*	*10/04/19 22:28*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/03/19 23:41	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/03/19 23:41	1
Sulfate	**19.4**		0.60	0.35	mg/L			10/03/19 23:41	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**34.8**	D	1.56	0.18	mg/L			10/04/19 04:44	13

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**27100**		250	233	ug/L		10/07/19 08:22	10/08/19 21:50	5
Potassium	**4060**		250	73.5	ug/L		10/07/19 08:22	10/08/19 21:50	5
Magnesium	**3240**		250	24.8	ug/L		10/07/19 08:22	10/08/19 21:50	5
Sodium	**21900**		250	66.8	ug/L		10/07/19 08:22	10/08/19 21:50	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**6.7**	J	50.0	1.7	ug/L		10/04/19 10:03	10/05/19 20:41	1
Iron, Dissolved	**754**		150	34.2	ug/L		10/04/19 10:03	10/05/19 20:41	1
Manganese, Dissolved	**533**		15.0	0.99	ug/L		10/04/19 10:03	10/05/19 20:41	1

Client Sample ID: UPA-107-TZ — Lab Sample ID: 460-192902-4

Date Collected: 10/02/19 15:00 **Matrix: Water**
Date Received: 10/02/19 21:20

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.075**	**J**	0.10	0.068	mg/L			10/04/19 14:31	1
Bicarbonate Alkalinity as CaCO3	**57.6**		5.0	5.0	mg/L			10/04/19 12:09	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/04/19 12:09	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/04/19 14:25	1

Client Sample ID: FDGW_100219 — Lab Sample ID: 460-192902-5

Date Collected: 10/02/19 00:00 **Matrix: Water**
Date Received: 10/02/19 21:20

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**6.2**		0.40	0.20	ug/L			10/04/19 14:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*72 - 133*		*10/04/19 14:29*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/07/19 00:38	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/07/19 00:38	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/07/19 00:38	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/07/19 00:38	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/07/19 00:38	1
Acetone	4.4	U	5.0	4.4	ug/L			10/07/19 00:38	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/07/19 00:38	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/07/19 00:38	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/07/19 00:38	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/07/19 00:38	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/07/19 00:38	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/07/19 00:38	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/07/19 00:38	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/07/19 00:38	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/07/19 00:38	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/07/19 00:38	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/07/19 00:38	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/07/19 00:38	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/07/19 00:38	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/07/19 00:38	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/07/19 00:38	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/07/19 00:38	1
Benzene	0.20	U	1.0	0.20	ug/L			10/07/19 00:38	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/07/19 00:38	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/07/19 00:38	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/07/19 00:38	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/07/19 00:38	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/07/19 00:38	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/07/19 00:38	1
Toluene	0.38	U	1.0	0.38	ug/L			10/07/19 00:38	1
Chlorobenzene	**7.1**		1.0	0.38	ug/L			10/07/19 00:38	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/07/19 00:38	1

Client Sample ID: FDGW_100219 Lab Sample ID: 460-192902-5

Date Collected: 10/02/19 00:00 **Matrix: Water**
Date Received: 10/02/19 21:20

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	0.42	U	1.0	0.42	ug/L			10/07/19 00:38	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/07/19 00:38	1
Diethyl ether	**11**		1.0	0.21	ug/L			10/07/19 00:38	1
MTBE	0.47	U	1.0	0.47	ug/L			10/07/19 00:38	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/07/19 00:38	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/07/19 00:38	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/07/19 00:38	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/07/19 00:38	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/07/19 00:38	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/07/19 00:38	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/07/19 00:38	1
Indane	0.35	U	1.0	0.35	ug/L			10/07/19 00:38	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/07/19 00:38	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/07/19 00:38	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/07/19 00:38*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*74 - 132*		*10/07/19 00:38*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/07/19 00:38*	*1*
4-Bromofluorobenzene	*82*		*77 - 124*		*10/07/19 00:38*	*1*
Dibromofluoromethane (Surr)	*90*		*72 - 131*		*10/07/19 00:38*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/04/19 09:28	10/05/19 06:34	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/04/19 09:28	10/05/19 06:34	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/04/19 09:28	10/05/19 06:34	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/04/19 09:28	10/05/19 06:34	1
Pentachlorophenol	0.15	U	0.20	0.15	ug/L		10/04/19 09:28	10/05/19 06:34	1
Bis(2-chloroethyl)ether	**0.092**		0.030	0.026	ug/L		10/04/19 09:28	10/05/19 06:34	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/04/19 09:28	10/04/19 22:49	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/04/19 09:28	10/04/19 22:49	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/04/19 09:28	10/04/19 22:49	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/04/19 09:28	10/04/19 22:49	1
2-Nitrophenol	0.75	U *	10	0.75	ug/L		10/04/19 09:28	10/04/19 22:49	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/04/19 09:28	10/04/19 22:49	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/04/19 09:28	10/04/19 22:49	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/04/19 09:28	10/04/19 22:49	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/04/19 09:28	10/04/19 22:49	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/04/19 09:28	10/04/19 22:49	1
2,4-Dinitrophenol	14	U *	20	14	ug/L		10/04/19 09:28	10/04/19 22:49	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/04/19 09:28	10/04/19 22:49	1
4,6-Dinitro-2-methylphenol	13	U *	20	13	ug/L		10/04/19 09:28	10/04/19 22:49	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/04/19 09:28	10/04/19 22:49	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/04/19 09:28	10/04/19 22:49	1

Client Sample ID: FDGW_100219 Lab Sample ID: 460-192902-5

Date Collected: 10/02/19 00:00 **Matrix: Water**
Date Received: 10/02/19 21:20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/04/19 09:28	10/04/19 22:49	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/04/19 09:28	10/04/19 22:49	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/04/19 09:28	10/04/19 22:49	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/04/19 09:28	10/04/19 22:49	1
Isophorone	0.80	U	10	0.80	ug/L		10/04/19 09:28	10/04/19 22:49	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/04/19 09:28	10/04/19 22:49	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/04/19 09:28	10/04/19 22:49	1
Naphthalene	1.1	U	10	1.1	ug/L		10/04/19 09:28	10/04/19 22:49	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/04/19 09:28	10/04/19 22:49	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/04/19 09:28	10/04/19 22:49	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/04/19 09:28	10/04/19 22:49	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/04/19 09:28	10/04/19 22:49	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/04/19 09:28	10/04/19 22:49	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/04/19 09:28	10/04/19 22:49	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/04/19 09:28	10/04/19 22:49	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/04/19 09:28	10/04/19 22:49	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/04/19 09:28	10/04/19 22:49	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/04/19 09:28	10/04/19 22:49	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/04/19 09:28	10/04/19 22:49	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/04/19 09:28	10/04/19 22:49	1
2,4-Dinitrotoluene	1.0	U ±	2.0	1.0	ug/L		10/04/19 09:28	10/04/19 22:49	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/04/19 09:28	10/04/19 22:49	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/04/19 09:28	10/04/19 22:49	1
Fluorene	0.91	U	10	0.91	ug/L		10/04/19 09:28	10/04/19 22:49	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/04/19 09:28	10/04/19 22:49	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/04/19 09:28	10/04/19 22:49	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/04/19 09:28	10/04/19 22:49	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/04/19 09:28	10/04/19 22:49	1
Anthracene	0.63	U	10	0.63	ug/L		10/04/19 09:28	10/04/19 22:49	1
Carbazole	0.68	U	10	0.68	ug/L		10/04/19 09:28	10/04/19 22:49	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/04/19 09:28	10/04/19 22:49	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/04/19 09:28	10/04/19 22:49	1
Pyrene	1.6	U	10	1.6	ug/L		10/04/19 09:28	10/04/19 22:49	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/04/19 09:28	10/04/19 22:49	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/04/19 09:28	10/04/19 22:49	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/04/19 09:28	10/04/19 22:49	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/04/19 09:28	10/04/19 22:49	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/04/19 09:28	10/04/19 22:49	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/04/19 09:28	10/04/19 22:49	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/04/19 09:28	10/04/19 22:49	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/04/19 09:28	10/04/19 22:49	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/04/19 09:28	10/04/19 22:49	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/04/19 09:28	10/04/19 22:49	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/04/19 09:28	10/04/19 22:49	1
Caprolactam	0.68	U	10	0.68	ug/L		10/04/19 09:28	10/04/19 22:49	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/04/19 09:28	10/04/19 22:49	1
Bisphenol-A	9.9	U ±	10	9.9	ug/L		10/04/19 09:28	10/04/19 22:49	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/04/19 09:28	10/04/19 22:49	1

Client Sample ID: FDGW_100219 Lab Sample ID: 460-192902-5

Date Collected: 10/02/19 00:00 **Matrix: Water**
Date Received: 10/02/19 21:20

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L				10/04/19 09:28	10/04/19 22:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	98		51 - 108	10/04/19 09:28	10/04/19 22:49	1
Phenol-d5 (Surr)	36		14 - 39	10/04/19 09:28	10/04/19 22:49	1
Terphenyl-d14 (Surr)	103		40 - 148	10/04/19 09:28	10/04/19 22:49	1
2,4,6-Tribromophenol (Surr)	105		26 - 139	10/04/19 09:28	10/04/19 22:49	1
2-Fluorophenol (Surr)	53		25 - 58	10/04/19 09:28	10/04/19 22:49	1
2-Fluorobiphenyl (Surr)	94		45 - 107	10/04/19 09:28	10/04/19 22:49	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/03/19 21:17	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/03/19 21:17	1
Sulfate	**16.6**		0.60	0.35	mg/L			10/03/19 21:17	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**51.4**	D	2.28	0.27	mg/L			10/04/19 03:01	19

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**28100**		250	233	ug/L		10/07/19 08:22	10/08/19 21:53	5
Potassium	**8990**		250	73.5	ug/L		10/07/19 08:22	10/08/19 21:53	5
Magnesium	**13200**		250	24.8	ug/L		10/07/19 08:22	10/08/19 21:53	5
Sodium	**32400**		250	66.8	ug/L		10/07/19 08:22	10/08/19 21:53	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**18.9**	J	50.0	1.7	ug/L		10/04/19 10:03	10/05/19 20:45	1
Iron, Dissolved	**7630**		150	34.2	ug/L		10/04/19 10:03	10/05/19 20:45	1
Manganese, Dissolved	**3310**		15.0	0.99	ug/L		10/04/19 10:03	10/05/19 20:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**10.4**		0.10	0.068	mg/L			10/04/19 14:32	1
Bicarbonate Alkalinity as CaCO3	**149**		5.0	5.0	mg/L			10/04/19 12:17	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/04/19 12:17	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/04/19 14:25	1

Client Sample ID: TBGW_100219 Lab Sample ID: 460-192902-6

Date Collected: 10/02/19 00:00 **Matrix: Water**
Date Received: 10/02/19 21:20

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/04/19 08:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	94		72 - 133		10/04/19 08:59	1

Client Sample Results

Client: Golder Associates Inc. Job ID: 460-192645-1
Project/Site: DS&G Semi-Annual Groundwater

Client Sample ID: TBGW_100219 Lab Sample ID: 460-192902-6

Date Collected: 10/02/19 00:00 **Matrix: Water**
Date Received: 10/02/19 21:20

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/06/19 20:20	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/06/19 20:20	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/06/19 20:20	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/06/19 20:20	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/06/19 20:20	1
Acetone	**9.4**		5.0	4.4	ug/L			10/06/19 20:20	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/06/19 20:20	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/06/19 20:20	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/06/19 20:20	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/06/19 20:20	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/06/19 20:20	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/06/19 20:20	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/06/19 20:20	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/06/19 20:20	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/06/19 20:20	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/06/19 20:20	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/06/19 20:20	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/06/19 20:20	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/06/19 20:20	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/06/19 20:20	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/06/19 20:20	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/06/19 20:20	1
Benzene	0.20	U	1.0	0.20	ug/L			10/06/19 20:20	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/06/19 20:20	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/06/19 20:20	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/06/19 20:20	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/06/19 20:20	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/06/19 20:20	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/06/19 20:20	1
Toluene	0.38	U	1.0	0.38	ug/L			10/06/19 20:20	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/06/19 20:20	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/06/19 20:20	1
Styrene	0.42	U	1.0	0.42	ug/L			10/06/19 20:20	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/06/19 20:20	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/06/19 20:20	1
MTBE	0.47	U	1.0	0.47	ug/L			10/06/19 20:20	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/06/19 20:20	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/06/19 20:20	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/06/19 20:20	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/06/19 20:20	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/06/19 20:20	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/06/19 20:20	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/06/19 20:20	1
Indane	0.35	U	1.0	0.35	ug/L			10/06/19 20:20	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/06/19 20:20	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/06/19 20:20	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/06/19 20:20*	*1*

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-192645-1

Client Sample ID: TBGW_100219

Lab Sample ID: 460-192902-6

Date Collected: 10/02/19 00:00
Date Received: 10/02/19 21:20

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		74 - 132		10/06/19 20:20	1
Toluene-d8 (Surr)	96		80 - 120		10/06/19 20:20	1
4-Bromofluorobenzene	86		77 - 124		10/06/19 20:20	1
Dibromofluoromethane (Surr)	93		72 - 131		10/06/19 20:20	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-193027-1
SDG: 193027

Client Sample ID: P-5L

Lab Sample ID: 460-193027-1

Date Collected: 10/03/19 10:05
Date Received: 10/03/19 20:20

Matrix: Water

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**14**		0.40	0.20	ug/L			10/05/19 03:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*72 - 133*		*10/05/19 03:03*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/09/19 15:32	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/09/19 15:32	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/09/19 15:32	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/09/19 15:32	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/09/19 15:32	1
Acetone	4.4	U	5.0	4.4	ug/L			10/09/19 15:32	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/09/19 15:32	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/09/19 15:32	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/09/19 15:32	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/09/19 15:32	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/09/19 15:32	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/09/19 15:32	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/09/19 15:32	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/09/19 15:32	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/09/19 15:32	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/09/19 15:32	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/09/19 15:32	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/09/19 15:32	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/09/19 15:32	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/09/19 15:32	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/09/19 15:32	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/09/19 15:32	1
Benzene	0.20	U	1.0	0.20	ug/L			10/09/19 15:32	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/09/19 15:32	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/09/19 15:32	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/09/19 15:32	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/09/19 15:32	1
Tetrachloroethene	**0.68**	**J**	1.0	0.25	ug/L			10/09/19 15:32	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/09/19 15:32	1
Toluene	0.38	U	1.0	0.38	ug/L			10/09/19 15:32	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/09/19 15:32	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/09/19 15:32	1
Styrene	0.42	U	1.0	0.42	ug/L			10/09/19 15:32	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/09/19 15:32	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/09/19 15:32	1
MTBE	0.47	U	1.0	0.47	ug/L			10/09/19 15:32	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/09/19 15:32	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/09/19 15:32	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/09/19 15:32	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/09/19 15:32	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/09/19 15:32	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/09/19 15:32	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/09/19 15:32	1

Client Sample ID: P-5L Lab Sample ID: 460-193027-1

Date Collected: 10/03/19 10:05 **Matrix: Water**
Date Received: 10/03/19 20:20

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Indane	0.35	U	1.0	0.35	ug/L			10/09/19 15:32	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/09/19 15:32	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/09/19 15:32	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/09/19 15:32*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*74 - 132*		*10/09/19 15:32*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*10/09/19 15:32*	*1*
4-Bromofluorobenzene	*102*		*77 - 124*		*10/09/19 15:32*	*1*
Dibromofluoromethane (Surr)	*100*		*72 - 131*		*10/09/19 15:32*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/06/19 08:46	10/07/19 00:39	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/06/19 08:46	10/07/19 00:39	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/06/19 08:46	10/07/19 00:39	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/06/19 08:46	10/07/19 00:39	1
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/06/19 08:46	10/07/19 00:39	1
Bis(2-chloroethyl)ether	**0.037**		0.030	0.026	ug/L		10/06/19 08:46	10/07/19 00:39	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/06/19 08:46	10/07/19 02:02	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/06/19 08:46	10/07/19 02:02	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/06/19 08:46	10/07/19 02:02	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/06/19 08:46	10/07/19 02:02	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/06/19 08:46	10/07/19 02:02	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/06/19 08:46	10/07/19 02:02	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/06/19 08:46	10/07/19 02:02	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/06/19 08:46	10/07/19 02:02	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/06/19 08:46	10/07/19 02:02	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/06/19 08:46	10/07/19 02:02	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/06/19 08:46	10/07/19 02:02	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/06/19 08:46	10/07/19 02:02	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/06/19 08:46	10/07/19 02:02	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/06/19 08:46	10/07/19 02:02	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/06/19 08:46	10/07/19 02:02	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/06/19 08:46	10/07/19 02:02	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/06/19 08:46	10/07/19 02:02	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/06/19 08:46	10/07/19 02:02	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/06/19 08:46	10/07/19 02:02	1
Isophorone	0.80	U	10	0.80	ug/L		10/06/19 08:46	10/07/19 02:02	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/06/19 08:46	10/07/19 02:02	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/06/19 08:46	10/07/19 02:02	1
Naphthalene	1.1	U	10	1.1	ug/L		10/06/19 08:46	10/07/19 02:02	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/06/19 08:46	10/07/19 02:02	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/06/19 08:46	10/07/19 02:02	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/06/19 08:46	10/07/19 02:02	1

Client Sample ID: P-5L Lab Sample ID: 460-193027-1

Date Collected: 10/03/19 10:05 **Matrix: Water**
Date Received: 10/03/19 20:20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/06/19 08:46	10/07/19 02:02	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/06/19 08:46	10/07/19 02:02	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/06/19 08:46	10/07/19 02:02	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/06/19 08:46	10/07/19 02:02	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/06/19 08:46	10/07/19 02:02	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/06/19 08:46	10/07/19 02:02	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/06/19 08:46	10/07/19 02:02	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/06/19 08:46	10/07/19 02:02	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/06/19 08:46	10/07/19 02:02	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/06/19 08:46	10/07/19 02:02	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/06/19 08:46	10/07/19 02:02	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/06/19 08:46	10/07/19 02:02	1
Fluorene	0.91	U	10	0.91	ug/L		10/06/19 08:46	10/07/19 02:02	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/06/19 08:46	10/07/19 02:02	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/06/19 08:46	10/07/19 02:02	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/06/19 08:46	10/07/19 02:02	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/06/19 08:46	10/07/19 02:02	1
Anthracene	0.63	U	10	0.63	ug/L		10/06/19 08:46	10/07/19 02:02	1
Carbazole	0.68	U	10	0.68	ug/L		10/06/19 08:46	10/07/19 02:02	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/06/19 08:46	10/07/19 02:02	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/06/19 08:46	10/07/19 02:02	1
Pyrene	1.6	U	10	1.6	ug/L		10/06/19 08:46	10/07/19 02:02	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/06/19 08:46	10/07/19 02:02	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/06/19 08:46	10/07/19 02:02	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/06/19 08:46	10/07/19 02:02	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/06/19 08:46	10/07/19 02:02	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/06/19 08:46	10/07/19 02:02	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/06/19 08:46	10/07/19 02:02	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/06/19 08:46	10/07/19 02:02	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/06/19 08:46	10/07/19 02:02	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/06/19 08:46	10/07/19 02:02	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/06/19 08:46	10/07/19 02:02	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/06/19 08:46	10/07/19 02:02	1
Caprolactam	0.68	U	10	0.68	ug/L		10/06/19 08:46	10/07/19 02:02	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/06/19 08:46	10/07/19 02:02	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/06/19 08:46	10/07/19 02:02	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/06/19 08:46	10/07/19 02:02	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/06/19 08:46*	*10/07/19 02:02*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*88*		*51 - 108*	*10/06/19 08:46*	*10/07/19 02:02*	*1*
Phenol-d5 (Surr)	*29*		*14 - 39*	*10/06/19 08:46*	*10/07/19 02:02*	*1*
Terphenyl-d14 (Surr)	*95*		*40 - 148*	*10/06/19 08:46*	*10/07/19 02:02*	*1*
2,4,6-Tribromophenol (Surr)	*108*		*26 - 139*	*10/06/19 08:46*	*10/07/19 02:02*	*1*
2-Fluorophenol (Surr)	*43*		*25 - 58*	*10/06/19 08:46*	*10/07/19 02:02*	*1*
2-Fluorobiphenyl (Surr)	*79*		*45 - 107*	*10/06/19 08:46*	*10/07/19 02:02*	*1*

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-193027-1
SDG: 193027

Client Sample ID: P-5L

Lab Sample ID: 460-193027-1

Date Collected: 10/03/19 10:05
Date Received: 10/03/19 20:20

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**0.34**		0.10	0.056	mg/L			10/05/19 04:00	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/05/19 04:00	1
Sulfate	**3.65**		0.60	0.35	mg/L			10/05/19 04:00	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**27.4**	D	1.20	0.14	mg/L			10/05/19 06:14	10

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**15500**		250	233	ug/L		10/09/19 08:12	10/09/19 22:55	5
Magnesium	**4830**		250	24.8	ug/L		10/09/19 08:12	10/09/19 22:55	5
Potassium	**3240**		250	73.5	ug/L		10/09/19 08:12	10/09/19 22:55	5
Sodium	**20700**		250	66.8	ug/L		10/09/19 08:12	10/09/19 22:55	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**1.9**	J	50.0	1.7	ug/L		10/07/19 08:20	10/08/19 02:11	1
Iron, Dissolved	**138**	J	150	34.2	ug/L		10/07/19 08:20	10/08/19 02:11	1
Manganese, Dissolved	**96.8**		15.0	0.99	ug/L		10/07/19 08:20	10/08/19 02:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.068	U	0.10	0.068	mg/L			10/07/19 15:59	1
Bicarbonate Alkalinity as CaCO3	**52.4**		5.0	5.0	mg/L			10/08/19 11:39	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/08/19 11:39	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/08/19 12:03	1

Client Sample ID: P-5U

Lab Sample ID: 460-193027-2

Date Collected: 10/03/19 10:50
Date Received: 10/03/19 20:20

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**0.38**		0.10	0.056	mg/L			10/05/19 04:15	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/05/19 04:15	1
Sulfate	**22.6**		0.60	0.35	mg/L			10/05/19 04:15	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**58.1**	D	2.76	0.32	mg/L			10/05/19 06:29	23

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**18600**		250	233	ug/L		10/09/19 08:12	10/09/19 23:00	5
Magnesium	**8770**		250	24.8	ug/L		10/09/19 08:12	10/09/19 23:00	5
Potassium	**3480**		250	73.5	ug/L		10/09/19 08:12	10/09/19 23:00	5
Sodium	**32200**		250	66.8	ug/L		10/09/19 08:12	10/09/19 23:00	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.068	U	0.10	0.068	mg/L			10/07/19 16:10	1

Client Sample ID: P-5U — Lab Sample ID: 460-193027-2

Date Collected: 10/03/19 10:50 **Matrix: Water**
Date Received: 10/03/19 20:20

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	**39.4**		5.0	5.0	mg/L			10/08/19 11:47	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/08/19 11:47	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/08/19 12:03	1

Client Sample ID: UPA-107-LS — Lab Sample ID: 460-193027-3

Date Collected: 10/03/19 13:45 **Matrix: Water**
Date Received: 10/03/19 20:20

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**18**		0.40	0.20	ug/L			10/05/19 04:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*89*		*72 - 133*		*10/05/19 04:44*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/09/19 16:25	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/09/19 16:25	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/09/19 16:25	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/09/19 16:25	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/09/19 16:25	1
Acetone	4.4	U	5.0	4.4	ug/L			10/09/19 16:25	1
Carbon disulfide	**2.6**		1.0	0.82	ug/L			10/09/19 16:25	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/09/19 16:25	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/09/19 16:25	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/09/19 16:25	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/09/19 16:25	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/09/19 16:25	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/09/19 16:25	1
2-Butanone (MEK)	**16**		5.0	1.9	ug/L			10/09/19 16:25	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/09/19 16:25	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/09/19 16:25	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/09/19 16:25	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/09/19 16:25	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/09/19 16:25	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/09/19 16:25	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/09/19 16:25	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/09/19 16:25	1
Benzene	0.20	U	1.0	0.20	ug/L			10/09/19 16:25	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/09/19 16:25	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/09/19 16:25	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/09/19 16:25	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/09/19 16:25	1
Tetrachloroethene	**0.34**	**J**	1.0	0.25	ug/L			10/09/19 16:25	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/09/19 16:25	1
Toluene	0.38	U	1.0	0.38	ug/L			10/09/19 16:25	1
Chlorobenzene	**3.7**		1.0	0.38	ug/L			10/09/19 16:25	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/09/19 16:25	1
Styrene	0.42	U	1.0	0.42	ug/L			10/09/19 16:25	1

Client Sample ID: UPA-107-LS Lab Sample ID: 460-193027-3

Date Collected: 10/03/19 13:45 **Matrix: Water**
Date Received: 10/03/19 20:20

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/09/19 16:25	1
Diethyl ether	**3.0**		1.0	0.21	ug/L			10/09/19 16:25	1
MTBE	**1.6**		1.0	0.47	ug/L			10/09/19 16:25	1
Tetrahydrofuran	**2.1**		2.0	1.0	ug/L			10/09/19 16:25	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/09/19 16:25	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/09/19 16:25	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/09/19 16:25	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/09/19 16:25	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/09/19 16:25	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/09/19 16:25	1
Indane	0.35	U	1.0	0.35	ug/L			10/09/19 16:25	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/09/19 16:25	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/09/19 16:25	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Propene	*11*	*J N*	*ug/L*		*0.86*	*115-07-1*		*10/09/19 16:25*	*1*
Unknown	*6.7*	*J*	*ug/L*		*1.01*			*10/09/19 16:25*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*74 - 132*		*10/09/19 16:25*	*1*
Toluene-d8 (Surr)	*107*		*80 - 120*		*10/09/19 16:25*	*1*
4-Bromofluorobenzene	*104*		*77 - 124*		*10/09/19 16:25*	*1*
Dibromofluoromethane (Surr)	*104*		*72 - 131*		*10/09/19 16:25*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/06/19 08:46	10/07/19 01:21	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/06/19 08:46	10/07/19 01:21	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/06/19 08:46	10/07/19 01:21	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/06/19 08:46	10/07/19 01:21	1
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/06/19 08:46	10/07/19 01:21	1
Bis(2-chloroethyl)ether	**1.2**		0.030	0.026	ug/L		10/06/19 08:46	10/07/19 01:21	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/06/19 08:46	10/07/19 02:44	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/06/19 08:46	10/07/19 02:44	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/06/19 08:46	10/07/19 02:44	1
4-Methylphenol	**4.5**	**J**	10	0.24	ug/L		10/06/19 08:46	10/07/19 02:44	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/06/19 08:46	10/07/19 02:44	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/06/19 08:46	10/07/19 02:44	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/06/19 08:46	10/07/19 02:44	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/06/19 08:46	10/07/19 02:44	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/06/19 08:46	10/07/19 02:44	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/06/19 08:46	10/07/19 02:44	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/06/19 08:46	10/07/19 02:44	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/06/19 08:46	10/07/19 02:44	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/06/19 08:46	10/07/19 02:44	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/06/19 08:46	10/07/19 02:44	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/06/19 08:46	10/07/19 02:44	1

Client Sample ID: UPA-107-LS Lab Sample ID: 460-193027-3

Date Collected: 10/03/19 13:45 **Matrix: Water**
Date Received: 10/03/19 20:20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/06/19 08:46	10/07/19 02:44	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/06/19 08:46	10/07/19 02:44	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/06/19 08:46	10/07/19 02:44	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/06/19 08:46	10/07/19 02:44	1
Isophorone	0.80	U	10	0.80	ug/L		10/06/19 08:46	10/07/19 02:44	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/06/19 08:46	10/07/19 02:44	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/06/19 08:46	10/07/19 02:44	1
Naphthalene	1.1	U	10	1.1	ug/L		10/06/19 08:46	10/07/19 02:44	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/06/19 08:46	10/07/19 02:44	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/06/19 08:46	10/07/19 02:44	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/06/19 08:46	10/07/19 02:44	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/06/19 08:46	10/07/19 02:44	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/06/19 08:46	10/07/19 02:44	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/06/19 08:46	10/07/19 02:44	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/06/19 08:46	10/07/19 02:44	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/06/19 08:46	10/07/19 02:44	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/06/19 08:46	10/07/19 02:44	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/06/19 08:46	10/07/19 02:44	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/06/19 08:46	10/07/19 02:44	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/06/19 08:46	10/07/19 02:44	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/06/19 08:46	10/07/19 02:44	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/06/19 08:46	10/07/19 02:44	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/06/19 08:46	10/07/19 02:44	1
Fluorene	0.91	U	10	0.91	ug/L		10/06/19 08:46	10/07/19 02:44	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/06/19 08:46	10/07/19 02:44	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/06/19 08:46	10/07/19 02:44	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/06/19 08:46	10/07/19 02:44	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/06/19 08:46	10/07/19 02:44	1
Anthracene	0.63	U	10	0.63	ug/L		10/06/19 08:46	10/07/19 02:44	1
Carbazole	0.68	U	10	0.68	ug/L		10/06/19 08:46	10/07/19 02:44	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/06/19 08:46	10/07/19 02:44	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/06/19 08:46	10/07/19 02:44	1
Pyrene	1.6	U	10	1.6	ug/L		10/06/19 08:46	10/07/19 02:44	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/06/19 08:46	10/07/19 02:44	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/06/19 08:46	10/07/19 02:44	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/06/19 08:46	10/07/19 02:44	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/06/19 08:46	10/07/19 02:44	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/06/19 08:46	10/07/19 02:44	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/06/19 08:46	10/07/19 02:44	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/06/19 08:46	10/07/19 02:44	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/06/19 08:46	10/07/19 02:44	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/06/19 08:46	10/07/19 02:44	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/06/19 08:46	10/07/19 02:44	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/06/19 08:46	10/07/19 02:44	1
Caprolactam	0.68	U	10	0.68	ug/L		10/06/19 08:46	10/07/19 02:44	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/06/19 08:46	10/07/19 02:44	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/06/19 08:46	10/07/19 02:44	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/06/19 08:46	10/07/19 02:44	1

Client Sample ID: UPA-107-LS — Lab Sample ID: 460-193027-3

Date Collected: 10/03/19 13:45 **Matrix: Water**
Date Received: 10/03/19 20:20

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Cyclic octaatomic sulfur	*7.5*	*J N*	*ug/L*		*9.81*	*10544-50-0*	*10/06/19 08:46*	*10/07/19 02:44*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*91*		*51 - 108*	*10/06/19 08:46*	*10/07/19 02:44*	*1*
Phenol-d5 (Surr)	*33*		*14 - 39*	*10/06/19 08:46*	*10/07/19 02:44*	*1*
Terphenyl-d14 (Surr)	*84*		*40 - 148*	*10/06/19 08:46*	*10/07/19 02:44*	*1*
2,4,6-Tribromophenol (Surr)	*107*		*26 - 139*	*10/06/19 08:46*	*10/07/19 02:44*	*1*
2-Fluorophenol (Surr)	*46*		*25 - 58*	*10/06/19 08:46*	*10/07/19 02:44*	*1*
2-Fluorobiphenyl (Surr)	*79*		*45 - 107*	*10/06/19 08:46*	*10/07/19 02:44*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/05/19 04:30	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/05/19 04:30	1
Sulfate	**2.29**		0.60	0.35	mg/L			10/05/19 04:30	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**40.5**	D	1.80	0.21	mg/L			10/05/19 06:44	15

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**27300**		250	233	ug/L		10/09/19 08:12	10/09/19 23:07	5
Magnesium	**10400**		250	24.8	ug/L		10/09/19 08:12	10/09/19 23:07	5
Potassium	**8460**		250	73.5	ug/L		10/09/19 08:12	10/09/19 23:07	5
Sodium	**39600**		250	66.8	ug/L		10/09/19 08:12	10/09/19 23:07	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	1.7	U	50.0	1.7	ug/L		10/07/19 08:20	10/08/19 02:19	1
Iron, Dissolved	**21800**		150	34.2	ug/L		10/07/19 08:20	10/08/19 02:19	1
Manganese, Dissolved	**1790**		15.0	0.99	ug/L		10/07/19 08:20	10/08/19 02:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.068	U	0.10	0.068	mg/L			10/07/19 16:11	1
Bicarbonate Alkalinity as CaCO3	**127**		5.0	5.0	mg/L			10/08/19 11:54	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/08/19 11:54	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/08/19 12:03	1

Client Sample ID: UPA-106-USA — Lab Sample ID: 460-193074-1

Date Collected: 10/04/19 11:25 **Matrix: Water**
Date Received: 10/04/19 20:15

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**3.7**		0.40	0.20	ug/L			10/09/19 17:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*86*		*72 - 133*		*10/09/19 17:10*	*1*

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-193027-1
SDG: 193027

Client Sample ID: UPA-106-USA

Lab Sample ID: 460-193074-1

Date Collected: 10/04/19 11:25
Date Received: 10/04/19 20:15

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/10/19 13:32	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/10/19 13:32	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/10/19 13:32	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/10/19 13:32	1
Methylene Chloride	**0.59**	**J**	1.0	0.32	ug/L			10/10/19 13:32	1
Acetone	4.4	U	5.0	4.4	ug/L			10/10/19 13:32	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/10/19 13:32	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/10/19 13:32	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/10/19 13:32	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/10/19 13:32	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/10/19 13:32	1
Chloroform	**2.1**		1.0	0.33	ug/L			10/10/19 13:32	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/10/19 13:32	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/10/19 13:32	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/10/19 13:32	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/10/19 13:32	1
Bromodichloromethane	**0.56**	**J**	1.0	0.34	ug/L			10/10/19 13:32	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/10/19 13:32	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/10/19 13:32	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/10/19 13:32	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/10/19 13:32	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/10/19 13:32	1
Benzene	0.20	U	1.0	0.20	ug/L			10/10/19 13:32	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/10/19 13:32	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/10/19 13:32	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/10/19 13:32	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/10/19 13:32	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/10/19 13:32	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/10/19 13:32	1
Toluene	0.38	U	1.0	0.38	ug/L			10/10/19 13:32	1
Chlorobenzene	**0.49**	**J**	1.0	0.38	ug/L			10/10/19 13:32	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/10/19 13:32	1
Styrene	0.42	U	1.0	0.42	ug/L			10/10/19 13:32	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/10/19 13:32	1
Diethyl ether	**0.56**	**J**	1.0	0.21	ug/L			10/10/19 13:32	1
MTBE	0.47	U	1.0	0.47	ug/L			10/10/19 13:32	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/10/19 13:32	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/10/19 13:32	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/10/19 13:32	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/10/19 13:32	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/10/19 13:32	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/10/19 13:32	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/10/19 13:32	1
Indane	0.35	U	1.0	0.35	ug/L			10/10/19 13:32	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/10/19 13:32	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/10/19 13:32	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/10/19 13:32*	*1*

Client Sample ID: UPA-106-USA Lab Sample ID: 460-193074-1

Date Collected: 10/04/19 11:25 **Matrix: Water**
Date Received: 10/04/19 20:15

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*74 - 132*		*10/10/19 13:32*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/10/19 13:32*	*1*
4-Bromofluorobenzene	*94*		*77 - 124*		*10/10/19 13:32*	*1*
Dibromofluoromethane (Surr)	*92*		*72 - 131*		*10/10/19 13:32*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/06/19 08:46	10/07/19 02:24	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/06/19 08:46	10/07/19 02:24	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/06/19 08:46	10/07/19 02:24	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/06/19 08:46	10/07/19 02:24	1
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/06/19 08:46	10/07/19 02:24	1
Bis(2-chloroethyl)ether	0.026	U	0.030	0.026	ug/L		10/06/19 08:46	10/07/19 02:24	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/06/19 08:46	10/07/19 04:51	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/06/19 08:46	10/07/19 04:51	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/06/19 08:46	10/07/19 04:51	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/06/19 08:46	10/07/19 04:51	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/06/19 08:46	10/07/19 04:51	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/06/19 08:46	10/07/19 04:51	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/06/19 08:46	10/07/19 04:51	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/06/19 08:46	10/07/19 04:51	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/06/19 08:46	10/07/19 04:51	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/06/19 08:46	10/07/19 04:51	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/06/19 08:46	10/07/19 04:51	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/06/19 08:46	10/07/19 04:51	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/06/19 08:46	10/07/19 04:51	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/06/19 08:46	10/07/19 04:51	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/06/19 08:46	10/07/19 04:51	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/06/19 08:46	10/07/19 04:51	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/06/19 08:46	10/07/19 04:51	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/06/19 08:46	10/07/19 04:51	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/06/19 08:46	10/07/19 04:51	1
Isophorone	0.80	U	10	0.80	ug/L		10/06/19 08:46	10/07/19 04:51	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/06/19 08:46	10/07/19 04:51	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/06/19 08:46	10/07/19 04:51	1
Naphthalene	1.1	U	10	1.1	ug/L		10/06/19 08:46	10/07/19 04:51	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/06/19 08:46	10/07/19 04:51	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/06/19 08:46	10/07/19 04:51	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/06/19 08:46	10/07/19 04:51	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/06/19 08:46	10/07/19 04:51	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/06/19 08:46	10/07/19 04:51	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/06/19 08:46	10/07/19 04:51	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/06/19 08:46	10/07/19 04:51	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/06/19 08:46	10/07/19 04:51	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/06/19 08:46	10/07/19 04:51	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/06/19 08:46	10/07/19 04:51	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/06/19 08:46	10/07/19 04:51	1

Client Sample ID: UPA-106-USA Lab Sample ID: 460-193074-1

Date Collected: 10/04/19 11:25 **Matrix: Water**
Date Received: 10/04/19 20:15

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	1.1	U	10	1.1	ug/L		10/06/19 08:46	10/07/19 04:51	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/06/19 08:46	10/07/19 04:51	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/06/19 08:46	10/07/19 04:51	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/06/19 08:46	10/07/19 04:51	1
Fluorene	0.91	U	10	0.91	ug/L		10/06/19 08:46	10/07/19 04:51	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/06/19 08:46	10/07/19 04:51	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/06/19 08:46	10/07/19 04:51	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/06/19 08:46	10/07/19 04:51	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/06/19 08:46	10/07/19 04:51	1
Anthracene	0.63	U	10	0.63	ug/L		10/06/19 08:46	10/07/19 04:51	1
Carbazole	0.68	U	10	0.68	ug/L		10/06/19 08:46	10/07/19 04:51	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/06/19 08:46	10/07/19 04:51	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/06/19 08:46	10/07/19 04:51	1
Pyrene	1.6	U	10	1.6	ug/L		10/06/19 08:46	10/07/19 04:51	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/06/19 08:46	10/07/19 04:51	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/06/19 08:46	10/07/19 04:51	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/06/19 08:46	10/07/19 04:51	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/06/19 08:46	10/07/19 04:51	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/06/19 08:46	10/07/19 04:51	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/06/19 08:46	10/07/19 04:51	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/06/19 08:46	10/07/19 04:51	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/06/19 08:46	10/07/19 04:51	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/06/19 08:46	10/07/19 04:51	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/06/19 08:46	10/07/19 04:51	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/06/19 08:46	10/07/19 04:51	1
Caprolactam	0.68	U	10	0.68	ug/L		10/06/19 08:46	10/07/19 04:51	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/06/19 08:46	10/07/19 04:51	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/06/19 08:46	10/07/19 04:51	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/06/19 08:46	10/07/19 04:51	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/06/19 08:46*	*10/07/19 04:51*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*112*	*X*	*51 - 108*	*10/06/19 08:46*	*10/07/19 04:51*	*1*
Phenol-d5 (Surr)	*41*	*X*	*14 - 39*	*10/06/19 08:46*	*10/07/19 04:51*	*1*
Terphenyl-d14 (Surr)	*95*		*40 - 148*	*10/06/19 08:46*	*10/07/19 04:51*	*1*
2,4,6-Tribromophenol (Surr)	*132*		*26 - 139*	*10/06/19 08:46*	*10/07/19 04:51*	*1*
2-Fluorophenol (Surr)	*58*		*25 - 58*	*10/06/19 08:46*	*10/07/19 04:51*	*1*
2-Fluorobiphenyl (Surr)	*101*		*45 - 107*	*10/06/19 08:46*	*10/07/19 04:51*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**56.6**		2.64	0.31	mg/L			10/05/19 18:57	22
Nitrate as N	**0.76**		0.10	0.056	mg/L			10/05/19 15:57	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/05/19 15:57	1
Sulfate	**29.6**		0.60	0.35	mg/L			10/05/19 15:57	1

Client Sample ID: UPA-106-USA — Lab Sample ID: 460-193074-1

Date Collected: 10/04/19 11:25 **Matrix: Water**
Date Received: 10/04/19 20:15

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**23000**		250	233	ug/L		10/08/19 09:29	10/09/19 02:14	5
Potassium	**5610**		250	73.5	ug/L		10/08/19 09:29	10/09/19 02:14	5
Magnesium	**9370**		250	24.8	ug/L		10/08/19 09:29	10/09/19 02:14	5
Sodium	**43300**		250	66.8	ug/L		10/08/19 09:29	10/09/19 02:14	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**8.9**	**J**	50.0	1.7	ug/L		10/09/19 08:11	10/09/19 21:23	1
Iron, Dissolved	**1430**		150	34.2	ug/L		10/09/19 08:11	10/09/19 21:23	1
Manganese, Dissolved	**1750**		15.0	0.99	ug/L		10/09/19 08:11	10/09/19 21:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.068	U	0.10	0.068	mg/L			10/09/19 09:58	1
Bicarbonate Alkalinity as CaCO3	**80.9**		5.0	5.0	mg/L			10/08/19 12:56	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/08/19 12:56	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/08/19 12:03	1

Client Sample ID: UPA-103-TZ — Lab Sample ID: 460-193074-2

Date Collected: 10/04/19 12:50 **Matrix: Water**
Date Received: 10/04/19 20:15

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**2.8**		0.40	0.20	ug/L			10/09/19 17:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*82*		*72 - 133*		*10/09/19 17:36*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/10/19 13:08	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/10/19 13:08	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/10/19 13:08	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/10/19 13:08	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/10/19 13:08	1
Acetone	4.4	U	5.0	4.4	ug/L			10/10/19 13:08	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/10/19 13:08	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/10/19 13:08	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/10/19 13:08	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/10/19 13:08	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/10/19 13:08	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/10/19 13:08	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/10/19 13:08	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/10/19 13:08	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/10/19 13:08	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/10/19 13:08	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/10/19 13:08	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/10/19 13:08	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/10/19 13:08	1
Trichloroethene	**0.43**	**J**	1.0	0.31	ug/L			10/10/19 13:08	1

Client Sample ID: UPA-103-TZ Lab Sample ID: 460-193074-2

Date Collected: 10/04/19 12:50 **Matrix: Water**
Date Received: 10/04/19 20:15

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/10/19 13:08	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/10/19 13:08	1
Benzene	0.20	U	1.0	0.20	ug/L			10/10/19 13:08	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/10/19 13:08	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/10/19 13:08	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/10/19 13:08	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/10/19 13:08	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/10/19 13:08	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/10/19 13:08	1
Toluene	0.38	U	1.0	0.38	ug/L			10/10/19 13:08	1
Chlorobenzene	**0.43**	**J**	1.0	0.38	ug/L			10/10/19 13:08	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/10/19 13:08	1
Styrene	0.42	U	1.0	0.42	ug/L			10/10/19 13:08	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/10/19 13:08	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/10/19 13:08	1
MTBE	0.47	U	1.0	0.47	ug/L			10/10/19 13:08	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/10/19 13:08	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/10/19 13:08	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/10/19 13:08	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/10/19 13:08	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/10/19 13:08	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/10/19 13:08	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/10/19 13:08	1
Indane	0.35	U	1.0	0.35	ug/L			10/10/19 13:08	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/10/19 13:08	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/10/19 13:08	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/10/19 13:08*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*74 - 132*		*10/10/19 13:08*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/10/19 13:08*	*1*
4-Bromofluorobenzene	*94*		*77 - 124*		*10/10/19 13:08*	*1*
Dibromofluoromethane (Surr)	*92*		*72 - 131*		*10/10/19 13:08*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/06/19 08:46	10/07/19 02:45	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/06/19 08:46	10/07/19 02:45	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/06/19 08:46	10/07/19 02:45	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/06/19 08:46	10/07/19 02:45	1
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/06/19 08:46	10/07/19 02:45	1
Bis(2-chloroethyl)ether	0.026	U	0.030	0.026	ug/L		10/06/19 08:46	10/07/19 02:45	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/06/19 08:46	10/07/19 05:12	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/06/19 08:46	10/07/19 05:12	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/06/19 08:46	10/07/19 05:12	1

Client Sample ID: UPA-103-TZ Lab Sample ID: 460-193074-2

Date Collected: 10/04/19 12:50 **Matrix: Water**
Date Received: 10/04/19 20:15

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methylphenol	0.24	U	10	0.24	ug/L		10/06/19 08:46	10/07/19 05:12	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/06/19 08:46	10/07/19 05:12	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/06/19 08:46	10/07/19 05:12	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/06/19 08:46	10/07/19 05:12	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/06/19 08:46	10/07/19 05:12	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/06/19 08:46	10/07/19 05:12	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/06/19 08:46	10/07/19 05:12	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/06/19 08:46	10/07/19 05:12	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/06/19 08:46	10/07/19 05:12	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/06/19 08:46	10/07/19 05:12	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/06/19 08:46	10/07/19 05:12	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/06/19 08:46	10/07/19 05:12	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/06/19 08:46	10/07/19 05:12	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/06/19 08:46	10/07/19 05:12	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/06/19 08:46	10/07/19 05:12	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/06/19 08:46	10/07/19 05:12	1
Isophorone	0.80	U	10	0.80	ug/L		10/06/19 08:46	10/07/19 05:12	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/06/19 08:46	10/07/19 05:12	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/06/19 08:46	10/07/19 05:12	1
Naphthalene	1.1	U	10	1.1	ug/L		10/06/19 08:46	10/07/19 05:12	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/06/19 08:46	10/07/19 05:12	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/06/19 08:46	10/07/19 05:12	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/06/19 08:46	10/07/19 05:12	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/06/19 08:46	10/07/19 05:12	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/06/19 08:46	10/07/19 05:12	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/06/19 08:46	10/07/19 05:12	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/06/19 08:46	10/07/19 05:12	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/06/19 08:46	10/07/19 05:12	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/06/19 08:46	10/07/19 05:12	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/06/19 08:46	10/07/19 05:12	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/06/19 08:46	10/07/19 05:12	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/06/19 08:46	10/07/19 05:12	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/06/19 08:46	10/07/19 05:12	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/06/19 08:46	10/07/19 05:12	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/06/19 08:46	10/07/19 05:12	1
Fluorene	0.91	U	10	0.91	ug/L		10/06/19 08:46	10/07/19 05:12	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/06/19 08:46	10/07/19 05:12	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/06/19 08:46	10/07/19 05:12	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/06/19 08:46	10/07/19 05:12	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/06/19 08:46	10/07/19 05:12	1
Anthracene	0.63	U	10	0.63	ug/L		10/06/19 08:46	10/07/19 05:12	1
Carbazole	0.68	U	10	0.68	ug/L		10/06/19 08:46	10/07/19 05:12	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/06/19 08:46	10/07/19 05:12	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/06/19 08:46	10/07/19 05:12	1
Pyrene	1.6	U	10	1.6	ug/L		10/06/19 08:46	10/07/19 05:12	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/06/19 08:46	10/07/19 05:12	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/06/19 08:46	10/07/19 05:12	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/06/19 08:46	10/07/19 05:12	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/06/19 08:46	10/07/19 05:12	1

Client Sample ID: UPA-103-TZ — Lab Sample ID: 460-193074-2

Date Collected: 10/04/19 12:50 **Matrix: Water**
Date Received: 10/04/19 20:15

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/06/19 08:46	10/07/19 05:12	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/06/19 08:46	10/07/19 05:12	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/06/19 08:46	10/07/19 05:12	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/06/19 08:46	10/07/19 05:12	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/06/19 08:46	10/07/19 05:12	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/06/19 08:46	10/07/19 05:12	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/06/19 08:46	10/07/19 05:12	1
Caprolactam	0.68	U	10	0.68	ug/L		10/06/19 08:46	10/07/19 05:12	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/06/19 08:46	10/07/19 05:12	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/06/19 08:46	10/07/19 05:12	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/06/19 08:46	10/07/19 05:12	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/06/19 08:46*	*10/07/19 05:12*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*68*		*51 - 108*	*10/06/19 08:46*	*10/07/19 05:12*	*1*
Phenol-d5 (Surr)	*24*		*14 - 39*	*10/06/19 08:46*	*10/07/19 05:12*	*1*
Terphenyl-d14 (Surr)	*57*		*40 - 148*	*10/06/19 08:46*	*10/07/19 05:12*	*1*
2,4,6-Tribromophenol (Surr)	*81*		*26 - 139*	*10/06/19 08:46*	*10/07/19 05:12*	*1*
2-Fluorophenol (Surr)	*35*		*25 - 58*	*10/06/19 08:46*	*10/07/19 05:12*	*1*
2-Fluorobiphenyl (Surr)	*61*		*45 - 107*	*10/06/19 08:46*	*10/07/19 05:12*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**57.5**		2.64	0.31	mg/L			10/05/19 19:11	22
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/05/19 16:12	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/05/19 16:12	1
Sulfate	**24.0**		0.60	0.35	mg/L			10/05/19 16:12	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**14000**		250	233	ug/L		10/08/19 09:29	10/09/19 02:16	5
Potassium	**7110**		250	73.5	ug/L		10/08/19 09:29	10/09/19 02:16	5
Magnesium	**8670**		250	24.8	ug/L		10/08/19 09:29	10/09/19 02:16	5
Sodium	**41500**		250	66.8	ug/L		10/08/19 09:29	10/09/19 02:16	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**31.7**	J	50.0	1.7	ug/L		10/09/19 08:11	10/09/19 21:27	1
Iron, Dissolved	**8750**		150	34.2	ug/L		10/09/19 08:11	10/09/19 21:27	1
Manganese, Dissolved	**807**		15.0	0.99	ug/L		10/09/19 08:11	10/09/19 21:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.15**		0.10	0.068	mg/L			10/09/19 09:59	1
Bicarbonate Alkalinity as CaCO3	**68.4**		5.0	5.0	mg/L			10/08/19 13:03	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/08/19 13:03	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/08/19 12:03	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-193027-1
SDG: 193027

Client Sample ID: UPA-103-LS

Lab Sample ID: 460-193074-3

Date Collected: 10/04/19 13:10
Date Received: 10/04/19 20:15

Matrix: Water

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/09/19 18:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*83*		*72 - 133*		*10/09/19 18:01*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/10/19 12:44	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/10/19 12:44	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/10/19 12:44	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/10/19 12:44	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/10/19 12:44	1
Acetone	**5.5**	U	~~5.0~~ 5.5	4.4	ug/L			10/10/19 12:44	1
Carbon disulfide	**3.5**		1.0	0.82	ug/L			10/10/19 12:44	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/10/19 12:44	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/10/19 12:44	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/10/19 12:44	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/10/19 12:44	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/10/19 12:44	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/10/19 12:44	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/10/19 12:44	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/10/19 12:44	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/10/19 12:44	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/10/19 12:44	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/10/19 12:44	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/10/19 12:44	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/10/19 12:44	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/10/19 12:44	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/10/19 12:44	1
Benzene	0.20	U	1.0	0.20	ug/L			10/10/19 12:44	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/10/19 12:44	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/10/19 12:44	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/10/19 12:44	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/10/19 12:44	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/10/19 12:44	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/10/19 12:44	1
Toluene	0.38	U	1.0	0.38	ug/L			10/10/19 12:44	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/10/19 12:44	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/10/19 12:44	1
Styrene	0.42	U	1.0	0.42	ug/L			10/10/19 12:44	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/10/19 12:44	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/10/19 12:44	1
MTBE	0.47	U	1.0	0.47	ug/L			10/10/19 12:44	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/10/19 12:44	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/10/19 12:44	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/10/19 12:44	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/10/19 12:44	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/10/19 12:44	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/10/19 12:44	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/10/19 12:44	1

Client Sample ID: UPA-103-LS Lab Sample ID: 460-193074-3

Date Collected: 10/04/19 13:10 **Matrix: Water**
Date Received: 10/04/19 20:15

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Indane	0.35	U	1.0	0.35	ug/L			10/10/19 12:44	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/10/19 12:44	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/10/19 12:44	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/10/19 12:44*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*74 - 132*		*10/10/19 12:44*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/10/19 12:44*	*1*
4-Bromofluorobenzene	*95*		*77 - 124*		*10/10/19 12:44*	*1*
Dibromofluoromethane (Surr)	*93*		*72 - 131*		*10/10/19 12:44*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/06/19 08:46	10/07/19 03:06	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/06/19 08:46	10/07/19 03:06	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/06/19 08:46	10/07/19 03:06	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/06/19 08:46	10/07/19 03:06	1
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/06/19 08:46	10/07/19 03:06	1
Bis(2-chloroethyl)ether	0.026	U	0.030	0.026	ug/L		10/06/19 08:46	10/07/19 03:06	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/06/19 08:46	10/07/19 05:33	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/06/19 08:46	10/07/19 05:33	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/06/19 08:46	10/07/19 05:33	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/06/19 08:46	10/07/19 05:33	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/06/19 08:46	10/07/19 05:33	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/06/19 08:46	10/07/19 05:33	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/06/19 08:46	10/07/19 05:33	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/06/19 08:46	10/07/19 05:33	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/06/19 08:46	10/07/19 05:33	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/06/19 08:46	10/07/19 05:33	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/06/19 08:46	10/07/19 05:33	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/06/19 08:46	10/07/19 05:33	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/06/19 08:46	10/07/19 05:33	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/06/19 08:46	10/07/19 05:33	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/06/19 08:46	10/07/19 05:33	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/06/19 08:46	10/07/19 05:33	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/06/19 08:46	10/07/19 05:33	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/06/19 08:46	10/07/19 05:33	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/06/19 08:46	10/07/19 05:33	1
Isophorone	0.80	U	10	0.80	ug/L		10/06/19 08:46	10/07/19 05:33	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/06/19 08:46	10/07/19 05:33	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/06/19 08:46	10/07/19 05:33	1
Naphthalene	1.1	U	10	1.1	ug/L		10/06/19 08:46	10/07/19 05:33	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/06/19 08:46	10/07/19 05:33	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/06/19 08:46	10/07/19 05:33	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/06/19 08:46	10/07/19 05:33	1

Client Sample ID: UPA-103-LS Lab Sample ID: 460-193074-3

Date Collected: 10/04/19 13:10 **Matrix: Water**
Date Received: 10/04/19 20:15

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/06/19 08:46	10/07/19 05:33	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/06/19 08:46	10/07/19 05:33	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/06/19 08:46	10/07/19 05:33	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/06/19 08:46	10/07/19 05:33	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/06/19 08:46	10/07/19 05:33	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/06/19 08:46	10/07/19 05:33	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/06/19 08:46	10/07/19 05:33	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/06/19 08:46	10/07/19 05:33	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/06/19 08:46	10/07/19 05:33	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/06/19 08:46	10/07/19 05:33	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/06/19 08:46	10/07/19 05:33	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/06/19 08:46	10/07/19 05:33	1
Fluorene	0.91	U	10	0.91	ug/L		10/06/19 08:46	10/07/19 05:33	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/06/19 08:46	10/07/19 05:33	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/06/19 08:46	10/07/19 05:33	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/06/19 08:46	10/07/19 05:33	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/06/19 08:46	10/07/19 05:33	1
Anthracene	0.63	U	10	0.63	ug/L		10/06/19 08:46	10/07/19 05:33	1
Carbazole	0.68	U	10	0.68	ug/L		10/06/19 08:46	10/07/19 05:33	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/06/19 08:46	10/07/19 05:33	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/06/19 08:46	10/07/19 05:33	1
Pyrene	1.6	U	10	1.6	ug/L		10/06/19 08:46	10/07/19 05:33	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/06/19 08:46	10/07/19 05:33	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/06/19 08:46	10/07/19 05:33	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/06/19 08:46	10/07/19 05:33	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/06/19 08:46	10/07/19 05:33	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/06/19 08:46	10/07/19 05:33	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/06/19 08:46	10/07/19 05:33	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/06/19 08:46	10/07/19 05:33	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/06/19 08:46	10/07/19 05:33	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/06/19 08:46	10/07/19 05:33	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/06/19 08:46	10/07/19 05:33	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/06/19 08:46	10/07/19 05:33	1
Caprolactam	0.68	U	10	0.68	ug/L		10/06/19 08:46	10/07/19 05:33	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/06/19 08:46	10/07/19 05:33	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/06/19 08:46	10/07/19 05:33	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/06/19 08:46	10/07/19 05:33	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/06/19 08:46*	*10/07/19 05:33*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*101*		*51 - 108*	*10/06/19 08:46*	*10/07/19 05:33*	*1*
Phenol-d5 (Surr)	*35*		*14 - 39*	*10/06/19 08:46*	*10/07/19 05:33*	*1*
Terphenyl-d14 (Surr)	*79*		*40 - 148*	*10/06/19 08:46*	*10/07/19 05:33*	*1*
2,4,6-Tribromophenol (Surr)	*117*		*26 - 139*	*10/06/19 08:46*	*10/07/19 05:33*	*1*
2-Fluorophenol (Surr)	*50*		*25 - 58*	*10/06/19 08:46*	*10/07/19 05:33*	*1*
2-Fluorobiphenyl (Surr)	*91*		*45 - 107*	*10/06/19 08:46*	*10/07/19 05:33*	*1*

Client Sample ID: UPA-103-LS — Lab Sample ID: 460-193074-3

Date Collected: 10/04/19 13:10 **Matrix: Water**
Date Received: 10/04/19 20:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**36.6**		1.68	0.20	mg/L			10/05/19 19:26	14
Nitrate as N	**2.56**		0.10	0.056	mg/L			10/05/19 16:27	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/05/19 16:27	1
Sulfate	**22.5**		0.60	0.35	mg/L			10/05/19 16:27	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**19900**		250	233	ug/L		10/08/19 09:29	10/09/19 02:19	5
Potassium	**4160**		250	73.5	ug/L		10/08/19 09:29	10/09/19 02:19	5
Magnesium	**6850**		250	24.8	ug/L		10/08/19 09:29	10/09/19 02:19	5
Sodium	**24300**		250	66.8	ug/L		10/08/19 09:29	10/09/19 02:19	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**38.8**	J	50.0	1.7	ug/L		10/09/19 08:11	10/09/19 21:31	1
Iron, Dissolved	**13600**		150	34.2	ug/L		10/09/19 08:11	10/09/19 21:31	1
Manganese, Dissolved	**573**		15.0	0.99	ug/L		10/09/19 08:11	10/09/19 21:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.72**		0.10	0.068	mg/L			10/09/19 10:01	1
Bicarbonate Alkalinity as CaCO3	**58.3**		5.0	5.0	mg/L			10/08/19 13:11	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/08/19 13:11	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/08/19 12:03	1

Client Sample ID: TBGW_100419 — Lab Sample ID: 460-193074-4

Date Collected: 10/04/19 00:00 **Matrix: Water**
Date Received: 10/04/19 20:15

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/09/19 16:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*86*		*72 - 133*		*10/09/19 16:45*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/10/19 11:56	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/10/19 11:56	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/10/19 11:56	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/10/19 11:56	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/10/19 11:56	1
Acetone	**7.9**		5.0	4.4	ug/L			10/10/19 11:56	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/10/19 11:56	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/10/19 11:56	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/10/19 11:56	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/10/19 11:56	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/10/19 11:56	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/10/19 11:56	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/10/19 11:56	1

Client Sample ID: TBGW_100419 Lab Sample ID: 460-193074-4

Date Collected: 10/04/19 00:00 **Matrix: Water**
Date Received: 10/04/19 20:15

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/10/19 11:56	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/10/19 11:56	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/10/19 11:56	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/10/19 11:56	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/10/19 11:56	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/10/19 11:56	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/10/19 11:56	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/10/19 11:56	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/10/19 11:56	1
Benzene	0.20	U	1.0	0.20	ug/L			10/10/19 11:56	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/10/19 11:56	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/10/19 11:56	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/10/19 11:56	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/10/19 11:56	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/10/19 11:56	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/10/19 11:56	1
Toluene	0.38	U	1.0	0.38	ug/L			10/10/19 11:56	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/10/19 11:56	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/10/19 11:56	1
Styrene	0.42	U	1.0	0.42	ug/L			10/10/19 11:56	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/10/19 11:56	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/10/19 11:56	1
MTBE	0.47	U	1.0	0.47	ug/L			10/10/19 11:56	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/10/19 11:56	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/10/19 11:56	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/10/19 11:56	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/10/19 11:56	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/10/19 11:56	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/10/19 11:56	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/10/19 11:56	1
Indane	0.35	U	1.0	0.35	ug/L			10/10/19 11:56	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/10/19 11:56	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/10/19 11:56	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/10/19 11:56*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*74 - 132*		*10/10/19 11:56*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/10/19 11:56*	*1*
4-Bromofluorobenzene	*93*		*77 - 124*		*10/10/19 11:56*	*1*
Dibromofluoromethane (Surr)	*92*		*72 - 131*		*10/10/19 11:56*	*1*

Client Sample ID: DGC-11S Lab Sample ID: 460-193280-1

Date Collected: 10/07/19 10:05 **Matrix: Water**
Date Received: 10/07/19 19:35

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/11/19 12:40	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-193027-1
SDG: 193027

Client Sample ID: DGC-11S

Lab Sample ID: 460-193280-1

Date Collected: 10/07/19 10:05
Date Received: 10/07/19 19:35

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*82*		*72 - 133*		*10/11/19 12:40*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/10/19 07:11	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/10/19 07:11	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/10/19 07:11	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/10/19 07:11	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/10/19 07:11	1
Acetone	4.4	U	5.0	4.4	ug/L			10/10/19 07:11	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/10/19 07:11	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/10/19 07:11	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/10/19 07:11	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/10/19 07:11	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/10/19 07:11	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/10/19 07:11	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/10/19 07:11	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/10/19 07:11	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/10/19 07:11	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/10/19 07:11	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/10/19 07:11	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/10/19 07:11	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/10/19 07:11	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/10/19 07:11	1
Dibromochloromethane	0.28	~~U~~ UJ	1.0	0.28	ug/L			10/10/19 07:11	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/10/19 07:11	1
Benzene	0.20	U	1.0	0.20	ug/L			10/10/19 07:11	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/10/19 07:11	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/10/19 07:11	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/10/19 07:11	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/10/19 07:11	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/10/19 07:11	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/10/19 07:11	1
Toluene	0.38	U	1.0	0.38	ug/L			10/10/19 07:11	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/10/19 07:11	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/10/19 07:11	1
Styrene	0.42	U	1.0	0.42	ug/L			10/10/19 07:11	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/10/19 07:11	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/10/19 07:11	1
MTBE	0.47	U	1.0	0.47	ug/L			10/10/19 07:11	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/10/19 07:11	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/10/19 07:11	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/10/19 07:11	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/10/19 07:11	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/10/19 07:11	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/10/19 07:11	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/10/19 07:11	1
Indane	0.35	U	1.0	0.35	ug/L			10/10/19 07:11	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/10/19 07:11	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/10/19 07:11	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-193027-1
SDG: 193027

Client Sample ID: DGC-11S

Lab Sample ID: 460-193280-1

Date Collected: 10/07/19 10:05
Date Received: 10/07/19 19:35

Matrix: Water

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					10/10/19 07:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		74 - 132		10/10/19 07:11	1
Toluene-d8 (Surr)	101		80 - 120		10/10/19 07:11	1
4-Bromofluorobenzene	96		77 - 124		10/10/19 07:11	1
Dibromofluoromethane (Surr)	97		72 - 131		10/10/19 07:11	1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/09/19 08:56	10/10/19 15:25	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/09/19 08:56	10/10/19 15:25	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/09/19 08:56	10/10/19 15:25	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/09/19 08:56	10/10/19 15:25	1
Pentachlorophenol	0.15	U	0.20	0.15	ug/L		10/09/19 08:56	10/10/19 15:25	1
Bis(2-chloroethyl)ether	0.026	U	0.030	0.026	ug/L		10/09/19 08:56	10/10/19 15:25	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U-*	10	0.29	ug/L		10/09/19 08:56	10/09/19 22:22	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/09/19 08:56	10/09/19 22:22	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/09/19 08:56	10/09/19 22:22	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/09/19 08:56	10/09/19 22:22	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/09/19 08:56	10/09/19 22:22	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/09/19 08:56	10/09/19 22:22	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/09/19 08:56	10/09/19 22:22	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/09/19 08:56	10/09/19 22:22	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/09/19 08:56	10/09/19 22:22	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/09/19 08:56	10/09/19 22:22	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/09/19 08:56	10/09/19 22:22	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/09/19 08:56	10/09/19 22:22	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/09/19 08:56	10/09/19 22:22	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/09/19 08:56	10/09/19 22:22	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/09/19 08:56	10/09/19 22:22	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/09/19 08:56	10/09/19 22:22	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/09/19 08:56	10/09/19 22:22	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/09/19 08:56	10/09/19 22:22	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/09/19 08:56	10/09/19 22:22	1
Isophorone	0.80	U	10	0.80	ug/L		10/09/19 08:56	10/09/19 22:22	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/09/19 08:56	10/09/19 22:22	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/09/19 08:56	10/09/19 22:22	1
Naphthalene	1.1	U	10	1.1	ug/L		10/09/19 08:56	10/09/19 22:22	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/09/19 08:56	10/09/19 22:22	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/09/19 08:56	10/09/19 22:22	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/09/19 08:56	10/09/19 22:22	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/09/19 08:56	10/09/19 22:22	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/09/19 08:56	10/09/19 22:22	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/09/19 08:56	10/09/19 22:22	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/09/19 08:56	10/09/19 22:22	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/09/19 08:56	10/09/19 22:22	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/09/19 08:56	10/09/19 22:22	1

Client Sample ID: DGC-11S Lab Sample ID: 460-193280-1

Date Collected: 10/07/19 10:05 **Matrix: Water**
Date Received: 10/07/19 19:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/09/19 08:56	10/09/19 22:22	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/09/19 08:56	10/09/19 22:22	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/09/19 08:56	10/09/19 22:22	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/09/19 08:56	10/09/19 22:22	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/09/19 08:56	10/09/19 22:22	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/09/19 08:56	10/09/19 22:22	1
Fluorene	0.91	U	10	0.91	ug/L		10/09/19 08:56	10/09/19 22:22	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/09/19 08:56	10/09/19 22:22	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/09/19 08:56	10/09/19 22:22	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/09/19 08:56	10/09/19 22:22	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/09/19 08:56	10/09/19 22:22	1
Anthracene	0.63	U	10	0.63	ug/L		10/09/19 08:56	10/09/19 22:22	1
Carbazole	0.68	U	10	0.68	ug/L		10/09/19 08:56	10/09/19 22:22	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/09/19 08:56	10/09/19 22:22	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/09/19 08:56	10/09/19 22:22	1
Pyrene	1.6	U	10	1.6	ug/L		10/09/19 08:56	10/09/19 22:22	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/09/19 08:56	10/09/19 22:22	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/09/19 08:56	10/09/19 22:22	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/09/19 08:56	10/09/19 22:22	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/09/19 08:56	10/09/19 22:22	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/09/19 08:56	10/09/19 22:22	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/09/19 08:56	10/09/19 22:22	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/09/19 08:56	10/09/19 22:22	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/09/19 08:56	10/09/19 22:22	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/09/19 08:56	10/09/19 22:22	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/09/19 08:56	10/09/19 22:22	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/09/19 08:56	10/09/19 22:22	1
Caprolactam	0.68	U	10	0.68	ug/L		10/09/19 08:56	10/09/19 22:22	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/09/19 08:56	10/09/19 22:22	1
Bisphenol-A	9.9	~~U~~ * UJ	10	9.9	ug/L		10/09/19 08:56	10/09/19 22:22	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/09/19 08:56	10/09/19 22:22	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/09/19 08:56*	*10/09/19 22:22*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*92*		*51 - 108*	*10/09/19 08:56*	*10/09/19 22:22*	*1*
Phenol-d5 (Surr)	*30*		*14 - 39*	*10/09/19 08:56*	*10/09/19 22:22*	*1*
Terphenyl-d14 (Surr)	*91*		*40 - 148*	*10/09/19 08:56*	*10/09/19 22:22*	*1*
2,4,6-Tribromophenol (Surr)	*101*		*26 - 139*	*10/09/19 08:56*	*10/09/19 22:22*	*1*
2-Fluorophenol (Surr)	*46*		*25 - 58*	*10/09/19 08:56*	*10/09/19 22:22*	*1*
2-Fluorobiphenyl (Surr)	*81*		*45 - 107*	*10/09/19 08:56*	*10/09/19 22:22*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2.93**		0.12	0.014	mg/L			10/08/19 21:15	1
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/08/19 21:15	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/08/19 21:15	1
Sulfate	**8.41**		0.60	0.35	mg/L			10/08/19 21:15	1

Client Sample ID: DGC-11S — Lab Sample ID: 460-193280-1

Date Collected: 10/07/19 10:05 **Matrix: Water**
Date Received: 10/07/19 19:35

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**6950**		250	233	ug/L		10/10/19 07:41	10/11/19 16:00	5
Potassium	**2410**		250	73.5	ug/L		10/10/19 07:41	10/11/19 16:00	5
Magnesium	**2620**		250	24.8	ug/L		10/10/19 07:41	10/11/19 16:00	5
Sodium	**4750**		250	66.8	ug/L		10/10/19 07:41	10/11/19 16:00	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	1.7	U	50.0	1.7	ug/L		10/09/19 08:11	10/09/19 21:35	1
Iron, Dissolved	34.2	U	150	34.2	ug/L		10/09/19 08:11	10/09/19 21:35	1
Manganese, Dissolved	**8.0**	**J**	15.0	0.99	ug/L		10/09/19 08:11	10/09/19 21:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.068	U	0.10	0.068	mg/L			10/09/19 10:39	1
Bicarbonate Alkalinity as CaCO3	**27.0**		5.0	5.0	mg/L			10/08/19 19:59	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/08/19 19:59	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/10/19 15:03	1

Client Sample ID: DGC-11D — Lab Sample ID: 460-193280-2

Date Collected: 10/07/19 10:20 **Matrix: Water**
Date Received: 10/07/19 19:35

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/11/19 13:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*83*		*72 - 133*		*10/11/19 13:06*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/10/19 07:35	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/10/19 07:35	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/10/19 07:35	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/10/19 07:35	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/10/19 07:35	1
Acetone	4.4	U	5.0	4.4	ug/L			10/10/19 07:35	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/10/19 07:35	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/10/19 07:35	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/10/19 07:35	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/10/19 07:35	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/10/19 07:35	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/10/19 07:35	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/10/19 07:35	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/10/19 07:35	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/10/19 07:35	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/10/19 07:35	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/10/19 07:35	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/10/19 07:35	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/10/19 07:35	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/10/19 07:35	1

Client Sample ID: DGC-11D Lab Sample ID: 460-193280-2

Date Collected: 10/07/19 10:20 **Matrix: Water**
Date Received: 10/07/19 19:35

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromochloromethane	0.28	~~U *~~ UJ	1.0	0.28	ug/L			10/10/19 07:35	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/10/19 07:35	1
Benzene	0.20	U	1.0	0.20	ug/L			10/10/19 07:35	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/10/19 07:35	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/10/19 07:35	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/10/19 07:35	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/10/19 07:35	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/10/19 07:35	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/10/19 07:35	1
Toluene	0.38	U	1.0	0.38	ug/L			10/10/19 07:35	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/10/19 07:35	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/10/19 07:35	1
Styrene	0.42	U	1.0	0.42	ug/L			10/10/19 07:35	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/10/19 07:35	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/10/19 07:35	1
MTBE	0.47	U	1.0	0.47	ug/L			10/10/19 07:35	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/10/19 07:35	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/10/19 07:35	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/10/19 07:35	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/10/19 07:35	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/10/19 07:35	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/10/19 07:35	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/10/19 07:35	1
Indane	0.35	U	1.0	0.35	ug/L			10/10/19 07:35	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/10/19 07:35	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/10/19 07:35	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/10/19 07:35*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*74 - 132*		*10/10/19 07:35*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*10/10/19 07:35*	*1*
4-Bromofluorobenzene	*99*		*77 - 124*		*10/10/19 07:35*	*1*
Dibromofluoromethane (Surr)	*99*		*72 - 131*		*10/10/19 07:35*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/09/19 08:56	10/10/19 15:46	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/09/19 08:56	10/10/19 15:46	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/09/19 08:56	10/10/19 15:46	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/09/19 08:56	10/10/19 15:46	1
Pentachlorophenol	0.15	U	0.20	0.15	ug/L		10/09/19 08:56	10/10/19 15:46	1
Bis(2-chloroethyl)ether	0.026	U	0.030	0.026	ug/L		10/09/19 08:56	10/10/19 15:46	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U *	10	0.29	ug/L		10/09/19 08:56	10/09/19 22:43	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/09/19 08:56	10/09/19 22:43	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/09/19 08:56	10/09/19 22:43	1

Client Sample ID: DGC-11D Lab Sample ID: 460-193280-2

Date Collected: 10/07/19 10:20 **Matrix: Water**
Date Received: 10/07/19 19:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methylphenol	0.24	U	10	0.24	ug/L		10/09/19 08:56	10/09/19 22:43	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/09/19 08:56	10/09/19 22:43	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/09/19 08:56	10/09/19 22:43	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/09/19 08:56	10/09/19 22:43	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/09/19 08:56	10/09/19 22:43	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/09/19 08:56	10/09/19 22:43	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/09/19 08:56	10/09/19 22:43	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/09/19 08:56	10/09/19 22:43	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/09/19 08:56	10/09/19 22:43	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/09/19 08:56	10/09/19 22:43	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/09/19 08:56	10/09/19 22:43	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/09/19 08:56	10/09/19 22:43	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/09/19 08:56	10/09/19 22:43	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/09/19 08:56	10/09/19 22:43	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/09/19 08:56	10/09/19 22:43	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/09/19 08:56	10/09/19 22:43	1
Isophorone	0.80	U	10	0.80	ug/L		10/09/19 08:56	10/09/19 22:43	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/09/19 08:56	10/09/19 22:43	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/09/19 08:56	10/09/19 22:43	1
Naphthalene	1.1	U	10	1.1	ug/L		10/09/19 08:56	10/09/19 22:43	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/09/19 08:56	10/09/19 22:43	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/09/19 08:56	10/09/19 22:43	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/09/19 08:56	10/09/19 22:43	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/09/19 08:56	10/09/19 22:43	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/09/19 08:56	10/09/19 22:43	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/09/19 08:56	10/09/19 22:43	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/09/19 08:56	10/09/19 22:43	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/09/19 08:56	10/09/19 22:43	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/09/19 08:56	10/09/19 22:43	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/09/19 08:56	10/09/19 22:43	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/09/19 08:56	10/09/19 22:43	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/09/19 08:56	10/09/19 22:43	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/09/19 08:56	10/09/19 22:43	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/09/19 08:56	10/09/19 22:43	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/09/19 08:56	10/09/19 22:43	1
Fluorene	0.91	U	10	0.91	ug/L		10/09/19 08:56	10/09/19 22:43	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/09/19 08:56	10/09/19 22:43	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/09/19 08:56	10/09/19 22:43	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/09/19 08:56	10/09/19 22:43	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/09/19 08:56	10/09/19 22:43	1
Anthracene	0.63	U	10	0.63	ug/L		10/09/19 08:56	10/09/19 22:43	1
Carbazole	0.68	U	10	0.68	ug/L		10/09/19 08:56	10/09/19 22:43	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/09/19 08:56	10/09/19 22:43	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/09/19 08:56	10/09/19 22:43	1
Pyrene	1.6	U	10	1.6	ug/L		10/09/19 08:56	10/09/19 22:43	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/09/19 08:56	10/09/19 22:43	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/09/19 08:56	10/09/19 22:43	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/09/19 08:56	10/09/19 22:43	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/09/19 08:56	10/09/19 22:43	1

Client Sample ID: DGC-11D — Lab Sample ID: 460-193280-2

Date Collected: 10/07/19 10:20 **Matrix: Water**
Date Received: 10/07/19 19:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/09/19 08:56	10/09/19 22:43	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/09/19 08:56	10/09/19 22:43	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/09/19 08:56	10/09/19 22:43	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/09/19 08:56	10/09/19 22:43	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/09/19 08:56	10/09/19 22:43	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/09/19 08:56	10/09/19 22:43	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/09/19 08:56	10/09/19 22:43	1
Caprolactam	0.68	U	10	0.68	ug/L		10/09/19 08:56	10/09/19 22:43	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/09/19 08:56	10/09/19 22:43	1
Bisphenol-A	9.9	~~U~~ * UJ	10	9.9	ug/L		10/09/19 08:56	10/09/19 22:43	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/09/19 08:56	10/09/19 22:43	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/09/19 08:56*	*10/09/19 22:43*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*106*		*51 - 108*	*10/09/19 08:56*	*10/09/19 22:43*	*1*
Phenol-d5 (Surr)	*49*	*X*	*14 - 39*	*10/09/19 08:56*	*10/09/19 22:43*	*1*
Terphenyl-d14 (Surr)	*102*		*40 - 148*	*10/09/19 08:56*	*10/09/19 22:43*	*1*
2,4,6-Tribromophenol (Surr)	*119*		*26 - 139*	*10/09/19 08:56*	*10/09/19 22:43*	*1*
2-Fluorophenol (Surr)	*63*	*X*	*25 - 58*	*10/09/19 08:56*	*10/09/19 22:43*	*1*
2-Fluorobiphenyl (Surr)	*94*		*45 - 107*	*10/09/19 08:56*	*10/09/19 22:43*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**7.97**		0.48	0.056	mg/L			10/09/19 01:04	4
Nitrate as N	**0.53**		0.10	0.056	mg/L			10/08/19 21:30	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/08/19 21:30	1
Sulfate	**52.0**		2.40	1.38	mg/L			10/09/19 01:04	4

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**15800**		250	233	ug/L		10/10/19 07:41	10/11/19 16:05	5
Potassium	**2130**		250	73.5	ug/L		10/10/19 07:41	10/11/19 16:05	5
Magnesium	**10200**		250	24.8	ug/L		10/10/19 07:41	10/11/19 16:05	5
Sodium	**7570**		250	66.8	ug/L		10/10/19 07:41	10/11/19 16:05	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	1.7	U	50.0	1.7	ug/L		10/09/19 08:11	10/09/19 21:55	1
Iron, Dissolved	34.2	U	150	34.2	ug/L		10/09/19 08:11	10/09/19 21:55	1
Manganese, Dissolved	**4.4**	**J**	15.0	0.99	ug/L		10/09/19 08:11	10/09/19 21:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.11**		0.10	0.068	mg/L			10/09/19 10:40	1
Bicarbonate Alkalinity as CaCO3	**29.9**		5.0	5.0	mg/L			10/08/19 20:33	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/08/19 20:33	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/10/19 15:03	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-193027-1
SDG: 193027

Client Sample ID: UPA-103-US

Lab Sample ID: 460-193280-3

Date Collected: 10/07/19 10:25
Date Received: 10/07/19 19:35

Matrix: Water

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**1.6**		0.40	0.20	ug/L			10/11/19 13:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*82*		*72 - 133*		*10/11/19 13:31*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/10/19 07:59	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/10/19 07:59	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/10/19 07:59	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/10/19 07:59	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/10/19 07:59	1
Acetone	4.4	U	5.0	4.4	ug/L			10/10/19 07:59	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/10/19 07:59	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/10/19 07:59	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/10/19 07:59	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/10/19 07:59	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/10/19 07:59	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/10/19 07:59	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/10/19 07:59	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/10/19 07:59	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/10/19 07:59	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/10/19 07:59	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/10/19 07:59	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/10/19 07:59	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/10/19 07:59	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/10/19 07:59	1
Dibromochloromethane	0.28	~~U~~ * UJ	1.0	0.28	ug/L			10/10/19 07:59	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/10/19 07:59	1
Benzene	0.20	U	1.0	0.20	ug/L			10/10/19 07:59	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/10/19 07:59	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/10/19 07:59	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/10/19 07:59	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/10/19 07:59	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/10/19 07:59	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/10/19 07:59	1
Toluene	0.38	U	1.0	0.38	ug/L			10/10/19 07:59	1
Chlorobenzene	**1.1**		1.0	0.38	ug/L			10/10/19 07:59	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/10/19 07:59	1
Styrene	0.42	U	1.0	0.42	ug/L			10/10/19 07:59	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/10/19 07:59	1
Diethyl ether	**0.98**	**J**	1.0	0.21	ug/L			10/10/19 07:59	1
MTBE	0.47	U	1.0	0.47	ug/L			10/10/19 07:59	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/10/19 07:59	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/10/19 07:59	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/10/19 07:59	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/10/19 07:59	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/10/19 07:59	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/10/19 07:59	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/10/19 07:59	1

Client Sample ID: UPA-103-US Lab Sample ID: 460-193280-3

Date Collected: 10/07/19 10:25 **Matrix: Water**
Date Received: 10/07/19 19:35

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Indane	0.35	U	1.0	0.35	ug/L			10/10/19 07:59	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/10/19 07:59	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/10/19 07:59	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/10/19 07:59*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*74 - 132*		*10/10/19 07:59*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*10/10/19 07:59*	*1*
4-Bromofluorobenzene	*99*		*77 - 124*		*10/10/19 07:59*	*1*
Dibromofluoromethane (Surr)	*98*		*72 - 131*		*10/10/19 07:59*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/09/19 08:56	10/10/19 05:27	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/09/19 08:56	10/10/19 05:27	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/09/19 08:56	10/10/19 05:27	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/09/19 08:56	10/10/19 05:27	1
Pentachlorophenol	0.15	U	0.20	0.15	ug/L		10/09/19 08:56	10/10/19 05:27	1
Bis(2-chloroethyl)ether	**0.056**		0.030	0.026	ug/L		10/09/19 08:56	10/10/19 05:27	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U *	10	0.29	ug/L		10/09/19 08:56	10/09/19 23:04	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/09/19 08:56	10/09/19 23:04	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/09/19 08:56	10/09/19 23:04	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/09/19 08:56	10/09/19 23:04	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/09/19 08:56	10/09/19 23:04	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/09/19 08:56	10/09/19 23:04	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/09/19 08:56	10/09/19 23:04	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/09/19 08:56	10/09/19 23:04	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/09/19 08:56	10/09/19 23:04	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/09/19 08:56	10/09/19 23:04	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/09/19 08:56	10/09/19 23:04	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/09/19 08:56	10/09/19 23:04	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/09/19 08:56	10/09/19 23:04	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/09/19 08:56	10/09/19 23:04	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/09/19 08:56	10/09/19 23:04	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/09/19 08:56	10/09/19 23:04	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/09/19 08:56	10/09/19 23:04	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/09/19 08:56	10/09/19 23:04	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/09/19 08:56	10/09/19 23:04	1
Isophorone	0.80	U	10	0.80	ug/L		10/09/19 08:56	10/09/19 23:04	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/09/19 08:56	10/09/19 23:04	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/09/19 08:56	10/09/19 23:04	1
Naphthalene	1.1	U	10	1.1	ug/L		10/09/19 08:56	10/09/19 23:04	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/09/19 08:56	10/09/19 23:04	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/09/19 08:56	10/09/19 23:04	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/09/19 08:56	10/09/19 23:04	1

Client Sample ID: UPA-103-US Lab Sample ID: 460-193280-3

Date Collected: 10/07/19 10:25 **Matrix: Water**
Date Received: 10/07/19 19:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/09/19 08:56	10/09/19 23:04	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/09/19 08:56	10/09/19 23:04	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/09/19 08:56	10/09/19 23:04	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/09/19 08:56	10/09/19 23:04	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/09/19 08:56	10/09/19 23:04	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/09/19 08:56	10/09/19 23:04	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/09/19 08:56	10/09/19 23:04	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/09/19 08:56	10/09/19 23:04	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/09/19 08:56	10/09/19 23:04	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/09/19 08:56	10/09/19 23:04	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/09/19 08:56	10/09/19 23:04	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/09/19 08:56	10/09/19 23:04	1
Fluorene	0.91	U	10	0.91	ug/L		10/09/19 08:56	10/09/19 23:04	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/09/19 08:56	10/09/19 23:04	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/09/19 08:56	10/09/19 23:04	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/09/19 08:56	10/09/19 23:04	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/09/19 08:56	10/09/19 23:04	1
Anthracene	0.63	U	10	0.63	ug/L		10/09/19 08:56	10/09/19 23:04	1
Carbazole	0.68	U	10	0.68	ug/L		10/09/19 08:56	10/09/19 23:04	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/09/19 08:56	10/09/19 23:04	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/09/19 08:56	10/09/19 23:04	1
Pyrene	1.6	U	10	1.6	ug/L		10/09/19 08:56	10/09/19 23:04	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/09/19 08:56	10/09/19 23:04	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/09/19 08:56	10/09/19 23:04	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/09/19 08:56	10/09/19 23:04	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/09/19 08:56	10/09/19 23:04	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/09/19 08:56	10/09/19 23:04	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/09/19 08:56	10/09/19 23:04	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/09/19 08:56	10/09/19 23:04	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/09/19 08:56	10/09/19 23:04	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/09/19 08:56	10/09/19 23:04	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/09/19 08:56	10/09/19 23:04	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/09/19 08:56	10/09/19 23:04	1
Caprolactam	0.68	U	10	0.68	ug/L		10/09/19 08:56	10/09/19 23:04	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/09/19 08:56	10/09/19 23:04	1
Bisphenol-A	9.9	~~U~~ UJ	10	9.9	ug/L		10/09/19 08:56	10/09/19 23:04	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/09/19 08:56	10/09/19 23:04	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/09/19 08:56*	*10/09/19 23:04*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*103*		*51 - 108*	*10/09/19 08:56*	*10/09/19 23:04*	*1*
Phenol-d5 (Surr)	*41*	*X*	*14 - 39*	*10/09/19 08:56*	*10/09/19 23:04*	*1*
Terphenyl-d14 (Surr)	*97*		*40 - 148*	*10/09/19 08:56*	*10/09/19 23:04*	*1*
2,4,6-Tribromophenol (Surr)	*94*		*26 - 139*	*10/09/19 08:56*	*10/09/19 23:04*	*1*
2-Fluorophenol (Surr)	*47*		*25 - 58*	*10/09/19 08:56*	*10/09/19 23:04*	*1*
2-Fluorobiphenyl (Surr)	*94*		*45 - 107*	*10/09/19 08:56*	*10/09/19 23:04*	*1*

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-193027-1
SDG: 193027

Client Sample ID: UPA-103-US

Lab Sample ID: 460-193280-3

Date Collected: 10/07/19 10:25
Date Received: 10/07/19 19:35

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**40.0**		1.80	0.21	mg/L			10/09/19 01:19	15
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/08/19 21:45	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/08/19 21:45	1
Sulfate	**19.2**		0.60	0.35	mg/L			10/08/19 21:45	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**20900**		250	233	ug/L		10/10/19 07:41	10/11/19 16:08	5
Potassium	**5250**		250	73.5	ug/L		10/10/19 07:41	10/11/19 16:08	5
Magnesium	**15200**		250	24.8	ug/L		10/10/19 07:41	10/11/19 16:08	5
Sodium	**32500**		250	66.8	ug/L		10/10/19 07:41	10/11/19 16:08	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**57.6**		50.0	1.7	ug/L		10/09/19 08:11	10/09/19 21:59	1
Iron, Dissolved	**57400**		150	34.2	ug/L		10/09/19 08:11	10/09/19 21:59	1
Manganese, Dissolved	**4530**		15.0	0.99	ug/L		10/09/19 08:11	10/09/19 21:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**2.3**		0.10	0.068	mg/L			10/09/19 10:42	1
Bicarbonate Alkalinity as CaCO3	**131**		5.0	5.0	mg/L			10/08/19 20:40	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/08/19 20:40	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/10/19 15:03	1

Client Sample ID: DGC-10D

Lab Sample ID: 460-193280-4

Date Collected: 10/07/19 14:15
Date Received: 10/07/19 19:35

Matrix: Water

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**0.67**		0.40	0.20	ug/L			10/11/19 13:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*81*		*72 - 133*		*10/11/19 13:56*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/10/19 08:23	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/10/19 08:23	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/10/19 08:23	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/10/19 08:23	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/10/19 08:23	1
Acetone	4.4	U	5.0	4.4	ug/L			10/10/19 08:23	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/10/19 08:23	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/10/19 08:23	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/10/19 08:23	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/10/19 08:23	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/10/19 08:23	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/10/19 08:23	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/10/19 08:23	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-193027-1
SDG: 193027

Client Sample ID: DGC-10D

Lab Sample ID: 460-193280-4

Date Collected: 10/07/19 14:15
Date Received: 10/07/19 19:35

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/10/19 08:23	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/10/19 08:23	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/10/19 08:23	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/10/19 08:23	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/10/19 08:23	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/10/19 08:23	1
Trichloroethene	**0.31**	**J**	1.0	0.31	ug/L			10/10/19 08:23	1
Dibromochloromethane	0.28	~~U~~ * UJ	1.0	0.28	ug/L			10/10/19 08:23	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/10/19 08:23	1
Benzene	0.20	U	1.0	0.20	ug/L			10/10/19 08:23	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/10/19 08:23	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/10/19 08:23	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/10/19 08:23	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/10/19 08:23	1
Tetrachloroethene	**1.5**		1.0	0.25	ug/L			10/10/19 08:23	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/10/19 08:23	1
Toluene	0.38	U	1.0	0.38	ug/L			10/10/19 08:23	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/10/19 08:23	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/10/19 08:23	1
Styrene	0.42	U	1.0	0.42	ug/L			10/10/19 08:23	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/10/19 08:23	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/10/19 08:23	1
MTBE	**0.48**	**J**	1.0	0.47	ug/L			10/10/19 08:23	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/10/19 08:23	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/10/19 08:23	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/10/19 08:23	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/10/19 08:23	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/10/19 08:23	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/10/19 08:23	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/10/19 08:23	1
Indane	0.35	U	1.0	0.35	ug/L			10/10/19 08:23	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/10/19 08:23	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/10/19 08:23	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/10/19 08:23*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*74 - 132*		*10/10/19 08:23*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*10/10/19 08:23*	*1*
4-Bromofluorobenzene	*96*		*77 - 124*		*10/10/19 08:23*	*1*
Dibromofluoromethane (Surr)	*95*		*72 - 131*		*10/10/19 08:23*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/09/19 08:56	10/10/19 05:48	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/09/19 08:56	10/10/19 05:48	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/09/19 08:56	10/10/19 05:48	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/09/19 08:56	10/10/19 05:48	1
Pentachlorophenol	0.15	U	0.20	0.15	ug/L		10/09/19 08:56	10/10/19 05:48	1

Client Sample ID: DGC-10D Lab Sample ID: 460-193280-4

Date Collected: 10/07/19 14:15 **Matrix: Water**
Date Received: 10/07/19 19:35

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethyl)ether	0.026	U	0.030	0.026	ug/L		10/09/19 08:56	10/10/19 05:48	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U *	10	0.29	ug/L		10/09/19 08:56	10/10/19 02:25	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/09/19 08:56	10/10/19 02:25	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/09/19 08:56	10/10/19 02:25	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/09/19 08:56	10/10/19 02:25	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/09/19 08:56	10/10/19 02:25	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/09/19 08:56	10/10/19 02:25	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/09/19 08:56	10/10/19 02:25	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/09/19 08:56	10/10/19 02:25	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/09/19 08:56	10/10/19 02:25	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/09/19 08:56	10/10/19 02:25	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/09/19 08:56	10/10/19 02:25	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/09/19 08:56	10/10/19 02:25	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/09/19 08:56	10/10/19 02:25	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/09/19 08:56	10/10/19 02:25	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/09/19 08:56	10/10/19 02:25	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/09/19 08:56	10/10/19 02:25	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/09/19 08:56	10/10/19 02:25	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/09/19 08:56	10/10/19 02:25	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/09/19 08:56	10/10/19 02:25	1
Isophorone	0.80	U	10	0.80	ug/L		10/09/19 08:56	10/10/19 02:25	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/09/19 08:56	10/10/19 02:25	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/09/19 08:56	10/10/19 02:25	1
Naphthalene	1.1	U	10	1.1	ug/L		10/09/19 08:56	10/10/19 02:25	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/09/19 08:56	10/10/19 02:25	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/09/19 08:56	10/10/19 02:25	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/09/19 08:56	10/10/19 02:25	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/09/19 08:56	10/10/19 02:25	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/09/19 08:56	10/10/19 02:25	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/09/19 08:56	10/10/19 02:25	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/09/19 08:56	10/10/19 02:25	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/09/19 08:56	10/10/19 02:25	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/09/19 08:56	10/10/19 02:25	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/09/19 08:56	10/10/19 02:25	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/09/19 08:56	10/10/19 02:25	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/09/19 08:56	10/10/19 02:25	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/09/19 08:56	10/10/19 02:25	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/09/19 08:56	10/10/19 02:25	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/09/19 08:56	10/10/19 02:25	1
Fluorene	0.91	U	10	0.91	ug/L		10/09/19 08:56	10/10/19 02:25	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/09/19 08:56	10/10/19 02:25	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/09/19 08:56	10/10/19 02:25	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/09/19 08:56	10/10/19 02:25	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/09/19 08:56	10/10/19 02:25	1
Anthracene	0.63	U	10	0.63	ug/L		10/09/19 08:56	10/10/19 02:25	1
Carbazole	0.68	U	10	0.68	ug/L		10/09/19 08:56	10/10/19 02:25	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/09/19 08:56	10/10/19 02:25	1

Client Sample ID: DGC-10D Lab Sample ID: 460-193280-4

Date Collected: 10/07/19 14:15 **Matrix: Water**
Date Received: 10/07/19 19:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	0.84	U	10	0.84	ug/L		10/09/19 08:56	10/10/19 02:25	1
Pyrene	1.6	U	10	1.6	ug/L		10/09/19 08:56	10/10/19 02:25	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/09/19 08:56	10/10/19 02:25	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/09/19 08:56	10/10/19 02:25	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/09/19 08:56	10/10/19 02:25	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/09/19 08:56	10/10/19 02:25	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/09/19 08:56	10/10/19 02:25	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/09/19 08:56	10/10/19 02:25	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/09/19 08:56	10/10/19 02:25	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/09/19 08:56	10/10/19 02:25	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/09/19 08:56	10/10/19 02:25	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/09/19 08:56	10/10/19 02:25	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/09/19 08:56	10/10/19 02:25	1
Caprolactam	0.68	U	10	0.68	ug/L		10/09/19 08:56	10/10/19 02:25	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/09/19 08:56	10/10/19 02:25	1
Bisphenol-A	9.9	~~U*~~ UJ	10	9.9	ug/L		10/09/19 08:56	10/10/19 02:25	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/09/19 08:56	10/10/19 02:25	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/09/19 08:56*	*10/10/19 02:25*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*96*		*51 - 108*	*10/09/19 08:56*	*10/10/19 02:25*	*1*
Phenol-d5 (Surr)	*32*		*14 - 39*	*10/09/19 08:56*	*10/10/19 02:25*	*1*
Terphenyl-d14 (Surr)	*98*		*40 - 148*	*10/09/19 08:56*	*10/10/19 02:25*	*1*
2,4,6-Tribromophenol (Surr)	*94*		*26 - 139*	*10/09/19 08:56*	*10/10/19 02:25*	*1*
2-Fluorophenol (Surr)	*48*		*25 - 58*	*10/09/19 08:56*	*10/10/19 02:25*	*1*
2-Fluorobiphenyl (Surr)	*88*		*45 - 107*	*10/09/19 08:56*	*10/10/19 02:25*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**37.8**		1.80	0.21	mg/L			10/09/19 01:33	15
Nitrate as N	**2.10**		0.10	0.056	mg/L			10/08/19 22:00	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/08/19 22:00	1
Sulfate	**9.51**		0.60	0.35	mg/L			10/08/19 22:00	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**13700**		250	233	ug/L		10/10/19 07:41	10/11/19 16:10	5
Potassium	**2670**		250	73.5	ug/L		10/10/19 07:41	10/11/19 16:10	5
Magnesium	**4780**		250	24.8	ug/L		10/10/19 07:41	10/11/19 16:10	5
Sodium	**19000**		250	66.8	ug/L		10/10/19 07:41	10/11/19 16:10	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**3.5**	**J**	50.0	1.7	ug/L		10/09/19 09:44	10/09/19 22:03	1
Iron, Dissolved	34.2	U	150	34.2	ug/L		10/09/19 09:44	10/09/19 22:03	1
Manganese, Dissolved	**180**		15.0	0.99	ug/L		10/09/19 09:44	10/09/19 22:03	1

Client Sample ID: DGC-10D — Lab Sample ID: 460-193280-4

Date Collected: 10/07/19 14:15 **Matrix: Water**
Date Received: 10/07/19 19:35

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.068	U	0.10	0.068	mg/L			10/09/19 10:43	1
Bicarbonate Alkalinity as CaCO3	**17.4**		5.0	5.0	mg/L			10/08/19 20:47	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/08/19 20:47	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/10/19 15:03	1

Client Sample ID: DGC-10S — Lab Sample ID: 460-193280-5

Date Collected: 10/07/19 15:15 **Matrix: Water**
Date Received: 10/07/19 19:35

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**4.7**		0.40	0.20	ug/L			10/11/19 14:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*81*		*72 - 133*		*10/11/19 14:21*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/10/19 08:46	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/10/19 08:46	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/10/19 08:46	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/10/19 08:46	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/10/19 08:46	1
Acetone	4.4	U	5.0	4.4	ug/L			10/10/19 08:46	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/10/19 08:46	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/10/19 08:46	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/10/19 08:46	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/10/19 08:46	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/10/19 08:46	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/10/19 08:46	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/10/19 08:46	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/10/19 08:46	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/10/19 08:46	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/10/19 08:46	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/10/19 08:46	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/10/19 08:46	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/10/19 08:46	1
Trichloroethene	**0.86**	**J**	1.0	0.31	ug/L			10/10/19 08:46	1
Dibromochloromethane	0.28	~~U~~ * UJ	1.0	0.28	ug/L			10/10/19 08:46	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/10/19 08:46	1
Benzene	0.20	U	1.0	0.20	ug/L			10/10/19 08:46	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/10/19 08:46	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/10/19 08:46	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/10/19 08:46	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/10/19 08:46	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/10/19 08:46	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/10/19 08:46	1
Toluene	0.38	U	1.0	0.38	ug/L			10/10/19 08:46	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/10/19 08:46	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/10/19 08:46	1

Client Sample ID: DGC-10S Lab Sample ID: 460-193280-5

Date Collected: 10/07/19 15:15 **Matrix: Water**
Date Received: 10/07/19 19:35

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	0.42	U	1.0	0.42	ug/L			10/10/19 08:46	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/10/19 08:46	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/10/19 08:46	1
MTBE	0.47	U	1.0	0.47	ug/L			10/10/19 08:46	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/10/19 08:46	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/10/19 08:46	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/10/19 08:46	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/10/19 08:46	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/10/19 08:46	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/10/19 08:46	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/10/19 08:46	1
Indane	0.35	U	1.0	0.35	ug/L			10/10/19 08:46	1
Dichlorofluoromethane	**0.35**	**J**	1.0	0.34	ug/L			10/10/19 08:46	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/10/19 08:46	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/10/19 08:46*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*74 - 132*		*10/10/19 08:46*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*10/10/19 08:46*	*1*
4-Bromofluorobenzene	*96*		*77 - 124*		*10/10/19 08:46*	*1*
Dibromofluoromethane (Surr)	*97*		*72 - 131*		*10/10/19 08:46*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/09/19 08:56	10/10/19 06:09	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/09/19 08:56	10/10/19 06:09	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/09/19 08:56	10/10/19 06:09	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/09/19 08:56	10/10/19 06:09	1
Pentachlorophenol	0.15	U	0.20	0.15	ug/L		10/09/19 08:56	10/10/19 06:09	1
Bis(2-chloroethyl)ether	**0.30**		0.030	0.026	ug/L		10/09/19 08:56	10/10/19 06:09	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U *	10	0.29	ug/L		10/09/19 08:56	10/10/19 02:46	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/09/19 08:56	10/10/19 02:46	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/09/19 08:56	10/10/19 02:46	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/09/19 08:56	10/10/19 02:46	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/09/19 08:56	10/10/19 02:46	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/09/19 08:56	10/10/19 02:46	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/09/19 08:56	10/10/19 02:46	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/09/19 08:56	10/10/19 02:46	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/09/19 08:56	10/10/19 02:46	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/09/19 08:56	10/10/19 02:46	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/09/19 08:56	10/10/19 02:46	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/09/19 08:56	10/10/19 02:46	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/09/19 08:56	10/10/19 02:46	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/09/19 08:56	10/10/19 02:46	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/09/19 08:56	10/10/19 02:46	1

Client Sample ID: DGC-10S Lab Sample ID: 460-193280-5

Date Collected: 10/07/19 15:15 **Matrix: Water**
Date Received: 10/07/19 19:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/09/19 08:56	10/10/19 02:46	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/09/19 08:56	10/10/19 02:46	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/09/19 08:56	10/10/19 02:46	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/09/19 08:56	10/10/19 02:46	1
Isophorone	0.80	U	10	0.80	ug/L		10/09/19 08:56	10/10/19 02:46	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/09/19 08:56	10/10/19 02:46	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/09/19 08:56	10/10/19 02:46	1
Naphthalene	1.1	U	10	1.1	ug/L		10/09/19 08:56	10/10/19 02:46	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/09/19 08:56	10/10/19 02:46	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/09/19 08:56	10/10/19 02:46	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/09/19 08:56	10/10/19 02:46	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/09/19 08:56	10/10/19 02:46	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/09/19 08:56	10/10/19 02:46	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/09/19 08:56	10/10/19 02:46	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/09/19 08:56	10/10/19 02:46	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/09/19 08:56	10/10/19 02:46	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/09/19 08:56	10/10/19 02:46	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/09/19 08:56	10/10/19 02:46	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/09/19 08:56	10/10/19 02:46	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/09/19 08:56	10/10/19 02:46	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/09/19 08:56	10/10/19 02:46	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/09/19 08:56	10/10/19 02:46	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/09/19 08:56	10/10/19 02:46	1
Fluorene	0.91	U	10	0.91	ug/L		10/09/19 08:56	10/10/19 02:46	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/09/19 08:56	10/10/19 02:46	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/09/19 08:56	10/10/19 02:46	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/09/19 08:56	10/10/19 02:46	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/09/19 08:56	10/10/19 02:46	1
Anthracene	0.63	U	10	0.63	ug/L		10/09/19 08:56	10/10/19 02:46	1
Carbazole	0.68	U	10	0.68	ug/L		10/09/19 08:56	10/10/19 02:46	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/09/19 08:56	10/10/19 02:46	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/09/19 08:56	10/10/19 02:46	1
Pyrene	1.6	U	10	1.6	ug/L		10/09/19 08:56	10/10/19 02:46	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/09/19 08:56	10/10/19 02:46	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/09/19 08:56	10/10/19 02:46	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/09/19 08:56	10/10/19 02:46	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/09/19 08:56	10/10/19 02:46	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/09/19 08:56	10/10/19 02:46	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/09/19 08:56	10/10/19 02:46	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/09/19 08:56	10/10/19 02:46	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/09/19 08:56	10/10/19 02:46	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/09/19 08:56	10/10/19 02:46	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/09/19 08:56	10/10/19 02:46	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/09/19 08:56	10/10/19 02:46	1
Caprolactam	0.68	U	10	0.68	ug/L		10/09/19 08:56	10/10/19 02:46	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/09/19 08:56	10/10/19 02:46	1
Bisphenol-A	9.9	~~U~~ UJ	10	9.9	ug/L		10/09/19 08:56	10/10/19 02:46	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/09/19 08:56	10/10/19 02:46	1

Client Sample ID: DGC-10S — Lab Sample ID: 460-193280-5

Date Collected: 10/07/19 15:15 **Matrix: Water**
Date Received: 10/07/19 19:35

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	13	J	ug/L		4.98		10/09/19 08:56	10/10/19 02:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	97		51 - 108	10/09/19 08:56	10/10/19 02:46	1
Phenol-d5 (Surr)	33		14 - 39	10/09/19 08:56	10/10/19 02:46	1
Terphenyl-d14 (Surr)	95		40 - 148	10/09/19 08:56	10/10/19 02:46	1
2,4,6-Tribromophenol (Surr)	101		26 - 139	10/09/19 08:56	10/10/19 02:46	1
2-Fluorophenol (Surr)	49		25 - 58	10/09/19 08:56	10/10/19 02:46	1
2-Fluorobiphenyl (Surr)	88		45 - 107	10/09/19 08:56	10/10/19 02:46	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**29.9**		1.32	0.15	mg/L			10/09/19 01:48	11
Nitrate as N	**0.25**		0.10	0.056	mg/L			10/08/19 22:15	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/08/19 22:15	1
Sulfate	**3.67**		0.60	0.35	mg/L			10/08/19 22:15	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**13700**		250	233	ug/L		10/10/19 07:41	10/11/19 16:13	5
Potassium	**1850**		250	73.5	ug/L		10/10/19 07:41	10/11/19 16:13	5
Magnesium	**3630**		250	24.8	ug/L		10/10/19 07:41	10/11/19 16:13	5
Sodium	**14300**		250	66.8	ug/L		10/10/19 07:41	10/11/19 16:13	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**2.5**	J	50.0	1.7	ug/L		10/09/19 09:44	10/09/19 22:07	1
Iron, Dissolved	**728**		150	34.2	ug/L		10/09/19 09:44	10/09/19 22:07	1
Manganese, Dissolved	**80.0**		15.0	0.99	ug/L		10/09/19 09:44	10/09/19 22:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.068	U	0.10	0.068	mg/L			10/09/19 10:45	1
Bicarbonate Alkalinity as CaCO3	**27.2**		5.0	5.0	mg/L			10/08/19 20:55	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/08/19 20:55	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/10/19 15:03	1

Client Sample ID: TBGW_100719 — Lab Sample ID: 460-193280-6

Date Collected: 10/07/19 15:15 **Matrix: Water**
Date Received: 10/07/19 19:35

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/11/19 10:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	82		72 - 133		10/11/19 10:09	1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/10/19 02:23	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/10/19 02:23	1

Client Sample ID: TBGW_100719 Lab Sample ID: 460-193280-6

Date Collected: 10/07/19 15:15 **Matrix: Water**
Date Received: 10/07/19 19:35

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/10/19 02:23	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/10/19 02:23	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/10/19 02:23	1
Acetone	**12**		5.0	4.4	ug/L			10/10/19 02:23	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/10/19 02:23	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/10/19 02:23	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/10/19 02:23	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/10/19 02:23	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/10/19 02:23	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/10/19 02:23	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/10/19 02:23	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/10/19 02:23	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/10/19 02:23	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/10/19 02:23	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/10/19 02:23	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/10/19 02:23	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/10/19 02:23	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/10/19 02:23	1
Dibromochloromethane	0.28	U *	1.0	0.28	ug/L			10/10/19 02:23	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/10/19 02:23	1
Benzene	0.20	U	1.0	0.20	ug/L			10/10/19 02:23	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/10/19 02:23	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/10/19 02:23	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/10/19 02:23	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/10/19 02:23	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/10/19 02:23	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/10/19 02:23	1
Toluene	0.38	U	1.0	0.38	ug/L			10/10/19 02:23	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/10/19 02:23	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/10/19 02:23	1
Styrene	0.42	U	1.0	0.42	ug/L			10/10/19 02:23	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/10/19 02:23	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/10/19 02:23	1
MTBE	0.47	U	1.0	0.47	ug/L			10/10/19 02:23	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/10/19 02:23	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/10/19 02:23	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/10/19 02:23	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/10/19 02:23	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/10/19 02:23	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/10/19 02:23	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/10/19 02:23	1
Indane	0.35	U	1.0	0.35	ug/L			10/10/19 02:23	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/10/19 02:23	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/10/19 02:23	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/10/19 02:23*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*74 - 132*		*10/10/19 02:23*	*1*

Client Sample ID: TBGW_100719 Lab Sample ID: 460-193280-6

Date Collected: 10/07/19 15:15 **Matrix: Water**
Date Received: 10/07/19 19:35

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*80 - 120*		*10/10/19 02:23*	*1*
4-Bromofluorobenzene	*96*		*77 - 124*		*10/10/19 02:23*	*1*
Dibromofluoromethane (Surr)	*99*		*72 - 131*		*10/10/19 02:23*	*1*

Client Sample ID: UPA-106-CA Lab Sample ID: 460-193375-1

Date Collected: 10/08/19 11:25 **Matrix: Water**
Date Received: 10/08/19 20:30

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**29**		0.40	0.20	ug/L			10/12/19 20:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*88*		*72 - 133*		*10/12/19 20:25*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/11/19 03:13	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/11/19 03:13	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/11/19 03:13	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/11/19 03:13	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/11/19 03:13	1
Acetone	4.4	U	5.0	4.4	ug/L			10/11/19 03:13	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/11/19 03:13	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/11/19 03:13	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/11/19 03:13	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/11/19 03:13	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/11/19 03:13	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/11/19 03:13	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/11/19 03:13	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/11/19 03:13	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/11/19 03:13	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/11/19 03:13	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/11/19 03:13	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/11/19 03:13	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/11/19 03:13	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/11/19 03:13	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/11/19 03:13	1
1,1,2-Trichloroethane	0.43	U *	1.0	0.43	ug/L			10/11/19 03:13	1
Benzene	0.20	U	1.0	0.20	ug/L			10/11/19 03:13	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/11/19 03:13	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/11/19 03:13	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/11/19 03:13	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/11/19 03:13	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/11/19 03:13	1
1,1,2,2-Tetrachloroethane	0.37	U *	1.0	0.37	ug/L			10/11/19 03:13	1
Toluene	0.38	U	1.0	0.38	ug/L			10/11/19 03:13	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/11/19 03:13	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/11/19 03:13	1
Styrene	0.42	U	1.0	0.42	ug/L			10/11/19 03:13	1

Client Sample ID: UPA-106-CA Lab Sample ID: 460-193375-1

Date Collected: 10/08/19 11:25 **Matrix: Water**
Date Received: 10/08/19 20:30

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/11/19 03:13	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/11/19 03:13	1
MTBE	0.47	U	1.0	0.47	ug/L			10/11/19 03:13	1
Tetrahydrofuran	**4.2**		2.0	1.0	ug/L			10/11/19 03:13	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/11/19 03:13	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/11/19 03:13	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/11/19 03:13	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/11/19 03:13	1
N-Propylbenzene	0.32	U *	1.0	0.32	ug/L			10/11/19 03:13	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/11/19 03:13	1
Indane	0.35	U	1.0	0.35	ug/L			10/11/19 03:13	1
Dichlorofluoromethane	**0.93**	**J**	1.0	0.34	ug/L			10/11/19 03:13	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/11/19 03:13	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/11/19 03:13*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*74 - 132*		*10/11/19 03:13*	*1*
Toluene-d8 (Surr)	*106*		*80 - 120*		*10/11/19 03:13*	*1*
4-Bromofluorobenzene	*91*		*77 - 124*		*10/11/19 03:13*	*1*
Dibromofluoromethane (Surr)	*89*		*72 - 131*		*10/11/19 03:13*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/10/19 09:41	10/11/19 01:57	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/10/19 09:41	10/11/19 01:57	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/10/19 09:41	10/11/19 01:57	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/10/19 09:41	10/11/19 01:57	1
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/10/19 09:41	10/11/19 01:57	1
Bis(2-chloroethyl)ether	0.026	U	0.030	0.026	ug/L		10/10/19 09:41	10/11/19 01:57	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/10/19 09:41	10/10/19 22:03	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/10/19 09:41	10/10/19 22:03	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/10/19 09:41	10/10/19 22:03	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/10/19 09:41	10/10/19 22:03	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/10/19 09:41	10/10/19 22:03	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/10/19 09:41	10/10/19 22:03	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/10/19 09:41	10/10/19 22:03	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/10/19 09:41	10/10/19 22:03	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/10/19 09:41	10/10/19 22:03	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/10/19 09:41	10/10/19 22:03	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/10/19 09:41	10/10/19 22:03	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/10/19 09:41	10/10/19 22:03	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/10/19 09:41	10/10/19 22:03	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/10/19 09:41	10/10/19 22:03	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/10/19 09:41	10/10/19 22:03	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/10/19 09:41	10/10/19 22:03	1

Client Sample ID: UPA-106-CA Lab Sample ID: 460-193375-1

Date Collected: 10/08/19 11:25 **Matrix: Water**
Date Received: 10/08/19 20:30

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/10/19 09:41	10/10/19 22:03	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/10/19 09:41	10/10/19 22:03	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/10/19 09:41	10/10/19 22:03	1
Isophorone	0.80	U	10	0.80	ug/L		10/10/19 09:41	10/10/19 22:03	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/10/19 09:41	10/10/19 22:03	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/10/19 09:41	10/10/19 22:03	1
Naphthalene	1.1	U	10	1.1	ug/L		10/10/19 09:41	10/10/19 22:03	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/10/19 09:41	10/10/19 22:03	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/10/19 09:41	10/10/19 22:03	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/10/19 09:41	10/10/19 22:03	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/10/19 09:41	10/10/19 22:03	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/10/19 09:41	10/10/19 22:03	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/10/19 09:41	10/10/19 22:03	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/10/19 09:41	10/10/19 22:03	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/10/19 09:41	10/10/19 22:03	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/10/19 09:41	10/10/19 22:03	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/10/19 09:41	10/10/19 22:03	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/10/19 09:41	10/10/19 22:03	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/10/19 09:41	10/10/19 22:03	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/10/19 09:41	10/10/19 22:03	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/10/19 09:41	10/10/19 22:03	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/10/19 09:41	10/10/19 22:03	1
Fluorene	0.91	U	10	0.91	ug/L		10/10/19 09:41	10/10/19 22:03	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/10/19 09:41	10/10/19 22:03	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/10/19 09:41	10/10/19 22:03	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/10/19 09:41	10/10/19 22:03	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/10/19 09:41	10/10/19 22:03	1
Anthracene	0.63	U	10	0.63	ug/L		10/10/19 09:41	10/10/19 22:03	1
Carbazole	0.68	U	10	0.68	ug/L		10/10/19 09:41	10/10/19 22:03	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/10/19 09:41	10/10/19 22:03	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/10/19 09:41	10/10/19 22:03	1
Pyrene	1.6	U	10	1.6	ug/L		10/10/19 09:41	10/10/19 22:03	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/10/19 09:41	10/10/19 22:03	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/10/19 09:41	10/10/19 22:03	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/10/19 09:41	10/10/19 22:03	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/10/19 09:41	10/10/19 22:03	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/10/19 09:41	10/10/19 22:03	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/10/19 09:41	10/10/19 22:03	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/10/19 09:41	10/10/19 22:03	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/10/19 09:41	10/10/19 22:03	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/10/19 09:41	10/10/19 22:03	1
Diphenyl ether	**2.8**	**J**	10	1.2	ug/L		10/10/19 09:41	10/10/19 22:03	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/10/19 09:41	10/10/19 22:03	1
Caprolactam	0.68	~~U~~ UJ	10	0.68	ug/L		10/10/19 09:41	10/10/19 22:03	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/10/19 09:41	10/10/19 22:03	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/10/19 09:41	10/10/19 22:03	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/10/19 09:41	10/10/19 22:03	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/10/19 09:41*	*10/10/19 22:03*	*1*

Client Sample ID: UPA-106-CA — Lab Sample ID: 460-193375-1

Date Collected: 10/08/19 11:25 **Matrix: Water**
Date Received: 10/08/19 20:30

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*86*		*51 - 108*	*10/10/19 09:41*	*10/10/19 22:03*	*1*
Phenol-d5 (Surr)	*27*		*14 - 39*	*10/10/19 09:41*	*10/10/19 22:03*	*1*
Terphenyl-d14 (Surr)	*72*		*40 - 148*	*10/10/19 09:41*	*10/10/19 22:03*	*1*
2,4,6-Tribromophenol (Surr)	*96*		*26 - 139*	*10/10/19 09:41*	*10/10/19 22:03*	*1*
2-Fluorophenol (Surr)	*41*		*25 - 58*	*10/10/19 09:41*	*10/10/19 22:03*	*1*
2-Fluorobiphenyl (Surr)	*79*		*45 - 107*	*10/10/19 09:41*	*10/10/19 22:03*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**197**		9.00	1.05	mg/L			10/09/19 23:17	75
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/09/19 14:20	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/09/19 14:20	1
Sulfate	**70.4**		45.0	26.0	mg/L			10/09/19 23:17	75

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**133000**		250	66.8	ug/L		10/12/19 09:39	10/14/19 17:36	5
Magnesium	**14000**		250	24.8	ug/L		10/12/19 09:39	10/14/19 17:36	5
Potassium	**5120**		250	73.5	ug/L		10/12/19 09:39	10/14/19 17:36	5
Calcium	**46200**		250	233	ug/L		10/12/19 09:39	10/14/19 17:36	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**247**		50.0	1.7	ug/L		10/14/19 09:44	10/14/19 17:16	1
Iron, Dissolved	**11600**		150	34.2	ug/L		10/14/19 09:44	10/14/19 17:16	1
Manganese, Dissolved	**5890**		15.0	0.99	ug/L		10/14/19 09:44	10/14/19 17:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.20**		0.10	0.068	mg/L			10/10/19 15:06	1
Bicarbonate Alkalinity as CaCO3	**127**		5.0	5.0	mg/L			10/10/19 11:55	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/10/19 11:55	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/10/19 15:03	1

Client Sample ID: UPA-106-USB — Lab Sample ID: 460-193375-2

Date Collected: 10/08/19 10:05 **Matrix: Water**
Date Received: 10/08/19 20:30

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**5.1**		0.40	0.20	ug/L			10/12/19 20:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*89*		*72 - 133*		*10/12/19 20:50*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/11/19 03:39	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/11/19 03:39	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/11/19 03:39	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/11/19 03:39	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/11/19 03:39	1

Client Sample ID: UPA-106-USB Lab Sample ID: 460-193375-2

Date Collected: 10/08/19 10:05 **Matrix: Water**
Date Received: 10/08/19 20:30

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	4.4	U	5.0	4.4	ug/L			10/11/19 03:39	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/11/19 03:39	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/11/19 03:39	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/11/19 03:39	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/11/19 03:39	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/11/19 03:39	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/11/19 03:39	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/11/19 03:39	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/11/19 03:39	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/11/19 03:39	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/11/19 03:39	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/11/19 03:39	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/11/19 03:39	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/11/19 03:39	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/11/19 03:39	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/11/19 03:39	1
1,1,2-Trichloroethane	0.43	U *	1.0	0.43	ug/L			10/11/19 03:39	1
Benzene	0.20	U	1.0	0.20	ug/L			10/11/19 03:39	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/11/19 03:39	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/11/19 03:39	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/11/19 03:39	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/11/19 03:39	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/11/19 03:39	1
1,1,2,2-Tetrachloroethane	0.37	U *	1.0	0.37	ug/L			10/11/19 03:39	1
Toluene	0.38	U	1.0	0.38	ug/L			10/11/19 03:39	1
Chlorobenzene	**9.3**		1.0	0.38	ug/L			10/11/19 03:39	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/11/19 03:39	1
Styrene	0.42	U	1.0	0.42	ug/L			10/11/19 03:39	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/11/19 03:39	1
Diethyl ether	**13**		1.0	0.21	ug/L			10/11/19 03:39	1
MTBE	0.47	U	1.0	0.47	ug/L			10/11/19 03:39	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/11/19 03:39	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/11/19 03:39	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/11/19 03:39	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/11/19 03:39	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/11/19 03:39	1
N-Propylbenzene	0.32	U *	1.0	0.32	ug/L			10/11/19 03:39	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/11/19 03:39	1
Indane	**0.45**	**J**	1.0	0.35	ug/L			10/11/19 03:39	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/11/19 03:39	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/11/19 03:39	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/11/19 03:39*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*74 - 132*		*10/11/19 03:39*	*1*
Toluene-d8 (Surr)	*106*		*80 - 120*		*10/11/19 03:39*	*1*
4-Bromofluorobenzene	*91*		*77 - 124*		*10/11/19 03:39*	*1*
Dibromofluoromethane (Surr)	*88*		*72 - 131*		*10/11/19 03:39*	*1*

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-193027-1
SDG: 193027

Client Sample ID: UPA-106-USB

Lab Sample ID: 460-193375-2

Date Collected: 10/08/19 10:05
Date Received: 10/08/19 20:30

Matrix: Water

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/10/19 09:41	10/11/19 02:18	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/10/19 09:41	10/11/19 02:18	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/10/19 09:41	10/11/19 02:18	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/10/19 09:41	10/11/19 02:18	1
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/10/19 09:41	10/11/19 02:18	1
Bis(2-chloroethyl)ether	**0.20**		0.030	0.026	ug/L		10/10/19 09:41	10/11/19 02:18	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/10/19 09:41	10/10/19 22:28	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/10/19 09:41	10/10/19 22:28	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/10/19 09:41	10/10/19 22:28	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/10/19 09:41	10/10/19 22:28	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/10/19 09:41	10/10/19 22:28	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/10/19 09:41	10/10/19 22:28	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/10/19 09:41	10/10/19 22:28	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/10/19 09:41	10/10/19 22:28	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/10/19 09:41	10/10/19 22:28	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/10/19 09:41	10/10/19 22:28	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/10/19 09:41	10/10/19 22:28	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/10/19 09:41	10/10/19 22:28	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/10/19 09:41	10/10/19 22:28	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/10/19 09:41	10/10/19 22:28	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/10/19 09:41	10/10/19 22:28	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/10/19 09:41	10/10/19 22:28	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/10/19 09:41	10/10/19 22:28	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/10/19 09:41	10/10/19 22:28	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/10/19 09:41	10/10/19 22:28	1
Isophorone	0.80	U	10	0.80	ug/L		10/10/19 09:41	10/10/19 22:28	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/10/19 09:41	10/10/19 22:28	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/10/19 09:41	10/10/19 22:28	1
Naphthalene	1.1	U	10	1.1	ug/L		10/10/19 09:41	10/10/19 22:28	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/10/19 09:41	10/10/19 22:28	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/10/19 09:41	10/10/19 22:28	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/10/19 09:41	10/10/19 22:28	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/10/19 09:41	10/10/19 22:28	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/10/19 09:41	10/10/19 22:28	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/10/19 09:41	10/10/19 22:28	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/10/19 09:41	10/10/19 22:28	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/10/19 09:41	10/10/19 22:28	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/10/19 09:41	10/10/19 22:28	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/10/19 09:41	10/10/19 22:28	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/10/19 09:41	10/10/19 22:28	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/10/19 09:41	10/10/19 22:28	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/10/19 09:41	10/10/19 22:28	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/10/19 09:41	10/10/19 22:28	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/10/19 09:41	10/10/19 22:28	1
Fluorene	0.91	U	10	0.91	ug/L		10/10/19 09:41	10/10/19 22:28	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/10/19 09:41	10/10/19 22:28	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/10/19 09:41	10/10/19 22:28	1

Client Sample ID: UPA-106-USB Lab Sample ID: 460-193375-2

Date Collected: 10/08/19 10:05 **Matrix: Water**
Date Received: 10/08/19 20:30

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/10/19 09:41	10/10/19 22:28	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/10/19 09:41	10/10/19 22:28	1
Anthracene	0.63	U	10	0.63	ug/L		10/10/19 09:41	10/10/19 22:28	1
Carbazole	0.68	U	10	0.68	ug/L		10/10/19 09:41	10/10/19 22:28	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/10/19 09:41	10/10/19 22:28	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/10/19 09:41	10/10/19 22:28	1
Pyrene	1.6	U	10	1.6	ug/L		10/10/19 09:41	10/10/19 22:28	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/10/19 09:41	10/10/19 22:28	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/10/19 09:41	10/10/19 22:28	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/10/19 09:41	10/10/19 22:28	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/10/19 09:41	10/10/19 22:28	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/10/19 09:41	10/10/19 22:28	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/10/19 09:41	10/10/19 22:28	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/10/19 09:41	10/10/19 22:28	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/10/19 09:41	10/10/19 22:28	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/10/19 09:41	10/10/19 22:28	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/10/19 09:41	10/10/19 22:28	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/10/19 09:41	10/10/19 22:28	1
Caprolactam	0.68	~~U~~ UJ	10	0.68	ug/L		10/10/19 09:41	10/10/19 22:28	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/10/19 09:41	10/10/19 22:28	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/10/19 09:41	10/10/19 22:28	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/10/19 09:41	10/10/19 22:28	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/10/19 09:41*	*10/10/19 22:28*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*98*		*51 - 108*	*10/10/19 09:41*	*10/10/19 22:28*	*1*
Phenol-d5 (Surr)	*31*		*14 - 39*	*10/10/19 09:41*	*10/10/19 22:28*	*1*
Terphenyl-d14 (Surr)	*74*		*40 - 148*	*10/10/19 09:41*	*10/10/19 22:28*	*1*
2,4,6-Tribromophenol (Surr)	*108*		*26 - 139*	*10/10/19 09:41*	*10/10/19 22:28*	*1*
2-Fluorophenol (Surr)	*46*		*25 - 58*	*10/10/19 09:41*	*10/10/19 22:28*	*1*
2-Fluorobiphenyl (Surr)	*88*		*45 - 107*	*10/10/19 09:41*	*10/10/19 22:28*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**48.5**		2.16	0.25	mg/L			10/09/19 23:32	18
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/09/19 14:35	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/09/19 14:35	1
Sulfate	**0.53**	**J**	0.60	0.35	mg/L			10/09/19 14:35	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**30100**		250	66.8	ug/L		10/12/19 09:39	10/14/19 17:58	5
Magnesium	**10500**		250	24.8	ug/L		10/12/19 09:39	10/14/19 17:58	5
Potassium	**17000**		250	73.5	ug/L		10/12/19 09:39	10/14/19 17:58	5
Calcium	**20000**		250	233	ug/L		10/12/19 09:39	10/14/19 17:58	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**85.8**		50.0	1.7	ug/L		10/14/19 09:44	10/14/19 17:20	1

Client Sample ID: UPA-106-USB — Lab Sample ID: 460-193375-2

Date Collected: 10/08/19 10:05 **Matrix: Water**
Date Received: 10/08/19 20:30

Method: 6010D - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	**38900**		150	34.2	ug/L		10/14/19 09:44	10/14/19 17:20	1
Manganese, Dissolved	**2150**		15.0	0.99	ug/L		10/14/19 09:44	10/14/19 17:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**27.4**		0.50	0.34	mg/L			10/10/19 16:31	5
Bicarbonate Alkalinity as CaCO3	**192**		5.0	5.0	mg/L			10/10/19 12:03	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/10/19 12:03	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/10/19 15:03	1

Client Sample ID: UPA-106-LS — Lab Sample ID: 460-193375-3

Date Collected: 10/08/19 11:45 **Matrix: Water**
Date Received: 10/08/19 20:30

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**4.9**		0.40	0.20	ug/L			10/12/19 21:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*86*		*72 - 133*		*10/12/19 21:15*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/11/19 04:04	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/11/19 04:04	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/11/19 04:04	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/11/19 04:04	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/11/19 04:04	1
Acetone	**5.8**	U	~~5.0~~ 5.8	4.4	ug/L			10/11/19 04:04	1
Carbon disulfide	**0.94**	**J**	1.0	0.82	ug/L			10/11/19 04:04	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/11/19 04:04	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/11/19 04:04	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/11/19 04:04	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/11/19 04:04	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/11/19 04:04	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/11/19 04:04	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/11/19 04:04	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/11/19 04:04	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/11/19 04:04	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/11/19 04:04	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/11/19 04:04	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/11/19 04:04	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/11/19 04:04	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/11/19 04:04	1
1,1,2-Trichloroethane	0.43	U *	1.0	0.43	ug/L			10/11/19 04:04	1
Benzene	0.20	U	1.0	0.20	ug/L			10/11/19 04:04	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/11/19 04:04	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/11/19 04:04	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/11/19 04:04	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/11/19 04:04	1
Tetrachloroethene	**0.27**	**J**	1.0	0.25	ug/L			10/11/19 04:04	1

Client Sample ID: UPA-106-LS Lab Sample ID: 460-193375-3

Date Collected: 10/08/19 11:45 **Matrix: Water**
Date Received: 10/08/19 20:30

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	0.37	U *	1.0	0.37	ug/L			10/11/19 04:04	1
Toluene	0.38	U	1.0	0.38	ug/L			10/11/19 04:04	1
Chlorobenzene	**3.0**		1.0	0.38	ug/L			10/11/19 04:04	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/11/19 04:04	1
Styrene	0.42	U	1.0	0.42	ug/L			10/11/19 04:04	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/11/19 04:04	1
Diethyl ether	**6.9**		1.0	0.21	ug/L			10/11/19 04:04	1
MTBE	0.47	U	1.0	0.47	ug/L			10/11/19 04:04	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/11/19 04:04	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/11/19 04:04	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/11/19 04:04	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/11/19 04:04	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/11/19 04:04	1
N-Propylbenzene	0.32	U *	1.0	0.32	ug/L			10/11/19 04:04	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/11/19 04:04	1
Indane	0.35	U	1.0	0.35	ug/L			10/11/19 04:04	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/11/19 04:04	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/11/19 04:04	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/11/19 04:04*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*74 - 132*		*10/11/19 04:04*	*1*
Toluene-d8 (Surr)	*107*		*80 - 120*		*10/11/19 04:04*	*1*
4-Bromofluorobenzene	*92*		*77 - 124*		*10/11/19 04:04*	*1*
Dibromofluoromethane (Surr)	*88*		*72 - 131*		*10/11/19 04:04*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/10/19 09:41	10/11/19 02:39	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/10/19 09:41	10/11/19 02:39	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/10/19 09:41	10/11/19 02:39	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/10/19 09:41	10/11/19 02:39	1
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/10/19 09:41	10/11/19 02:39	1
Bis(2-chloroethyl)ether	**0.68**		0.030	0.026	ug/L		10/10/19 09:41	10/11/19 02:39	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/10/19 09:41	10/10/19 22:49	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/10/19 09:41	10/10/19 22:49	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/10/19 09:41	10/10/19 22:49	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/10/19 09:41	10/10/19 22:49	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/10/19 09:41	10/10/19 22:49	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/10/19 09:41	10/10/19 22:49	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/10/19 09:41	10/10/19 22:49	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/10/19 09:41	10/10/19 22:49	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/10/19 09:41	10/10/19 22:49	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/10/19 09:41	10/10/19 22:49	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/10/19 09:41	10/10/19 22:49	1

Client Sample ID: UPA-106-LS Lab Sample ID: 460-193375-3

Date Collected: 10/08/19 11:45 **Matrix: Water**
Date Received: 10/08/19 20:30

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/10/19 09:41	10/10/19 22:49	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/10/19 09:41	10/10/19 22:49	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/10/19 09:41	10/10/19 22:49	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/10/19 09:41	10/10/19 22:49	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/10/19 09:41	10/10/19 22:49	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/10/19 09:41	10/10/19 22:49	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/10/19 09:41	10/10/19 22:49	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/10/19 09:41	10/10/19 22:49	1
Isophorone	0.80	U	10	0.80	ug/L		10/10/19 09:41	10/10/19 22:49	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/10/19 09:41	10/10/19 22:49	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/10/19 09:41	10/10/19 22:49	1
Naphthalene	1.1	U	10	1.1	ug/L		10/10/19 09:41	10/10/19 22:49	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/10/19 09:41	10/10/19 22:49	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/10/19 09:41	10/10/19 22:49	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/10/19 09:41	10/10/19 22:49	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/10/19 09:41	10/10/19 22:49	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/10/19 09:41	10/10/19 22:49	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/10/19 09:41	10/10/19 22:49	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/10/19 09:41	10/10/19 22:49	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/10/19 09:41	10/10/19 22:49	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/10/19 09:41	10/10/19 22:49	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/10/19 09:41	10/10/19 22:49	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/10/19 09:41	10/10/19 22:49	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/10/19 09:41	10/10/19 22:49	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/10/19 09:41	10/10/19 22:49	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/10/19 09:41	10/10/19 22:49	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/10/19 09:41	10/10/19 22:49	1
Fluorene	0.91	U	10	0.91	ug/L		10/10/19 09:41	10/10/19 22:49	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/10/19 09:41	10/10/19 22:49	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/10/19 09:41	10/10/19 22:49	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/10/19 09:41	10/10/19 22:49	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/10/19 09:41	10/10/19 22:49	1
Anthracene	0.63	U	10	0.63	ug/L		10/10/19 09:41	10/10/19 22:49	1
Carbazole	0.68	U	10	0.68	ug/L		10/10/19 09:41	10/10/19 22:49	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/10/19 09:41	10/10/19 22:49	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/10/19 09:41	10/10/19 22:49	1
Pyrene	1.6	U	10	1.6	ug/L		10/10/19 09:41	10/10/19 22:49	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/10/19 09:41	10/10/19 22:49	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/10/19 09:41	10/10/19 22:49	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/10/19 09:41	10/10/19 22:49	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/10/19 09:41	10/10/19 22:49	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/10/19 09:41	10/10/19 22:49	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/10/19 09:41	10/10/19 22:49	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/10/19 09:41	10/10/19 22:49	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/10/19 09:41	10/10/19 22:49	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/10/19 09:41	10/10/19 22:49	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/10/19 09:41	10/10/19 22:49	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/10/19 09:41	10/10/19 22:49	1
Caprolactam	0.68	~~U~~ * UJ	10	0.68	ug/L		10/10/19 09:41	10/10/19 22:49	1

Client Sample ID: UPA-106-LS — Lab Sample ID: 460-193375-3

Date Collected: 10/08/19 11:45 **Matrix: Water**
Date Received: 10/08/19 20:30

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/10/19 09:41	10/10/19 22:49	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/10/19 09:41	10/10/19 22:49	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/10/19 09:41	10/10/19 22:49	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/10/19 09:41*	*10/10/19 22:49*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*105*		*51 - 108*	*10/10/19 09:41*	*10/10/19 22:49*	*1*
Phenol-d5 (Surr)	*31*		*14 - 39*	*10/10/19 09:41*	*10/10/19 22:49*	*1*
Terphenyl-d14 (Surr)	*96*		*40 - 148*	*10/10/19 09:41*	*10/10/19 22:49*	*1*
2,4,6-Tribromophenol (Surr)	*115*		*26 - 139*	*10/10/19 09:41*	*10/10/19 22:49*	*1*
2-Fluorophenol (Surr)	*48*		*25 - 58*	*10/10/19 09:41*	*10/10/19 22:49*	*1*
2-Fluorobiphenyl (Surr)	*96*		*45 - 107*	*10/10/19 09:41*	*10/10/19 22:49*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**36.0**		1.68	0.20	mg/L			10/09/19 23:47	14
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/09/19 14:50	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/09/19 14:50	1
Sulfate	**8.82**		0.60	0.35	mg/L			10/09/19 14:50	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**22500**		250	66.8	ug/L		10/12/19 09:39	10/14/19 16:58	5
Magnesium	**8490**		250	24.8	ug/L		10/12/19 09:39	10/14/19 16:58	5
Potassium	**12400**		250	73.5	ug/L		10/12/19 09:39	10/14/19 16:58	5
Calcium	**17200**		250	233	ug/L		10/12/19 09:39	10/14/19 16:58	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**16.6**	J	50.0	1.7	ug/L		10/14/19 09:44	10/14/19 17:24	1
Iron, Dissolved	**35400**		150	34.2	ug/L		10/14/19 09:44	10/14/19 17:24	1
Manganese, Dissolved	**1190**		15.0	0.99	ug/L		10/14/19 09:44	10/14/19 17:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**17.3**		0.10	0.068	mg/L			10/10/19 15:12	1
Bicarbonate Alkalinity as CaCO3	**133**		5.0	5.0	mg/L			10/10/19 12:10	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/10/19 12:10	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/10/19 15:03	1

Client Sample ID: P-6 — Lab Sample ID: 460-193375-4

Date Collected: 10/08/19 15:05 **Matrix: Water**
Date Received: 10/08/19 20:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/11/19 04:30	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/11/19 04:30	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/11/19 04:30	1

Client Sample ID: P-6 — Lab Sample ID: 460-193375-4

Date Collected: 10/08/19 15:05 — **Matrix: Water**
Date Received: 10/08/19 20:30

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroethane	**3.1**		1.0	0.32	ug/L			10/11/19 04:30	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/11/19 04:30	1
Acetone	**6.2**	U	~~5.0~~ 6.2	4.4	ug/L			10/11/19 04:30	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/11/19 04:30	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/11/19 04:30	1
1,1-Dichloroethane	**0.75**	**J**	1.0	0.26	ug/L			10/11/19 04:30	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/11/19 04:30	1
cis-1,2-Dichloroethene	**0.36**	**J**	1.0	0.22	ug/L			10/11/19 04:30	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/11/19 04:30	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/11/19 04:30	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/11/19 04:30	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/11/19 04:30	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/11/19 04:30	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/11/19 04:30	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/11/19 04:30	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/11/19 04:30	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/11/19 04:30	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/11/19 04:30	1
1,1,2-Trichloroethane	0.43	U *	1.0	0.43	ug/L			10/11/19 04:30	1
Benzene	**420**		1.0	0.20	ug/L			10/11/19 04:30	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/11/19 04:30	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/11/19 04:30	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/11/19 04:30	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/11/19 04:30	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/11/19 04:30	1
1,1,2,2-Tetrachloroethane	0.37	U *	1.0	0.37	ug/L			10/11/19 04:30	1
Toluene	**2.3**		1.0	0.38	ug/L			10/11/19 04:30	1
Chlorobenzene	**12**		1.0	0.38	ug/L			10/11/19 04:30	1
Ethylbenzene	**140**		1.0	0.30	ug/L			10/11/19 04:30	1
Styrene	0.42	U	1.0	0.42	ug/L			10/11/19 04:30	1
Xylenes, Total	**61**		2.0	0.65	ug/L			10/11/19 04:30	1
Diethyl ether	**8.3**		1.0	0.21	ug/L			10/11/19 04:30	1
MTBE	0.47	U	1.0	0.47	ug/L			10/11/19 04:30	1
Tetrahydrofuran	**110**		2.0	1.0	ug/L			10/11/19 04:30	1
Cyclohexane	**15**		1.0	0.32	ug/L			10/11/19 04:30	1
1,4-Dioxane	**370**		50	28	ug/L			10/11/19 04:30	1
1,2,4-Trimethylbenzene	**37**		1.0	0.37	ug/L			10/11/19 04:30	1
1,3,5-Trimethylbenzene	**21**		1.0	0.33	ug/L			10/11/19 04:30	1
Isopropylbenzene	**17**		1.0	0.34	ug/L			10/11/19 04:30	1
N-Propylbenzene	**31**	*	1.0	0.32	ug/L			10/11/19 04:30	1
Methylcyclohexane	**18**		1.0	0.26	ug/L			10/11/19 04:30	1
Indane	**20**		1.0	0.35	ug/L			10/11/19 04:30	1
Dichlorofluoromethane	**23**		1.0	0.34	ug/L			10/11/19 04:30	1
1,2,3-Trimethylbenzene	**43**		1.0	0.36	ug/L			10/11/19 04:30	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Methane, chlorofluoro-	*9.1*	*J N*	*ug/L*		*1.01*	*593-70-4*		*10/11/19 04:30*	*1*
Benzene, 1-ethyl-3-methyl-	*30*	*J N*	*ug/L*		*9.10*	*620-14-4*		*10/11/19 04:30*	*1*
Benzene, 1-ethyl-2-methyl-	*35*	*J N*	*ug/L*		*9.56*	*611-14-3*		*10/11/19 04:30*	*1*
1,4-Benzenediol, diacetate	*7.1*	*J N*	*ug/L*		*13.77*	*1205-91-0*		*10/11/19 04:30*	*1*

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-193027-1
SDG: 193027

Client Sample ID: P-6

Lab Sample ID: 460-193375-4

Date Collected: 10/08/19 15:05
Date Received: 10/08/19 20:30

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*74 - 132*		*10/11/19 04:30*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*10/11/19 04:30*	*1*
4-Bromofluorobenzene	*93*		*77 - 124*		*10/11/19 04:30*	*1*
Dibromofluoromethane (Surr)	*85*		*72 - 131*		*10/11/19 04:30*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/10/19 09:41	10/11/19 03:00	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/10/19 09:41	10/11/19 03:00	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/10/19 09:41	10/11/19 03:00	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/10/19 09:41	10/11/19 03:00	1
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/10/19 09:41	10/11/19 03:00	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/10/19 09:41	10/10/19 23:10	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/10/19 09:41	10/10/19 23:10	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/10/19 09:41	10/10/19 23:10	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/10/19 09:41	10/10/19 23:10	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/10/19 09:41	10/10/19 23:10	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/10/19 09:41	10/10/19 23:10	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/10/19 09:41	10/10/19 23:10	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/10/19 09:41	10/10/19 23:10	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/10/19 09:41	10/10/19 23:10	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/10/19 09:41	10/10/19 23:10	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/10/19 09:41	10/10/19 23:10	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/10/19 09:41	10/10/19 23:10	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/10/19 09:41	10/10/19 23:10	1
Bis(2-chloroethyl)ether	**120**		1.0	0.30	ug/L		10/10/19 09:41	10/10/19 23:10	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/10/19 09:41	10/10/19 23:10	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/10/19 09:41	10/10/19 23:10	1
1,2-Dichlorobenzene	**2.2**	**J**	10	1.3	ug/L		10/10/19 09:41	10/10/19 23:10	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/10/19 09:41	10/10/19 23:10	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/10/19 09:41	10/10/19 23:10	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/10/19 09:41	10/10/19 23:10	1
Isophorone	0.80	U	10	0.80	ug/L		10/10/19 09:41	10/10/19 23:10	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/10/19 09:41	10/10/19 23:10	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/10/19 09:41	10/10/19 23:10	1
Naphthalene	**1.9**	**J**	10	1.1	ug/L		10/10/19 09:41	10/10/19 23:10	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/10/19 09:41	10/10/19 23:10	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/10/19 09:41	10/10/19 23:10	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/10/19 09:41	10/10/19 23:10	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/10/19 09:41	10/10/19 23:10	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/10/19 09:41	10/10/19 23:10	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/10/19 09:41	10/10/19 23:10	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/10/19 09:41	10/10/19 23:10	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/10/19 09:41	10/10/19 23:10	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/10/19 09:41	10/10/19 23:10	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/10/19 09:41	10/10/19 23:10	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/10/19 09:41	10/10/19 23:10	1

Client Sample ID: P-6 Lab Sample ID: 460-193375-4

Date Collected: 10/08/19 15:05 **Matrix: Water**
Date Received: 10/08/19 20:30

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	1.1	U	10	1.1	ug/L		10/10/19 09:41	10/10/19 23:10	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/10/19 09:41	10/10/19 23:10	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/10/19 09:41	10/10/19 23:10	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/10/19 09:41	10/10/19 23:10	1
Fluorene	0.91	U	10	0.91	ug/L		10/10/19 09:41	10/10/19 23:10	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/10/19 09:41	10/10/19 23:10	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/10/19 09:41	10/10/19 23:10	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/10/19 09:41	10/10/19 23:10	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/10/19 09:41	10/10/19 23:10	1
Anthracene	0.63	U	10	0.63	ug/L		10/10/19 09:41	10/10/19 23:10	1
Carbazole	0.68	U	10	0.68	ug/L		10/10/19 09:41	10/10/19 23:10	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/10/19 09:41	10/10/19 23:10	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/10/19 09:41	10/10/19 23:10	1
Pyrene	1.6	U	10	1.6	ug/L		10/10/19 09:41	10/10/19 23:10	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/10/19 09:41	10/10/19 23:10	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/10/19 09:41	10/10/19 23:10	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/10/19 09:41	10/10/19 23:10	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/10/19 09:41	10/10/19 23:10	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/10/19 09:41	10/10/19 23:10	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/10/19 09:41	10/10/19 23:10	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/10/19 09:41	10/10/19 23:10	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/10/19 09:41	10/10/19 23:10	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/10/19 09:41	10/10/19 23:10	1
Diphenyl ether	**2.8**	**J**	10	1.2	ug/L		10/10/19 09:41	10/10/19 23:10	1
n,n'-Dimethylaniline	**21**		1.0	0.91	ug/L		10/10/19 09:41	10/10/19 23:10	1
Caprolactam	0.68	~~U~~ UJ	10	0.68	ug/L		10/10/19 09:41	10/10/19 23:10	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/10/19 09:41	10/10/19 23:10	1
Bisphenol-A	**110**		10	9.9	ug/L		10/10/19 09:41	10/10/19 23:10	1
N-Methylaniline	**12**		5.0	0.48	ug/L		10/10/19 09:41	10/10/19 23:10	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane	*32*	*J N*	*ug/L*		*1.92*	*123-91-1*	*10/10/19 09:41*	*10/10/19 23:10*	*1*
Unknown	*15*	*J*	*ug/L*		*2.57*		*10/10/19 09:41*	*10/10/19 23:10*	*1*
Unknown	*10*	*J*	*ug/L*		*2.93*		*10/10/19 09:41*	*10/10/19 23:10*	*1*
Benzene, (1-methylethyl)-	*13*	*J N*	*ug/L*		*3.60*	*98-82-8*	*10/10/19 09:41*	*10/10/19 23:10*	*1*
Benzene, propyl-	*20*	*J N*	*ug/L*		*3.85*	*103-65-1*	*10/10/19 09:41*	*10/10/19 23:10*	*1*
Benzene, 1-ethyl-3-methyl-	*14*	*J N*	*ug/L*		*3.91*	*620-14-4*	*10/10/19 09:41*	*10/10/19 23:10*	*1*
Benzene, 1-ethyl-2-methyl-	*13*	*J N*	*ug/L*		*3.93*	*611-14-3*	*10/10/19 09:41*	*10/10/19 23:10*	*1*
Benzene, 1,3,5-trimethyl-	*15*	*J N*	*ug/L*		*3.98*	*108-67-8*	*10/10/19 09:41*	*10/10/19 23:10*	*1*
Benzene, 1,2,3-trimethyl-	*29*	*J N*	*ug/L*		*4.18*	*526-73-8*	*10/10/19 09:41*	*10/10/19 23:10*	*1*
Benzene, 1,2,4-trimethyl-	*34*	*J N*	*ug/L*		*4.40*	*95-63-6*	*10/10/19 09:41*	*10/10/19 23:10*	*1*
Unknown	*30*	*J*	*ug/L*		*4.52*		*10/10/19 09:41*	*10/10/19 23:10*	*1*
2-Isopropoxyphenol	*190*	*J N*	*ug/L*		*5.42*	*4812-20-8*	*10/10/19 09:41*	*10/10/19 23:10*	*1*
Phenol, 2-propoxy-	*9.4*	*J N*	*ug/L*		*5.84*	*6280-96-2*	*10/10/19 09:41*	*10/10/19 23:10*	*1*
1,4-Benzenediol, diacetate	*36*	*J N*	*ug/L*		*5.98*	*1205-91-0*	*10/10/19 09:41*	*10/10/19 23:10*	*1*
Unknown	*35*	*J*	*ug/L*		*6.15*		*10/10/19 09:41*	*10/10/19 23:10*	*1*
Unknown	*300*	*J*	*ug/L*		*7.00*		*10/10/19 09:41*	*10/10/19 23:10*	*1*
Benzenamine, 3-methyl-	*43*	*J N*	*ug/L*		*7.28*	*108-44-1*	*10/10/19 09:41*	*10/10/19 23:10*	*1*
2(3H)-Benzothiazolone	*15*	*J N*	*ug/L*		*8.07*	*934-34-9*	*10/10/19 09:41*	*10/10/19 23:10*	*1*
Unknown	*10*	*J*	*ug/L*		*9.84*		*10/10/19 09:41*	*10/10/19 23:10*	*1*

Client Sample ID: P-6 Lab Sample ID: 460-193375-4

Date Collected: 10/08/19 15:05 **Matrix: Water**
Date Received: 10/08/19 20:30

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*12*	*J*	*ug/L*		*10.59*		*10/10/19 09:41*	*10/10/19 23:10*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*100*		*51 - 108*	*10/10/19 09:41*	*10/10/19 23:10*	*1*
Phenol-d5 (Surr)	*32*		*14 - 39*	*10/10/19 09:41*	*10/10/19 23:10*	*1*
Terphenyl-d14 (Surr)	*76*		*40 - 148*	*10/10/19 09:41*	*10/10/19 23:10*	*1*
2,4,6-Tribromophenol (Surr)	*107*		*26 - 139*	*10/10/19 09:41*	*10/10/19 23:10*	*1*
2-Fluorophenol (Surr)	*48*		*25 - 58*	*10/10/19 09:41*	*10/10/19 23:10*	*1*
2-Fluorobiphenyl (Surr)	*96*		*45 - 107*	*10/10/19 09:41*	*10/10/19 23:10*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**74.6**		3.48	0.41	mg/L			10/10/19 00:01	29
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/09/19 15:05	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/09/19 15:05	1
Sulfate	**0.39**	**J**	0.60	0.35	mg/L			10/09/19 15:05	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**58100**		250	66.8	ug/L		10/12/19 09:39	10/14/19 17:01	5
Magnesium	**15400**		250	24.8	ug/L		10/12/19 09:39	10/14/19 17:01	5
Potassium	**506**		250	73.5	ug/L		10/12/19 09:39	10/14/19 17:01	5
Calcium	**29100**		250	233	ug/L		10/12/19 09:39	10/14/19 17:01	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**4.7**	**J**	50.0	1.7	ug/L		10/14/19 09:44	10/14/19 17:28	1
Iron, Dissolved	**5070**		150	34.2	ug/L		10/14/19 09:44	10/14/19 17:28	1
Manganese, Dissolved	**391**		15.0	0.99	ug/L		10/14/19 09:44	10/14/19 17:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.16**		0.10	0.068	mg/L			10/10/19 15:14	1
Bicarbonate Alkalinity as CaCO3	**155**		5.0	5.0	mg/L			10/10/19 12:17	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/10/19 12:17	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/10/19 15:03	1

Client Sample ID: TBGW_100819 Lab Sample ID: 460-193375-5

Date Collected: 10/08/19 15:05 **Matrix: Water**
Date Received: 10/08/19 20:30

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/12/19 14:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*86*		*72 - 133*		*10/12/19 14:29*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/11/19 00:41	1

Client Sample ID: TBGW_100819 Lab Sample ID: 460-193375-5

Date Collected: 10/08/19 15:05 **Matrix: Water**
Date Received: 10/08/19 20:30

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	0.55	U	1.0	0.55	ug/L			10/11/19 00:41	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/11/19 00:41	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/11/19 00:41	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/11/19 00:41	1
Acetone	**24**		5.0	4.4	ug/L			10/11/19 00:41	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/11/19 00:41	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/11/19 00:41	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/11/19 00:41	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/11/19 00:41	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/11/19 00:41	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/11/19 00:41	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/11/19 00:41	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/11/19 00:41	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/11/19 00:41	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/11/19 00:41	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/11/19 00:41	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/11/19 00:41	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/11/19 00:41	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/11/19 00:41	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/11/19 00:41	1
1,1,2-Trichloroethane	0.43	U *	1.0	0.43	ug/L			10/11/19 00:41	1
Benzene	0.20	U	1.0	0.20	ug/L			10/11/19 00:41	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/11/19 00:41	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/11/19 00:41	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/11/19 00:41	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/11/19 00:41	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/11/19 00:41	1
1,1,2,2-Tetrachloroethane	0.37	U *	1.0	0.37	ug/L			10/11/19 00:41	1
Toluene	0.38	U	1.0	0.38	ug/L			10/11/19 00:41	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/11/19 00:41	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/11/19 00:41	1
Styrene	0.42	U	1.0	0.42	ug/L			10/11/19 00:41	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/11/19 00:41	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/11/19 00:41	1
MTBE	0.47	U	1.0	0.47	ug/L			10/11/19 00:41	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/11/19 00:41	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/11/19 00:41	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/11/19 00:41	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/11/19 00:41	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/11/19 00:41	1
N-Propylbenzene	0.32	U *	1.0	0.32	ug/L			10/11/19 00:41	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/11/19 00:41	1
Indane	0.35	U	1.0	0.35	ug/L			10/11/19 00:41	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/11/19 00:41	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/11/19 00:41	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Isopropyl Alcohol	*5.7*	*J N*	*ug/L*		*1.75*	*67-63-0*		*10/11/19 00:41*	*1*

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-193027-1
SDG: 193027

Client Sample ID: TBGW_100819

Lab Sample ID: 460-193375-5

Date Collected: 10/08/19 15:05
Date Received: 10/08/19 20:30

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		74 - 132		10/11/19 00:41	1
Toluene-d8 (Surr)	107		80 - 120		10/11/19 00:41	1
4-Bromofluorobenzene	93		77 - 124		10/11/19 00:41	1
Dibromofluoromethane (Surr)	87		72 - 131		10/11/19 00:41	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-193458-1

Client Sample ID: UPA-102-CA

Lab Sample ID: 460-193458-1

Date Collected: 10/09/19 10:00
Date Received: 10/09/19 20:20

Matrix: Water

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/15/19 13:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*72 - 133*		*10/15/19 13:46*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/12/19 05:54	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/12/19 05:54	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/12/19 05:54	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/12/19 05:54	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/12/19 05:54	1
Acetone	4.4	U	5.0	4.4	ug/L			10/12/19 05:54	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/12/19 05:54	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/12/19 05:54	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/12/19 05:54	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/12/19 05:54	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/12/19 05:54	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/12/19 05:54	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/12/19 05:54	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/12/19 05:54	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/12/19 05:54	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/12/19 05:54	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/12/19 05:54	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/12/19 05:54	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/12/19 05:54	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/12/19 05:54	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/12/19 05:54	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/12/19 05:54	1
Benzene	0.20	U	1.0	0.20	ug/L			10/12/19 05:54	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/12/19 05:54	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/12/19 05:54	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/12/19 05:54	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/12/19 05:54	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/12/19 05:54	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/12/19 05:54	1
Toluene	0.38	U	1.0	0.38	ug/L			10/12/19 05:54	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/12/19 05:54	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/12/19 05:54	1
Styrene	0.42	U	1.0	0.42	ug/L			10/12/19 05:54	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/12/19 05:54	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/12/19 05:54	1
MTBE	0.47	U	1.0	0.47	ug/L			10/12/19 05:54	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/12/19 05:54	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/12/19 05:54	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/12/19 05:54	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/12/19 05:54	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/12/19 05:54	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/12/19 05:54	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/12/19 05:54	1

Client Sample ID: UPA-102-CA Lab Sample ID: 460-193458-1

Date Collected: 10/09/19 10:00 **Matrix: Water**
Date Received: 10/09/19 20:20

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Indane	0.35	U	1.0	0.35	ug/L			10/12/19 05:54	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/12/19 05:54	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/12/19 05:54	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/12/19 05:54*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*74 - 132*		*10/12/19 05:54*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/12/19 05:54*	*1*
4-Bromofluorobenzene	*93*		*77 - 124*		*10/12/19 05:54*	*1*
Dibromofluoromethane (Surr)	*91*		*72 - 131*		*10/12/19 05:54*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/10/19 09:49	10/11/19 04:26	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/10/19 09:49	10/11/19 04:26	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/10/19 09:49	10/11/19 04:26	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/10/19 09:49	10/11/19 04:26	1
Pentachlorophenol	0.15	U	0.20	0.15	ug/L		10/10/19 09:49	10/11/19 04:26	1
Bis(2-chloroethyl)ether	0.026	U	0.030	0.026	ug/L		10/10/19 09:49	10/11/19 04:26	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/10/19 09:49	10/11/19 00:22	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/10/19 09:49	10/11/19 00:22	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/10/19 09:49	10/11/19 00:22	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/10/19 09:49	10/11/19 00:22	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/10/19 09:49	10/11/19 00:22	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/10/19 09:49	10/11/19 00:22	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/10/19 09:49	10/11/19 00:22	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/10/19 09:49	10/11/19 00:22	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/10/19 09:49	10/11/19 00:22	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/10/19 09:49	10/11/19 00:22	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/10/19 09:49	10/11/19 00:22	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/10/19 09:49	10/11/19 00:22	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/10/19 09:49	10/11/19 00:22	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/10/19 09:49	10/11/19 00:22	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/10/19 09:49	10/11/19 00:22	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/10/19 09:49	10/11/19 00:22	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/10/19 09:49	10/11/19 00:22	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/10/19 09:49	10/11/19 00:22	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/10/19 09:49	10/11/19 00:22	1
Isophorone	0.80	U	10	0.80	ug/L		10/10/19 09:49	10/11/19 00:22	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/10/19 09:49	10/11/19 00:22	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/10/19 09:49	10/11/19 00:22	1
Naphthalene	1.1	U	10	1.1	ug/L		10/10/19 09:49	10/11/19 00:22	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/10/19 09:49	10/11/19 00:22	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/10/19 09:49	10/11/19 00:22	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/10/19 09:49	10/11/19 00:22	1

Client Sample Results

Client: Golder Associates Inc. Job ID: 460-193458-1
Project/Site: DS&G Semi-Annual Groundwater

Client Sample ID: UPA-102-CA Lab Sample ID: 460-193458-1

Date Collected: 10/09/19 10:00 **Matrix: Water**
Date Received: 10/09/19 20:20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/10/19 09:49	10/11/19 00:22	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/10/19 09:49	10/11/19 00:22	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/10/19 09:49	10/11/19 00:22	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/10/19 09:49	10/11/19 00:22	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/10/19 09:49	10/11/19 00:22	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/10/19 09:49	10/11/19 00:22	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/10/19 09:49	10/11/19 00:22	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/10/19 09:49	10/11/19 00:22	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/10/19 09:49	10/11/19 00:22	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/10/19 09:49	10/11/19 00:22	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/10/19 09:49	10/11/19 00:22	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/10/19 09:49	10/11/19 00:22	1
Fluorene	0.91	U	10	0.91	ug/L		10/10/19 09:49	10/11/19 00:22	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/10/19 09:49	10/11/19 00:22	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/10/19 09:49	10/11/19 00:22	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/10/19 09:49	10/11/19 00:22	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/10/19 09:49	10/11/19 00:22	1
Anthracene	0.63	U	10	0.63	ug/L		10/10/19 09:49	10/11/19 00:22	1
Carbazole	0.68	U	10	0.68	ug/L		10/10/19 09:49	10/11/19 00:22	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/10/19 09:49	10/11/19 00:22	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/10/19 09:49	10/11/19 00:22	1
Pyrene	1.6	U	10	1.6	ug/L		10/10/19 09:49	10/11/19 00:22	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/10/19 09:49	10/11/19 00:22	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/10/19 09:49	10/11/19 00:22	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/10/19 09:49	10/11/19 00:22	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/10/19 09:49	10/11/19 00:22	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/10/19 09:49	10/11/19 00:22	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/10/19 09:49	10/11/19 00:22	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/10/19 09:49	10/11/19 00:22	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/10/19 09:49	10/11/19 00:22	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/10/19 09:49	10/11/19 00:22	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/10/19 09:49	10/11/19 00:22	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/10/19 09:49	10/11/19 00:22	1
Caprolactam	0.68	~~U~~ * UJ	10	0.68	ug/L		10/10/19 09:49	10/11/19 00:22	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/10/19 09:49	10/11/19 00:22	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/10/19 09:49	10/11/19 00:22	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/10/19 09:49	10/11/19 00:22	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/10/19 09:49*	*10/11/19 00:22*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*102*		*51 - 108*	*10/10/19 09:49*	*10/11/19 00:22*	*1*
Phenol-d5 (Surr)	*33*		*14 - 39*	*10/10/19 09:49*	*10/11/19 00:22*	*1*
Terphenyl-d14 (Surr)	*86*		*40 - 148*	*10/10/19 09:49*	*10/11/19 00:22*	*1*
2,4,6-Tribromophenol (Surr)	*92*		*26 - 139*	*10/10/19 09:49*	*10/11/19 00:22*	*1*
2-Fluorophenol (Surr)	*51*		*25 - 58*	*10/10/19 09:49*	*10/11/19 00:22*	*1*
2-Fluorobiphenyl (Surr)	*98*		*45 - 107*	*10/10/19 09:49*	*10/11/19 00:22*	*1*

Client Sample ID: UPA-102-CA — Lab Sample ID: 460-193458-1

Date Collected: 10/09/19 10:00 **Matrix: Water**
Date Received: 10/09/19 20:20

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/10/19 20:58	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/10/19 20:58	1
Sulfate	**22.8**		0.60	0.35	mg/L			10/10/19 20:58	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**161**	D	7.44	0.87	mg/L			10/11/19 00:12	62

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**107000**		250	66.8	ug/L		10/14/19 03:50	10/14/19 20:25	5
Magnesium	**18300**		250	24.8	ug/L		10/14/19 03:50	10/14/19 20:25	5
Potassium	**4510**		250	73.5	ug/L		10/14/19 03:50	10/14/19 20:25	5
Calcium	**19200**		250	233	ug/L		10/14/19 03:50	10/14/19 20:25	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**45.6**	J	100	3.3	ug/L		10/14/19 09:44	10/14/19 17:32	2
Iron, Dissolved	**87400**		300	68.4	ug/L		10/14/19 09:44	10/14/19 17:32	2
Manganese, Dissolved	**5230**		30.0	2.0	ug/L		10/14/19 09:44	10/14/19 17:32	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.15**		0.10	0.068	mg/L			10/10/19 16:20	1
Bicarbonate Alkalinity as CaCO3	**247**		5.0	5.0	mg/L			10/10/19 12:25	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/10/19 12:25	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/15/19 16:45	1

Client Sample ID: UPA-103-CA — Lab Sample ID: 460-193458-2

Date Collected: 10/09/19 10:25 **Matrix: Water**
Date Received: 10/09/19 20:20

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**1.4**		0.40	0.20	ug/L			10/14/19 07:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*91*		*72 - 133*		*10/14/19 07:43*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/12/19 06:18	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/12/19 06:18	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/12/19 06:18	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/12/19 06:18	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/12/19 06:18	1
Acetone	4.4	U	5.0	4.4	ug/L			10/12/19 06:18	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/12/19 06:18	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/12/19 06:18	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/12/19 06:18	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/12/19 06:18	1

Client Sample ID: UPA-103-CA Lab Sample ID: 460-193458-2

Date Collected: 10/09/19 10:25 **Matrix: Water**
Date Received: 10/09/19 20:20

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/12/19 06:18	1
Chloroform	**2.8**		1.0	0.33	ug/L			10/12/19 06:18	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/12/19 06:18	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/12/19 06:18	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/12/19 06:18	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/12/19 06:18	1
Bromodichloromethane	**2.2**		1.0	0.34	ug/L			10/12/19 06:18	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/12/19 06:18	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/12/19 06:18	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/12/19 06:18	1
Dibromochloromethane	**1.5**		1.0	0.28	ug/L			10/12/19 06:18	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/12/19 06:18	1
Benzene	0.20	U	1.0	0.20	ug/L			10/12/19 06:18	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/12/19 06:18	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/12/19 06:18	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/12/19 06:18	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/12/19 06:18	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/12/19 06:18	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/12/19 06:18	1
Toluene	0.38	U	1.0	0.38	ug/L			10/12/19 06:18	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/12/19 06:18	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/12/19 06:18	1
Styrene	0.42	U	1.0	0.42	ug/L			10/12/19 06:18	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/12/19 06:18	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/12/19 06:18	1
MTBE	0.47	U	1.0	0.47	ug/L			10/12/19 06:18	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/12/19 06:18	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/12/19 06:18	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/12/19 06:18	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/12/19 06:18	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/12/19 06:18	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/12/19 06:18	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/12/19 06:18	1
Indane	0.35	U	1.0	0.35	ug/L			10/12/19 06:18	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/12/19 06:18	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/12/19 06:18	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/12/19 06:18*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*74 - 132*		*10/12/19 06:18*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/12/19 06:18*	*1*
4-Bromofluorobenzene	*93*		*77 - 124*		*10/12/19 06:18*	*1*
Dibromofluoromethane (Surr)	*92*		*72 - 131*		*10/12/19 06:18*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/11/19 09:11	10/12/19 02:47	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/11/19 09:11	10/12/19 02:47	1

Client Sample ID: UPA-103-CA Lab Sample ID: 460-193458-2

Date Collected: 10/09/19 10:25 **Matrix: Water**
Date Received: 10/09/19 20:20

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/11/19 09:11	10/12/19 02:47	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/11/19 09:11	10/12/19 02:47	1
Pentachlorophenol	0.15	U	0.20	0.15	ug/L		10/11/19 09:11	10/12/19 02:47	1
Bis(2-chloroethyl)ether	0.026	U	0.030	0.026	ug/L		10/11/19 09:11	10/12/19 02:47	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U *	10	0.29	ug/L		10/11/19 09:11	10/12/19 04:49	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/11/19 09:11	10/12/19 04:49	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/11/19 09:11	10/12/19 04:49	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/11/19 09:11	10/12/19 04:49	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/11/19 09:11	10/12/19 04:49	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/11/19 09:11	10/12/19 04:49	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/11/19 09:11	10/12/19 04:49	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/11/19 09:11	10/12/19 04:49	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/11/19 09:11	10/12/19 04:49	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/11/19 09:11	10/12/19 04:49	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/11/19 09:11	10/12/19 04:49	1
4-Nitrophenol	0.69	U *	20	0.69	ug/L		10/11/19 09:11	10/12/19 04:49	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/11/19 09:11	10/12/19 04:49	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/11/19 09:11	10/12/19 04:49	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/11/19 09:11	10/12/19 04:49	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/11/19 09:11	10/12/19 04:49	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/11/19 09:11	10/12/19 04:49	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/11/19 09:11	10/12/19 04:49	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/11/19 09:11	10/12/19 04:49	1
Isophorone	0.80	U	10	0.80	ug/L		10/11/19 09:11	10/12/19 04:49	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/11/19 09:11	10/12/19 04:49	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/11/19 09:11	10/12/19 04:49	1
Naphthalene	1.1	U	10	1.1	ug/L		10/11/19 09:11	10/12/19 04:49	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/11/19 09:11	10/12/19 04:49	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/11/19 09:11	10/12/19 04:49	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/11/19 09:11	10/12/19 04:49	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/11/19 09:11	10/12/19 04:49	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/11/19 09:11	10/12/19 04:49	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/11/19 09:11	10/12/19 04:49	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/11/19 09:11	10/12/19 04:49	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/11/19 09:11	10/12/19 04:49	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/11/19 09:11	10/12/19 04:49	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/11/19 09:11	10/12/19 04:49	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/11/19 09:11	10/12/19 04:49	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/11/19 09:11	10/12/19 04:49	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/11/19 09:11	10/12/19 04:49	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/11/19 09:11	10/12/19 04:49	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/11/19 09:11	10/12/19 04:49	1
Fluorene	0.91	U	10	0.91	ug/L		10/11/19 09:11	10/12/19 04:49	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/11/19 09:11	10/12/19 04:49	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/11/19 09:11	10/12/19 04:49	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/11/19 09:11	10/12/19 04:49	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/11/19 09:11	10/12/19 04:49	1

Client Sample ID: UPA-103-CA Lab Sample ID: 460-193458-2

Date Collected: 10/09/19 10:25 **Matrix: Water**
Date Received: 10/09/19 20:20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	0.63	U	10	0.63	ug/L		10/11/19 09:11	10/12/19 04:49	1
Carbazole	0.68	U	10	0.68	ug/L		10/11/19 09:11	10/12/19 04:49	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/11/19 09:11	10/12/19 04:49	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/11/19 09:11	10/12/19 04:49	1
Pyrene	1.6	U	10	1.6	ug/L		10/11/19 09:11	10/12/19 04:49	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/11/19 09:11	10/12/19 04:49	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/11/19 09:11	10/12/19 04:49	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/11/19 09:11	10/12/19 04:49	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/11/19 09:11	10/12/19 04:49	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/11/19 09:11	10/12/19 04:49	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/11/19 09:11	10/12/19 04:49	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/11/19 09:11	10/12/19 04:49	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/11/19 09:11	10/12/19 04:49	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/11/19 09:11	10/12/19 04:49	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/11/19 09:11	10/12/19 04:49	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/11/19 09:11	10/12/19 04:49	1
Caprolactam	0.68	U *	10	0.68	ug/L		10/11/19 09:11	10/12/19 04:49	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/11/19 09:11	10/12/19 04:49	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/11/19 09:11	10/12/19 04:49	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/11/19 09:11	10/12/19 04:49	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*13*	*J*	*ug/L*		*3.77*		*10/11/19 09:11*	*10/12/19 04:49*	*1*
Unknown	*12*	*J*	*ug/L*		*11.42*		*10/11/19 09:11*	*10/12/19 04:49*	*1*
Unknown	*15*	*J*	*ug/L*		*11.91*		*10/11/19 09:11*	*10/12/19 04:49*	*1*
Unknown	*11*	*J*	*ug/L*		*13.71*		*10/11/19 09:11*	*10/12/19 04:49*	*1*
Unknown	*26*	*J*	*ug/L*		*13.95*		*10/11/19 09:11*	*10/12/19 04:49*	*1*
Unknown	*13*	*J*	*ug/L*		*14.05*		*10/11/19 09:11*	*10/12/19 04:49*	*1*
Unknown	*35*	*J*	*ug/L*		*14.38*		*10/11/19 09:11*	*10/12/19 04:49*	*1*
Unknown	*24*	*J*	*ug/L*		*14.63*		*10/11/19 09:11*	*10/12/19 04:49*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*96*		*51 - 108*	*10/11/19 09:11*	*10/12/19 04:49*	*1*
Phenol-d5 (Surr)	*28*		*14 - 39*	*10/11/19 09:11*	*10/12/19 04:49*	*1*
Terphenyl-d14 (Surr)	*89*		*40 - 148*	*10/11/19 09:11*	*10/12/19 04:49*	*1*
2,4,6-Tribromophenol (Surr)	*104*		*26 - 139*	*10/11/19 09:11*	*10/12/19 04:49*	*1*
2-Fluorophenol (Surr)	*50*		*25 - 58*	*10/11/19 09:11*	*10/12/19 04:49*	*1*
2-Fluorobiphenyl (Surr)	*93*		*45 - 107*	*10/11/19 09:11*	*10/12/19 04:49*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**3.52**		0.10	0.056	mg/L			10/10/19 21:13	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/10/19 21:13	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**32.5**	D	1.44	0.17	mg/L			10/11/19 00:27	12
Sulfate	**24.0**	D	7.20	4.15	mg/L			10/11/19 00:27	12

Client Sample ID: UPA-103-CA — Lab Sample ID: 460-193458-2

Date Collected: 10/09/19 10:25 **Matrix: Water**
Date Received: 10/09/19 20:20

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**16800**		250	66.8	ug/L		10/14/19 03:50	10/14/19 20:32	5
Magnesium	**9170**		250	24.8	ug/L		10/14/19 03:50	10/14/19 20:32	5
Potassium	**11200**		250	73.5	ug/L		10/14/19 03:50	10/14/19 20:32	5
Calcium	**11700**		250	233	ug/L		10/14/19 03:50	10/14/19 20:32	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**7.6**	**J**	50.0	1.7	ug/L		10/14/19 09:44	10/14/19 17:36	1
Iron, Dissolved	**76.3**	**J**	150	34.2	ug/L		10/14/19 09:44	10/14/19 17:36	1
Manganese, Dissolved	**1920**		15.0	0.99	ug/L		10/14/19 09:44	10/14/19 17:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.20**		0.10	0.068	mg/L			10/10/19 16:06	1
Bicarbonate Alkalinity as CaCO3	**29.4**		5.0	5.0	mg/L			10/10/19 12:31	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/10/19 12:31	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/15/19 16:45	1

Client Sample ID: MW-26N — Lab Sample ID: 460-193458-3

Date Collected: 10/09/19 11:45 **Matrix: Water**
Date Received: 10/09/19 20:20

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/12/19 06:42	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/12/19 06:42	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/12/19 06:42	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/12/19 06:42	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/12/19 06:42	1
Acetone	4.4	U	5.0	4.4	ug/L			10/12/19 06:42	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/12/19 06:42	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/12/19 06:42	1
1,1-Dichloroethane	**0.47**	**J**	1.0	0.26	ug/L			10/12/19 06:42	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/12/19 06:42	1
cis-1,2-Dichloroethene	**0.42**	**J**	1.0	0.22	ug/L			10/12/19 06:42	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/12/19 06:42	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/12/19 06:42	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/12/19 06:42	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/12/19 06:42	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/12/19 06:42	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/12/19 06:42	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/12/19 06:42	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/12/19 06:42	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/12/19 06:42	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/12/19 06:42	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/12/19 06:42	1
Benzene	**0.82**	**J**	1.0	0.20	ug/L			10/12/19 06:42	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/12/19 06:42	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/12/19 06:42	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/12/19 06:42	1

Client Sample ID: MW-26N Lab Sample ID: 460-193458-3

Date Collected: 10/09/19 11:45 **Matrix: Water**
Date Received: 10/09/19 20:20

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/12/19 06:42	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/12/19 06:42	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/12/19 06:42	1
Toluene	0.38	U	1.0	0.38	ug/L			10/12/19 06:42	1
Chlorobenzene	**2.1**		1.0	0.38	ug/L			10/12/19 06:42	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/12/19 06:42	1
Styrene	0.42	U	1.0	0.42	ug/L			10/12/19 06:42	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/12/19 06:42	1
Diethyl ether	**1.8**		1.0	0.21	ug/L			10/12/19 06:42	1
MTBE	0.47	U	1.0	0.47	ug/L			10/12/19 06:42	1
Tetrahydrofuran	**4.4**		2.0	1.0	ug/L			10/12/19 06:42	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/12/19 06:42	1
1,4-Dioxane	**150**		50	28	ug/L			10/12/19 06:42	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/12/19 06:42	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/12/19 06:42	1
Isopropylbenzene	**0.75**	**J**	1.0	0.34	ug/L			10/12/19 06:42	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/12/19 06:42	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/12/19 06:42	1
Indane	0.35	U	1.0	0.35	ug/L			10/12/19 06:42	1
Dichlorofluoromethane	**2.7**		1.0	0.34	ug/L			10/12/19 06:42	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/12/19 06:42	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/12/19 06:42*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*74 - 132*		*10/12/19 06:42*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/12/19 06:42*	*1*
4-Bromofluorobenzene	*93*		*77 - 124*		*10/12/19 06:42*	*1*
Dibromofluoromethane (Surr)	*92*		*72 - 131*		*10/12/19 06:42*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/10/19 09:49	10/11/19 05:08	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/10/19 09:49	10/11/19 05:08	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/10/19 09:49	10/11/19 05:08	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/10/19 09:49	10/11/19 05:08	1
Pentachlorophenol	0.15	U	0.20	0.15	ug/L		10/10/19 09:49	10/11/19 05:08	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/10/19 09:49	10/11/19 01:04	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/10/19 09:49	10/11/19 01:04	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/10/19 09:49	10/11/19 01:04	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/10/19 09:49	10/11/19 01:04	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/10/19 09:49	10/11/19 01:04	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/10/19 09:49	10/11/19 01:04	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/10/19 09:49	10/11/19 01:04	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/10/19 09:49	10/11/19 01:04	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/10/19 09:49	10/11/19 01:04	1

Client Sample ID: MW-26N Lab Sample ID: 460-193458-3

Date Collected: 10/09/19 11:45 **Matrix: Water**
Date Received: 10/09/19 20:20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/10/19 09:49	10/11/19 01:04	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/10/19 09:49	10/11/19 01:04	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/10/19 09:49	10/11/19 01:04	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/10/19 09:49	10/11/19 01:04	1
Bis(2-chloroethyl)ether	**30**		1.0	0.30	ug/L		10/10/19 09:49	10/11/19 01:04	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/10/19 09:49	10/11/19 01:04	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/10/19 09:49	10/11/19 01:04	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/10/19 09:49	10/11/19 01:04	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/10/19 09:49	10/11/19 01:04	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/10/19 09:49	10/11/19 01:04	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/10/19 09:49	10/11/19 01:04	1
Isophorone	0.80	U	10	0.80	ug/L		10/10/19 09:49	10/11/19 01:04	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/10/19 09:49	10/11/19 01:04	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/10/19 09:49	10/11/19 01:04	1
Naphthalene	1.1	U	10	1.1	ug/L		10/10/19 09:49	10/11/19 01:04	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/10/19 09:49	10/11/19 01:04	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/10/19 09:49	10/11/19 01:04	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/10/19 09:49	10/11/19 01:04	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/10/19 09:49	10/11/19 01:04	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/10/19 09:49	10/11/19 01:04	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/10/19 09:49	10/11/19 01:04	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/10/19 09:49	10/11/19 01:04	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/10/19 09:49	10/11/19 01:04	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/10/19 09:49	10/11/19 01:04	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/10/19 09:49	10/11/19 01:04	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/10/19 09:49	10/11/19 01:04	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/10/19 09:49	10/11/19 01:04	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/10/19 09:49	10/11/19 01:04	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/10/19 09:49	10/11/19 01:04	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/10/19 09:49	10/11/19 01:04	1
Fluorene	0.91	U	10	0.91	ug/L		10/10/19 09:49	10/11/19 01:04	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/10/19 09:49	10/11/19 01:04	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/10/19 09:49	10/11/19 01:04	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/10/19 09:49	10/11/19 01:04	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/10/19 09:49	10/11/19 01:04	1
Anthracene	0.63	U	10	0.63	ug/L		10/10/19 09:49	10/11/19 01:04	1
Carbazole	0.68	U	10	0.68	ug/L		10/10/19 09:49	10/11/19 01:04	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/10/19 09:49	10/11/19 01:04	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/10/19 09:49	10/11/19 01:04	1
Pyrene	1.6	U	10	1.6	ug/L		10/10/19 09:49	10/11/19 01:04	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/10/19 09:49	10/11/19 01:04	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/10/19 09:49	10/11/19 01:04	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/10/19 09:49	10/11/19 01:04	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/10/19 09:49	10/11/19 01:04	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/10/19 09:49	10/11/19 01:04	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/10/19 09:49	10/11/19 01:04	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/10/19 09:49	10/11/19 01:04	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/10/19 09:49	10/11/19 01:04	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/10/19 09:49	10/11/19 01:04	1

Client Sample Results

Client: Golder Associates Inc. Job ID: 460-193458-1
Project/Site: DS&G Semi-Annual Groundwater

Client Sample ID: MW-26N Lab Sample ID: 460-193458-3

Date Collected: 10/09/19 11:45 **Matrix: Water**
Date Received: 10/09/19 20:20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diphenyl ether	1.2	U	10	1.2	ug/L		10/10/19 09:49	10/11/19 01:04	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/10/19 09:49	10/11/19 01:04	1
Caprolactam	0.68	~~U*~~ UJ	10	0.68	ug/L		10/10/19 09:49	10/11/19 01:04	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/10/19 09:49	10/11/19 01:04	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/10/19 09:49	10/11/19 01:04	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/10/19 09:49	10/11/19 01:04	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane	*65*	*~~J N~~*	*ug/L*		*1.63*	*123-91-1*	*10/10/19 09:49*	*10/11/19 01:04*	*1*
Unknown	*35*	*J*	*ug/L*		*6.83*		*10/10/19 09:49*	*10/11/19 01:04*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*92*		*51 - 108*	*10/10/19 09:49*	*10/11/19 01:04*	*1*
Phenol-d5 (Surr)	*30*		*14 - 39*	*10/10/19 09:49*	*10/11/19 01:04*	*1*
Terphenyl-d14 (Surr)	*82*		*40 - 148*	*10/10/19 09:49*	*10/11/19 01:04*	*1*
2,4,6-Tribromophenol (Surr)	*85*		*26 - 139*	*10/10/19 09:49*	*10/11/19 01:04*	*1*
2-Fluorophenol (Surr)	*46*		*25 - 58*	*10/10/19 09:49*	*10/11/19 01:04*	*1*
2-Fluorobiphenyl (Surr)	*89*		*45 - 107*	*10/10/19 09:49*	*10/11/19 01:04*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**0.16**		0.10	0.056	mg/L			10/10/19 21:28	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/10/19 21:28	1
Sulfate	**14.6**		0.60	0.35	mg/L			10/10/19 21:28	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**49.3**	~~D~~	2.28	0.27	mg/L			10/11/19 00:42	19

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**26400**		250	66.8	ug/L		10/14/19 03:50	10/14/19 19:51	5
Magnesium	**11800**		250	24.8	ug/L		10/14/19 03:50	10/14/19 19:51	5
Potassium	**2280**		250	73.5	ug/L		10/14/19 03:50	10/14/19 19:51	5
Calcium	**20400**		250	233	ug/L		10/14/19 03:50	10/14/19 19:51	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**3.3**	J	50.0	1.7	ug/L		10/14/19 09:44	10/14/19 17:49	1
Iron, Dissolved	34.2	U	150	34.2	ug/L		10/14/19 09:44	10/14/19 17:49	1
Manganese, Dissolved	**170**		15.0	0.99	ug/L		10/14/19 09:44	10/14/19 17:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.28**		0.10	0.068	mg/L			10/10/19 16:22	1
Bicarbonate Alkalinity as CaCO3	**61.9**		5.0	5.0	mg/L			10/10/19 12:38	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/10/19 12:38	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/15/19 16:45	1

Client Sample Results

Client: Golder Associates Inc. Job ID: 460-193458-1
Project/Site: DS&G Semi-Annual Groundwater

Client Sample ID: GA-101 Lab Sample ID: 460-193458-4

Date Collected: 10/09/19 14:00 **Matrix: Water**
Date Received: 10/09/19 20:20

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**4.1**		0.80	0.40	ug/L			10/16/19 09:37	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*86*		*72 - 133*		*10/16/19 09:37*	*2*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.80	U	2.0	0.80	ug/L			10/12/19 17:55	2
Bromomethane	1.1	U	2.0	1.1	ug/L			10/12/19 17:55	2
Vinyl chloride	0.34	U	2.0	0.34	ug/L			10/12/19 17:55	2
Chloroethane	0.64	U	2.0	0.64	ug/L			10/12/19 17:55	2
Methylene Chloride	0.63	U	2.0	0.63	ug/L			10/12/19 17:55	2
Acetone	**13**	U	~~10~~ 13	8.8	ug/L			10/12/19 17:55	2
Carbon disulfide	1.6	U	2.0	1.6	ug/L			10/12/19 17:55	2
1,1-Dichloroethene	0.53	U	2.0	0.53	ug/L			10/12/19 17:55	2
1,1-Dichloroethane	0.53	U	2.0	0.53	ug/L			10/12/19 17:55	2
trans-1,2-Dichloroethene	0.47	U	2.0	0.47	ug/L			10/12/19 17:55	2
cis-1,2-Dichloroethene	**1.9**	**J**	2.0	0.44	ug/L			10/12/19 17:55	2
Chloroform	0.65	U	2.0	0.65	ug/L			10/12/19 17:55	2
1,2-Dichloroethane	0.86	U	2.0	0.86	ug/L			10/12/19 17:55	2
2-Butanone (MEK)	3.7	U	10	3.7	ug/L			10/12/19 17:55	2
1,1,1-Trichloroethane	0.48	U	2.0	0.48	ug/L			10/12/19 17:55	2
Carbon tetrachloride	0.42	U	2.0	0.42	ug/L			10/12/19 17:55	2
Bromodichloromethane	0.69	U	2.0	0.69	ug/L			10/12/19 17:55	2
1,2-Dichloropropane	0.71	U	2.0	0.71	ug/L			10/12/19 17:55	2
cis-1,3-Dichloropropene	0.44	U	2.0	0.44	ug/L			10/12/19 17:55	2
Trichloroethene	**1.0**	**J**	2.0	0.63	ug/L			10/12/19 17:55	2
Dibromochloromethane	0.56	U	2.0	0.56	ug/L			10/12/19 17:55	2
1,1,2-Trichloroethane	0.87	U	2.0	0.87	ug/L			10/12/19 17:55	2
Benzene	**1.6**	**J**	2.0	0.41	ug/L			10/12/19 17:55	2
trans-1,3-Dichloropropene	0.97	U	2.0	0.97	ug/L			10/12/19 17:55	2
Bromoform	1.1	U	2.0	1.1	ug/L			10/12/19 17:55	2
4-Methyl-2-pentanone	2.6	U	10	2.6	ug/L			10/12/19 17:55	2
2-Hexanone	2.3	U	10	2.3	ug/L			10/12/19 17:55	2
Tetrachloroethene	**1.2**	**J**	2.0	0.50	ug/L			10/12/19 17:55	2
1,1,2,2-Tetrachloroethane	0.73	U	2.0	0.73	ug/L			10/12/19 17:55	2
Toluene	**120**		2.0	0.76	ug/L			10/12/19 17:55	2
Chlorobenzene	**2.8**		2.0	0.75	ug/L			10/12/19 17:55	2
Ethylbenzene	**240**		2.0	0.60	ug/L			10/12/19 17:55	2
Styrene	0.83	U	2.0	0.83	ug/L			10/12/19 17:55	2
Xylenes, Total	**820**		4.0	1.3	ug/L			10/12/19 17:55	2
Diethyl ether	0.42	U	2.0	0.42	ug/L			10/12/19 17:55	2
MTBE	0.93	U	2.0	0.93	ug/L			10/12/19 17:55	2
Tetrahydrofuran	2.1	U	4.0	2.1	ug/L			10/12/19 17:55	2
Cyclohexane	**2.8**		2.0	0.64	ug/L			10/12/19 17:55	2
1,2,4-Trimethylbenzene	**600**		2.0	0.75	ug/L			10/12/19 17:55	2
1,3,5-Trimethylbenzene	**180**		2.0	0.65	ug/L			10/12/19 17:55	2
Isopropylbenzene	**43**		2.0	0.67	ug/L			10/12/19 17:55	2
N-Propylbenzene	**120**		2.0	0.64	ug/L			10/12/19 17:55	2
Methylcyclohexane	**21**		2.0	0.52	ug/L			10/12/19 17:55	2

Client Sample ID: GA-101 Lab Sample ID: 460-193458-4

Date Collected: 10/09/19 14:00 **Matrix: Water**
Date Received: 10/09/19 20:20

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Indane	**57**		2.0	0.69	ug/L			10/12/19 17:55	2
Dichlorofluoromethane	0.68	U	2.0	0.68	ug/L			10/12/19 17:55	2
1,2,3-Trimethylbenzene	**190**		2.0	0.72	ug/L			10/12/19 17:55	2

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, 1-ethyl-3-methyl-	*500*	*J N*	*ug/L*		*9.26*	*620-14-4*		*10/12/19 17:55*	*2*
Benzene, 1-ethyl-2-methyl-	*180*	*J N*	*ug/L*		*9.69*	*611-14-3*		*10/12/19 17:55*	*2*
Benzene, 1-methyl-3-propyl-	*23*	*J N*	*ug/L*		*11.12*	*1074-43-7*		*10/12/19 17:55*	*2*
Benzene, 2-ethyl-1,4-dimethyl-	*32*	*J N*	*ug/L*		*11.24*	*1758-88-9*		*10/12/19 17:55*	*2*
Benzene, 4-ethyl-1,2-dimethyl-	*23*	*J N*	*ug/L*		*11.60*	*934-80-5*		*10/12/19 17:55*	*2*
Benzene, 1-methyl-2-(1-methylethyl)-	*21*	*J N*	*ug/L*		*11.64*	*527-84-4*		*10/12/19 17:55*	*2*
Benzene, 1-ethyl-2,3-dimethyl-	*39*	*J N*	*ug/L*		*11.74*	*933-98-2*		*10/12/19 17:55*	*2*
Benzene, 1,2,4,5-tetramethyl-	*22*	*J N*	*ug/L*		*12.20*	*95-93-2*		*10/12/19 17:55*	*2*
Benzene, 1,2,3,5-tetramethyl-	*32*	*J N*	*ug/L*		*12.26*	*527-53-7*		*10/12/19 17:55*	*2*
Benzene, 2-ethenyl-1,4-dimethyl-	*32*	*J N*	*ug/L*		*12.66*	*2039-89-6*		*10/12/19 17:55*	*2*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*74 - 132*		*10/12/19 17:55*	*2*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/12/19 17:55*	*2*
4-Bromofluorobenzene	*91*		*77 - 124*		*10/12/19 17:55*	*2*
Dibromofluoromethane (Surr)	*93*		*72 - 131*		*10/12/19 17:55*	*2*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/10/19 09:49	10/11/19 05:29	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/10/19 09:49	10/11/19 05:29	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/10/19 09:49	10/11/19 05:29	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/10/19 09:49	10/11/19 05:29	1
Pentachlorophenol	0.15	U	0.20	0.15	ug/L		10/10/19 09:49	10/11/19 05:29	1
Bis(2-chloroethyl)ether	0.026	U	0.030	0.026	ug/L		10/10/19 09:49	10/11/19 05:29	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/10/19 09:49	10/11/19 01:25	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/10/19 09:49	10/11/19 01:25	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/10/19 09:49	10/11/19 01:25	1
4-Methylphenol	**1.3**	**J**	10	0.24	ug/L		10/10/19 09:49	10/11/19 01:25	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/10/19 09:49	10/11/19 01:25	1
2,4-Dimethylphenol	**1.9**	**J**	10	0.24	ug/L		10/10/19 09:49	10/11/19 01:25	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/10/19 09:49	10/11/19 01:25	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/10/19 09:49	10/11/19 01:25	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/10/19 09:49	10/11/19 01:25	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/10/19 09:49	10/11/19 01:25	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/10/19 09:49	10/11/19 01:25	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/10/19 09:49	10/11/19 01:25	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/10/19 09:49	10/11/19 01:25	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/10/19 09:49	10/11/19 01:25	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/10/19 09:49	10/11/19 01:25	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/10/19 09:49	10/11/19 01:25	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/10/19 09:49	10/11/19 01:25	1

Client Sample ID: GA-101 Lab Sample ID: 460-193458-4

Date Collected: 10/09/19 14:00 **Matrix: Water**
Date Received: 10/09/19 20:20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/10/19 09:49	10/11/19 01:25	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/10/19 09:49	10/11/19 01:25	1
Isophorone	0.80	U	10	0.80	ug/L		10/10/19 09:49	10/11/19 01:25	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/10/19 09:49	10/11/19 01:25	1
1,2,4-Trichlorobenzene	**6.2**		2.0	1.3	ug/L		10/10/19 09:49	10/11/19 01:25	1
Naphthalene	**28**		10	1.1	ug/L		10/10/19 09:49	10/11/19 01:25	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/10/19 09:49	10/11/19 01:25	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/10/19 09:49	10/11/19 01:25	1
2-Methylnaphthalene	**4.0**	**J**	10	1.1	ug/L		10/10/19 09:49	10/11/19 01:25	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/10/19 09:49	10/11/19 01:25	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/10/19 09:49	10/11/19 01:25	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/10/19 09:49	10/11/19 01:25	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/10/19 09:49	10/11/19 01:25	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/10/19 09:49	10/11/19 01:25	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/10/19 09:49	10/11/19 01:25	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/10/19 09:49	10/11/19 01:25	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/10/19 09:49	10/11/19 01:25	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/10/19 09:49	10/11/19 01:25	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/10/19 09:49	10/11/19 01:25	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/10/19 09:49	10/11/19 01:25	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/10/19 09:49	10/11/19 01:25	1
Fluorene	0.91	U	10	0.91	ug/L		10/10/19 09:49	10/11/19 01:25	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/10/19 09:49	10/11/19 01:25	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/10/19 09:49	10/11/19 01:25	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/10/19 09:49	10/11/19 01:25	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/10/19 09:49	10/11/19 01:25	1
Anthracene	0.63	U	10	0.63	ug/L		10/10/19 09:49	10/11/19 01:25	1
Carbazole	0.68	U	10	0.68	ug/L		10/10/19 09:49	10/11/19 01:25	1
Di-n-butyl phthalate	**8.7**	**J**	10	0.84	ug/L		10/10/19 09:49	10/11/19 01:25	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/10/19 09:49	10/11/19 01:25	1
Pyrene	1.6	U	10	1.6	ug/L		10/10/19 09:49	10/11/19 01:25	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/10/19 09:49	10/11/19 01:25	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/10/19 09:49	10/11/19 01:25	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/10/19 09:49	10/11/19 01:25	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/10/19 09:49	10/11/19 01:25	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/10/19 09:49	10/11/19 01:25	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/10/19 09:49	10/11/19 01:25	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/10/19 09:49	10/11/19 01:25	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/10/19 09:49	10/11/19 01:25	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/10/19 09:49	10/11/19 01:25	1
Diphenyl ether	**67**		10	1.2	ug/L		10/10/19 09:49	10/11/19 01:25	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/10/19 09:49	10/11/19 01:25	1
Caprolactam	0.68	~~U~~ UJ	10	0.68	ug/L		10/10/19 09:49	10/11/19 01:25	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/10/19 09:49	10/11/19 01:25	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/10/19 09:49	10/11/19 01:25	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/10/19 09:49	10/11/19 01:25	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, (1-methylethyl)-	*49*	*J N*	*ug/L*		*3.37*	*98-82-8*	*10/10/19 09:49*	*10/11/19 01:25*	*1*
Benzene, propyl-	*130*	*J N*	*ug/L*		*3.63*	*103-65-1*	*10/10/19 09:49*	*10/11/19 01:25*	*1*

Client Sample ID: GA-101 Lab Sample ID: 460-193458-4

Date Collected: 10/09/19 14:00 **Matrix: Water**
Date Received: 10/09/19 20:20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Benzene, 1-ethyl-2-methyl-	440	J N	ug/L		3.69	611-14-3	10/10/19 09:49	10/11/19 01:25	1
Benzene, 1,3,5-trimethyl-	180	J N	ug/L		3.77	108-67-8	10/10/19 09:49	10/11/19 01:25	1
Benzene, 1-ethyl-4-methyl-	180	J N	ug/L		3.84	622-96-8	10/10/19 09:49	10/11/19 01:25	1
Benzene, 1,2,3-trimethyl-	510	J N	ug/L		3.98	526-73-8	10/10/19 09:49	10/11/19 01:25	1
Benzene, 1,2,4-trimethyl-	190	J N	ug/L		4.19	95-63-6	10/10/19 09:49	10/11/19 01:25	1
Indane	62	J N	ug/L		4.31	496-11-7	10/10/19 09:49	10/11/19 01:25	1
Benzene, 4-ethyl-1,2-dimethyl-	93	J N	ug/L		4.45	934-80-5	10/10/19 09:49	10/11/19 01:25	1
Benzene, 1-methyl-2-(1-methylethyl)-	67	J N	ug/L		4.61	527-84-4	10/10/19 09:49	10/11/19 01:25	1
Benzene, 2-ethyl-1,4-dimethyl-	17	J N	ug/L		4.80	1758-88-9	10/10/19 09:49	10/11/19 01:25	1
Benzene, 1,2,4,5-tetramethyl-	68	J N	ug/L		4.91	95-93-2	10/10/19 09:49	10/11/19 01:25	1
3-Phenylbut-1-ene	23	J N	ug/L		5.12	934-10-1	10/10/19 09:49	10/11/19 01:25	1
Unknown	20	J	ug/L		5.24		10/10/19 09:49	10/11/19 01:25	1
Biphenyl	23	J N	ug/L		6.50	92-52-4	10/10/19 09:49	10/11/19 01:25	1
Unknown	31	J	ug/L		6.83		10/10/19 09:49	10/11/19 01:25	1
Unknown	130	J	ug/L		8.05		10/10/19 09:49	10/11/19 01:25	1
Unknown	74	J	ug/L		8.22		10/10/19 09:49	10/11/19 01:25	1
Cyclic octaatomic sulfur	17	J N	ug/L		9.64	10544-50-0	10/10/19 09:49	10/11/19 01:25	1
Unknown	20	J	ug/L		12.35		10/10/19 09:49	10/11/19 01:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	112	X	51 - 108	10/10/19 09:49	10/11/19 01:25	1
Phenol-d5 (Surr)	38		14 - 39	10/10/19 09:49	10/11/19 01:25	1
Terphenyl-d14 (Surr)	88		40 - 148	10/10/19 09:49	10/11/19 01:25	1
2,4,6-Tribromophenol (Surr)	107		26 - 139	10/10/19 09:49	10/11/19 01:25	1
2-Fluorophenol (Surr)	59	X	25 - 58	10/10/19 09:49	10/11/19 01:25	1
2-Fluorobiphenyl (Surr)	107		45 - 107	10/10/19 09:49	10/11/19 01:25	1

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	1.7	U	50.0	1.7	ug/L		10/14/19 09:44	10/14/19 17:53	1
Iron, Dissolved	**7230**		150	34.2	ug/L		10/14/19 09:44	10/14/19 17:53	1
Manganese, Dissolved	**563**		15.0	0.99	ug/L		10/14/19 09:44	10/14/19 17:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.45**		0.10	0.068	mg/L			10/10/19 16:23	1

Client Sample ID: TBGW_100919 Lab Sample ID: 460-193458-5

Date Collected: 10/09/19 14:00 **Matrix: Water**
Date Received: 10/09/19 20:20

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/16/19 16:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	98		72 - 133		10/16/19 16:58	1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/12/19 11:29	1

Client Sample ID: TBGW_100919 Lab Sample ID: 460-193458-5

Date Collected: 10/09/19 14:00 **Matrix: Water**
Date Received: 10/09/19 20:20

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	0.55	U	1.0	0.55	ug/L			10/12/19 11:29	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/12/19 11:29	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/12/19 11:29	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/12/19 11:29	1
Acetone	**19**		5.0	4.4	ug/L			10/12/19 11:29	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/12/19 11:29	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/12/19 11:29	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/12/19 11:29	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/12/19 11:29	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/12/19 11:29	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/12/19 11:29	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/12/19 11:29	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/12/19 11:29	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/12/19 11:29	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/12/19 11:29	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/12/19 11:29	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/12/19 11:29	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/12/19 11:29	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/12/19 11:29	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/12/19 11:29	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/12/19 11:29	1
Benzene	0.20	U	1.0	0.20	ug/L			10/12/19 11:29	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/12/19 11:29	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/12/19 11:29	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/12/19 11:29	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/12/19 11:29	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/12/19 11:29	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/12/19 11:29	1
Toluene	0.38	U	1.0	0.38	ug/L			10/12/19 11:29	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/12/19 11:29	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/12/19 11:29	1
Styrene	0.42	U	1.0	0.42	ug/L			10/12/19 11:29	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/12/19 11:29	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/12/19 11:29	1
MTBE	0.47	U	1.0	0.47	ug/L			10/12/19 11:29	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/12/19 11:29	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/12/19 11:29	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/12/19 11:29	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/12/19 11:29	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/12/19 11:29	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/12/19 11:29	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/12/19 11:29	1
Indane	0.35	U	1.0	0.35	ug/L			10/12/19 11:29	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/12/19 11:29	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/12/19 11:29	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/12/19 11:29*	*1*

Client Sample ID: TBGW_100919 Lab Sample ID: 460-193458-5

Date Collected: 10/09/19 14:00 **Matrix: Water**
Date Received: 10/09/19 20:20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*74 - 132*		*10/12/19 11:29*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/12/19 11:29*	*1*
4-Bromofluorobenzene	*93*		*77 - 124*		*10/12/19 11:29*	*1*
Dibromofluoromethane (Surr)	*93*		*72 - 131*		*10/12/19 11:29*	*1*

Client Sample ID: UPA-108B-US Lab Sample ID: 460-193634-1

Date Collected: 10/10/19 10:00 **Matrix: Water**
Date Received: 10/10/19 21:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/14/19 08:04	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/14/19 08:04	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/14/19 08:04	1
Chloroethane	0.32	U *	1.0	0.32	ug/L			10/14/19 08:04	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/14/19 08:04	1
Acetone	4.4	U	5.0	4.4	ug/L			10/14/19 08:04	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/14/19 08:04	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/14/19 08:04	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/14/19 08:04	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/14/19 08:04	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/14/19 08:04	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/14/19 08:04	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/14/19 08:04	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/14/19 08:04	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/14/19 08:04	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/14/19 08:04	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/14/19 08:04	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/14/19 08:04	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/14/19 08:04	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/14/19 08:04	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/14/19 08:04	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/14/19 08:04	1
Benzene	0.20	U	1.0	0.20	ug/L			10/14/19 08:04	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/14/19 08:04	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/14/19 08:04	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/14/19 08:04	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/14/19 08:04	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/14/19 08:04	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/14/19 08:04	1
Toluene	0.38	U	1.0	0.38	ug/L			10/14/19 08:04	1
Chlorobenzene	**5.4**		1.0	0.38	ug/L			10/14/19 08:04	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/14/19 08:04	1
Styrene	0.42	U	1.0	0.42	ug/L			10/14/19 08:04	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/14/19 08:04	1
Diethyl ether	**24**		1.0	0.21	ug/L			10/14/19 08:04	1
MTBE	0.47	U	1.0	0.47	ug/L			10/14/19 08:04	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/14/19 08:04	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/14/19 08:04	1
1,4-Dioxane	**210**		50	28	ug/L			10/14/19 08:04	1

Client Sample ID: UPA-108B-US Lab Sample ID: 460-193634-1

Date Collected: 10/10/19 10:00 **Matrix: Water**
Date Received: 10/10/19 21:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/14/19 08:04	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/14/19 08:04	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/14/19 08:04	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/14/19 08:04	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/14/19 08:04	1
Indane	**0.69**	**J**	1.0	0.35	ug/L			10/14/19 08:04	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/14/19 08:04	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/14/19 08:04	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/14/19 08:04*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*74 - 132*		*10/14/19 08:04*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/14/19 08:04*	*1*
4-Bromofluorobenzene	*97*		*77 - 124*		*10/14/19 08:04*	*1*
Dibromofluoromethane (Surr)	*101*		*72 - 131*		*10/14/19 08:04*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U *	0.050	0.016	ug/L		10/12/19 07:30	10/13/19 03:58	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/12/19 07:30	10/13/19 03:58	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/12/19 07:30	10/13/19 03:58	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/12/19 07:30	10/13/19 03:58	1
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/12/19 07:30	10/13/19 03:58	1
Bis(2-chloroethyl)ether	0.026	U	0.030	0.026	ug/L		10/12/19 07:30	10/13/19 03:58	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U *	10	0.29	ug/L		10/12/19 07:30	10/13/19 00:59	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/12/19 07:30	10/13/19 00:59	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/12/19 07:30	10/13/19 00:59	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/12/19 07:30	10/13/19 00:59	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/12/19 07:30	10/13/19 00:59	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/12/19 07:30	10/13/19 00:59	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/12/19 07:30	10/13/19 00:59	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/12/19 07:30	10/13/19 00:59	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/12/19 07:30	10/13/19 00:59	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/12/19 07:30	10/13/19 00:59	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/12/19 07:30	10/13/19 00:59	1
4-Nitrophenol	0.69	U *	20	0.69	ug/L		10/12/19 07:30	10/13/19 00:59	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/12/19 07:30	10/13/19 00:59	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/12/19 07:30	10/13/19 00:59	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/12/19 07:30	10/13/19 00:59	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/12/19 07:30	10/13/19 00:59	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/12/19 07:30	10/13/19 00:59	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/12/19 07:30	10/13/19 00:59	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/12/19 07:30	10/13/19 00:59	1
Isophorone	0.80	U	10	0.80	ug/L		10/12/19 07:30	10/13/19 00:59	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/12/19 07:30	10/13/19 00:59	1

Client Sample ID: UPA-108B-US Lab Sample ID: 460-193634-1

Date Collected: 10/10/19 10:00 **Matrix: Water**
Date Received: 10/10/19 21:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/12/19 07:30	10/13/19 00:59	1
Naphthalene	1.1	U	10	1.1	ug/L		10/12/19 07:30	10/13/19 00:59	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/12/19 07:30	10/13/19 00:59	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/12/19 07:30	10/13/19 00:59	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/12/19 07:30	10/13/19 00:59	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/12/19 07:30	10/13/19 00:59	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/12/19 07:30	10/13/19 00:59	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/12/19 07:30	10/13/19 00:59	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/12/19 07:30	10/13/19 00:59	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/12/19 07:30	10/13/19 00:59	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/12/19 07:30	10/13/19 00:59	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/12/19 07:30	10/13/19 00:59	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/12/19 07:30	10/13/19 00:59	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/12/19 07:30	10/13/19 00:59	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/12/19 07:30	10/13/19 00:59	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/12/19 07:30	10/13/19 00:59	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/12/19 07:30	10/13/19 00:59	1
Fluorene	0.91	U	10	0.91	ug/L		10/12/19 07:30	10/13/19 00:59	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/12/19 07:30	10/13/19 00:59	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/12/19 07:30	10/13/19 00:59	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/12/19 07:30	10/13/19 00:59	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/12/19 07:30	10/13/19 00:59	1
Anthracene	0.63	U	10	0.63	ug/L		10/12/19 07:30	10/13/19 00:59	1
Carbazole	0.68	U	10	0.68	ug/L		10/12/19 07:30	10/13/19 00:59	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/12/19 07:30	10/13/19 00:59	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/12/19 07:30	10/13/19 00:59	1
Pyrene	1.6	U	10	1.6	ug/L		10/12/19 07:30	10/13/19 00:59	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/12/19 07:30	10/13/19 00:59	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/12/19 07:30	10/13/19 00:59	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/12/19 07:30	10/13/19 00:59	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/12/19 07:30	10/13/19 00:59	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/12/19 07:30	10/13/19 00:59	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/12/19 07:30	10/13/19 00:59	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/12/19 07:30	10/13/19 00:59	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/12/19 07:30	10/13/19 00:59	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/12/19 07:30	10/13/19 00:59	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/12/19 07:30	10/13/19 00:59	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/12/19 07:30	10/13/19 00:59	1
Caprolactam	0.68	U	10	0.68	ug/L		10/12/19 07:30	10/13/19 00:59	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/12/19 07:30	10/13/19 00:59	1
Bisphenol-A	9.9	U *	10	9.9	ug/L		10/12/19 07:30	10/13/19 00:59	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/12/19 07:30	10/13/19 00:59	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/12/19 07:30*	*10/13/19 00:59*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*85*		*51 - 108*	*10/12/19 07:30*	*10/13/19 00:59*	*1*
Phenol-d5 (Surr)	*32*		*14 - 39*	*10/12/19 07:30*	*10/13/19 00:59*	*1*
Terphenyl-d14 (Surr)	*85*		*40 - 148*	*10/12/19 07:30*	*10/13/19 00:59*	*1*

Client Sample ID: UPA-108B-US — Lab Sample ID: 460-193634-1

Date Collected: 10/10/19 10:00 **Matrix: Water**
Date Received: 10/10/19 21:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*98*		*26 - 139*	*10/12/19 07:30*	*10/13/19 00:59*	*1*
2-Fluorophenol (Surr)	*45*		*25 - 58*	*10/12/19 07:30*	*10/13/19 00:59*	*1*
2-Fluorobiphenyl (Surr)	*76*		*45 - 107*	*10/12/19 07:30*	*10/13/19 00:59*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**49.9**		2.16	0.25	mg/L			10/12/19 11:09	18
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/12/19 08:09	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/12/19 08:09	1
Sulfate	0.35	U	0.60	0.35	mg/L			10/12/19 08:09	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**32000**		250	66.8	ug/L		10/16/19 09:08	10/16/19 14:18	5
Magnesium	**7710**		250	24.8	ug/L		10/16/19 09:08	10/16/19 14:18	5
Potassium	**11600**		250	73.5	ug/L		10/16/19 09:08	10/16/19 14:18	5
Calcium	**10300**		250	233	ug/L		10/16/19 09:08	10/16/19 14:18	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**13.6**	**J**	50.0	1.7	ug/L		10/15/19 08:35	10/15/19 18:56	1
Iron, Dissolved	**32300**		150	34.2	ug/L		10/15/19 08:35	10/15/19 18:56	1
Manganese, Dissolved	**397**		15.0	0.99	ug/L		10/15/19 08:35	10/15/19 18:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**16.9**		0.10	0.068	mg/L			10/14/19 13:37	1
Bicarbonate Alkalinity as CaCO3	**128**		5.0	5.0	mg/L			10/15/19 14:38	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/15/19 14:38	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/15/19 16:45	1

Client Sample ID: UPA-108B-LS — Lab Sample ID: 460-193634-2

Date Collected: 10/10/19 10:35 **Matrix: Water**
Date Received: 10/10/19 21:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/14/19 08:27	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/14/19 08:27	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/14/19 08:27	1
Chloroethane	0.32	U *	1.0	0.32	ug/L			10/14/19 08:27	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/14/19 08:27	1
Acetone	4.4	U	5.0	4.4	ug/L			10/14/19 08:27	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/14/19 08:27	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/14/19 08:27	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/14/19 08:27	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/14/19 08:27	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/14/19 08:27	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/14/19 08:27	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/14/19 08:27	1

Client Sample ID: UPA-108B-LS Lab Sample ID: 460-193634-2

Date Collected: 10/10/19 10:35 **Matrix: Water**
Date Received: 10/10/19 21:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/14/19 08:27	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/14/19 08:27	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/14/19 08:27	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/14/19 08:27	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/14/19 08:27	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/14/19 08:27	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/14/19 08:27	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/14/19 08:27	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/14/19 08:27	1
Benzene	0.20	U	1.0	0.20	ug/L			10/14/19 08:27	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/14/19 08:27	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/14/19 08:27	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/14/19 08:27	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/14/19 08:27	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/14/19 08:27	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/14/19 08:27	1
Toluene	0.38	U	1.0	0.38	ug/L			10/14/19 08:27	1
Chlorobenzene	**5.3**		1.0	0.38	ug/L			10/14/19 08:27	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/14/19 08:27	1
Styrene	0.42	U	1.0	0.42	ug/L			10/14/19 08:27	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/14/19 08:27	1
Diethyl ether	**21**		1.0	0.21	ug/L			10/14/19 08:27	1
MTBE	**0.51**	**J**	1.0	0.47	ug/L			10/14/19 08:27	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/14/19 08:27	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/14/19 08:27	1
1,4-Dioxane	**110**		50	28	ug/L			10/14/19 08:27	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/14/19 08:27	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/14/19 08:27	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/14/19 08:27	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/14/19 08:27	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/14/19 08:27	1
Indane	**0.38**	**J**	1.0	0.35	ug/L			10/14/19 08:27	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/14/19 08:27	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/14/19 08:27	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/14/19 08:27*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*74 - 132*		*10/14/19 08:27*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/14/19 08:27*	*1*
4-Bromofluorobenzene	*95*		*77 - 124*		*10/14/19 08:27*	*1*
Dibromofluoromethane (Surr)	*98*		*72 - 131*		*10/14/19 08:27*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U *	0.050	0.016	ug/L		10/12/19 07:30	10/13/19 04:19	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/12/19 07:30	10/13/19 04:19	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/12/19 07:30	10/13/19 04:19	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/12/19 07:30	10/13/19 04:19	1

Client Sample ID: UPA-108B-LS Lab Sample ID: 460-193634-2

Date Collected: 10/10/19 10:35 **Matrix: Water**
Date Received: 10/10/19 21:00

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/12/19 07:30	10/13/19 04:19	1
Bis(2-chloroethyl)ether	0.026	U	0.030	0.026	ug/L		10/12/19 07:30	10/13/19 04:19	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U *	10	0.29	ug/L		10/12/19 07:30	10/13/19 01:20	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/12/19 07:30	10/13/19 01:20	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/12/19 07:30	10/13/19 01:20	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/12/19 07:30	10/13/19 01:20	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/12/19 07:30	10/13/19 01:20	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/12/19 07:30	10/13/19 01:20	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/12/19 07:30	10/13/19 01:20	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/12/19 07:30	10/13/19 01:20	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/12/19 07:30	10/13/19 01:20	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/12/19 07:30	10/13/19 01:20	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/12/19 07:30	10/13/19 01:20	1
4-Nitrophenol	0.69	U *	20	0.69	ug/L		10/12/19 07:30	10/13/19 01:20	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/12/19 07:30	10/13/19 01:20	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/12/19 07:30	10/13/19 01:20	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/12/19 07:30	10/13/19 01:20	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/12/19 07:30	10/13/19 01:20	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/12/19 07:30	10/13/19 01:20	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/12/19 07:30	10/13/19 01:20	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/12/19 07:30	10/13/19 01:20	1
Isophorone	0.80	U	10	0.80	ug/L		10/12/19 07:30	10/13/19 01:20	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/12/19 07:30	10/13/19 01:20	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/12/19 07:30	10/13/19 01:20	1
Naphthalene	1.1	U	10	1.1	ug/L		10/12/19 07:30	10/13/19 01:20	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/12/19 07:30	10/13/19 01:20	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/12/19 07:30	10/13/19 01:20	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/12/19 07:30	10/13/19 01:20	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/12/19 07:30	10/13/19 01:20	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/12/19 07:30	10/13/19 01:20	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/12/19 07:30	10/13/19 01:20	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/12/19 07:30	10/13/19 01:20	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/12/19 07:30	10/13/19 01:20	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/12/19 07:30	10/13/19 01:20	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/12/19 07:30	10/13/19 01:20	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/12/19 07:30	10/13/19 01:20	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/12/19 07:30	10/13/19 01:20	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/12/19 07:30	10/13/19 01:20	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/12/19 07:30	10/13/19 01:20	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/12/19 07:30	10/13/19 01:20	1
Fluorene	0.91	U	10	0.91	ug/L		10/12/19 07:30	10/13/19 01:20	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/12/19 07:30	10/13/19 01:20	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/12/19 07:30	10/13/19 01:20	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/12/19 07:30	10/13/19 01:20	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/12/19 07:30	10/13/19 01:20	1
Anthracene	0.63	U	10	0.63	ug/L		10/12/19 07:30	10/13/19 01:20	1
Carbazole	0.68	U	10	0.68	ug/L		10/12/19 07:30	10/13/19 01:20	1

Client Sample ID: UPA-108B-LS Lab Sample ID: 460-193634-2

Date Collected: 10/10/19 10:35 **Matrix: Water**
Date Received: 10/10/19 21:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/12/19 07:30	10/13/19 01:20	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/12/19 07:30	10/13/19 01:20	1
Pyrene	1.6	U	10	1.6	ug/L		10/12/19 07:30	10/13/19 01:20	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/12/19 07:30	10/13/19 01:20	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/12/19 07:30	10/13/19 01:20	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/12/19 07:30	10/13/19 01:20	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/12/19 07:30	10/13/19 01:20	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/12/19 07:30	10/13/19 01:20	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/12/19 07:30	10/13/19 01:20	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/12/19 07:30	10/13/19 01:20	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/12/19 07:30	10/13/19 01:20	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/12/19 07:30	10/13/19 01:20	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/12/19 07:30	10/13/19 01:20	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/12/19 07:30	10/13/19 01:20	1
Caprolactam	0.68	U	10	0.68	ug/L		10/12/19 07:30	10/13/19 01:20	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/12/19 07:30	10/13/19 01:20	1
Bisphenol-A	9.9	U *	10	9.9	ug/L		10/12/19 07:30	10/13/19 01:20	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/12/19 07:30	10/13/19 01:20	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/12/19 07:30*	*10/13/19 01:20*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*102*		*51 - 108*	*10/12/19 07:30*	*10/13/19 01:20*	*1*
Phenol-d5 (Surr)	*39*		*14 - 39*	*10/12/19 07:30*	*10/13/19 01:20*	*1*
Terphenyl-d14 (Surr)	*106*		*40 - 148*	*10/12/19 07:30*	*10/13/19 01:20*	*1*
2,4,6-Tribromophenol (Surr)	*119*		*26 - 139*	*10/12/19 07:30*	*10/13/19 01:20*	*1*
2-Fluorophenol (Surr)	*56*		*25 - 58*	*10/12/19 07:30*	*10/13/19 01:20*	*1*
2-Fluorobiphenyl (Surr)	*93*		*45 - 107*	*10/12/19 07:30*	*10/13/19 01:20*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**37.6**		1.68	0.20	mg/L			10/12/19 11:24	14
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/12/19 08:24	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/12/19 08:24	1
Sulfate	**6.15**		0.60	0.35	mg/L			10/12/19 08:24	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**26600**		250	66.8	ug/L		10/16/19 09:08	10/16/19 14:20	5
Magnesium	**7710**		250	24.8	ug/L		10/16/19 09:08	10/16/19 14:20	5
Potassium	**16100**		250	73.5	ug/L		10/16/19 09:08	10/16/19 14:20	5
Calcium	**14200**		250	233	ug/L		10/16/19 09:08	10/16/19 14:20	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**2.1**	J	50.0	1.7	ug/L		10/15/19 08:35	10/15/19 19:00	1
Iron, Dissolved	**55500**		150	34.2	ug/L		10/15/19 08:35	10/15/19 19:00	1
Manganese, Dissolved	**1660**		15.0	0.99	ug/L		10/15/19 08:35	10/15/19 19:00	1

Client Sample ID: UPA-108B-LS — Lab Sample ID: 460-193634-2

Date Collected: 10/10/19 10:35 **Matrix: Water**
Date Received: 10/10/19 21:00

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**15.4**		0.10	0.068	mg/L			10/14/19 13:41	1
Bicarbonate Alkalinity as CaCO3	**135**		5.0	5.0	mg/L			10/15/19 14:45	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/15/19 14:45	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/15/19 16:45	1

Client Sample ID: UPA-108B-TZ — Lab Sample ID: 460-193634-3

Date Collected: 10/10/19 11:05 **Matrix: Water**
Date Received: 10/10/19 21:00

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**46**		2.0	1.0	ug/L			10/16/19 15:17	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*102*		*72 - 133*		*10/16/19 15:17*	*5*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/14/19 08:51	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/14/19 08:51	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/14/19 08:51	1
Chloroethane	0.32	U *	1.0	0.32	ug/L			10/14/19 08:51	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/14/19 08:51	1
Acetone	4.4	U	5.0	4.4	ug/L			10/14/19 08:51	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/14/19 08:51	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/14/19 08:51	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/14/19 08:51	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/14/19 08:51	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/14/19 08:51	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/14/19 08:51	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/14/19 08:51	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/14/19 08:51	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/14/19 08:51	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/14/19 08:51	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/14/19 08:51	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/14/19 08:51	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/14/19 08:51	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/14/19 08:51	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/14/19 08:51	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/14/19 08:51	1
Benzene	**0.58**	**J**	1.0	0.20	ug/L			10/14/19 08:51	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/14/19 08:51	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/14/19 08:51	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/14/19 08:51	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/14/19 08:51	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/14/19 08:51	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/14/19 08:51	1
Toluene	0.38	U	1.0	0.38	ug/L			10/14/19 08:51	1
Chlorobenzene	**6.1**		1.0	0.38	ug/L			10/14/19 08:51	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/14/19 08:51	1

Client Sample ID: UPA-108B-TZ Lab Sample ID: 460-193634-3

Date Collected: 10/10/19 11:05 **Matrix: Water**
Date Received: 10/10/19 21:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	0.42	U	1.0	0.42	ug/L			10/14/19 08:51	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/14/19 08:51	1
Diethyl ether	**46**		1.0	0.21	ug/L			10/14/19 08:51	1
MTBE	0.47	U	1.0	0.47	ug/L			10/14/19 08:51	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/14/19 08:51	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/14/19 08:51	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/14/19 08:51	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/14/19 08:51	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/14/19 08:51	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/14/19 08:51	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/14/19 08:51	1
Indane	**0.55**	**J**	1.0	0.35	ug/L			10/14/19 08:51	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/14/19 08:51	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/14/19 08:51	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/14/19 08:51*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*74 - 132*		*10/14/19 08:51*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/14/19 08:51*	*1*
4-Bromofluorobenzene	*96*		*77 - 124*		*10/14/19 08:51*	*1*
Dibromofluoromethane (Surr)	*100*		*72 - 131*		*10/14/19 08:51*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U *	0.050	0.016	ug/L		10/12/19 07:30	10/14/19 04:13	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/12/19 07:30	10/14/19 04:13	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/12/19 07:30	10/14/19 04:13	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/12/19 07:30	10/14/19 04:13	1
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/12/19 07:30	10/14/19 04:13	1
Bis(2-chloroethyl)ether	**0.61**		0.030	0.026	ug/L		10/12/19 07:30	10/14/19 04:13	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U *	10	0.29	ug/L		10/12/19 07:30	10/13/19 01:41	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/12/19 07:30	10/13/19 01:41	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/12/19 07:30	10/13/19 01:41	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/12/19 07:30	10/13/19 01:41	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/12/19 07:30	10/13/19 01:41	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/12/19 07:30	10/13/19 01:41	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/12/19 07:30	10/13/19 01:41	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/12/19 07:30	10/13/19 01:41	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/12/19 07:30	10/13/19 01:41	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/12/19 07:30	10/13/19 01:41	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/12/19 07:30	10/13/19 01:41	1
4-Nitrophenol	0.69	U *	20	0.69	ug/L		10/12/19 07:30	10/13/19 01:41	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/12/19 07:30	10/13/19 01:41	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/12/19 07:30	10/13/19 01:41	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/12/19 07:30	10/13/19 01:41	1

Client Sample ID: UPA-108B-TZ Lab Sample ID: 460-193634-3

Date Collected: 10/10/19 11:05 **Matrix: Water**
Date Received: 10/10/19 21:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/12/19 07:30	10/13/19 01:41	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/12/19 07:30	10/13/19 01:41	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/12/19 07:30	10/13/19 01:41	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/12/19 07:30	10/13/19 01:41	1
Isophorone	0.80	U	10	0.80	ug/L		10/12/19 07:30	10/13/19 01:41	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/12/19 07:30	10/13/19 01:41	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/12/19 07:30	10/13/19 01:41	1
Naphthalene	1.1	U	10	1.1	ug/L		10/12/19 07:30	10/13/19 01:41	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/12/19 07:30	10/13/19 01:41	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/12/19 07:30	10/13/19 01:41	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/12/19 07:30	10/13/19 01:41	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/12/19 07:30	10/13/19 01:41	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/12/19 07:30	10/13/19 01:41	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/12/19 07:30	10/13/19 01:41	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/12/19 07:30	10/13/19 01:41	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/12/19 07:30	10/13/19 01:41	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/12/19 07:30	10/13/19 01:41	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/12/19 07:30	10/13/19 01:41	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/12/19 07:30	10/13/19 01:41	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/12/19 07:30	10/13/19 01:41	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/12/19 07:30	10/13/19 01:41	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/12/19 07:30	10/13/19 01:41	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/12/19 07:30	10/13/19 01:41	1
Fluorene	0.91	U	10	0.91	ug/L		10/12/19 07:30	10/13/19 01:41	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/12/19 07:30	10/13/19 01:41	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/12/19 07:30	10/13/19 01:41	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/12/19 07:30	10/13/19 01:41	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/12/19 07:30	10/13/19 01:41	1
Anthracene	0.63	U	10	0.63	ug/L		10/12/19 07:30	10/13/19 01:41	1
Carbazole	0.68	U	10	0.68	ug/L		10/12/19 07:30	10/13/19 01:41	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/12/19 07:30	10/13/19 01:41	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/12/19 07:30	10/13/19 01:41	1
Pyrene	1.6	U	10	1.6	ug/L		10/12/19 07:30	10/13/19 01:41	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/12/19 07:30	10/13/19 01:41	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/12/19 07:30	10/13/19 01:41	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/12/19 07:30	10/13/19 01:41	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/12/19 07:30	10/13/19 01:41	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/12/19 07:30	10/13/19 01:41	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/12/19 07:30	10/13/19 01:41	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/12/19 07:30	10/13/19 01:41	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/12/19 07:30	10/13/19 01:41	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/12/19 07:30	10/13/19 01:41	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/12/19 07:30	10/13/19 01:41	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/12/19 07:30	10/13/19 01:41	1
Caprolactam	0.68	U	10	0.68	ug/L		10/12/19 07:30	10/13/19 01:41	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/12/19 07:30	10/13/19 01:41	1
Bisphenol-A	9.9	U ±	10	9.9	ug/L		10/12/19 07:30	10/13/19 01:41	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/12/19 07:30	10/13/19 01:41	1

Client Sample ID: UPA-108B-TZ — Lab Sample ID: 460-193634-3

Date Collected: 10/10/19 11:05 **Matrix: Water**
Date Received: 10/10/19 21:00

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/12/19 07:30*	*10/13/19 01:41*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*105*		*51 - 108*	*10/12/19 07:30*	*10/13/19 01:41*	*1*
Phenol-d5 (Surr)	*36*		*14 - 39*	*10/12/19 07:30*	*10/13/19 01:41*	*1*
Terphenyl-d14 (Surr)	*108*		*40 - 148*	*10/12/19 07:30*	*10/13/19 01:41*	*1*
2,4,6-Tribromophenol (Surr)	*121*		*26 - 139*	*10/12/19 07:30*	*10/13/19 01:41*	*1*
2-Fluorophenol (Surr)	*55*		*25 - 58*	*10/12/19 07:30*	*10/13/19 01:41*	*1*
2-Fluorobiphenyl (Surr)	*94*		*45 - 107*	*10/12/19 07:30*	*10/13/19 01:41*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**60.5**		2.76	0.32	mg/L			10/12/19 11:38	23
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/12/19 08:39	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/12/19 08:39	1
Sulfate	**0.58**	**J**	0.60	0.35	mg/L			10/12/19 08:39	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**39800**		250	66.8	ug/L		10/16/19 09:08	10/16/19 14:23	5
Magnesium	**13700**		250	24.8	ug/L		10/16/19 09:08	10/16/19 14:23	5
Potassium	**5100**		250	73.5	ug/L		10/16/19 09:08	10/16/19 14:23	5
Calcium	**29200**		250	233	ug/L		10/16/19 09:08	10/16/19 14:23	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**189**		50.0	1.7	ug/L		10/15/19 08:35	10/15/19 19:04	1
Iron, Dissolved	**60400**		150	34.2	ug/L		10/15/19 08:35	10/15/19 19:04	1
Manganese, Dissolved	**2210**		15.0	0.99	ug/L		10/15/19 08:35	10/15/19 19:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**2.8**		0.10	0.068	mg/L			10/14/19 13:43	1
Bicarbonate Alkalinity as CaCO3	**132**		5.0	5.0	mg/L			10/15/19 14:52	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/15/19 14:52	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/15/19 16:45	1

Client Sample ID: UPA-102-TZ — Lab Sample ID: 460-193634-4

Date Collected: 10/10/19 14:30 **Matrix: Water**
Date Received: 10/10/19 21:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/14/19 15:31	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/14/19 15:31	1
Vinyl chloride	**3.0**		1.0	0.17	ug/L			10/14/19 15:31	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/14/19 15:31	1
Methylene Chloride	**0.77**	**J**	1.0	0.32	ug/L			10/14/19 15:31	1
Acetone	4.4	U	5.0	4.4	ug/L			10/14/19 15:31	1
Carbon disulfide	**3.4**		1.0	0.82	ug/L			10/14/19 15:31	1
1,1-Dichloroethene	**0.43**	**J**	1.0	0.26	ug/L			10/14/19 15:31	1
1,1-Dichloroethane	**2.9**		1.0	0.26	ug/L			10/14/19 15:31	1

Client Sample ID: UPA-102-TZ Lab Sample ID: 460-193634-4

Date Collected: 10/10/19 14:30 **Matrix: Water**
Date Received: 10/10/19 21:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	**0.49**	**J**	1.0	0.24	ug/L			10/14/19 15:31	1
cis-1,2-Dichloroethene	**9.6**		1.0	0.22	ug/L			10/14/19 15:31	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/14/19 15:31	1
1,2-Dichloroethane	**23**		1.0	0.43	ug/L			10/14/19 15:31	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/14/19 15:31	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/14/19 15:31	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/14/19 15:31	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/14/19 15:31	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/14/19 15:31	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/14/19 15:31	1
Trichloroethene	**4.9**		1.0	0.31	ug/L			10/14/19 15:31	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/14/19 15:31	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/14/19 15:31	1
Benzene	**180**		1.0	0.20	ug/L			10/14/19 15:31	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/14/19 15:31	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/14/19 15:31	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/14/19 15:31	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/14/19 15:31	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/14/19 15:31	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/14/19 15:31	1
Toluene	**0.69**	**J**	1.0	0.38	ug/L			10/14/19 15:31	1
Chlorobenzene	**51**		1.0	0.38	ug/L			10/14/19 15:31	1
Ethylbenzene	**0.55**	**J**	1.0	0.30	ug/L			10/14/19 15:31	1
Styrene	0.42	U	1.0	0.42	ug/L			10/14/19 15:31	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/14/19 15:31	1
Diethyl ether	**6.4**		1.0	0.21	ug/L			10/14/19 15:31	1
MTBE	0.47	U	1.0	0.47	ug/L			10/14/19 15:31	1
Tetrahydrofuran	**73**		2.0	1.0	ug/L			10/14/19 15:31	1
Cyclohexane	**3.3**		1.0	0.32	ug/L			10/14/19 15:31	1
1,4-Dioxane	**270**		50	28	ug/L			10/14/19 15:31	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/14/19 15:31	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/14/19 15:31	1
Isopropylbenzene	**4.8**		1.0	0.34	ug/L			10/14/19 15:31	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/14/19 15:31	1
Methylcyclohexane	**0.99**	**J**	1.0	0.26	ug/L			10/14/19 15:31	1
Indane	**2.1**		1.0	0.35	ug/L			10/14/19 15:31	1
Dichlorofluoromethane	**33**		1.0	0.34	ug/L			10/14/19 15:31	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/14/19 15:31	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Cyclopentane, 1,3-dimethyl-	*6.2*	*J N*	*ug/L*		*3.62*	*2453-00-1*		*10/14/19 15:31*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*74 - 132*		*10/14/19 15:31*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*10/14/19 15:31*	*1*
4-Bromofluorobenzene	*97*		*77 - 124*		*10/14/19 15:31*	*1*
Dibromofluoromethane (Surr)	*100*		*72 - 131*		*10/14/19 15:31*	*1*

Client Sample ID: UPA-102-TZ — Lab Sample ID: 460-193634-4

Date Collected: 10/10/19 14:30 **Matrix: Water**
Date Received: 10/10/19 21:00

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.16	U *	0.50	0.16	ug/L		10/12/19 07:30	10/14/19 04:34	10
Benzo[a]pyrene	0.22	U	0.50	0.22	ug/L		10/12/19 07:30	10/14/19 04:34	10
Benzo[b]fluoranthene	0.24	U	0.50	0.24	ug/L		10/12/19 07:30	10/14/19 04:34	10
Hexachlorobenzene	0.13	U	0.20	0.13	ug/L		10/12/19 07:30	10/14/19 04:34	10
Pentachlorophenol	1.5	U *	2.0	1.5	ug/L		10/12/19 07:30	10/14/19 04:34	10
Bis(2-chloroethyl)ether	**35**		0.30	0.26	ug/L		10/12/19 07:30	10/14/19 04:34	10

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	**1.2**	~~J *~~ J	10	0.29	ug/L		10/12/19 07:30	10/13/19 02:02	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/12/19 07:30	10/13/19 02:02	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/12/19 07:30	10/13/19 02:02	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/12/19 07:30	10/13/19 02:02	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/12/19 07:30	10/13/19 02:02	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/12/19 07:30	10/13/19 02:02	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/12/19 07:30	10/13/19 02:02	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/12/19 07:30	10/13/19 02:02	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/12/19 07:30	10/13/19 02:02	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/12/19 07:30	10/13/19 02:02	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/12/19 07:30	10/13/19 02:02	1
4-Nitrophenol	0.69	U *	20	0.69	ug/L		10/12/19 07:30	10/13/19 02:02	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/12/19 07:30	10/13/19 02:02	1
Bis(2-chloroethyl)ether	**35**		1.0	0.30	ug/L		10/12/19 07:30	10/13/19 02:02	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/12/19 07:30	10/13/19 02:02	1
1,4-Dichlorobenzene	**1.3**	**J**	10	1.3	ug/L		10/12/19 07:30	10/13/19 02:02	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/12/19 07:30	10/13/19 02:02	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/12/19 07:30	10/13/19 02:02	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/12/19 07:30	10/13/19 02:02	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/12/19 07:30	10/13/19 02:02	1
Isophorone	0.80	U	10	0.80	ug/L		10/12/19 07:30	10/13/19 02:02	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/12/19 07:30	10/13/19 02:02	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/12/19 07:30	10/13/19 02:02	1
Naphthalene	1.1	U	10	1.1	ug/L		10/12/19 07:30	10/13/19 02:02	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/12/19 07:30	10/13/19 02:02	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/12/19 07:30	10/13/19 02:02	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/12/19 07:30	10/13/19 02:02	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/12/19 07:30	10/13/19 02:02	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/12/19 07:30	10/13/19 02:02	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/12/19 07:30	10/13/19 02:02	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/12/19 07:30	10/13/19 02:02	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/12/19 07:30	10/13/19 02:02	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/12/19 07:30	10/13/19 02:02	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/12/19 07:30	10/13/19 02:02	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/12/19 07:30	10/13/19 02:02	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/12/19 07:30	10/13/19 02:02	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/12/19 07:30	10/13/19 02:02	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/12/19 07:30	10/13/19 02:02	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/12/19 07:30	10/13/19 02:02	1
Fluorene	0.91	U	10	0.91	ug/L		10/12/19 07:30	10/13/19 02:02	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/12/19 07:30	10/13/19 02:02	1

Client Sample ID: UPA-102-TZ — Lab Sample ID: 460-193634-4

Date Collected: 10/10/19 14:30 **Matrix: Water**
Date Received: 10/10/19 21:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/12/19 07:30	10/13/19 02:02	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/12/19 07:30	10/13/19 02:02	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/12/19 07:30	10/13/19 02:02	1
Anthracene	0.63	U	10	0.63	ug/L		10/12/19 07:30	10/13/19 02:02	1
Carbazole	0.68	U	10	0.68	ug/L		10/12/19 07:30	10/13/19 02:02	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/12/19 07:30	10/13/19 02:02	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/12/19 07:30	10/13/19 02:02	1
Pyrene	1.6	U	10	1.6	ug/L		10/12/19 07:30	10/13/19 02:02	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/12/19 07:30	10/13/19 02:02	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/12/19 07:30	10/13/19 02:02	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/12/19 07:30	10/13/19 02:02	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/12/19 07:30	10/13/19 02:02	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/12/19 07:30	10/13/19 02:02	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/12/19 07:30	10/13/19 02:02	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/12/19 07:30	10/13/19 02:02	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/12/19 07:30	10/13/19 02:02	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/12/19 07:30	10/13/19 02:02	1
Diphenyl ether	**1.7**	**J**	10	1.2	ug/L		10/12/19 07:30	10/13/19 02:02	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/12/19 07:30	10/13/19 02:02	1
Caprolactam	0.68	U	10	0.68	ug/L		10/12/19 07:30	10/13/19 02:02	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/12/19 07:30	10/13/19 02:02	1
Bisphenol-A	9.9	U *	10	9.9	ug/L		10/12/19 07:30	10/13/19 02:02	1
N-Methylaniline	**1.6**	**J**	5.0	0.48	ug/L		10/12/19 07:30	10/13/19 02:02	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*8.6*	*J*	*ug/L*		*2.40*		*10/12/19 07:30*	*10/13/19 02:02*	*1*
Unknown	*13*	*J*	*ug/L*		*2.53*		*10/12/19 07:30*	*10/13/19 02:02*	*1*
Unknown	*6.8*	*J*	*ug/L*		*2.67*		*10/12/19 07:30*	*10/13/19 02:02*	*1*
2-Isopropoxyphenol	*17*	*J N*	*ug/L*		*5.40*	*4812-20-8*	*10/12/19 07:30*	*10/13/19 02:02*	*1*
Unknown	*6.4*	*J*	*ug/L*		*6.03*		*10/12/19 07:30*	*10/13/19 02:02*	*1*
Unknown	*24*	*J*	*ug/L*		*6.14*		*10/12/19 07:30*	*10/13/19 02:02*	*1*
Unknown	*180*	*J*	*ug/L*		*6.99*		*10/12/19 07:30*	*10/13/19 02:02*	*1*
Unknown	*11*	*J*	*ug/L*		*7.28*		*10/12/19 07:30*	*10/13/19 02:02*	*1*
2(3H)-Benzothiazolone	*13*	*J N*	*ug/L*		*8.07*	*934-34-9*	*10/12/19 07:30*	*10/13/19 02:02*	*1*
Benzenesulfonamide, N-ethyl-4-methyl-	*7.1*	*J N*	*ug/L*		*8.23*	*80-39-7*	*10/12/19 07:30*	*10/13/19 02:02*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*102*		*51 - 108*	*10/12/19 07:30*	*10/13/19 02:02*	*1*
Phenol-d5 (Surr)	*33*		*14 - 39*	*10/12/19 07:30*	*10/13/19 02:02*	*1*
Terphenyl-d14 (Surr)	*102*		*40 - 148*	*10/12/19 07:30*	*10/13/19 02:02*	*1*
2,4,6-Tribromophenol (Surr)	*124*		*26 - 139*	*10/12/19 07:30*	*10/13/19 02:02*	*1*
2-Fluorophenol (Surr)	*52*		*25 - 58*	*10/12/19 07:30*	*10/13/19 02:02*	*1*
2-Fluorobiphenyl (Surr)	*96*		*45 - 107*	*10/12/19 07:30*	*10/13/19 02:02*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**106**		4.56	0.53	mg/L			10/12/19 11:53	38
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/12/19 08:54	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/12/19 08:54	1

Client Sample ID: UPA-102-TZ — Lab Sample ID: 460-193634-4

Date Collected: 10/10/19 14:30 Matrix: Water
Date Received: 10/10/19 21:00

Method: 300.0 - Anions, Ion Chromatography (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**28.8**		22.8	13.1	mg/L			10/12/19 11:53	38

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**75400**		250	66.8	ug/L		10/16/19 09:08	10/16/19 14:32	5
Magnesium	**34600**		250	24.8	ug/L		10/16/19 09:08	10/16/19 14:32	5
Potassium	**7230**		250	73.5	ug/L		10/16/19 09:08	10/16/19 14:32	5
Calcium	**77500**		250	233	ug/L		10/16/19 09:08	10/16/19 14:32	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**100**		50.0	1.7	ug/L		10/15/19 08:35	10/15/19 19:08	1
Iron, Dissolved	**26100**		150	34.2	ug/L		10/15/19 08:35	10/15/19 19:08	1
Manganese, Dissolved	**5580**		15.0	0.99	ug/L		10/15/19 08:35	10/15/19 19:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.55**		0.10	0.068	mg/L			10/14/19 13:44	1
Bicarbonate Alkalinity as CaCO3	**312**		5.0	5.0	mg/L			10/15/19 15:01	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/15/19 15:01	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/15/19 16:45	1

Client Sample ID: TBGW_101019 — Lab Sample ID: 460-193634-5

Date Collected: 10/10/19 00:00 Matrix: Water
Date Received: 10/10/19 21:00

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/16/19 03:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*72 - 133*		*10/16/19 03:42*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/14/19 07:39	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/14/19 07:39	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/14/19 07:39	1
Chloroethane	0.32	U *	1.0	0.32	ug/L			10/14/19 07:39	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/14/19 07:39	1
Acetone	**15**		5.0	4.4	ug/L			10/14/19 07:39	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/14/19 07:39	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/14/19 07:39	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/14/19 07:39	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/14/19 07:39	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/14/19 07:39	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/14/19 07:39	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/14/19 07:39	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/14/19 07:39	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/14/19 07:39	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/14/19 07:39	1

Client Sample ID: TBGW_101019 Lab Sample ID: 460-193634-5

Date Collected: 10/10/19 00:00 **Matrix: Water**
Date Received: 10/10/19 21:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/14/19 07:39	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/14/19 07:39	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/14/19 07:39	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/14/19 07:39	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/14/19 07:39	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/14/19 07:39	1
Benzene	0.20	U	1.0	0.20	ug/L			10/14/19 07:39	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/14/19 07:39	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/14/19 07:39	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/14/19 07:39	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/14/19 07:39	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/14/19 07:39	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/14/19 07:39	1
Toluene	0.38	U	1.0	0.38	ug/L			10/14/19 07:39	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/14/19 07:39	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/14/19 07:39	1
Styrene	0.42	U	1.0	0.42	ug/L			10/14/19 07:39	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/14/19 07:39	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/14/19 07:39	1
MTBE	0.47	U	1.0	0.47	ug/L			10/14/19 07:39	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/14/19 07:39	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/14/19 07:39	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/14/19 07:39	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/14/19 07:39	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/14/19 07:39	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/14/19 07:39	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/14/19 07:39	1
Indane	0.35	U	1.0	0.35	ug/L			10/14/19 07:39	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/14/19 07:39	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/14/19 07:39	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/14/19 07:39*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*74 - 132*		*10/14/19 07:39*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/14/19 07:39*	*1*
4-Bromofluorobenzene	*97*		*77 - 124*		*10/14/19 07:39*	*1*
Dibromofluoromethane (Surr)	*99*		*72 - 131*		*10/14/19 07:39*	*1*

Client Sample ID: BW-2(128) Lab Sample ID: 460-193677-1

Date Collected: 10/11/19 10:25 **Matrix: Water**
Date Received: 10/11/19 21:00

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**47**		2.0	1.0	ug/L			10/17/19 18:19	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*107*		*72 - 133*		*10/17/19 18:19*	*5*

Client Sample Results

Client: Golder Associates Inc. Job ID: 460-193458-1
Project/Site: DS&G Semi-Annual Groundwater

Client Sample ID: BW-2(128) Lab Sample ID: 460-193677-1

Date Collected: 10/11/19 10:25 **Matrix: Water**
Date Received: 10/11/19 21:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/16/19 03:21	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/16/19 03:21	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/16/19 03:21	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/16/19 03:21	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/16/19 03:21	1
Acetone	4.4	U	5.0	4.4	ug/L			10/16/19 03:21	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/16/19 03:21	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/16/19 03:21	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/16/19 03:21	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/16/19 03:21	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/16/19 03:21	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/16/19 03:21	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/16/19 03:21	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/16/19 03:21	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/16/19 03:21	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/16/19 03:21	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/16/19 03:21	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/16/19 03:21	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/16/19 03:21	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/16/19 03:21	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/16/19 03:21	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/16/19 03:21	1
Benzene	0.20	U	1.0	0.20	ug/L			10/16/19 03:21	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/16/19 03:21	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/16/19 03:21	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/16/19 03:21	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/16/19 03:21	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/16/19 03:21	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/16/19 03:21	1
Toluene	0.38	U	1.0	0.38	ug/L			10/16/19 03:21	1
Chlorobenzene	**2.2**		1.0	0.38	ug/L			10/16/19 03:21	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/16/19 03:21	1
Styrene	0.42	U	1.0	0.42	ug/L			10/16/19 03:21	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/16/19 03:21	1
Diethyl ether	**5.8**		1.0	0.21	ug/L			10/16/19 03:21	1
MTBE	0.47	U	1.0	0.47	ug/L			10/16/19 03:21	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/16/19 03:21	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/16/19 03:21	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/16/19 03:21	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/16/19 03:21	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/16/19 03:21	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/16/19 03:21	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/16/19 03:21	1
Indane	0.35	U	1.0	0.35	ug/L			10/16/19 03:21	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/16/19 03:21	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/16/19 03:21	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/16/19 03:21*	*1*

Client Sample Results

Client: Golder Associates Inc. Job ID: 460-193458-1
Project/Site: DS&G Semi-Annual Groundwater

Client Sample ID: BW-2(128) Lab Sample ID: 460-193677-1

Date Collected: 10/11/19 10:25 **Matrix: Water**
Date Received: 10/11/19 21:00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*74 - 132*		*10/16/19 03:21*	*1*
Toluene-d8 (Surr)	*93*		*80 - 120*		*10/16/19 03:21*	*1*
4-Bromofluorobenzene	*95*		*77 - 124*		*10/16/19 03:21*	*1*
Dibromofluoromethane (Surr)	*97*		*72 - 131*		*10/16/19 03:21*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U *	0.050	0.016	ug/L		10/12/19 07:30	10/13/19 05:43	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/12/19 07:30	10/13/19 05:43	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/12/19 07:30	10/13/19 05:43	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/12/19 07:30	10/13/19 05:43	1
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/12/19 07:30	10/13/19 05:43	1
Bis(2-chloroethyl)ether	**0.10**		0.030	0.026	ug/L		10/12/19 07:30	10/13/19 05:43	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U *	10	0.29	ug/L		10/12/19 07:30	10/13/19 05:10	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/12/19 07:30	10/13/19 05:10	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/12/19 07:30	10/13/19 05:10	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/12/19 07:30	10/13/19 05:10	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/12/19 07:30	10/13/19 05:10	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/12/19 07:30	10/13/19 05:10	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/12/19 07:30	10/13/19 05:10	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/12/19 07:30	10/13/19 05:10	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/12/19 07:30	10/13/19 05:10	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/12/19 07:30	10/13/19 05:10	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/12/19 07:30	10/13/19 05:10	1
4-Nitrophenol	0.69	U *	20	0.69	ug/L		10/12/19 07:30	10/13/19 05:10	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/12/19 07:30	10/13/19 05:10	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/12/19 07:30	10/13/19 05:10	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/12/19 07:30	10/13/19 05:10	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/12/19 07:30	10/13/19 05:10	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/12/19 07:30	10/13/19 05:10	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/12/19 07:30	10/13/19 05:10	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/12/19 07:30	10/13/19 05:10	1
Isophorone	0.80	U	10	0.80	ug/L		10/12/19 07:30	10/13/19 05:10	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/12/19 07:30	10/13/19 05:10	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/12/19 07:30	10/13/19 05:10	1
Naphthalene	1.1	U	10	1.1	ug/L		10/12/19 07:30	10/13/19 05:10	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/12/19 07:30	10/13/19 05:10	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/12/19 07:30	10/13/19 05:10	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/12/19 07:30	10/13/19 05:10	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/12/19 07:30	10/13/19 05:10	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/12/19 07:30	10/13/19 05:10	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/12/19 07:30	10/13/19 05:10	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/12/19 07:30	10/13/19 05:10	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/12/19 07:30	10/13/19 05:10	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/12/19 07:30	10/13/19 05:10	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/12/19 07:30	10/13/19 05:10	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/12/19 07:30	10/13/19 05:10	1

Client Sample ID: BW-2(128) Lab Sample ID: 460-193677-1

Date Collected: 10/11/19 10:25 **Matrix: Water**
Date Received: 10/11/19 21:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	1.1	U	10	1.1	ug/L		10/12/19 07:30	10/13/19 05:10	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/12/19 07:30	10/13/19 05:10	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/12/19 07:30	10/13/19 05:10	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/12/19 07:30	10/13/19 05:10	1
Fluorene	0.91	U	10	0.91	ug/L		10/12/19 07:30	10/13/19 05:10	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/12/19 07:30	10/13/19 05:10	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/12/19 07:30	10/13/19 05:10	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/12/19 07:30	10/13/19 05:10	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/12/19 07:30	10/13/19 05:10	1
Anthracene	0.63	U	10	0.63	ug/L		10/12/19 07:30	10/13/19 05:10	1
Carbazole	0.68	U	10	0.68	ug/L		10/12/19 07:30	10/13/19 05:10	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/12/19 07:30	10/13/19 05:10	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/12/19 07:30	10/13/19 05:10	1
Pyrene	1.6	U	10	1.6	ug/L		10/12/19 07:30	10/13/19 05:10	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/12/19 07:30	10/13/19 05:10	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/12/19 07:30	10/13/19 05:10	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/12/19 07:30	10/13/19 05:10	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/12/19 07:30	10/13/19 05:10	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/12/19 07:30	10/13/19 05:10	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/12/19 07:30	10/13/19 05:10	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/12/19 07:30	10/13/19 05:10	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/12/19 07:30	10/13/19 05:10	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/12/19 07:30	10/13/19 05:10	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/12/19 07:30	10/13/19 05:10	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/12/19 07:30	10/13/19 05:10	1
Caprolactam	0.68	U	10	0.68	ug/L		10/12/19 07:30	10/13/19 05:10	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/12/19 07:30	10/13/19 05:10	1
Bisphenol-A	9.9	U *	10	9.9	ug/L		10/12/19 07:30	10/13/19 05:10	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/12/19 07:30	10/13/19 05:10	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/12/19 07:30*	*10/13/19 05:10*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*99*		*51 - 108*	*10/12/19 07:30*	*10/13/19 05:10*	*1*
Phenol-d5 (Surr)	*34*		*14 - 39*	*10/12/19 07:30*	*10/13/19 05:10*	*1*
Terphenyl-d14 (Surr)	*98*		*40 - 148*	*10/12/19 07:30*	*10/13/19 05:10*	*1*
2,4,6-Tribromophenol (Surr)	*111*		*26 - 139*	*10/12/19 07:30*	*10/13/19 05:10*	*1*
2-Fluorophenol (Surr)	*49*		*25 - 58*	*10/12/19 07:30*	*10/13/19 05:10*	*1*
2-Fluorobiphenyl (Surr)	*87*		*45 - 107*	*10/12/19 07:30*	*10/13/19 05:10*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**40.8**		1.80	0.21	mg/L			10/12/19 19:51	15
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/12/19 15:03	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/12/19 15:03	1
Sulfate	**7.30**		0.60	0.35	mg/L			10/12/19 15:03	1

Client Sample Results

Client: Golder Associates Inc. Job ID: 460-193458-1
Project/Site: DS&G Semi-Annual Groundwater

Client Sample ID: BW-2(128) Lab Sample ID: 460-193677-1

Date Collected: 10/11/19 10:25 Matrix: Water
Date Received: 10/11/19 21:00

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**25200**		250	66.8	ug/L		10/16/19 09:08	10/16/19 14:44	5
Magnesium	**10200**		250	24.8	ug/L		10/16/19 09:08	10/16/19 14:44	5
Potassium	**8890**		250	73.5	ug/L		10/16/19 09:08	10/16/19 14:44	5
Calcium	**25400**		250	233	ug/L		10/16/19 09:08	10/16/19 14:44	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**18.6**	J	50.0	1.7	ug/L		10/17/19 08:59	10/17/19 14:49	1
Iron, Dissolved	**3040**		150	34.2	ug/L		10/17/19 08:59	10/17/19 14:49	1
Manganese, Dissolved	**1870**		15.0	0.99	ug/L		10/17/19 08:59	10/17/19 14:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**7.4**		0.10	0.068	mg/L			10/14/19 14:02	1
Bicarbonate Alkalinity as CaCO3	**121**		5.0	5.0	mg/L			10/15/19 16:47	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/15/19 16:47	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/15/19 16:45	1

Client Sample ID: BW-2(138) Lab Sample ID: 460-193677-2

Date Collected: 10/11/19 11:10 Matrix: Water
Date Received: 10/11/19 21:00

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**47**		0.40	0.20	ug/L			10/17/19 08:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*105*		*72 - 133*		*10/17/19 08:13*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/16/19 03:45	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/16/19 03:45	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/16/19 03:45	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/16/19 03:45	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/16/19 03:45	1
Acetone	4.4	U	5.0	4.4	ug/L			10/16/19 03:45	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/16/19 03:45	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/16/19 03:45	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/16/19 03:45	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/16/19 03:45	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/16/19 03:45	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/16/19 03:45	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/16/19 03:45	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/16/19 03:45	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/16/19 03:45	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/16/19 03:45	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/16/19 03:45	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/16/19 03:45	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/16/19 03:45	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/16/19 03:45	1

Client Sample ID: BW-2(138) Lab Sample ID: 460-193677-2

Date Collected: 10/11/19 11:10 **Matrix: Water**
Date Received: 10/11/19 21:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/16/19 03:45	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/16/19 03:45	1
Benzene	0.20	U	1.0	0.20	ug/L			10/16/19 03:45	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/16/19 03:45	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/16/19 03:45	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/16/19 03:45	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/16/19 03:45	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/16/19 03:45	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/16/19 03:45	1
Toluene	0.38	U	1.0	0.38	ug/L			10/16/19 03:45	1
Chlorobenzene	**3.0**		1.0	0.38	ug/L			10/16/19 03:45	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/16/19 03:45	1
Styrene	0.42	U	1.0	0.42	ug/L			10/16/19 03:45	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/16/19 03:45	1
Diethyl ether	**7.9**		1.0	0.21	ug/L			10/16/19 03:45	1
MTBE	0.47	U	1.0	0.47	ug/L			10/16/19 03:45	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/16/19 03:45	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/16/19 03:45	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/16/19 03:45	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/16/19 03:45	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/16/19 03:45	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/16/19 03:45	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/16/19 03:45	1
Indane	0.35	U	1.0	0.35	ug/L			10/16/19 03:45	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/16/19 03:45	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/16/19 03:45	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/16/19 03:45*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*74 - 132*		*10/16/19 03:45*	*1*
Toluene-d8 (Surr)	*92*		*80 - 120*		*10/16/19 03:45*	*1*
4-Bromofluorobenzene	*94*		*77 - 124*		*10/16/19 03:45*	*1*
Dibromofluoromethane (Surr)	*96*		*72 - 131*		*10/16/19 03:45*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U *	0.050	0.016	ug/L		10/12/19 07:30	10/13/19 06:03	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/12/19 07:30	10/13/19 06:03	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/12/19 07:30	10/13/19 06:03	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/12/19 07:30	10/13/19 06:03	1
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/12/19 07:30	10/13/19 06:03	1
Bis(2-chloroethyl)ether	**0.12**		0.030	0.026	ug/L		10/12/19 07:30	10/13/19 06:03	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U *	10	0.29	ug/L		10/12/19 07:30	10/13/19 05:31	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/12/19 07:30	10/13/19 05:31	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/12/19 07:30	10/13/19 05:31	1

Client Sample ID: BW-2(138) Lab Sample ID: 460-193677-2

Date Collected: 10/11/19 11:10 **Matrix: Water**
Date Received: 10/11/19 21:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methylphenol	0.24	U	10	0.24	ug/L		10/12/19 07:30	10/13/19 05:31	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/12/19 07:30	10/13/19 05:31	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/12/19 07:30	10/13/19 05:31	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/12/19 07:30	10/13/19 05:31	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/12/19 07:30	10/13/19 05:31	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/12/19 07:30	10/13/19 05:31	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/12/19 07:30	10/13/19 05:31	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/12/19 07:30	10/13/19 05:31	1
4-Nitrophenol	0.69	U *	20	0.69	ug/L		10/12/19 07:30	10/13/19 05:31	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/12/19 07:30	10/13/19 05:31	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/12/19 07:30	10/13/19 05:31	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/12/19 07:30	10/13/19 05:31	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/12/19 07:30	10/13/19 05:31	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/12/19 07:30	10/13/19 05:31	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/12/19 07:30	10/13/19 05:31	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/12/19 07:30	10/13/19 05:31	1
Isophorone	0.80	U	10	0.80	ug/L		10/12/19 07:30	10/13/19 05:31	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/12/19 07:30	10/13/19 05:31	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/12/19 07:30	10/13/19 05:31	1
Naphthalene	1.1	U	10	1.1	ug/L		10/12/19 07:30	10/13/19 05:31	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/12/19 07:30	10/13/19 05:31	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/12/19 07:30	10/13/19 05:31	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/12/19 07:30	10/13/19 05:31	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/12/19 07:30	10/13/19 05:31	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/12/19 07:30	10/13/19 05:31	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/12/19 07:30	10/13/19 05:31	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/12/19 07:30	10/13/19 05:31	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/12/19 07:30	10/13/19 05:31	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/12/19 07:30	10/13/19 05:31	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/12/19 07:30	10/13/19 05:31	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/12/19 07:30	10/13/19 05:31	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/12/19 07:30	10/13/19 05:31	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/12/19 07:30	10/13/19 05:31	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/12/19 07:30	10/13/19 05:31	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/12/19 07:30	10/13/19 05:31	1
Fluorene	0.91	U	10	0.91	ug/L		10/12/19 07:30	10/13/19 05:31	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/12/19 07:30	10/13/19 05:31	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/12/19 07:30	10/13/19 05:31	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/12/19 07:30	10/13/19 05:31	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/12/19 07:30	10/13/19 05:31	1
Anthracene	0.63	U	10	0.63	ug/L		10/12/19 07:30	10/13/19 05:31	1
Carbazole	0.68	U	10	0.68	ug/L		10/12/19 07:30	10/13/19 05:31	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/12/19 07:30	10/13/19 05:31	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/12/19 07:30	10/13/19 05:31	1
Pyrene	1.6	U	10	1.6	ug/L		10/12/19 07:30	10/13/19 05:31	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/12/19 07:30	10/13/19 05:31	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/12/19 07:30	10/13/19 05:31	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/12/19 07:30	10/13/19 05:31	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/12/19 07:30	10/13/19 05:31	1

Client Sample ID: BW-2(138) Lab Sample ID: 460-193677-2

Date Collected: 10/11/19 11:10 **Matrix: Water**
Date Received: 10/11/19 21:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/12/19 07:30	10/13/19 05:31	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/12/19 07:30	10/13/19 05:31	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/12/19 07:30	10/13/19 05:31	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/12/19 07:30	10/13/19 05:31	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/12/19 07:30	10/13/19 05:31	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/12/19 07:30	10/13/19 05:31	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/12/19 07:30	10/13/19 05:31	1
Caprolactam	0.68	U	10	0.68	ug/L		10/12/19 07:30	10/13/19 05:31	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/12/19 07:30	10/13/19 05:31	1
Bisphenol-A	9.9	U *	10	9.9	ug/L		10/12/19 07:30	10/13/19 05:31	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/12/19 07:30	10/13/19 05:31	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/12/19 07:30*	*10/13/19 05:31*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*105*		*51 - 108*	*10/12/19 07:30*	*10/13/19 05:31*	*1*
Phenol-d5 (Surr)	*38*		*14 - 39*	*10/12/19 07:30*	*10/13/19 05:31*	*1*
Terphenyl-d14 (Surr)	*108*		*40 - 148*	*10/12/19 07:30*	*10/13/19 05:31*	*1*
2,4,6-Tribromophenol (Surr)	*122*		*26 - 139*	*10/12/19 07:30*	*10/13/19 05:31*	*1*
2-Fluorophenol (Surr)	*53*		*25 - 58*	*10/12/19 07:30*	*10/13/19 05:31*	*1*
2-Fluorobiphenyl (Surr)	*95*		*45 - 107*	*10/12/19 07:30*	*10/13/19 05:31*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**42.2**		1.92	0.22	mg/L			10/12/19 20:06	16
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/12/19 15:18	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/12/19 15:18	1
Sulfate	**7.45**		0.60	0.35	mg/L			10/12/19 15:18	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**23800**		250	66.8	ug/L		10/16/19 09:08	10/16/19 14:46	5
Magnesium	**9700**		250	24.8	ug/L		10/16/19 09:08	10/16/19 14:46	5
Potassium	**7910**		250	73.5	ug/L		10/16/19 09:08	10/16/19 14:46	5
Calcium	**21400**		250	233	ug/L		10/16/19 09:08	10/16/19 14:46	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**21.7**	J	50.0	1.7	ug/L		10/17/19 08:59	10/17/19 14:53	1
Iron, Dissolved	**4550**		150	34.2	ug/L		10/17/19 08:59	10/17/19 14:53	1
Manganese, Dissolved	**1940**		15.0	0.99	ug/L		10/17/19 08:59	10/17/19 14:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**7.6**		0.10	0.068	mg/L			10/14/19 14:03	1
Bicarbonate Alkalinity as CaCO3	**112**		5.0	5.0	mg/L			10/15/19 16:54	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/15/19 16:54	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/15/19 16:45	1

Client Sample Results

Client: Golder Associates Inc. Job ID: 460-193458-1
Project/Site: DS&G Semi-Annual Groundwater

Client Sample ID: BW-2(3X) Lab Sample ID: 460-193677-3

Date Collected: 10/11/19 13:30 **Matrix: Water**
Date Received: 10/11/19 21:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/16/19 04:09	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/16/19 04:09	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/16/19 04:09	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/16/19 04:09	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/16/19 04:09	1
Acetone	4.4	U	5.0	4.4	ug/L			10/16/19 04:09	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/16/19 04:09	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/16/19 04:09	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/16/19 04:09	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/16/19 04:09	1
cis-1,2-Dichloroethene	**0.35**	**J**	1.0	0.22	ug/L			10/16/19 04:09	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/16/19 04:09	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/16/19 04:09	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/16/19 04:09	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/16/19 04:09	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/16/19 04:09	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/16/19 04:09	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/16/19 04:09	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/16/19 04:09	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/16/19 04:09	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/16/19 04:09	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/16/19 04:09	1
Benzene	0.20	U	1.0	0.20	ug/L			10/16/19 04:09	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/16/19 04:09	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/16/19 04:09	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/16/19 04:09	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/16/19 04:09	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/16/19 04:09	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/16/19 04:09	1
Toluene	0.38	U	1.0	0.38	ug/L			10/16/19 04:09	1
Chlorobenzene	**3.7**		1.0	0.38	ug/L			10/16/19 04:09	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/16/19 04:09	1
Styrene	0.42	U	1.0	0.42	ug/L			10/16/19 04:09	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/16/19 04:09	1
Diethyl ether	**9.7**		1.0	0.21	ug/L			10/16/19 04:09	1
MTBE	0.47	U	1.0	0.47	ug/L			10/16/19 04:09	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/16/19 04:09	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/16/19 04:09	1
1,4-Dioxane	**62**		50	28	ug/L			10/16/19 04:09	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/16/19 04:09	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/16/19 04:09	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/16/19 04:09	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/16/19 04:09	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/16/19 04:09	1
Indane	0.35	U	1.0	0.35	ug/L			10/16/19 04:09	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/16/19 04:09	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/16/19 04:09	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/16/19 04:09*	*1*

Client Sample Results

Client: Golder Associates Inc. Job ID: 460-193458-1
Project/Site: DS&G Semi-Annual Groundwater

Client Sample ID: BW-2(3X) Lab Sample ID: 460-193677-3

Date Collected: 10/11/19 13:30 **Matrix: Water**
Date Received: 10/11/19 21:00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*74 - 132*		*10/16/19 04:09*	*1*
Toluene-d8 (Surr)	*93*		*80 - 120*		*10/16/19 04:09*	*1*
4-Bromofluorobenzene	*95*		*77 - 124*		*10/16/19 04:09*	*1*
Dibromofluoromethane (Surr)	*97*		*72 - 131*		*10/16/19 04:09*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/12/19 10:28	10/13/19 03:37	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/12/19 10:28	10/13/19 03:37	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/12/19 10:28	10/13/19 03:37	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/12/19 10:28	10/13/19 03:37	1
Pentachlorophenol	0.15	U	0.20	0.15	ug/L		10/12/19 10:28	10/13/19 03:37	1
Bis(2-chloroethyl)ether	**0.14**		0.030	0.026	ug/L		10/12/19 10:28	10/13/19 03:37	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U *	10	0.29	ug/L		10/12/19 10:28	10/13/19 00:48	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/12/19 10:28	10/13/19 00:48	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/12/19 10:28	10/13/19 00:48	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/12/19 10:28	10/13/19 00:48	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/12/19 10:28	10/13/19 00:48	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/12/19 10:28	10/13/19 00:48	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/12/19 10:28	10/13/19 00:48	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/12/19 10:28	10/13/19 00:48	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/12/19 10:28	10/13/19 00:48	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/12/19 10:28	10/13/19 00:48	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/12/19 10:28	10/13/19 00:48	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/12/19 10:28	10/13/19 00:48	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/12/19 10:28	10/13/19 00:48	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/12/19 10:28	10/13/19 00:48	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/12/19 10:28	10/13/19 00:48	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/12/19 10:28	10/13/19 00:48	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/12/19 10:28	10/13/19 00:48	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/12/19 10:28	10/13/19 00:48	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/12/19 10:28	10/13/19 00:48	1
Isophorone	0.80	U	10	0.80	ug/L		10/12/19 10:28	10/13/19 00:48	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/12/19 10:28	10/13/19 00:48	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/12/19 10:28	10/13/19 00:48	1
Naphthalene	1.1	U	10	1.1	ug/L		10/12/19 10:28	10/13/19 00:48	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/12/19 10:28	10/13/19 00:48	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/12/19 10:28	10/13/19 00:48	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/12/19 10:28	10/13/19 00:48	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/12/19 10:28	10/13/19 00:48	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/12/19 10:28	10/13/19 00:48	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/12/19 10:28	10/13/19 00:48	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/12/19 10:28	10/13/19 00:48	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/12/19 10:28	10/13/19 00:48	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/12/19 10:28	10/13/19 00:48	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/12/19 10:28	10/13/19 00:48	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/12/19 10:28	10/13/19 00:48	1

Client Sample ID: BW-2(3X) Lab Sample ID: 460-193677-3

Date Collected: 10/11/19 13:30 **Matrix: Water**
Date Received: 10/11/19 21:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	1.1	U	10	1.1	ug/L		10/12/19 10:28	10/13/19 00:48	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/12/19 10:28	10/13/19 00:48	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/12/19 10:28	10/13/19 00:48	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/12/19 10:28	10/13/19 00:48	1
Fluorene	0.91	U	10	0.91	ug/L		10/12/19 10:28	10/13/19 00:48	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/12/19 10:28	10/13/19 00:48	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/12/19 10:28	10/13/19 00:48	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/12/19 10:28	10/13/19 00:48	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/12/19 10:28	10/13/19 00:48	1
Anthracene	0.63	U	10	0.63	ug/L		10/12/19 10:28	10/13/19 00:48	1
Carbazole	0.68	U	10	0.68	ug/L		10/12/19 10:28	10/13/19 00:48	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/12/19 10:28	10/13/19 00:48	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/12/19 10:28	10/13/19 00:48	1
Pyrene	1.6	U	10	1.6	ug/L		10/12/19 10:28	10/13/19 00:48	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/12/19 10:28	10/13/19 00:48	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/12/19 10:28	10/13/19 00:48	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/12/19 10:28	10/13/19 00:48	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/12/19 10:28	10/13/19 00:48	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/12/19 10:28	10/13/19 00:48	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/12/19 10:28	10/13/19 00:48	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/12/19 10:28	10/13/19 00:48	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/12/19 10:28	10/13/19 00:48	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/12/19 10:28	10/13/19 00:48	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/12/19 10:28	10/13/19 00:48	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/12/19 10:28	10/13/19 00:48	1
Caprolactam	0.68	U	10	0.68	ug/L		10/12/19 10:28	10/13/19 00:48	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/12/19 10:28	10/13/19 00:48	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/12/19 10:28	10/13/19 00:48	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/12/19 10:28	10/13/19 00:48	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/12/19 10:28*	*10/13/19 00:48*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*102*		*51 - 108*	*10/12/19 10:28*	*10/13/19 00:48*	*1*
Phenol-d5 (Surr)	*33*		*14 - 39*	*10/12/19 10:28*	*10/13/19 00:48*	*1*
Terphenyl-d14 (Surr)	*99*		*40 - 148*	*10/12/19 10:28*	*10/13/19 00:48*	*1*
2,4,6-Tribromophenol (Surr)	*95*		*26 - 139*	*10/12/19 10:28*	*10/13/19 00:48*	*1*
2-Fluorophenol (Surr)	*51*		*25 - 58*	*10/12/19 10:28*	*10/13/19 00:48*	*1*
2-Fluorobiphenyl (Surr)	*99*		*45 - 107*	*10/12/19 10:28*	*10/13/19 00:48*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**43.1**		1.92	0.22	mg/L			10/12/19 21:20	16
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/12/19 15:48	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/12/19 15:48	1
Sulfate	**7.37**		0.60	0.35	mg/L			10/12/19 15:48	1

Client Sample ID: BW-2(3X) Lab Sample ID: 460-193677-3

Date Collected: 10/11/19 13:30 **Matrix: Water**
Date Received: 10/11/19 21:00

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**24700**		250	66.8	ug/L		10/16/19 09:08	10/16/19 14:49	5
Magnesium	**9980**		250	24.8	ug/L		10/16/19 09:08	10/16/19 14:49	5
Potassium	**7710**		250	73.5	ug/L		10/16/19 09:08	10/16/19 14:49	5
Calcium	**19600**		250	233	ug/L		10/16/19 09:08	10/16/19 14:49	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**22.3**	J	50.0	1.7	ug/L		10/17/19 08:59	10/17/19 14:57	1
Iron, Dissolved	**5540**		150	34.2	ug/L		10/17/19 08:59	10/17/19 14:57	1
Manganese, Dissolved	**1940**		15.0	0.99	ug/L		10/17/19 08:59	10/17/19 14:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**7.8**		0.10	0.068	mg/L			10/14/19 14:56	1
Bicarbonate Alkalinity as CaCO3	**106**		5.0	5.0	mg/L			10/15/19 17:02	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/15/19 17:02	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/15/19 16:45	1

Client Sample ID: TBGW_101119 Lab Sample ID: 460-193677-4

Date Collected: 10/11/19 13:30 **Matrix: Water**
Date Received: 10/11/19 21:00

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/17/19 06:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*104*		*72 - 133*		*10/17/19 06:06*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/15/19 02:14	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/15/19 02:14	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/15/19 02:14	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/15/19 02:14	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/15/19 02:14	1
Acetone	**13**		5.0	4.4	ug/L			10/15/19 02:14	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/15/19 02:14	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/15/19 02:14	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/15/19 02:14	1
trans-1,2-Dichloroethene	0.24	U *	1.0	0.24	ug/L			10/15/19 02:14	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/15/19 02:14	1
Chloroform	0.33	U *	1.0	0.33	ug/L			10/15/19 02:14	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/15/19 02:14	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/15/19 02:14	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/15/19 02:14	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/15/19 02:14	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/15/19 02:14	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/15/19 02:14	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/15/19 02:14	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/15/19 02:14	1

Client Sample ID: TBGW_101119 Lab Sample ID: 460-193677-4

Date Collected: 10/11/19 13:30 **Matrix: Water**
Date Received: 10/11/19 21:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/15/19 02:14	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/15/19 02:14	1
Benzene	0.20	U	1.0	0.20	ug/L			10/15/19 02:14	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/15/19 02:14	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/15/19 02:14	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/15/19 02:14	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/15/19 02:14	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/15/19 02:14	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/15/19 02:14	1
Toluene	0.38	U	1.0	0.38	ug/L			10/15/19 02:14	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/15/19 02:14	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/15/19 02:14	1
Styrene	0.42	U	1.0	0.42	ug/L			10/15/19 02:14	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/15/19 02:14	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/15/19 02:14	1
MTBE	0.47	U	1.0	0.47	ug/L			10/15/19 02:14	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/15/19 02:14	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/15/19 02:14	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/15/19 02:14	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/15/19 02:14	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/15/19 02:14	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/15/19 02:14	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/15/19 02:14	1
Indane	0.35	U	1.0	0.35	ug/L			10/15/19 02:14	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/15/19 02:14	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/15/19 02:14	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/15/19 02:14*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*74 - 132*		*10/15/19 02:14*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*10/15/19 02:14*	*1*
4-Bromofluorobenzene	*91*		*77 - 124*		*10/15/19 02:14*	*1*
Dibromofluoromethane (Surr)	*94*		*72 - 131*		*10/15/19 02:14*	*1*

Client Sample ID: UPA-03D Lab Sample ID: 460-193869-1

Date Collected: 10/14/19 09:55 **Matrix: Water**
Date Received: 10/14/19 20:20

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**39**		0.40	0.20	ug/L			10/18/19 02:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*72 - 133*		*10/18/19 02:48*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/17/19 17:37	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/17/19 17:37	1

Client Sample ID: UPA-03D Lab Sample ID: 460-193869-1

Date Collected: 10/14/19 09:55 **Matrix: Water**
Date Received: 10/14/19 20:20

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/17/19 17:37	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/17/19 17:37	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/17/19 17:37	1
Acetone	4.4	U	5.0	4.4	ug/L			10/17/19 17:37	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/17/19 17:37	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/17/19 17:37	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/17/19 17:37	1
trans-1,2-Dichloroethene	0.24	U *	1.0	0.24	ug/L			10/17/19 17:37	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/17/19 17:37	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/17/19 17:37	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/17/19 17:37	1
2-Butanone (MEK)	1.9	U *	5.0	1.9	ug/L			10/17/19 17:37	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/17/19 17:37	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/17/19 17:37	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/17/19 17:37	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/17/19 17:37	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/17/19 17:37	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/17/19 17:37	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/17/19 17:37	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/17/19 17:37	1
Benzene	0.20	U	1.0	0.20	ug/L			10/17/19 17:37	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/17/19 17:37	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/17/19 17:37	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/17/19 17:37	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/17/19 17:37	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/17/19 17:37	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/17/19 17:37	1
Toluene	0.38	U	1.0	0.38	ug/L			10/17/19 17:37	1
Chlorobenzene	**2.0**		1.0	0.38	ug/L			10/17/19 17:37	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/17/19 17:37	1
Styrene	0.42	U	1.0	0.42	ug/L			10/17/19 17:37	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/17/19 17:37	1
Diethyl ether	**0.59**	**J**	1.0	0.21	ug/L			10/17/19 17:37	1
MTBE	**0.75**	**J**	1.0	0.47	ug/L			10/17/19 17:37	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/17/19 17:37	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/17/19 17:37	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/17/19 17:37	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/17/19 17:37	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/17/19 17:37	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/17/19 17:37	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/17/19 17:37	1
Indane	0.35	U	1.0	0.35	ug/L			10/17/19 17:37	1
Dichlorofluoromethane	**0.53**	**J**	1.0	0.34	ug/L			10/17/19 17:37	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/17/19 17:37	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/17/19 17:37*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*74 - 132*		*10/17/19 17:37*	*1*

Client Sample ID: UPA-03D — Lab Sample ID: 460-193869-1

Date Collected: 10/14/19 09:55 **Matrix: Water**
Date Received: 10/14/19 20:20

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*87*		*80 - 120*		*10/17/19 17:37*	*1*
4-Bromofluorobenzene	*107*		*77 - 124*		*10/17/19 17:37*	*1*
Dibromofluoromethane (Surr)	*102*		*72 - 131*		*10/17/19 17:37*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/15/19 15:20	10/16/19 09:37	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/15/19 15:20	10/16/19 09:37	1
Benzo[b]fluoranthene	0.024	U *	0.050	0.024	ug/L		10/15/19 15:20	10/16/19 09:37	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/15/19 15:20	10/16/19 09:37	1
Pentachlorophenol	0.15	U	0.20	0.15	ug/L		10/15/19 15:20	10/16/19 09:37	1
Bis(2-chloroethyl)ether	**6.6**		0.030	0.026	ug/L		10/15/19 15:20	10/16/19 09:37	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/16/19 09:03	10/17/19 01:26	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/16/19 09:03	10/17/19 01:26	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/16/19 09:03	10/17/19 01:26	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/16/19 09:03	10/17/19 01:26	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/16/19 09:03	10/17/19 01:26	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/16/19 09:03	10/17/19 01:26	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/16/19 09:03	10/17/19 01:26	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/16/19 09:03	10/17/19 01:26	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/16/19 09:03	10/17/19 01:26	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/16/19 09:03	10/17/19 01:26	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/16/19 09:03	10/17/19 01:26	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/16/19 09:03	10/17/19 01:26	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/16/19 09:03	10/17/19 01:26	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/16/19 09:03	10/17/19 01:26	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/16/19 09:03	10/17/19 01:26	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/16/19 09:03	10/17/19 01:26	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/16/19 09:03	10/17/19 01:26	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/16/19 09:03	10/17/19 01:26	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/16/19 09:03	10/17/19 01:26	1
Isophorone	0.80	U	10	0.80	ug/L		10/16/19 09:03	10/17/19 01:26	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/16/19 09:03	10/17/19 01:26	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/16/19 09:03	10/17/19 01:26	1
Naphthalene	1.1	U	10	1.1	ug/L		10/16/19 09:03	10/17/19 01:26	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/16/19 09:03	10/17/19 01:26	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/16/19 09:03	10/17/19 01:26	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/16/19 09:03	10/17/19 01:26	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/16/19 09:03	10/17/19 01:26	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/16/19 09:03	10/17/19 01:26	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/16/19 09:03	10/17/19 01:26	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/16/19 09:03	10/17/19 01:26	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/16/19 09:03	10/17/19 01:26	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/16/19 09:03	10/17/19 01:26	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/16/19 09:03	10/17/19 01:26	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/16/19 09:03	10/17/19 01:26	1

Client Sample ID: UPA-03D — Lab Sample ID: 460-193869-1

Date Collected: 10/14/19 09:55 **Matrix: Water**
Date Received: 10/14/19 20:20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	1.1	U	10	1.1	ug/L		10/16/19 09:03	10/17/19 01:26	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/16/19 09:03	10/17/19 01:26	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/16/19 09:03	10/17/19 01:26	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/16/19 09:03	10/17/19 01:26	1
Fluorene	0.91	U	10	0.91	ug/L		10/16/19 09:03	10/17/19 01:26	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/16/19 09:03	10/17/19 01:26	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/16/19 09:03	10/17/19 01:26	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/16/19 09:03	10/17/19 01:26	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/16/19 09:03	10/17/19 01:26	1
Anthracene	0.63	U	10	0.63	ug/L		10/16/19 09:03	10/17/19 01:26	1
Carbazole	0.68	U	10	0.68	ug/L		10/16/19 09:03	10/17/19 01:26	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/16/19 09:03	10/17/19 01:26	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/16/19 09:03	10/17/19 01:26	1
Pyrene	1.6	U	10	1.6	ug/L		10/16/19 09:03	10/17/19 01:26	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/16/19 09:03	10/17/19 01:26	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/16/19 09:03	10/17/19 01:26	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/16/19 09:03	10/17/19 01:26	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/16/19 09:03	10/17/19 01:26	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/16/19 09:03	10/17/19 01:26	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/16/19 09:03	10/17/19 01:26	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/16/19 09:03	10/17/19 01:26	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/16/19 09:03	10/17/19 01:26	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/16/19 09:03	10/17/19 01:26	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/16/19 09:03	10/17/19 01:26	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/16/19 09:03	10/17/19 01:26	1
Caprolactam	0.68	U	10	0.68	ug/L		10/16/19 09:03	10/17/19 01:26	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/16/19 09:03	10/17/19 01:26	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/16/19 09:03	10/17/19 01:26	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/16/19 09:03	10/17/19 01:26	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/16/19 09:03*	*10/17/19 01:26*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*101*		*51 - 108*	*10/16/19 09:03*	*10/17/19 01:26*	*1*
Phenol-d5 (Surr)	*35*		*14 - 39*	*10/16/19 09:03*	*10/17/19 01:26*	*1*
Terphenyl-d14 (Surr)	*114*		*40 - 148*	*10/16/19 09:03*	*10/17/19 01:26*	*1*
2,4,6-Tribromophenol (Surr)	*91*		*26 - 139*	*10/16/19 09:03*	*10/17/19 01:26*	*1*
2-Fluorophenol (Surr)	*52*		*25 - 58*	*10/16/19 09:03*	*10/17/19 01:26*	*1*
2-Fluorobiphenyl (Surr)	*99*		*45 - 107*	*10/16/19 09:03*	*10/17/19 01:26*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**33.7**		1.56	0.18	mg/L			10/16/19 01:25	13
Nitrate as N	**0.65**		0.10	0.056	mg/L			10/15/19 19:13	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/15/19 19:13	1
Sulfate	**11.0**		0.60	0.35	mg/L			10/15/19 19:13	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-193458-1

Client Sample ID: UPA-03D

Lab Sample ID: 460-193869-1

Date Collected: 10/14/19 09:55
Date Received: 10/14/19 20:20

Matrix: Water

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**17200**		250	66.8	ug/L		10/17/19 08:47	10/18/19 11:35	5
Magnesium	**5070**		250	24.8	ug/L		10/17/19 08:47	10/18/19 11:35	5
Potassium	**2200**		250	73.5	ug/L		10/17/19 08:47	10/18/19 11:35	5
Calcium	**12700**		250	233	ug/L		10/17/19 08:47	10/18/19 11:35	5

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	34.2	U	150	34.2	ug/L		11/05/19 05:09	11/06/19 16:27	1
Manganese	**7.1**	**J**	15.0	0.99	ug/L		11/05/19 05:09	11/06/19 16:27	1
Cobalt	**2.5**	**J**	50.0	1.7	ug/L		11/05/19 05:09	11/06/19 16:27	1

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**2.7**	**J**	50.0	1.7	ug/L		10/17/19 10:43	10/18/19 02:04	1
Iron, Dissolved	34.2	U	150	34.2	ug/L		10/17/19 10:43	10/18/19 02:04	1
Manganese, Dissolved	**7.9**	**J**	15.0	0.99	ug/L		10/17/19 10:43	10/18/19 02:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.068	U	0.10	0.068	mg/L			10/17/19 17:02	1
Bicarbonate Alkalinity as CaCO3	**24.6**		5.0	5.0	mg/L			10/17/19 11:34	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/17/19 11:34	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/17/19 18:45	1

Client Sample ID: DGC-8D

Lab Sample ID: 460-193869-2

Date Collected: 10/14/19 15:15
Date Received: 10/14/19 20:20

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**33.3**		1.56	0.18	mg/L			10/16/19 01:40	13
Nitrate as N	**0.56**		0.10	0.056	mg/L			10/15/19 19:28	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/15/19 19:28	1
Sulfate	**4.18**		0.60	0.35	mg/L			10/15/19 19:28	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**13200**		250	66.8	ug/L		10/17/19 08:47	10/18/19 11:38	5
Magnesium	**3250**		250	24.8	ug/L		10/17/19 08:47	10/18/19 11:38	5
Potassium	**2940**		250	73.5	ug/L		10/17/19 08:47	10/18/19 11:38	5
Calcium	**17200**		250	233	ug/L		10/17/19 08:47	10/18/19 11:38	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.81**		0.10	0.068	mg/L			10/17/19 17:07	1
Bicarbonate Alkalinity as CaCO3	**31.6**		5.0	5.0	mg/L			10/17/19 11:41	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/17/19 11:41	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/17/19 18:45	1

Client Sample ID: DGC-8S — Lab Sample ID: 460-193869-3

Date Collected: 10/14/19 15:20 **Matrix: Water**
Date Received: 10/14/19 20:20

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**17.4**		0.72	0.084	mg/L			10/16/19 01:55	6
Nitrate as N	**0.097**	J	0.10	0.056	mg/L			10/15/19 19:43	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/15/19 19:43	1
Sulfate	**4.29**		0.60	0.35	mg/L			10/15/19 19:43	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**8280**		250	66.8	ug/L		10/17/19 08:47	10/18/19 11:40	5
Magnesium	**73000**		250	24.8	ug/L		10/17/19 08:47	10/18/19 11:40	5
Potassium	**5520**		250	73.5	ug/L		10/17/19 08:47	10/18/19 11:40	5
Calcium	**40000**		250	233	ug/L		10/17/19 08:47	10/18/19 11:40	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.89**		0.10	0.068	mg/L			10/17/19 17:08	1
Bicarbonate Alkalinity as CaCO3	**387**		5.0	5.0	mg/L			10/17/19 11:51	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/17/19 11:51	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/17/19 18:45	1

Client Sample ID: UPA-02D — Lab Sample ID: 460-193869-4

Date Collected: 10/14/19 12:25 **Matrix: Water**
Date Received: 10/14/19 20:20

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**28**		0.40	0.20	ug/L			10/18/19 03:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*94*		*72 - 133*		*10/18/19 03:11*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/17/19 18:01	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/17/19 18:01	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/17/19 18:01	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/17/19 18:01	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/17/19 18:01	1
Acetone	4.4	U	5.0	4.4	ug/L			10/17/19 18:01	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/17/19 18:01	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/17/19 18:01	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/17/19 18:01	1
trans-1,2-Dichloroethene	0.24	U *	1.0	0.24	ug/L			10/17/19 18:01	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/17/19 18:01	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/17/19 18:01	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/17/19 18:01	1
2-Butanone (MEK)	1.9	U *	5.0	1.9	ug/L			10/17/19 18:01	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/17/19 18:01	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/17/19 18:01	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/17/19 18:01	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/17/19 18:01	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/17/19 18:01	1

Client Sample ID: UPA-02D — Lab Sample ID: 460-193869-4

Date Collected: 10/14/19 12:25 **Matrix: Water**
Date Received: 10/14/19 20:20

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/17/19 18:01	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/17/19 18:01	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/17/19 18:01	1
Benzene	0.20	U	1.0	0.20	ug/L			10/17/19 18:01	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/17/19 18:01	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/17/19 18:01	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/17/19 18:01	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/17/19 18:01	1
Tetrachloroethene	**0.26**	**J**	1.0	0.25	ug/L			10/17/19 18:01	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/17/19 18:01	1
Toluene	0.38	U	1.0	0.38	ug/L			10/17/19 18:01	1
Chlorobenzene	**5.5**		1.0	0.38	ug/L			10/17/19 18:01	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/17/19 18:01	1
Styrene	0.42	U	1.0	0.42	ug/L			10/17/19 18:01	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/17/19 18:01	1
Diethyl ether	**3.1**		1.0	0.21	ug/L			10/17/19 18:01	1
MTBE	**2.5**		1.0	0.47	ug/L			10/17/19 18:01	1
Tetrahydrofuran	**2.7**		2.0	1.0	ug/L			10/17/19 18:01	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/17/19 18:01	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/17/19 18:01	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/17/19 18:01	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/17/19 18:01	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/17/19 18:01	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/17/19 18:01	1
Indane	0.35	U	1.0	0.35	ug/L			10/17/19 18:01	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/17/19 18:01	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/17/19 18:01	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/17/19 18:01*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*74 - 132*		*10/17/19 18:01*	*1*
Toluene-d8 (Surr)	*86*		*80 - 120*		*10/17/19 18:01*	*1*
4-Bromofluorobenzene	*105*		*77 - 124*		*10/17/19 18:01*	*1*
Dibromofluoromethane (Surr)	*103*		*72 - 131*		*10/17/19 18:01*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/15/19 15:20	10/16/19 09:58	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/15/19 15:20	10/16/19 09:58	1
Benzo[b]fluoranthene	0.024	U *	0.050	0.024	ug/L		10/15/19 15:20	10/16/19 09:58	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/15/19 15:20	10/16/19 09:58	1
Pentachlorophenol	0.15	U	0.20	0.15	ug/L		10/15/19 15:20	10/16/19 09:58	1
Bis(2-chloroethyl)ether	**4.6**		0.030	0.026	ug/L		10/15/19 15:20	10/16/19 09:58	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/16/19 09:03	10/17/19 01:47	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/16/19 09:03	10/17/19 01:47	1

Client Sample ID: UPA-02D Lab Sample ID: 460-193869-4

Date Collected: 10/14/19 12:25 **Matrix: Water**
Date Received: 10/14/19 20:20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	0.26	U	10	0.26	ug/L		10/16/19 09:03	10/17/19 01:47	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/16/19 09:03	10/17/19 01:47	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/16/19 09:03	10/17/19 01:47	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/16/19 09:03	10/17/19 01:47	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/16/19 09:03	10/17/19 01:47	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/16/19 09:03	10/17/19 01:47	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/16/19 09:03	10/17/19 01:47	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/16/19 09:03	10/17/19 01:47	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/16/19 09:03	10/17/19 01:47	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/16/19 09:03	10/17/19 01:47	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/16/19 09:03	10/17/19 01:47	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/16/19 09:03	10/17/19 01:47	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/16/19 09:03	10/17/19 01:47	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/16/19 09:03	10/17/19 01:47	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/16/19 09:03	10/17/19 01:47	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/16/19 09:03	10/17/19 01:47	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/16/19 09:03	10/17/19 01:47	1
Isophorone	0.80	U	10	0.80	ug/L		10/16/19 09:03	10/17/19 01:47	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/16/19 09:03	10/17/19 01:47	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/16/19 09:03	10/17/19 01:47	1
Naphthalene	1.1	U	10	1.1	ug/L		10/16/19 09:03	10/17/19 01:47	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/16/19 09:03	10/17/19 01:47	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/16/19 09:03	10/17/19 01:47	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/16/19 09:03	10/17/19 01:47	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/16/19 09:03	10/17/19 01:47	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/16/19 09:03	10/17/19 01:47	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/16/19 09:03	10/17/19 01:47	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/16/19 09:03	10/17/19 01:47	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/16/19 09:03	10/17/19 01:47	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/16/19 09:03	10/17/19 01:47	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/16/19 09:03	10/17/19 01:47	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/16/19 09:03	10/17/19 01:47	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/16/19 09:03	10/17/19 01:47	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/16/19 09:03	10/17/19 01:47	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/16/19 09:03	10/17/19 01:47	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/16/19 09:03	10/17/19 01:47	1
Fluorene	0.91	U	10	0.91	ug/L		10/16/19 09:03	10/17/19 01:47	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/16/19 09:03	10/17/19 01:47	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/16/19 09:03	10/17/19 01:47	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/16/19 09:03	10/17/19 01:47	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/16/19 09:03	10/17/19 01:47	1
Anthracene	0.63	U	10	0.63	ug/L		10/16/19 09:03	10/17/19 01:47	1
Carbazole	0.68	U	10	0.68	ug/L		10/16/19 09:03	10/17/19 01:47	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/16/19 09:03	10/17/19 01:47	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/16/19 09:03	10/17/19 01:47	1
Pyrene	1.6	U	10	1.6	ug/L		10/16/19 09:03	10/17/19 01:47	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/16/19 09:03	10/17/19 01:47	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/16/19 09:03	10/17/19 01:47	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/16/19 09:03	10/17/19 01:47	1

Client Sample ID: UPA-02D — Lab Sample ID: 460-193869-4

Date Collected: 10/14/19 12:25 **Matrix: Water**
Date Received: 10/14/19 20:20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/16/19 09:03	10/17/19 01:47	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/16/19 09:03	10/17/19 01:47	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/16/19 09:03	10/17/19 01:47	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/16/19 09:03	10/17/19 01:47	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/16/19 09:03	10/17/19 01:47	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/16/19 09:03	10/17/19 01:47	1
Diphenyl ether	**2.4**	**J**	10	1.2	ug/L		10/16/19 09:03	10/17/19 01:47	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/16/19 09:03	10/17/19 01:47	1
Caprolactam	0.68	U	10	0.68	ug/L		10/16/19 09:03	10/17/19 01:47	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/16/19 09:03	10/17/19 01:47	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/16/19 09:03	10/17/19 01:47	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/16/19 09:03	10/17/19 01:47	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*16*	*J*	*ug/L*		*9.68*		*10/16/19 09:03*	*10/17/19 01:47*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*98*		*51 - 108*	*10/16/19 09:03*	*10/17/19 01:47*	*1*
Phenol-d5 (Surr)	*35*		*14 - 39*	*10/16/19 09:03*	*10/17/19 01:47*	*1*
Terphenyl-d14 (Surr)	*106*		*40 - 148*	*10/16/19 09:03*	*10/17/19 01:47*	*1*
2,4,6-Tribromophenol (Surr)	*94*		*26 - 139*	*10/16/19 09:03*	*10/17/19 01:47*	*1*
2-Fluorophenol (Surr)	*51*		*25 - 58*	*10/16/19 09:03*	*10/17/19 01:47*	*1*
2-Fluorobiphenyl (Surr)	*95*		*45 - 107*	*10/16/19 09:03*	*10/17/19 01:47*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**37.9**		1.68	0.20	mg/L			10/16/19 02:10	14
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/15/19 19:58	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/15/19 19:58	1
Sulfate	**22.1**		0.60	0.35	mg/L			10/15/19 19:58	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**23800**		250	66.8	ug/L		10/17/19 08:47	10/18/19 11:43	5
Magnesium	**12700**		250	24.8	ug/L		10/17/19 08:47	10/18/19 11:43	5
Potassium	**5250**		250	73.5	ug/L		10/17/19 08:47	10/18/19 11:43	5
Calcium	**24200**		250	233	ug/L		10/17/19 08:47	10/18/19 11:43	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**24.2**	**J**	50.0	1.7	ug/L		10/17/19 10:43	10/18/19 02:08	1
Iron, Dissolved	**10200**		150	34.2	ug/L		10/17/19 10:43	10/18/19 02:08	1
Manganese, Dissolved	**2010**		15.0	0.99	ug/L		10/17/19 10:43	10/18/19 02:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**1.6**		0.10	0.068	mg/L			10/17/19 17:10	1
Bicarbonate Alkalinity as CaCO3	**110**		5.0	5.0	mg/L			10/17/19 11:58	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/17/19 11:58	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/17/19 18:45	1

Client Sample ID: UPA-02S — Lab Sample ID: 460-193869-5

Date Collected: 10/14/19 12:25 **Matrix: Water**
Date Received: 10/14/19 20:20

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**50.4**		2.40	0.28	mg/L			10/16/19 02:24	20
Nitrate as N	**0.64**		0.10	0.056	mg/L			10/15/19 20:43	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/15/19 20:43	1
Sulfate	**26.7**		12.0	6.92	mg/L			10/16/19 02:24	20

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**29300**		250	66.8	ug/L		10/17/19 08:47	10/18/19 11:50	5
Magnesium	**8150**		250	24.8	ug/L		10/17/19 08:47	10/18/19 11:50	5
Potassium	**1770**		250	73.5	ug/L		10/17/19 08:47	10/18/19 11:50	5
Calcium	**13400**		250	233	ug/L		10/17/19 08:47	10/18/19 11:50	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.068	U	0.10	0.068	mg/L			10/17/19 17:11	1
Bicarbonate Alkalinity as CaCO3	**21.5**		5.0	5.0	mg/L			10/17/19 12:04	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/17/19 12:04	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/17/19 18:45	1

Client Sample ID: UPA-102-US — Lab Sample ID: 460-193869-6

Date Collected: 10/14/19 09:50 **Matrix: Water**
Date Received: 10/14/19 20:20

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/17/19 18:25	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/17/19 18:25	1
Vinyl chloride	**0.62**	**J**	1.0	0.17	ug/L			10/17/19 18:25	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/17/19 18:25	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/17/19 18:25	1
Acetone	4.4	U	5.0	4.4	ug/L			10/17/19 18:25	1
Carbon disulfide	**2.9**		1.0	0.82	ug/L			10/17/19 18:25	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/17/19 18:25	1
1,1-Dichloroethane	**0.84**	**J**	1.0	0.26	ug/L			10/17/19 18:25	1
trans-1,2-Dichloroethene	0.24	U *	1.0	0.24	ug/L			10/17/19 18:25	1
cis-1,2-Dichloroethene	**2.1**		1.0	0.22	ug/L			10/17/19 18:25	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/17/19 18:25	1
1,2-Dichloroethane	**1.6**		1.0	0.43	ug/L			10/17/19 18:25	1
2-Butanone (MEK)	1.9	U *	5.0	1.9	ug/L			10/17/19 18:25	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/17/19 18:25	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/17/19 18:25	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/17/19 18:25	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/17/19 18:25	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/17/19 18:25	1
Trichloroethene	**0.69**	**J**	1.0	0.31	ug/L			10/17/19 18:25	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/17/19 18:25	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/17/19 18:25	1
Benzene	**31**		1.0	0.20	ug/L			10/17/19 18:25	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/17/19 18:25	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/17/19 18:25	1

Client Sample ID: UPA-102-US Lab Sample ID: 460-193869-6

Date Collected: 10/14/19 09:50 **Matrix: Water**
Date Received: 10/14/19 20:20

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/17/19 18:25	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/17/19 18:25	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/17/19 18:25	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/17/19 18:25	1
Toluene	0.38	U	1.0	0.38	ug/L			10/17/19 18:25	1
Chlorobenzene	**65**		1.0	0.38	ug/L			10/17/19 18:25	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/17/19 18:25	1
Styrene	0.42	U	1.0	0.42	ug/L			10/17/19 18:25	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/17/19 18:25	1
Diethyl ether	**3.4**		1.0	0.21	ug/L			10/17/19 18:25	1
MTBE	**0.88**	**J**	1.0	0.47	ug/L			10/17/19 18:25	1
Tetrahydrofuran	**16**		2.0	1.0	ug/L			10/17/19 18:25	1
Cyclohexane	**0.52**	**J**	1.0	0.32	ug/L			10/17/19 18:25	1
1,4-Dioxane	**170**		50	28	ug/L			10/17/19 18:25	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/17/19 18:25	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/17/19 18:25	1
Isopropylbenzene	**0.39**	**J**	1.0	0.34	ug/L			10/17/19 18:25	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/17/19 18:25	1
Methylcyclohexane	**0.31**	**J**	1.0	0.26	ug/L			10/17/19 18:25	1
Indane	**2.7**		1.0	0.35	ug/L			10/17/19 18:25	1
Dichlorofluoromethane	**6.3**		1.0	0.34	ug/L			10/17/19 18:25	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/17/19 18:25	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/17/19 18:25*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*74 - 132*		*10/17/19 18:25*	*1*
Toluene-d8 (Surr)	*87*		*80 - 120*		*10/17/19 18:25*	*1*
4-Bromofluorobenzene	*105*		*77 - 124*		*10/17/19 18:25*	*1*
Dibromofluoromethane (Surr)	*102*		*72 - 131*		*10/17/19 18:25*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/15/19 15:20	10/16/19 10:19	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/15/19 15:20	10/16/19 10:19	1
Benzo[b]fluoranthene	0.024	U *	0.050	0.024	ug/L		10/15/19 15:20	10/16/19 10:19	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/15/19 15:20	10/16/19 10:19	1
Pentachlorophenol	0.15	U	0.20	0.15	ug/L		10/15/19 15:20	10/16/19 10:19	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/16/19 09:03	10/17/19 02:08	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/16/19 09:03	10/17/19 02:08	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/16/19 09:03	10/17/19 02:08	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/16/19 09:03	10/17/19 02:08	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/16/19 09:03	10/17/19 02:08	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/16/19 09:03	10/17/19 02:08	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/16/19 09:03	10/17/19 02:08	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/16/19 09:03	10/17/19 02:08	1

Client Sample ID: UPA-102-US Lab Sample ID: 460-193869-6

Date Collected: 10/14/19 09:50 **Matrix: Water**
Date Received: 10/14/19 20:20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/16/19 09:03	10/17/19 02:08	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/16/19 09:03	10/17/19 02:08	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/16/19 09:03	10/17/19 02:08	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/16/19 09:03	10/17/19 02:08	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/16/19 09:03	10/17/19 02:08	1
Bis(2-chloroethyl)ether	**21**		1.0	0.30	ug/L		10/16/19 09:03	10/17/19 02:08	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/16/19 09:03	10/17/19 02:08	1
1,4-Dichlorobenzene	**1.8**	**J**	10	1.3	ug/L		10/16/19 09:03	10/17/19 02:08	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/16/19 09:03	10/17/19 02:08	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/16/19 09:03	10/17/19 02:08	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/16/19 09:03	10/17/19 02:08	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/16/19 09:03	10/17/19 02:08	1
Isophorone	0.80	U	10	0.80	ug/L		10/16/19 09:03	10/17/19 02:08	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/16/19 09:03	10/17/19 02:08	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/16/19 09:03	10/17/19 02:08	1
Naphthalene	1.1	U	10	1.1	ug/L		10/16/19 09:03	10/17/19 02:08	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/16/19 09:03	10/17/19 02:08	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/16/19 09:03	10/17/19 02:08	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/16/19 09:03	10/17/19 02:08	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/16/19 09:03	10/17/19 02:08	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/16/19 09:03	10/17/19 02:08	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/16/19 09:03	10/17/19 02:08	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/16/19 09:03	10/17/19 02:08	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/16/19 09:03	10/17/19 02:08	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/16/19 09:03	10/17/19 02:08	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/16/19 09:03	10/17/19 02:08	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/16/19 09:03	10/17/19 02:08	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/16/19 09:03	10/17/19 02:08	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/16/19 09:03	10/17/19 02:08	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/16/19 09:03	10/17/19 02:08	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/16/19 09:03	10/17/19 02:08	1
Fluorene	0.91	U	10	0.91	ug/L		10/16/19 09:03	10/17/19 02:08	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/16/19 09:03	10/17/19 02:08	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/16/19 09:03	10/17/19 02:08	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/16/19 09:03	10/17/19 02:08	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/16/19 09:03	10/17/19 02:08	1
Anthracene	0.63	U	10	0.63	ug/L		10/16/19 09:03	10/17/19 02:08	1
Carbazole	0.68	U	10	0.68	ug/L		10/16/19 09:03	10/17/19 02:08	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/16/19 09:03	10/17/19 02:08	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/16/19 09:03	10/17/19 02:08	1
Pyrene	1.6	U	10	1.6	ug/L		10/16/19 09:03	10/17/19 02:08	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/16/19 09:03	10/17/19 02:08	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/16/19 09:03	10/17/19 02:08	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/16/19 09:03	10/17/19 02:08	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/16/19 09:03	10/17/19 02:08	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/16/19 09:03	10/17/19 02:08	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/16/19 09:03	10/17/19 02:08	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/16/19 09:03	10/17/19 02:08	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/16/19 09:03	10/17/19 02:08	1

Client Sample ID: UPA-102-US Lab Sample ID: 460-193869-6

Date Collected: 10/14/19 09:50 **Matrix: Water**
Date Received: 10/14/19 20:20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/16/19 09:03	10/17/19 02:08	1
Diphenyl ether	**1.9**	**J**	10	1.2	ug/L		10/16/19 09:03	10/17/19 02:08	1
n,n'-Dimethylaniline	**0.95**	**J**	1.0	0.91	ug/L		10/16/19 09:03	10/17/19 02:08	1
Caprolactam	0.68	U	10	0.68	ug/L		10/16/19 09:03	10/17/19 02:08	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/16/19 09:03	10/17/19 02:08	1
Bisphenol-A	**31**		10	9.9	ug/L		10/16/19 09:03	10/17/19 02:08	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/16/19 09:03	10/17/19 02:08	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane	*16*	*J N*	*ug/L*		*1.59*	*123-91-1*	*10/16/19 09:03*	*10/17/19 02:08*	*1*
Unknown	*10*	*J*	*ug/L*		*2.26*		*10/16/19 09:03*	*10/17/19 02:08*	*1*
Benzene, chloro-	*37*	*J N*	*ug/L*		*2.65*	*108-90-7*	*10/16/19 09:03*	*10/17/19 02:08*	*1*
Benzenemethanamine, N,N-dimethyl-	*31*	*J N*	*ug/L*		*4.29*	*103-83-3*	*10/16/19 09:03*	*10/17/19 02:08*	*1*
Unknown	*8.9*	*J*	*ug/L*		*5.95*		*10/16/19 09:03*	*10/17/19 02:08*	*1*
Unknown	*43*	*J*	*ug/L*		*6.80*		*10/16/19 09:03*	*10/17/19 02:08*	*1*
2(3H)-Benzothiazolone	*7.9*	*J N*	*ug/L*		*7.89*	*934-34-9*	*10/16/19 09:03*	*10/17/19 02:08*	*1*
Benzenesulfonamide, N-ethyl-4-methyl-	*7.6*	*J N*	*ug/L*		*8.05*	*80-39-7*	*10/16/19 09:03*	*10/17/19 02:08*	*1*
Cyclic octaatomic sulfur	*9.8*	*J N*	*ug/L*		*9.61*	*10544-50-0*	*10/16/19 09:03*	*10/17/19 02:08*	*1*
Unknown	*26*	*J*	*ug/L*		*9.68*		*10/16/19 09:03*	*10/17/19 02:08*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*104*		*51 - 108*	*10/16/19 09:03*	*10/17/19 02:08*	*1*
Phenol-d5 (Surr)	*36*		*14 - 39*	*10/16/19 09:03*	*10/17/19 02:08*	*1*
Terphenyl-d14 (Surr)	*114*		*40 - 148*	*10/16/19 09:03*	*10/17/19 02:08*	*1*
2,4,6-Tribromophenol (Surr)	*102*		*26 - 139*	*10/16/19 09:03*	*10/17/19 02:08*	*1*
2-Fluorophenol (Surr)	*52*		*25 - 58*	*10/16/19 09:03*	*10/17/19 02:08*	*1*
2-Fluorobiphenyl (Surr)	*101*		*45 - 107*	*10/16/19 09:03*	*10/17/19 02:08*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**45.0**		2.04	0.24	mg/L			10/16/19 02:39	17
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/15/19 20:58	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/15/19 20:58	1
Sulfate	**19.4**		0.60	0.35	mg/L			10/15/19 20:58	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**56900**		250	66.8	ug/L		10/17/19 08:47	10/18/19 11:33	5
Magnesium	**23800**		250	24.8	ug/L		10/17/19 08:47	10/18/19 11:33	5
Potassium	**3320**		250	73.5	ug/L		10/17/19 08:47	10/18/19 11:33	5
Calcium	**51200**		250	233	ug/L		10/17/19 08:47	10/18/19 11:33	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**10.8**	**J**	50.0	1.7	ug/L		10/17/19 10:43	10/18/19 02:20	1
Iron, Dissolved	**42400**		150	34.2	ug/L		10/17/19 10:43	10/18/19 02:20	1
Manganese, Dissolved	**3020**		15.0	0.99	ug/L		10/17/19 10:43	10/18/19 02:20	1

Client Sample ID: UPA-102-US — Lab Sample ID: 460-193869-6

Date Collected: 10/14/19 09:50 **Matrix: Water**
Date Received: 10/14/19 20:20

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**1.7**		0.10	0.068	mg/L			10/17/19 17:23	1
Bicarbonate Alkalinity as CaCO3	**246**		5.0	5.0	mg/L			10/17/19 12:12	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/17/19 12:12	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/17/19 18:45	1

Client Sample ID: TBGW_101419 — Lab Sample ID: 460-193869-7

Date Collected: 10/14/19 15:20 **Matrix: Water**
Date Received: 10/14/19 20:20

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/18/19 00:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*93*		*72 - 133*		*10/18/19 00:50*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/17/19 16:49	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/17/19 16:49	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/17/19 16:49	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/17/19 16:49	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/17/19 16:49	1
Acetone	**14**		5.0	4.4	ug/L			10/17/19 16:49	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/17/19 16:49	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/17/19 16:49	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/17/19 16:49	1
trans-1,2-Dichloroethene	0.24	U *	1.0	0.24	ug/L			10/17/19 16:49	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/17/19 16:49	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/17/19 16:49	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/17/19 16:49	1
2-Butanone (MEK)	1.9	U *	5.0	1.9	ug/L			10/17/19 16:49	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/17/19 16:49	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/17/19 16:49	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/17/19 16:49	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/17/19 16:49	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/17/19 16:49	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/17/19 16:49	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/17/19 16:49	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/17/19 16:49	1
Benzene	0.20	U	1.0	0.20	ug/L			10/17/19 16:49	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/17/19 16:49	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/17/19 16:49	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/17/19 16:49	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/17/19 16:49	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/17/19 16:49	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/17/19 16:49	1
Toluene	0.38	U	1.0	0.38	ug/L			10/17/19 16:49	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/17/19 16:49	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/17/19 16:49	1

Client Sample ID: TBGW_101419 Lab Sample ID: 460-193869-7

Date Collected: 10/14/19 15:20 **Matrix: Water**
Date Received: 10/14/19 20:20

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	0.42	U	1.0	0.42	ug/L			10/17/19 16:49	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/17/19 16:49	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/17/19 16:49	1
MTBE	0.47	U	1.0	0.47	ug/L			10/17/19 16:49	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/17/19 16:49	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/17/19 16:49	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/17/19 16:49	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/17/19 16:49	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/17/19 16:49	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/17/19 16:49	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/17/19 16:49	1
Indane	0.35	U	1.0	0.35	ug/L			10/17/19 16:49	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/17/19 16:49	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/17/19 16:49	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/17/19 16:49*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*74 - 132*		*10/17/19 16:49*	*1*
Toluene-d8 (Surr)	*86*		*80 - 120*		*10/17/19 16:49*	*1*
4-Bromofluorobenzene	*104*		*77 - 124*		*10/17/19 16:49*	*1*
Dibromofluoromethane (Surr)	*101*		*72 - 131*		*10/17/19 16:49*	*1*

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-194006-1

Client Sample ID: MW-18

Lab Sample ID: 460-194006-1

Date Collected: 10/15/19 10:25
Date Received: 10/15/19 20:10

Matrix: Water

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**4.4**		0.40	0.20	ug/L			10/18/19 17:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*98*		*72 - 133*		*10/18/19 17:31*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/18/19 02:45	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/18/19 02:45	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/18/19 02:45	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/18/19 02:45	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/18/19 02:45	1
Acetone	4.4	U	5.0	4.4	ug/L			10/18/19 02:45	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/18/19 02:45	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/18/19 02:45	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/18/19 02:45	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/18/19 02:45	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/18/19 02:45	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/18/19 02:45	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/18/19 02:45	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/18/19 02:45	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/18/19 02:45	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/18/19 02:45	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/18/19 02:45	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/18/19 02:45	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/18/19 02:45	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/18/19 02:45	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/18/19 02:45	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/18/19 02:45	1
Benzene	**0.24**	**J**	1.0	0.20	ug/L			10/18/19 02:45	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/18/19 02:45	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/18/19 02:45	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/18/19 02:45	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/18/19 02:45	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/18/19 02:45	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/18/19 02:45	1
Toluene	0.38	U	1.0	0.38	ug/L			10/18/19 02:45	1
Chlorobenzene	**6.9**		1.0	0.38	ug/L			10/18/19 02:45	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/18/19 02:45	1
Styrene	0.42	U	1.0	0.42	ug/L			10/18/19 02:45	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/18/19 02:45	1
Diethyl ether	**13**		1.0	0.21	ug/L			10/18/19 02:45	1
MTBE	0.47	U	1.0	0.47	ug/L			10/18/19 02:45	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/18/19 02:45	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/18/19 02:45	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/18/19 02:45	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/18/19 02:45	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/18/19 02:45	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/18/19 02:45	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/18/19 02:45	1

Client Sample ID: MW-18 Lab Sample ID: 460-194006-1

Date Collected: 10/15/19 10:25 **Matrix: Water**
Date Received: 10/15/19 20:10

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Indane	0.35	U	1.0	0.35	ug/L			10/18/19 02:45	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/18/19 02:45	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/18/19 02:45	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Chlorodifluoromethane	*2.0*	*F1*	*ug/L*		*1.42*	*75-45-6*		*10/18/19 02:45*	*1*
1,4-Dichlorobenzene	*1.4*		*ug/L*		*10.92*	*106-46-7*		*10/18/19 02:45*	*1*
Tentatively Identified Compound	*None*		*ug/L*					*10/18/19 02:45*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*74 - 132*		*10/18/19 02:45*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/18/19 02:45*	*1*
4-Bromofluorobenzene	*101*		*77 - 124*		*10/18/19 02:45*	*1*
Dibromofluoromethane (Surr)	*99*		*72 - 131*		*10/18/19 02:45*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/17/19 16:11	10/18/19 06:31	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/17/19 16:11	10/18/19 06:31	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/17/19 16:11	10/18/19 06:31	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/17/19 16:11	10/18/19 06:31	1
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/17/19 16:11	10/18/19 06:31	1
Bis(2-chloroethyl)ether	**0.19**		0.030	0.026	ug/L		10/17/19 16:11	10/18/19 06:31	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/17/19 16:11	10/18/19 03:15	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/17/19 16:11	10/18/19 03:15	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/17/19 16:11	10/18/19 03:15	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/17/19 16:11	10/18/19 03:15	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/17/19 16:11	10/18/19 03:15	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/17/19 16:11	10/18/19 03:15	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/17/19 16:11	10/18/19 03:15	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/17/19 16:11	10/18/19 03:15	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/17/19 16:11	10/18/19 03:15	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/17/19 16:11	10/18/19 03:15	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/17/19 16:11	10/18/19 03:15	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/17/19 16:11	10/18/19 03:15	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/17/19 16:11	10/18/19 03:15	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/17/19 16:11	10/18/19 03:15	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/17/19 16:11	10/18/19 03:15	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/17/19 16:11	10/18/19 03:15	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/17/19 16:11	10/18/19 03:15	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/17/19 16:11	10/18/19 03:15	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/17/19 16:11	10/18/19 03:15	1
Isophorone	0.80	U	10	0.80	ug/L		10/17/19 16:11	10/18/19 03:15	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/17/19 16:11	10/18/19 03:15	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/17/19 16:11	10/18/19 03:15	1
Naphthalene	1.1	U	10	1.1	ug/L		10/17/19 16:11	10/18/19 03:15	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/17/19 16:11	10/18/19 03:15	1

Client Sample ID: MW-18 Lab Sample ID: 460-194006-1

Date Collected: 10/15/19 10:25 **Matrix: Water**
Date Received: 10/15/19 20:10

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/17/19 16:11	10/18/19 03:15	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/17/19 16:11	10/18/19 03:15	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/17/19 16:11	10/18/19 03:15	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/17/19 16:11	10/18/19 03:15	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/17/19 16:11	10/18/19 03:15	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/17/19 16:11	10/18/19 03:15	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/17/19 16:11	10/18/19 03:15	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/17/19 16:11	10/18/19 03:15	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/17/19 16:11	10/18/19 03:15	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/17/19 16:11	10/18/19 03:15	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/17/19 16:11	10/18/19 03:15	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/17/19 16:11	10/18/19 03:15	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/17/19 16:11	10/18/19 03:15	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/17/19 16:11	10/18/19 03:15	1
Fluorene	0.91	U	10	0.91	ug/L		10/17/19 16:11	10/18/19 03:15	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/17/19 16:11	10/18/19 03:15	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/17/19 16:11	10/18/19 03:15	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/17/19 16:11	10/18/19 03:15	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/17/19 16:11	10/18/19 03:15	1
Anthracene	0.63	U	10	0.63	ug/L		10/17/19 16:11	10/18/19 03:15	1
Carbazole	0.68	U	10	0.68	ug/L		10/17/19 16:11	10/18/19 03:15	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/17/19 16:11	10/18/19 03:15	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/17/19 16:11	10/18/19 03:15	1
Pyrene	1.6	U	10	1.6	ug/L		10/17/19 16:11	10/18/19 03:15	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/17/19 16:11	10/18/19 03:15	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/17/19 16:11	10/18/19 03:15	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/17/19 16:11	10/18/19 03:15	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/17/19 16:11	10/18/19 03:15	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/17/19 16:11	10/18/19 03:15	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/17/19 16:11	10/18/19 03:15	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/17/19 16:11	10/18/19 03:15	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/17/19 16:11	10/18/19 03:15	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/17/19 16:11	10/18/19 03:15	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/17/19 16:11	10/18/19 03:15	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/17/19 16:11	10/18/19 03:15	1
Caprolactam	0.68	U	10	0.68	ug/L		10/17/19 16:11	10/18/19 03:15	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/17/19 16:11	10/18/19 03:15	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/17/19 16:11	10/18/19 03:15	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/17/19 16:11	10/18/19 03:15	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Butane, 2-methoxy-2-methyl-	*220*	*J N*	*ug/L*		*1.73*	*994-05-8*	*10/17/19 16:11*	*10/18/19 03:15*	*1*
Ethanol, 2-butoxy-, phosphate (3:1)	*9.5*	*J N*	*ug/L*		*10.68*	*78-51-3*	*10/17/19 16:11*	*10/18/19 03:15*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*99*		*51 - 108*	*10/17/19 16:11*	*10/18/19 03:15*	*1*
Phenol-d5 (Surr)	*33*		*14 - 39*	*10/17/19 16:11*	*10/18/19 03:15*	*1*
Terphenyl-d14 (Surr)	*87*		*40 - 148*	*10/17/19 16:11*	*10/18/19 03:15*	*1*
2,4,6-Tribromophenol (Surr)	*105*		*26 - 139*	*10/17/19 16:11*	*10/18/19 03:15*	*1*
2-Fluorophenol (Surr)	*48*		*25 - 58*	*10/17/19 16:11*	*10/18/19 03:15*	*1*

Client Sample ID: MW-18 — Lab Sample ID: 460-194006-1

Date Collected: 10/15/19 10:25 **Matrix: Water**
Date Received: 10/15/19 20:10

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*86*		*45 - 107*	*10/17/19 16:11*	*10/18/19 03:15*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/17/19 01:03	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/17/19 01:03	1
Sulfate	**7.13**		0.60	0.35	mg/L			10/17/19 01:03	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**49.1**	~~F1 D~~ J-	2.28	0.27	mg/L			10/17/19 07:58	19

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**31200**		250	66.8	ug/L		10/18/19 09:46	10/21/19 10:29	5
Magnesium	**11800**		250	24.8	ug/L		10/18/19 09:46	10/21/19 10:29	5
Potassium	**15400**		250	73.5	ug/L		10/18/19 09:46	10/21/19 10:29	5
Calcium	**23500**		250	233	ug/L		10/18/19 09:46	10/21/19 10:29	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**27.0**	**J**	50.0	1.7	ug/L		10/19/19 08:58	10/20/19 06:56	1
Iron, Dissolved	**33100**		150	34.2	ug/L		10/19/19 08:58	10/20/19 06:56	1
Manganese, Dissolved	**2670**		15.0	0.99	ug/L		10/19/19 08:58	10/20/19 06:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**22.2**		0.20	0.14	mg/L			10/17/19 17:48	2
Bicarbonate Alkalinity as CaCO3	**178**		5.0	5.0	mg/L			10/17/19 14:09	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/17/19 14:09	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/17/19 18:45	1

Client Sample ID: MW-34 (80) — Lab Sample ID: 460-194006-2

Date Collected: 10/15/19 12:05 **Matrix: Water**
Date Received: 10/15/19 20:10

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**3.8**		0.40	0.20	ug/L			10/18/19 17:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*109*		*72 - 133*		*10/18/19 17:54*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/18/19 03:04	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/18/19 03:04	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/18/19 03:04	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/18/19 03:04	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/18/19 03:04	1
Acetone	4.4	U	5.0	4.4	ug/L			10/18/19 03:04	1

Client Sample ID: MW-34 (80) Lab Sample ID: 460-194006-2

Date Collected: 10/15/19 12:05 **Matrix: Water**
Date Received: 10/15/19 20:10

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/18/19 03:04	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/18/19 03:04	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/18/19 03:04	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/18/19 03:04	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/18/19 03:04	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/18/19 03:04	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/18/19 03:04	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/18/19 03:04	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/18/19 03:04	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/18/19 03:04	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/18/19 03:04	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/18/19 03:04	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/18/19 03:04	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/18/19 03:04	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/18/19 03:04	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/18/19 03:04	1
Benzene	0.20	U	1.0	0.20	ug/L			10/18/19 03:04	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/18/19 03:04	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/18/19 03:04	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/18/19 03:04	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/18/19 03:04	1
Tetrachloroethene	**0.92**	**J**	1.0	0.25	ug/L			10/18/19 03:04	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/18/19 03:04	1
Toluene	0.38	U	1.0	0.38	ug/L			10/18/19 03:04	1
Chlorobenzene	**2.0**		1.0	0.38	ug/L			10/18/19 03:04	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/18/19 03:04	1
Styrene	0.42	U	1.0	0.42	ug/L			10/18/19 03:04	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/18/19 03:04	1
Diethyl ether	**3.1**		1.0	0.21	ug/L			10/18/19 03:04	1
MTBE	0.47	U	1.0	0.47	ug/L			10/18/19 03:04	1
Tetrahydrofuran	**1.6**	**J**	2.0	1.0	ug/L			10/18/19 03:04	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/18/19 03:04	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/18/19 03:04	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/18/19 03:04	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/18/19 03:04	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/18/19 03:04	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/18/19 03:04	1
Indane	0.35	U	1.0	0.35	ug/L			10/18/19 03:04	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/18/19 03:04	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/18/19 03:04	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/18/19 03:04*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*74 - 132*		*10/18/19 03:04*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*		*10/18/19 03:04*	*1*
4-Bromofluorobenzene	*101*		*77 - 124*		*10/18/19 03:04*	*1*
Dibromofluoromethane (Surr)	*100*		*72 - 131*		*10/18/19 03:04*	*1*

Client Sample ID: MW-34 (80) Lab Sample ID: 460-194006-2

Date Collected: 10/15/19 12:05 **Matrix: Water**
Date Received: 10/15/19 20:10

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/17/19 16:11	10/18/19 06:52	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/17/19 16:11	10/18/19 06:52	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/17/19 16:11	10/18/19 06:52	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/17/19 16:11	10/18/19 06:52	1
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/17/19 16:11	10/18/19 06:52	1
Bis(2-chloroethyl)ether	**0.62**		0.030	0.026	ug/L		10/17/19 16:11	10/18/19 06:52	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/17/19 16:11	10/18/19 04:39	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/17/19 16:11	10/18/19 04:39	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/17/19 16:11	10/18/19 04:39	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/17/19 16:11	10/18/19 04:39	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/17/19 16:11	10/18/19 04:39	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/17/19 16:11	10/18/19 04:39	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/17/19 16:11	10/18/19 04:39	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/17/19 16:11	10/18/19 04:39	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/17/19 16:11	10/18/19 04:39	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/17/19 16:11	10/18/19 04:39	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/17/19 16:11	10/18/19 04:39	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/17/19 16:11	10/18/19 04:39	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/17/19 16:11	10/18/19 04:39	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/17/19 16:11	10/18/19 04:39	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/17/19 16:11	10/18/19 04:39	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/17/19 16:11	10/18/19 04:39	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/17/19 16:11	10/18/19 04:39	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/17/19 16:11	10/18/19 04:39	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/17/19 16:11	10/18/19 04:39	1
Isophorone	0.80	U	10	0.80	ug/L		10/17/19 16:11	10/18/19 04:39	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/17/19 16:11	10/18/19 04:39	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/17/19 16:11	10/18/19 04:39	1
Naphthalene	1.1	U	10	1.1	ug/L		10/17/19 16:11	10/18/19 04:39	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/17/19 16:11	10/18/19 04:39	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/17/19 16:11	10/18/19 04:39	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/17/19 16:11	10/18/19 04:39	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/17/19 16:11	10/18/19 04:39	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/17/19 16:11	10/18/19 04:39	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/17/19 16:11	10/18/19 04:39	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/17/19 16:11	10/18/19 04:39	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/17/19 16:11	10/18/19 04:39	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/17/19 16:11	10/18/19 04:39	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/17/19 16:11	10/18/19 04:39	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/17/19 16:11	10/18/19 04:39	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/17/19 16:11	10/18/19 04:39	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/17/19 16:11	10/18/19 04:39	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/17/19 16:11	10/18/19 04:39	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/17/19 16:11	10/18/19 04:39	1
Fluorene	0.91	U	10	0.91	ug/L		10/17/19 16:11	10/18/19 04:39	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/17/19 16:11	10/18/19 04:39	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/17/19 16:11	10/18/19 04:39	1

Client Sample ID: MW-34 (80) Lab Sample ID: 460-194006-2

Date Collected: 10/15/19 12:05 **Matrix: Water**
Date Received: 10/15/19 20:10

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/17/19 16:11	10/18/19 04:39	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/17/19 16:11	10/18/19 04:39	1
Anthracene	0.63	U	10	0.63	ug/L		10/17/19 16:11	10/18/19 04:39	1
Carbazole	0.68	U	10	0.68	ug/L		10/17/19 16:11	10/18/19 04:39	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/17/19 16:11	10/18/19 04:39	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/17/19 16:11	10/18/19 04:39	1
Pyrene	1.6	U	10	1.6	ug/L		10/17/19 16:11	10/18/19 04:39	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/17/19 16:11	10/18/19 04:39	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/17/19 16:11	10/18/19 04:39	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/17/19 16:11	10/18/19 04:39	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/17/19 16:11	10/18/19 04:39	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/17/19 16:11	10/18/19 04:39	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/17/19 16:11	10/18/19 04:39	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/17/19 16:11	10/18/19 04:39	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/17/19 16:11	10/18/19 04:39	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/17/19 16:11	10/18/19 04:39	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/17/19 16:11	10/18/19 04:39	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/17/19 16:11	10/18/19 04:39	1
Caprolactam	0.68	U	10	0.68	ug/L		10/17/19 16:11	10/18/19 04:39	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/17/19 16:11	10/18/19 04:39	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/17/19 16:11	10/18/19 04:39	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/17/19 16:11	10/18/19 04:39	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/17/19 16:11*	*10/18/19 04:39*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*101*		*51 - 108*	*10/17/19 16:11*	*10/18/19 04:39*	*1*
Phenol-d5 (Surr)	*31*		*14 - 39*	*10/17/19 16:11*	*10/18/19 04:39*	*1*
Terphenyl-d14 (Surr)	*94*		*40 - 148*	*10/17/19 16:11*	*10/18/19 04:39*	*1*
2,4,6-Tribromophenol (Surr)	*103*		*26 - 139*	*10/17/19 16:11*	*10/18/19 04:39*	*1*
2-Fluorophenol (Surr)	*46*		*25 - 58*	*10/17/19 16:11*	*10/18/19 04:39*	*1*
2-Fluorobiphenyl (Surr)	*84*		*45 - 107*	*10/17/19 16:11*	*10/18/19 04:39*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**0.52**		0.10	0.056	mg/L			10/17/19 02:18	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/17/19 02:18	1
Sulfate	**12.9**		0.60	0.35	mg/L			10/17/19 02:18	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**38.3**	D	1.68	0.20	mg/L			10/17/19 09:42	14

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**21100**		250	66.8	ug/L		10/18/19 09:46	10/21/19 10:48	5
Magnesium	**8310**		250	24.8	ug/L		10/18/19 09:46	10/21/19 10:48	5
Potassium	**4110**		250	73.5	ug/L		10/18/19 09:46	10/21/19 10:48	5
Calcium	**16100**		250	233	ug/L		10/18/19 09:46	10/21/19 10:48	5

Client Sample ID: MW-34 (80) Lab Sample ID: 460-194006-2

Date Collected: 10/15/19 12:05 **Matrix: Water**
Date Received: 10/15/19 20:10

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**12.9**	**J**	50.0	1.7	ug/L		10/19/19 08:58	10/20/19 07:04	1
Iron, Dissolved	**2450**		150	34.2	ug/L		10/19/19 08:58	10/20/19 07:04	1
Manganese, Dissolved	**1200**		15.0	0.99	ug/L		10/19/19 08:58	10/20/19 07:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.62**		0.10	0.068	mg/L			10/17/19 18:00	1
Bicarbonate Alkalinity as CaCO3	**54.1**		5.0	5.0	mg/L			10/17/19 12:27	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/17/19 12:27	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/17/19 18:45	1

Client Sample ID: MW-34 (110) Lab Sample ID: 460-194006-3

Date Collected: 10/15/19 15:05 **Matrix: Water**
Date Received: 10/15/19 20:10

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**4.3**		0.40	0.20	ug/L			10/18/19 18:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*94*		*72 - 133*		*10/18/19 18:17*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/18/19 03:22	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/18/19 03:22	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/18/19 03:22	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/18/19 03:22	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/18/19 03:22	1
Acetone	4.4	U	5.0	4.4	ug/L			10/18/19 03:22	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/18/19 03:22	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/18/19 03:22	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/18/19 03:22	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/18/19 03:22	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/18/19 03:22	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/18/19 03:22	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/18/19 03:22	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/18/19 03:22	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/18/19 03:22	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/18/19 03:22	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/18/19 03:22	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/18/19 03:22	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/18/19 03:22	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/18/19 03:22	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/18/19 03:22	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/18/19 03:22	1
Benzene	0.20	U	1.0	0.20	ug/L			10/18/19 03:22	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/18/19 03:22	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/18/19 03:22	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/18/19 03:22	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/18/19 03:22	1

Client Sample ID: MW-34 (110) Lab Sample ID: 460-194006-3

Date Collected: 10/15/19 15:05 **Matrix: Water**
Date Received: 10/15/19 20:10

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	**0.91**	**J**	1.0	0.25	ug/L			10/18/19 03:22	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/18/19 03:22	1
Toluene	0.38	U	1.0	0.38	ug/L			10/18/19 03:22	1
Chlorobenzene	**2.9**		1.0	0.38	ug/L			10/18/19 03:22	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/18/19 03:22	1
Styrene	0.42	U	1.0	0.42	ug/L			10/18/19 03:22	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/18/19 03:22	1
Diethyl ether	**4.6**		1.0	0.21	ug/L			10/18/19 03:22	1
MTBE	0.47	U	1.0	0.47	ug/L			10/18/19 03:22	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/18/19 03:22	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/18/19 03:22	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/18/19 03:22	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/18/19 03:22	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/18/19 03:22	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/18/19 03:22	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/18/19 03:22	1
Indane	0.35	U	1.0	0.35	ug/L			10/18/19 03:22	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/18/19 03:22	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/18/19 03:22	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/18/19 03:22*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*74 - 132*		*10/18/19 03:22*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*10/18/19 03:22*	*1*
4-Bromofluorobenzene	*100*		*77 - 124*		*10/18/19 03:22*	*1*
Dibromofluoromethane (Surr)	*100*		*72 - 131*		*10/18/19 03:22*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/17/19 16:11	10/18/19 07:14	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/17/19 16:11	10/18/19 07:14	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/17/19 16:11	10/18/19 07:14	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/17/19 16:11	10/18/19 07:14	1
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/17/19 16:11	10/18/19 07:14	1
Bis(2-chloroethyl)ether	**0.56**		0.030	0.026	ug/L		10/17/19 16:11	10/18/19 07:14	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/17/19 16:11	10/18/19 05:00	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/17/19 16:11	10/18/19 05:00	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/17/19 16:11	10/18/19 05:00	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/17/19 16:11	10/18/19 05:00	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/17/19 16:11	10/18/19 05:00	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/17/19 16:11	10/18/19 05:00	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/17/19 16:11	10/18/19 05:00	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/17/19 16:11	10/18/19 05:00	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/17/19 16:11	10/18/19 05:00	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/17/19 16:11	10/18/19 05:00	1

Client Sample ID: MW-34 (110) Lab Sample ID: 460-194006-3

Date Collected: 10/15/19 15:05 **Matrix: Water**
Date Received: 10/15/19 20:10

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dinitrophenol	14	U	20	14	ug/L		10/17/19 16:11	10/18/19 05:00	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/17/19 16:11	10/18/19 05:00	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/17/19 16:11	10/18/19 05:00	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/17/19 16:11	10/18/19 05:00	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/17/19 16:11	10/18/19 05:00	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/17/19 16:11	10/18/19 05:00	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/17/19 16:11	10/18/19 05:00	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/17/19 16:11	10/18/19 05:00	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/17/19 16:11	10/18/19 05:00	1
Isophorone	0.80	U	10	0.80	ug/L		10/17/19 16:11	10/18/19 05:00	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/17/19 16:11	10/18/19 05:00	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/17/19 16:11	10/18/19 05:00	1
Naphthalene	1.1	U	10	1.1	ug/L		10/17/19 16:11	10/18/19 05:00	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/17/19 16:11	10/18/19 05:00	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/17/19 16:11	10/18/19 05:00	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/17/19 16:11	10/18/19 05:00	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/17/19 16:11	10/18/19 05:00	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/17/19 16:11	10/18/19 05:00	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/17/19 16:11	10/18/19 05:00	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/17/19 16:11	10/18/19 05:00	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/17/19 16:11	10/18/19 05:00	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/17/19 16:11	10/18/19 05:00	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/17/19 16:11	10/18/19 05:00	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/17/19 16:11	10/18/19 05:00	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/17/19 16:11	10/18/19 05:00	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/17/19 16:11	10/18/19 05:00	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/17/19 16:11	10/18/19 05:00	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/17/19 16:11	10/18/19 05:00	1
Fluorene	0.91	U	10	0.91	ug/L		10/17/19 16:11	10/18/19 05:00	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/17/19 16:11	10/18/19 05:00	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/17/19 16:11	10/18/19 05:00	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/17/19 16:11	10/18/19 05:00	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/17/19 16:11	10/18/19 05:00	1
Anthracene	0.63	U	10	0.63	ug/L		10/17/19 16:11	10/18/19 05:00	1
Carbazole	0.68	U	10	0.68	ug/L		10/17/19 16:11	10/18/19 05:00	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/17/19 16:11	10/18/19 05:00	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/17/19 16:11	10/18/19 05:00	1
Pyrene	1.6	U	10	1.6	ug/L		10/17/19 16:11	10/18/19 05:00	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/17/19 16:11	10/18/19 05:00	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/17/19 16:11	10/18/19 05:00	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/17/19 16:11	10/18/19 05:00	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/17/19 16:11	10/18/19 05:00	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/17/19 16:11	10/18/19 05:00	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/17/19 16:11	10/18/19 05:00	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/17/19 16:11	10/18/19 05:00	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/17/19 16:11	10/18/19 05:00	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/17/19 16:11	10/18/19 05:00	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/17/19 16:11	10/18/19 05:00	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/17/19 16:11	10/18/19 05:00	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-194006-1

Client Sample ID: MW-34 (110)

Lab Sample ID: 460-194006-3

Date Collected: 10/15/19 15:05
Date Received: 10/15/19 20:10

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	0.68	U	10	0.68	ug/L		10/17/19 16:11	10/18/19 05:00	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/17/19 16:11	10/18/19 05:00	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/17/19 16:11	10/18/19 05:00	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/17/19 16:11	10/18/19 05:00	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/17/19 16:11*	*10/18/19 05:00*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*106*		*51 - 108*	*10/17/19 16:11*	*10/18/19 05:00*	*1*
Phenol-d5 (Surr)	*34*		*14 - 39*	*10/17/19 16:11*	*10/18/19 05:00*	*1*
Terphenyl-d14 (Surr)	*99*		*40 - 148*	*10/17/19 16:11*	*10/18/19 05:00*	*1*
2,4,6-Tribromophenol (Surr)	*103*		*26 - 139*	*10/17/19 16:11*	*10/18/19 05:00*	*1*
2-Fluorophenol (Surr)	*50*		*25 - 58*	*10/17/19 16:11*	*10/18/19 05:00*	*1*
2-Fluorobiphenyl (Surr)	*87*		*45 - 107*	*10/17/19 16:11*	*10/18/19 05:00*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**0.67**		0.10	0.056	mg/L			10/17/19 02:03	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/17/19 02:03	1
Sulfate	**13.7**		0.60	0.35	mg/L			10/17/19 02:03	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**37.4**	D	1.80	0.21	mg/L			10/17/19 08:57	15

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**22500**		250	66.8	ug/L		10/18/19 09:46	10/21/19 10:50	5
Magnesium	**9140**		250	24.8	ug/L		10/18/19 09:46	10/21/19 10:50	5
Potassium	**4530**		250	73.5	ug/L		10/18/19 09:46	10/21/19 10:50	5
Calcium	**17500**		250	233	ug/L		10/18/19 09:46	10/21/19 10:50	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**13.9**	J	50.0	1.7	ug/L		10/19/19 08:58	10/20/19 07:08	1
Iron, Dissolved	**6280**		150	34.2	ug/L		10/19/19 08:58	10/20/19 07:08	1
Manganese, Dissolved	**1300**		15.0	0.99	ug/L		10/19/19 08:58	10/20/19 07:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.95**		0.10	0.068	mg/L			10/17/19 16:42	1
Bicarbonate Alkalinity as CaCO3	**66.5**		5.0	5.0	mg/L			10/17/19 12:34	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/17/19 12:34	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/17/19 18:45	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-194006-1

Client Sample ID: FDGW_101519

Lab Sample ID: 460-194006-4

Date Collected: 10/15/19 00:00
Date Received: 10/15/19 20:10

Matrix: Water

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**4.4**		0.40	0.20	ug/L			10/18/19 18:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*92*		*72 - 133*		*10/18/19 18:41*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/18/19 03:41	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/18/19 03:41	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/18/19 03:41	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/18/19 03:41	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/18/19 03:41	1
Acetone	4.4	U	5.0	4.4	ug/L			10/18/19 03:41	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/18/19 03:41	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/18/19 03:41	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/18/19 03:41	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/18/19 03:41	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/18/19 03:41	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/18/19 03:41	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/18/19 03:41	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/18/19 03:41	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/18/19 03:41	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/18/19 03:41	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/18/19 03:41	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/18/19 03:41	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/18/19 03:41	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/18/19 03:41	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/18/19 03:41	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/18/19 03:41	1
Benzene	0.20	U	1.0	0.20	ug/L			10/18/19 03:41	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/18/19 03:41	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/18/19 03:41	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/18/19 03:41	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/18/19 03:41	1
Tetrachloroethene	**0.89**	**J**	1.0	0.25	ug/L			10/18/19 03:41	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/18/19 03:41	1
Toluene	0.38	U	1.0	0.38	ug/L			10/18/19 03:41	1
Chlorobenzene	**1.9**		1.0	0.38	ug/L			10/18/19 03:41	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/18/19 03:41	1
Styrene	0.42	U	1.0	0.42	ug/L			10/18/19 03:41	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/18/19 03:41	1
Diethyl ether	**3.2**		1.0	0.21	ug/L			10/18/19 03:41	1
MTBE	0.47	U	1.0	0.47	ug/L			10/18/19 03:41	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/18/19 03:41	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/18/19 03:41	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/18/19 03:41	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/18/19 03:41	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/18/19 03:41	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/18/19 03:41	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/18/19 03:41	1

Client Sample ID: FDGW_101519 Lab Sample ID: 460-194006-4

Date Collected: 10/15/19 00:00 **Matrix: Water**
Date Received: 10/15/19 20:10

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Indane	0.35	U	1.0	0.35	ug/L			10/18/19 03:41	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/18/19 03:41	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/18/19 03:41	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/18/19 03:41*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*87*		*74 - 132*		*10/18/19 03:41*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/18/19 03:41*	*1*
4-Bromofluorobenzene	*101*		*77 - 124*		*10/18/19 03:41*	*1*
Dibromofluoromethane (Surr)	*100*		*72 - 131*		*10/18/19 03:41*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/17/19 16:11	10/18/19 07:35	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/17/19 16:11	10/18/19 07:35	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/17/19 16:11	10/18/19 07:35	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/17/19 16:11	10/18/19 07:35	1
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/17/19 16:11	10/18/19 07:35	1
Bis(2-chloroethyl)ether	**0.58**		0.030	0.026	ug/L		10/17/19 16:11	10/18/19 07:35	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/17/19 16:11	10/18/19 05:21	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/17/19 16:11	10/18/19 05:21	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/17/19 16:11	10/18/19 05:21	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/17/19 16:11	10/18/19 05:21	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/17/19 16:11	10/18/19 05:21	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/17/19 16:11	10/18/19 05:21	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/17/19 16:11	10/18/19 05:21	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/17/19 16:11	10/18/19 05:21	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/17/19 16:11	10/18/19 05:21	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/17/19 16:11	10/18/19 05:21	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/17/19 16:11	10/18/19 05:21	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/17/19 16:11	10/18/19 05:21	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/17/19 16:11	10/18/19 05:21	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/17/19 16:11	10/18/19 05:21	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/17/19 16:11	10/18/19 05:21	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/17/19 16:11	10/18/19 05:21	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/17/19 16:11	10/18/19 05:21	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/17/19 16:11	10/18/19 05:21	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/17/19 16:11	10/18/19 05:21	1
Isophorone	0.80	U	10	0.80	ug/L		10/17/19 16:11	10/18/19 05:21	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/17/19 16:11	10/18/19 05:21	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/17/19 16:11	10/18/19 05:21	1
Naphthalene	1.1	U	10	1.1	ug/L		10/17/19 16:11	10/18/19 05:21	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/17/19 16:11	10/18/19 05:21	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/17/19 16:11	10/18/19 05:21	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/17/19 16:11	10/18/19 05:21	1

Client Sample ID: FDGW_101519 Lab Sample ID: 460-194006-4

Date Collected: 10/15/19 00:00 **Matrix: Water**
Date Received: 10/15/19 20:10

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/17/19 16:11	10/18/19 05:21	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/17/19 16:11	10/18/19 05:21	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/17/19 16:11	10/18/19 05:21	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/17/19 16:11	10/18/19 05:21	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/17/19 16:11	10/18/19 05:21	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/17/19 16:11	10/18/19 05:21	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/17/19 16:11	10/18/19 05:21	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/17/19 16:11	10/18/19 05:21	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/17/19 16:11	10/18/19 05:21	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/17/19 16:11	10/18/19 05:21	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/17/19 16:11	10/18/19 05:21	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/17/19 16:11	10/18/19 05:21	1
Fluorene	0.91	U	10	0.91	ug/L		10/17/19 16:11	10/18/19 05:21	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/17/19 16:11	10/18/19 05:21	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/17/19 16:11	10/18/19 05:21	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/17/19 16:11	10/18/19 05:21	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/17/19 16:11	10/18/19 05:21	1
Anthracene	0.63	U	10	0.63	ug/L		10/17/19 16:11	10/18/19 05:21	1
Carbazole	0.68	U	10	0.68	ug/L		10/17/19 16:11	10/18/19 05:21	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/17/19 16:11	10/18/19 05:21	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/17/19 16:11	10/18/19 05:21	1
Pyrene	1.6	U	10	1.6	ug/L		10/17/19 16:11	10/18/19 05:21	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/17/19 16:11	10/18/19 05:21	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/17/19 16:11	10/18/19 05:21	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/17/19 16:11	10/18/19 05:21	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/17/19 16:11	10/18/19 05:21	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/17/19 16:11	10/18/19 05:21	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/17/19 16:11	10/18/19 05:21	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/17/19 16:11	10/18/19 05:21	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/17/19 16:11	10/18/19 05:21	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/17/19 16:11	10/18/19 05:21	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/17/19 16:11	10/18/19 05:21	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/17/19 16:11	10/18/19 05:21	1
Caprolactam	0.68	U	10	0.68	ug/L		10/17/19 16:11	10/18/19 05:21	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/17/19 16:11	10/18/19 05:21	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/17/19 16:11	10/18/19 05:21	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/17/19 16:11	10/18/19 05:21	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/17/19 16:11*	*10/18/19 05:21*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*102*		*51 - 108*	*10/17/19 16:11*	*10/18/19 05:21*	*1*
Phenol-d5 (Surr)	*33*		*14 - 39*	*10/17/19 16:11*	*10/18/19 05:21*	*1*
Terphenyl-d14 (Surr)	*96*		*40 - 148*	*10/17/19 16:11*	*10/18/19 05:21*	*1*
2,4,6-Tribromophenol (Surr)	*102*		*26 - 139*	*10/17/19 16:11*	*10/18/19 05:21*	*1*
2-Fluorophenol (Surr)	*48*		*25 - 58*	*10/17/19 16:11*	*10/18/19 05:21*	*1*
2-Fluorobiphenyl (Surr)	*86*		*45 - 107*	*10/17/19 16:11*	*10/18/19 05:21*	*1*

Client Sample ID: FDGW_101519 Lab Sample ID: 460-194006-4

Date Collected: 10/15/19 00:00 **Matrix: Water**
Date Received: 10/15/19 20:10

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**0.51**		0.10	0.056	mg/L			10/17/19 00:18	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/17/19 00:18	1
Sulfate	**12.9**		0.60	0.35	mg/L			10/17/19 00:18	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**37.5**	D	1.80	0.21	mg/L			10/17/19 07:43	15

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**21000**		250	66.8	ug/L		10/18/19 09:46	10/21/19 10:53	5
Magnesium	**8180**		250	24.8	ug/L		10/18/19 09:46	10/21/19 10:53	5
Potassium	**4180**		250	73.5	ug/L		10/18/19 09:46	10/21/19 10:53	5
Calcium	**16900**		250	233	ug/L		10/18/19 09:46	10/21/19 10:53	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**13.0**	J	50.0	1.7	ug/L		10/19/19 08:58	10/20/19 07:12	1
Iron, Dissolved	**2480**		150	34.2	ug/L		10/19/19 08:58	10/20/19 07:12	1
Manganese, Dissolved	**1190**		15.0	0.99	ug/L		10/19/19 08:58	10/20/19 07:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.63**		0.10	0.068	mg/L			10/17/19 16:43	1
Bicarbonate Alkalinity as CaCO3	**54.8**		5.0	5.0	mg/L			10/17/19 12:42	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/17/19 12:42	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/17/19 18:45	1

Client Sample ID: TBGW_101519 Lab Sample ID: 460-194006-5

Date Collected: 10/15/19 00:00 **Matrix: Water**
Date Received: 10/15/19 20:10

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/18/19 17:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*94*		*72 - 133*		*10/18/19 17:08*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/18/19 02:09	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/18/19 02:09	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/18/19 02:09	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/18/19 02:09	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/18/19 02:09	1
Acetone	**15**		5.0	4.4	ug/L			10/18/19 02:09	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/18/19 02:09	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/18/19 02:09	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/18/19 02:09	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/18/19 02:09	1

Client Sample ID: TBGW_101519 Lab Sample ID: 460-194006-5

Date Collected: 10/15/19 00:00 **Matrix: Water**
Date Received: 10/15/19 20:10

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/18/19 02:09	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/18/19 02:09	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/18/19 02:09	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/18/19 02:09	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/18/19 02:09	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/18/19 02:09	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/18/19 02:09	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/18/19 02:09	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/18/19 02:09	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/18/19 02:09	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/18/19 02:09	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/18/19 02:09	1
Benzene	0.20	U	1.0	0.20	ug/L			10/18/19 02:09	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/18/19 02:09	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/18/19 02:09	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/18/19 02:09	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/18/19 02:09	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/18/19 02:09	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/18/19 02:09	1
Toluene	0.38	U	1.0	0.38	ug/L			10/18/19 02:09	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/18/19 02:09	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/18/19 02:09	1
Styrene	0.42	U	1.0	0.42	ug/L			10/18/19 02:09	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/18/19 02:09	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/18/19 02:09	1
MTBE	0.47	U	1.0	0.47	ug/L			10/18/19 02:09	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/18/19 02:09	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/18/19 02:09	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/18/19 02:09	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/18/19 02:09	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/18/19 02:09	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/18/19 02:09	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/18/19 02:09	1
Indane	0.35	U	1.0	0.35	ug/L			10/18/19 02:09	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/18/19 02:09	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/18/19 02:09	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/18/19 02:09*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*87*		*74 - 132*		*10/18/19 02:09*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/18/19 02:09*	*1*
4-Bromofluorobenzene	*101*		*77 - 124*		*10/18/19 02:09*	*1*
Dibromofluoromethane (Surr)	*99*		*72 - 131*		*10/18/19 02:09*	*1*

Client Sample Results

Client: Golder Associates Inc. Job ID: 460-194006-1
Project/Site: DS&G Semi-Annual Groundwater

Client Sample ID: MW-34(124) Lab Sample ID: 460-194064-1

Date Collected: 10/16/19 10:15 **Matrix: Water**
Date Received: 10/16/19 21:10

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**6.1**		0.40	0.20	ug/L			10/19/19 07:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*72 - 133*		*10/19/19 07:06*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/20/19 00:46	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/20/19 00:46	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/20/19 00:46	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/20/19 00:46	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/20/19 00:46	1
Acetone	4.4	U	5.0	4.4	ug/L			10/20/19 00:46	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/20/19 00:46	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/20/19 00:46	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/20/19 00:46	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/20/19 00:46	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/20/19 00:46	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/20/19 00:46	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/20/19 00:46	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/20/19 00:46	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/20/19 00:46	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/20/19 00:46	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/20/19 00:46	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/20/19 00:46	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/20/19 00:46	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/20/19 00:46	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/20/19 00:46	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/20/19 00:46	1
Benzene	0.20	U	1.0	0.20	ug/L			10/20/19 00:46	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/20/19 00:46	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/20/19 00:46	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/20/19 00:46	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/20/19 00:46	1
Tetrachloroethene	**1.2**		1.0	0.25	ug/L			10/20/19 00:46	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/20/19 00:46	1
Toluene	0.38	U	1.0	0.38	ug/L			10/20/19 00:46	1
Chlorobenzene	**2.1**		1.0	0.38	ug/L			10/20/19 00:46	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/20/19 00:46	1
Styrene	0.42	U	1.0	0.42	ug/L			10/20/19 00:46	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/20/19 00:46	1
Diethyl ether	**3.8**		1.0	0.21	ug/L			10/20/19 00:46	1
MTBE	0.47	U	1.0	0.47	ug/L			10/20/19 00:46	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/20/19 00:46	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/20/19 00:46	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/20/19 00:46	1
1,3,5-Trimethylbenzene	0.33	~~U~~ * UJ	1.0	0.33	ug/L			10/20/19 00:46	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/20/19 00:46	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/20/19 00:46	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/20/19 00:46	1

Client Sample ID: MW-34(124) Lab Sample ID: 460-194064-1

Date Collected: 10/16/19 10:15 **Matrix: Water**
Date Received: 10/16/19 21:10

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Indane	0.35	U	1.0	0.35	ug/L			10/20/19 00:46	1
Dichlorofluoromethane	0.34	U *	1.0	0.34	ug/L			10/20/19 00:46	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/20/19 00:46	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/20/19 00:46*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*74 - 132*		*10/20/19 00:46*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*10/20/19 00:46*	*1*
4-Bromofluorobenzene	*99*		*77 - 124*		*10/20/19 00:46*	*1*
Dibromofluoromethane (Surr)	*112*		*72 - 131*		*10/20/19 00:46*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/18/19 09:15	10/19/19 04:45	1
Benzo[a]pyrene	0.022	U *	0.050	0.022	ug/L		10/18/19 09:15	10/19/19 04:45	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/18/19 09:15	10/19/19 04:45	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/18/19 09:15	10/19/19 04:45	1
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/18/19 09:15	10/19/19 04:45	1
Bis(2-chloroethyl)ether	**0.42**		0.030	0.026	ug/L		10/18/19 09:15	10/19/19 04:45	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/18/19 09:15	10/19/19 02:45	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/18/19 09:15	10/19/19 02:45	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/18/19 09:15	10/19/19 02:45	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/18/19 09:15	10/19/19 02:45	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/18/19 09:15	10/19/19 02:45	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/18/19 09:15	10/19/19 02:45	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/18/19 09:15	10/19/19 02:45	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/18/19 09:15	10/19/19 02:45	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/18/19 09:15	10/19/19 02:45	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/18/19 09:15	10/19/19 02:45	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/18/19 09:15	10/19/19 02:45	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/18/19 09:15	10/19/19 02:45	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/18/19 09:15	10/19/19 02:45	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/18/19 09:15	10/19/19 02:45	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/18/19 09:15	10/19/19 02:45	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/18/19 09:15	10/19/19 02:45	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/18/19 09:15	10/19/19 02:45	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/18/19 09:15	10/19/19 02:45	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/18/19 09:15	10/19/19 02:45	1
Isophorone	0.80	U	10	0.80	ug/L		10/18/19 09:15	10/19/19 02:45	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/18/19 09:15	10/19/19 02:45	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/18/19 09:15	10/19/19 02:45	1
Naphthalene	1.1	U	10	1.1	ug/L		10/18/19 09:15	10/19/19 02:45	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/18/19 09:15	10/19/19 02:45	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/18/19 09:15	10/19/19 02:45	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/18/19 09:15	10/19/19 02:45	1

Client Sample ID: MW-34(124) Lab Sample ID: 460-194064-1

Date Collected: 10/16/19 10:15 **Matrix: Water**
Date Received: 10/16/19 21:10

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/18/19 09:15	10/19/19 02:45	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/18/19 09:15	10/19/19 02:45	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/18/19 09:15	10/19/19 02:45	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/18/19 09:15	10/19/19 02:45	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/18/19 09:15	10/19/19 02:45	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/18/19 09:15	10/19/19 02:45	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/18/19 09:15	10/19/19 02:45	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/18/19 09:15	10/19/19 02:45	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/18/19 09:15	10/19/19 02:45	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/18/19 09:15	10/19/19 02:45	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/18/19 09:15	10/19/19 02:45	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/18/19 09:15	10/19/19 02:45	1
Fluorene	0.91	U	10	0.91	ug/L		10/18/19 09:15	10/19/19 02:45	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/18/19 09:15	10/19/19 02:45	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/18/19 09:15	10/19/19 02:45	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/18/19 09:15	10/19/19 02:45	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/18/19 09:15	10/19/19 02:45	1
Anthracene	0.63	U	10	0.63	ug/L		10/18/19 09:15	10/19/19 02:45	1
Carbazole	0.68	U	10	0.68	ug/L		10/18/19 09:15	10/19/19 02:45	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/18/19 09:15	10/19/19 02:45	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/18/19 09:15	10/19/19 02:45	1
Pyrene	1.6	U	10	1.6	ug/L		10/18/19 09:15	10/19/19 02:45	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/18/19 09:15	10/19/19 02:45	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/18/19 09:15	10/19/19 02:45	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/18/19 09:15	10/19/19 02:45	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/18/19 09:15	10/19/19 02:45	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/18/19 09:15	10/19/19 02:45	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/18/19 09:15	10/19/19 02:45	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/18/19 09:15	10/19/19 02:45	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/18/19 09:15	10/19/19 02:45	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/18/19 09:15	10/19/19 02:45	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/18/19 09:15	10/19/19 02:45	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/18/19 09:15	10/19/19 02:45	1
Caprolactam	0.68	U *	10	0.68	ug/L		10/18/19 09:15	10/19/19 02:45	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/18/19 09:15	10/19/19 02:45	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/18/19 09:15	10/19/19 02:45	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/18/19 09:15	10/19/19 02:45	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/18/19 09:15*	*10/19/19 02:45*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*96*		*51 - 108*	*10/18/19 09:15*	*10/19/19 02:45*	*1*
Phenol-d5 (Surr)	*33*		*14 - 39*	*10/18/19 09:15*	*10/19/19 02:45*	*1*
Terphenyl-d14 (Surr)	*109*		*40 - 148*	*10/18/19 09:15*	*10/19/19 02:45*	*1*
2,4,6-Tribromophenol (Surr)	*106*		*26 - 139*	*10/18/19 09:15*	*10/19/19 02:45*	*1*
2-Fluorophenol (Surr)	*50*		*25 - 58*	*10/18/19 09:15*	*10/19/19 02:45*	*1*
2-Fluorobiphenyl (Surr)	*96*		*45 - 107*	*10/18/19 09:15*	*10/19/19 02:45*	*1*

Client Sample ID: MW-34(124) Lab Sample ID: 460-194064-1

Date Collected: 10/16/19 10:15 **Matrix: Water**
Date Received: 10/16/19 21:10

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**38.4**		1.68	0.20	mg/L			10/18/19 11:27	14
Nitrate as N	**1.48**		0.10	0.056	mg/L			10/17/19 21:03	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/17/19 21:03	1
Sulfate	**13.0**		0.60	0.35	mg/L			10/17/19 21:03	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**21000**		250	66.8	ug/L		10/22/19 08:48	10/23/19 15:08	5
Magnesium	**8350**		250	24.8	ug/L		10/22/19 08:48	10/23/19 15:08	5
Potassium	**4150**		250	73.5	ug/L		10/22/19 08:48	10/23/19 15:08	5
Calcium	**16000**		250	233	ug/L		10/22/19 08:48	10/23/19 15:08	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**13.1**	**J**	50.0	1.7	ug/L		10/19/19 08:58	10/20/19 07:24	1
Iron, Dissolved	**8690**		150	34.2	ug/L		10/19/19 08:58	10/20/19 07:24	1
Manganese, Dissolved	**1080**		15.0	0.99	ug/L		10/19/19 08:58	10/20/19 07:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.80**		0.10	0.068	mg/L			10/18/19 12:05	1
Bicarbonate Alkalinity as CaCO3	**61.6**		5.0	5.0	mg/L			10/17/19 13:18	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/17/19 13:18	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/22/19 13:00	1

Client Sample ID: UPA-108C-US Lab Sample ID: 460-194064-2

Date Collected: 10/16/19 14:30 **Matrix: Water**
Date Received: 10/16/19 21:10

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/19/19 18:48	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/19/19 18:48	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/19/19 18:48	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/19/19 18:48	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/19/19 18:48	1
Acetone	4.4	U	5.0	4.4	ug/L			10/19/19 18:48	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/19/19 18:48	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/19/19 18:48	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/19/19 18:48	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/19/19 18:48	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/19/19 18:48	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/19/19 18:48	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/19/19 18:48	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/19/19 18:48	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/19/19 18:48	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/19/19 18:48	1
Bromodichloromethane	0.34	U *	1.0	0.34	ug/L			10/19/19 18:48	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/19/19 18:48	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/19/19 18:48	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/19/19 18:48	1

Client Sample ID: UPA-108C-US Lab Sample ID: 460-194064-2

Date Collected: 10/16/19 14:30 **Matrix: Water**
Date Received: 10/16/19 21:10

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/19/19 18:48	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/19/19 18:48	1
Benzene	**0.57**	**J**	1.0	0.20	ug/L			10/19/19 18:48	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/19/19 18:48	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/19/19 18:48	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/19/19 18:48	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/19/19 18:48	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/19/19 18:48	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/19/19 18:48	1
Toluene	0.38	U	1.0	0.38	ug/L			10/19/19 18:48	1
Chlorobenzene	**6.7**		1.0	0.38	ug/L			10/19/19 18:48	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/19/19 18:48	1
Styrene	0.42	U	1.0	0.42	ug/L			10/19/19 18:48	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/19/19 18:48	1
Diethyl ether	**48**		1.0	0.21	ug/L			10/19/19 18:48	1
MTBE	0.47	U	1.0	0.47	ug/L			10/19/19 18:48	1
Tetrahydrofuran	**1.6**	**J**	2.0	1.0	ug/L			10/19/19 18:48	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/19/19 18:48	1
1,4-Dioxane	**600**		50	28	ug/L			10/19/19 18:48	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/19/19 18:48	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/19/19 18:48	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/19/19 18:48	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/19/19 18:48	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/19/19 18:48	1
Indane	**0.62**	**J**	1.0	0.35	ug/L			10/19/19 18:48	1
Dichlorofluoromethane	0.34	U *	1.0	0.34	ug/L			10/19/19 18:48	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/19/19 18:48	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/19/19 18:48*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*112*		*74 - 132*		*10/19/19 18:48*	*1*
Toluene-d8 (Surr)	*105*		*80 - 120*		*10/19/19 18:48*	*1*
4-Bromofluorobenzene	*100*		*77 - 124*		*10/19/19 18:48*	*1*
Dibromofluoromethane (Surr)	*114*		*72 - 131*		*10/19/19 18:48*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/18/19 09:15	10/19/19 05:27	1
Benzo[a]pyrene	0.022	U *	0.050	0.022	ug/L		10/18/19 09:15	10/19/19 05:27	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/18/19 09:15	10/19/19 05:27	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/18/19 09:15	10/19/19 05:27	1
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/18/19 09:15	10/19/19 05:27	1
Bis(2-chloroethyl)ether	**0.34**		0.030	0.026	ug/L		10/18/19 09:15	10/19/19 05:27	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/18/19 09:15	10/19/19 03:06	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/18/19 09:15	10/19/19 03:06	1

Client Sample ID: UPA-108C-US Lab Sample ID: 460-194064-2

Date Collected: 10/16/19 14:30 **Matrix: Water**
Date Received: 10/16/19 21:10

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	0.26	U	10	0.26	ug/L		10/18/19 09:15	10/19/19 03:06	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/18/19 09:15	10/19/19 03:06	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/18/19 09:15	10/19/19 03:06	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/18/19 09:15	10/19/19 03:06	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/18/19 09:15	10/19/19 03:06	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/18/19 09:15	10/19/19 03:06	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/18/19 09:15	10/19/19 03:06	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/18/19 09:15	10/19/19 03:06	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/18/19 09:15	10/19/19 03:06	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/18/19 09:15	10/19/19 03:06	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/18/19 09:15	10/19/19 03:06	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/18/19 09:15	10/19/19 03:06	1
1,4-Dichlorobenzene	**1.3**	**J**	10	1.3	ug/L		10/18/19 09:15	10/19/19 03:06	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/18/19 09:15	10/19/19 03:06	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/18/19 09:15	10/19/19 03:06	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/18/19 09:15	10/19/19 03:06	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/18/19 09:15	10/19/19 03:06	1
Isophorone	0.80	U	10	0.80	ug/L		10/18/19 09:15	10/19/19 03:06	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/18/19 09:15	10/19/19 03:06	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/18/19 09:15	10/19/19 03:06	1
Naphthalene	1.1	U	10	1.1	ug/L		10/18/19 09:15	10/19/19 03:06	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/18/19 09:15	10/19/19 03:06	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/18/19 09:15	10/19/19 03:06	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/18/19 09:15	10/19/19 03:06	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/18/19 09:15	10/19/19 03:06	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/18/19 09:15	10/19/19 03:06	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/18/19 09:15	10/19/19 03:06	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/18/19 09:15	10/19/19 03:06	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/18/19 09:15	10/19/19 03:06	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/18/19 09:15	10/19/19 03:06	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/18/19 09:15	10/19/19 03:06	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/18/19 09:15	10/19/19 03:06	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/18/19 09:15	10/19/19 03:06	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/18/19 09:15	10/19/19 03:06	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/18/19 09:15	10/19/19 03:06	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/18/19 09:15	10/19/19 03:06	1
Fluorene	0.91	U	10	0.91	ug/L		10/18/19 09:15	10/19/19 03:06	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/18/19 09:15	10/19/19 03:06	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/18/19 09:15	10/19/19 03:06	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/18/19 09:15	10/19/19 03:06	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/18/19 09:15	10/19/19 03:06	1
Anthracene	0.63	U	10	0.63	ug/L		10/18/19 09:15	10/19/19 03:06	1
Carbazole	0.68	U	10	0.68	ug/L		10/18/19 09:15	10/19/19 03:06	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/18/19 09:15	10/19/19 03:06	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/18/19 09:15	10/19/19 03:06	1
Pyrene	1.6	U	10	1.6	ug/L		10/18/19 09:15	10/19/19 03:06	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/18/19 09:15	10/19/19 03:06	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/18/19 09:15	10/19/19 03:06	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/18/19 09:15	10/19/19 03:06	1

Client Sample ID: UPA-108C-US Lab Sample ID: 460-194064-2

Date Collected: 10/16/19 14:30 **Matrix: Water**
Date Received: 10/16/19 21:10

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/18/19 09:15	10/19/19 03:06	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/18/19 09:15	10/19/19 03:06	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/18/19 09:15	10/19/19 03:06	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/18/19 09:15	10/19/19 03:06	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/18/19 09:15	10/19/19 03:06	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/18/19 09:15	10/19/19 03:06	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/18/19 09:15	10/19/19 03:06	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/18/19 09:15	10/19/19 03:06	1
Caprolactam	0.68	U *	10	0.68	ug/L		10/18/19 09:15	10/19/19 03:06	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/18/19 09:15	10/19/19 03:06	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/18/19 09:15	10/19/19 03:06	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/18/19 09:15	10/19/19 03:06	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane, 2,5-dimethyl-	*10*	*~~J N~~*	*ug/L*		*2.28*	*15176-21-3*	*10/18/19 09:15*	*10/19/19 03:06*	*1*
Ethanol, 2-(2-butoxyethoxy)-	*49*	*~~J N~~*	*ug/L*		*5.26*	*112-34-5*	*10/18/19 09:15*	*10/19/19 03:06*	*1*
Unknown	*8.5*	*J*	*ug/L*		*7.61*		*10/18/19 09:15*	*10/19/19 03:06*	*1*
Unknown	*14*	*J*	*ug/L*		*8.24*		*10/18/19 09:15*	*10/19/19 03:06*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*89*		*51 - 108*	*10/18/19 09:15*	*10/19/19 03:06*	*1*
Phenol-d5 (Surr)	*30*		*14 - 39*	*10/18/19 09:15*	*10/19/19 03:06*	*1*
Terphenyl-d14 (Surr)	*97*		*40 - 148*	*10/18/19 09:15*	*10/19/19 03:06*	*1*
2,4,6-Tribromophenol (Surr)	*100*		*26 - 139*	*10/18/19 09:15*	*10/19/19 03:06*	*1*
2-Fluorophenol (Surr)	*45*		*25 - 58*	*10/18/19 09:15*	*10/19/19 03:06*	*1*
2-Fluorobiphenyl (Surr)	*90*		*45 - 107*	*10/18/19 09:15*	*10/19/19 03:06*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**44.4**		1.92	0.22	mg/L			10/18/19 13:10	16
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/18/19 01:48	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/18/19 01:48	1
Sulfate	**10.6**		0.60	0.35	mg/L			10/18/19 01:48	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**38200**		250	66.8	ug/L		10/22/19 08:48	10/23/19 15:11	5
Magnesium	**9710**		250	24.8	ug/L		10/22/19 08:48	10/23/19 15:11	5
Potassium	**14000**		250	73.5	ug/L		10/22/19 08:48	10/23/19 15:11	5
Calcium	**13600**		250	233	ug/L		10/22/19 08:48	10/23/19 15:11	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**3.2**	J	50.0	1.7	ug/L		10/19/19 08:58	10/20/19 07:28	1
Iron, Dissolved	**66900**		150	34.2	ug/L		10/19/19 08:58	10/20/19 07:28	1
Manganese, Dissolved	**238**		15.0	0.99	ug/L		10/19/19 08:58	10/20/19 07:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**9.0**		0.10	0.068	mg/L			10/18/19 11:43	1
Bicarbonate Alkalinity as CaCO3	**155**		5.0	5.0	mg/L			10/17/19 13:25	1

Client Sample ID: UPA-108C-US — Lab Sample ID: 460-194064-2

Date Collected: 10/16/19 14:30 **Matrix: Water**
Date Received: 10/16/19 21:10

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/17/19 13:25	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/22/19 13:00	1

Client Sample ID: RBGW_101619 — Lab Sample ID: 460-194064-3

Date Collected: 10/16/19 12:40 **Matrix: Water**
Date Received: 10/16/19 21:10

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/19/19 12:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*91*		*72 - 133*		*10/19/19 12:23*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/19/19 14:37	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/19/19 14:37	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/19/19 14:37	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/19/19 14:37	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/19/19 14:37	1
Acetone	**6.0**		5.0	4.4	ug/L			10/19/19 14:37	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/19/19 14:37	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/19/19 14:37	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/19/19 14:37	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/19/19 14:37	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/19/19 14:37	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/19/19 14:37	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/19/19 14:37	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/19/19 14:37	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/19/19 14:37	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/19/19 14:37	1
Bromodichloromethane	0.34	U *	1.0	0.34	ug/L			10/19/19 14:37	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/19/19 14:37	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/19/19 14:37	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/19/19 14:37	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/19/19 14:37	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/19/19 14:37	1
Benzene	0.20	U	1.0	0.20	ug/L			10/19/19 14:37	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/19/19 14:37	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/19/19 14:37	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/19/19 14:37	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/19/19 14:37	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/19/19 14:37	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/19/19 14:37	1
Toluene	0.38	U	1.0	0.38	ug/L			10/19/19 14:37	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/19/19 14:37	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/19/19 14:37	1
Styrene	0.42	U	1.0	0.42	ug/L			10/19/19 14:37	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/19/19 14:37	1

Client Sample ID: RBGW_101619 Lab Sample ID: 460-194064-3

Date Collected: 10/16/19 12:40 **Matrix: Water**
Date Received: 10/16/19 21:10

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/19/19 14:37	1
MTBE	0.47	U	1.0	0.47	ug/L			10/19/19 14:37	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/19/19 14:37	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/19/19 14:37	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/19/19 14:37	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/19/19 14:37	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/19/19 14:37	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/19/19 14:37	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/19/19 14:37	1
Indane	0.35	U	1.0	0.35	ug/L			10/19/19 14:37	1
Dichlorofluoromethane	0.34	U *	1.0	0.34	ug/L			10/19/19 14:37	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/19/19 14:37	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/19/19 14:37*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*118*		*74 - 132*		*10/19/19 14:37*	*1*
Toluene-d8 (Surr)	*106*		*80 - 120*		*10/19/19 14:37*	*1*
4-Bromofluorobenzene	*103*		*77 - 124*		*10/19/19 14:37*	*1*
Dibromofluoromethane (Surr)	*117*		*72 - 131*		*10/19/19 14:37*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/18/19 09:15	10/19/19 05:06	1
Benzo[a]pyrene	0.022	U *	0.050	0.022	ug/L		10/18/19 09:15	10/19/19 05:06	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/18/19 09:15	10/19/19 05:06	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/18/19 09:15	10/19/19 05:06	1
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/18/19 09:15	10/19/19 05:06	1
Bis(2-chloroethyl)ether	0.026	U	0.030	0.026	ug/L		10/18/19 09:15	10/19/19 05:06	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/18/19 09:15	10/19/19 03:27	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/18/19 09:15	10/19/19 03:27	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/18/19 09:15	10/19/19 03:27	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/18/19 09:15	10/19/19 03:27	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/18/19 09:15	10/19/19 03:27	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/18/19 09:15	10/19/19 03:27	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/18/19 09:15	10/19/19 03:27	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/18/19 09:15	10/19/19 03:27	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/18/19 09:15	10/19/19 03:27	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/18/19 09:15	10/19/19 03:27	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/18/19 09:15	10/19/19 03:27	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/18/19 09:15	10/19/19 03:27	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/18/19 09:15	10/19/19 03:27	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/18/19 09:15	10/19/19 03:27	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/18/19 09:15	10/19/19 03:27	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/18/19 09:15	10/19/19 03:27	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/18/19 09:15	10/19/19 03:27	1

Client Sample ID: RBGW_101619 Lab Sample ID: 460-194064-3

Date Collected: 10/16/19 12:40 **Matrix: Water**
Date Received: 10/16/19 21:10

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/18/19 09:15	10/19/19 03:27	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/18/19 09:15	10/19/19 03:27	1
Isophorone	0.80	U	10	0.80	ug/L		10/18/19 09:15	10/19/19 03:27	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/18/19 09:15	10/19/19 03:27	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/18/19 09:15	10/19/19 03:27	1
Naphthalene	1.1	U	10	1.1	ug/L		10/18/19 09:15	10/19/19 03:27	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/18/19 09:15	10/19/19 03:27	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/18/19 09:15	10/19/19 03:27	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/18/19 09:15	10/19/19 03:27	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/18/19 09:15	10/19/19 03:27	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/18/19 09:15	10/19/19 03:27	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/18/19 09:15	10/19/19 03:27	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/18/19 09:15	10/19/19 03:27	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/18/19 09:15	10/19/19 03:27	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/18/19 09:15	10/19/19 03:27	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/18/19 09:15	10/19/19 03:27	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/18/19 09:15	10/19/19 03:27	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/18/19 09:15	10/19/19 03:27	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/18/19 09:15	10/19/19 03:27	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/18/19 09:15	10/19/19 03:27	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/18/19 09:15	10/19/19 03:27	1
Fluorene	0.91	U	10	0.91	ug/L		10/18/19 09:15	10/19/19 03:27	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/18/19 09:15	10/19/19 03:27	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/18/19 09:15	10/19/19 03:27	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/18/19 09:15	10/19/19 03:27	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/18/19 09:15	10/19/19 03:27	1
Anthracene	0.63	U	10	0.63	ug/L		10/18/19 09:15	10/19/19 03:27	1
Carbazole	0.68	U	10	0.68	ug/L		10/18/19 09:15	10/19/19 03:27	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/18/19 09:15	10/19/19 03:27	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/18/19 09:15	10/19/19 03:27	1
Pyrene	1.6	U	10	1.6	ug/L		10/18/19 09:15	10/19/19 03:27	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/18/19 09:15	10/19/19 03:27	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/18/19 09:15	10/19/19 03:27	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/18/19 09:15	10/19/19 03:27	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/18/19 09:15	10/19/19 03:27	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/18/19 09:15	10/19/19 03:27	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/18/19 09:15	10/19/19 03:27	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/18/19 09:15	10/19/19 03:27	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/18/19 09:15	10/19/19 03:27	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/18/19 09:15	10/19/19 03:27	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/18/19 09:15	10/19/19 03:27	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/18/19 09:15	10/19/19 03:27	1
Caprolactam	0.68	U *	10	0.68	ug/L		10/18/19 09:15	10/19/19 03:27	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/18/19 09:15	10/19/19 03:27	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/18/19 09:15	10/19/19 03:27	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/18/19 09:15	10/19/19 03:27	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/18/19 09:15*	*10/19/19 03:27*	*1*

Client Sample ID: RBGW_101619 Lab Sample ID: 460-194064-3

Date Collected: 10/16/19 12:40 **Matrix: Water**
Date Received: 10/16/19 21:10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*104*		*51 - 108*	*10/18/19 09:15*	*10/19/19 03:27*	*1*
Phenol-d5 (Surr)	*35*		*14 - 39*	*10/18/19 09:15*	*10/19/19 03:27*	*1*
Terphenyl-d14 (Surr)	*119*		*40 - 148*	*10/18/19 09:15*	*10/19/19 03:27*	*1*
2,4,6-Tribromophenol (Surr)	*113*		*26 - 139*	*10/18/19 09:15*	*10/19/19 03:27*	*1*
2-Fluorophenol (Surr)	*53*		*25 - 58*	*10/18/19 09:15*	*10/19/19 03:27*	*1*
2-Fluorobiphenyl (Surr)	*103*		*45 - 107*	*10/18/19 09:15*	*10/19/19 03:27*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.014	U	0.12	0.014	mg/L			10/17/19 23:58	1
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/17/19 23:58	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/17/19 23:58	1
Sulfate	0.35	U	0.60	0.35	mg/L			10/17/19 23:58	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**82.6**	**J**	250	66.8	ug/L		10/22/19 08:48	10/23/19 15:13	5
Magnesium	24.8	U	250	24.8	ug/L		10/22/19 08:48	10/23/19 15:13	5
Potassium	73.5	U	250	73.5	ug/L		10/22/19 08:48	10/23/19 15:13	5
Calcium	233	U	250	233	ug/L		10/22/19 08:48	10/23/19 15:13	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	1.7	U	50.0	1.7	ug/L		10/19/19 08:58	10/20/19 07:32	1
Iron, Dissolved	34.2	U	150	34.2	ug/L		10/19/19 08:58	10/20/19 07:32	1
Manganese, Dissolved	0.99	U	15.0	0.99	ug/L		10/19/19 08:58	10/20/19 07:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.068	U	0.10	0.068	mg/L			10/18/19 12:07	1
Bicarbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/17/19 13:31	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/17/19 13:31	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/22/19 13:00	1

Client Sample ID: TBGW_101619 Lab Sample ID: 460-194064-4

Date Collected: 10/16/19 14:30 **Matrix: Water**
Date Received: 10/16/19 21:10

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/19/19 03:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*72 - 133*		*10/19/19 03:18*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/19/19 15:05	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/19/19 15:05	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/19/19 15:05	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/19/19 15:05	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/19/19 15:05	1

Client Sample ID: TBGW_101619 Lab Sample ID: 460-194064-4

Date Collected: 10/16/19 14:30 **Matrix: Water**
Date Received: 10/16/19 21:10

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**19**		5.0	4.4	ug/L			10/19/19 15:05	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/19/19 15:05	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/19/19 15:05	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/19/19 15:05	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/19/19 15:05	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/19/19 15:05	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/19/19 15:05	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/19/19 15:05	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/19/19 15:05	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/19/19 15:05	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/19/19 15:05	1
Bromodichloromethane	0.34	U *	1.0	0.34	ug/L			10/19/19 15:05	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/19/19 15:05	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/19/19 15:05	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/19/19 15:05	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/19/19 15:05	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/19/19 15:05	1
Benzene	0.20	U	1.0	0.20	ug/L			10/19/19 15:05	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/19/19 15:05	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/19/19 15:05	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/19/19 15:05	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/19/19 15:05	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/19/19 15:05	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/19/19 15:05	1
Toluene	0.38	U	1.0	0.38	ug/L			10/19/19 15:05	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/19/19 15:05	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/19/19 15:05	1
Styrene	0.42	U	1.0	0.42	ug/L			10/19/19 15:05	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/19/19 15:05	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/19/19 15:05	1
MTBE	0.47	U	1.0	0.47	ug/L			10/19/19 15:05	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/19/19 15:05	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/19/19 15:05	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/19/19 15:05	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/19/19 15:05	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/19/19 15:05	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/19/19 15:05	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/19/19 15:05	1
Indane	0.35	U	1.0	0.35	ug/L			10/19/19 15:05	1
Dichlorofluoromethane	0.34	U *	1.0	0.34	ug/L			10/19/19 15:05	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/19/19 15:05	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Isopropyl Alcohol	*5.3*	*J N*	*ug/L*		*1.90*	*67-63-0*		*10/19/19 15:05*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*114*		*74 - 132*		*10/19/19 15:05*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*10/19/19 15:05*	*1*
4-Bromofluorobenzene	*97*		*77 - 124*		*10/19/19 15:05*	*1*
Dibromofluoromethane (Surr)	*112*		*72 - 131*		*10/19/19 15:05*	*1*

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-194006-1

Client Sample ID: MW-26N_128

Lab Sample ID: 460-194233-1

Date Collected: 10/17/19 11:00
Date Received: 10/17/19 21:00

Matrix: Water

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**37**		0.40	0.20	ug/L			10/19/19 15:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*94*		*72 - 133*		*10/19/19 15:20*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/22/19 19:29	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/22/19 19:29	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/22/19 19:29	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/22/19 19:29	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/22/19 19:29	1
Acetone	4.4	U	5.0	4.4	ug/L			10/22/19 19:29	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/22/19 19:29	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/22/19 19:29	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/22/19 19:29	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/22/19 19:29	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/22/19 19:29	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/22/19 19:29	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/22/19 19:29	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/22/19 19:29	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/22/19 19:29	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/22/19 19:29	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/22/19 19:29	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/22/19 19:29	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/22/19 19:29	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/22/19 19:29	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/22/19 19:29	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/22/19 19:29	1
Benzene	0.20	U	1.0	0.20	ug/L			10/22/19 19:29	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/22/19 19:29	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/22/19 19:29	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/22/19 19:29	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/22/19 19:29	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/22/19 19:29	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/22/19 19:29	1
Toluene	0.38	U	1.0	0.38	ug/L			10/22/19 19:29	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/22/19 19:29	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/22/19 19:29	1
Styrene	0.42	U	1.0	0.42	ug/L			10/22/19 19:29	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/22/19 19:29	1
Diethyl ether	**0.49**	**J**	1.0	0.21	ug/L			10/22/19 19:29	1
MTBE	0.47	U	1.0	0.47	ug/L			10/22/19 19:29	1
Tetrahydrofuran	**4.7**		2.0	1.0	ug/L			10/22/19 19:29	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/22/19 19:29	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/22/19 19:29	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/22/19 19:29	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/22/19 19:29	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/22/19 19:29	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/22/19 19:29	1

Client Sample ID: MW-26N_128 Lab Sample ID: 460-194233-1

Date Collected: 10/17/19 11:00 **Matrix: Water**
Date Received: 10/17/19 21:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Indane	0.35	U	1.0	0.35	ug/L			10/22/19 19:29	1
Dichlorofluoromethane	**1.6**		1.0	0.34	ug/L			10/22/19 19:29	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/22/19 19:29	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/22/19 19:29*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*74 - 132*		*10/22/19 19:29*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/22/19 19:29*	*1*
4-Bromofluorobenzene	*110*		*77 - 124*		*10/22/19 19:29*	*1*
Dibromofluoromethane (Surr)	*107*		*72 - 131*		*10/22/19 19:29*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.031	U	0.10	0.031	ug/L		10/19/19 08:47	10/21/19 02:00	2
Benzo[a]pyrene	0.043	U	0.10	0.043	ug/L		10/19/19 08:47	10/21/19 02:00	2
Benzo[b]fluoranthene	0.048	U	0.10	0.048	ug/L		10/19/19 08:47	10/21/19 02:00	2
Hexachlorobenzene	0.026	U	0.040	0.026	ug/L		10/19/19 08:47	10/21/19 02:00	2
Pentachlorophenol	0.31	U *	0.40	0.31	ug/L		10/19/19 08:47	10/21/19 02:00	2
Bis(2-chloroethyl)ether	**11**		0.060	0.052	ug/L		10/19/19 08:47	10/21/19 02:00	2

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/19/19 08:47	10/20/19 04:46	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/19/19 08:47	10/20/19 04:46	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/19/19 08:47	10/20/19 04:46	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/19/19 08:47	10/20/19 04:46	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/19/19 08:47	10/20/19 04:46	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/19/19 08:47	10/20/19 04:46	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/19/19 08:47	10/20/19 04:46	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/19/19 08:47	10/20/19 04:46	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/19/19 08:47	10/20/19 04:46	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/19/19 08:47	10/20/19 04:46	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/19/19 08:47	10/20/19 04:46	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/19/19 08:47	10/20/19 04:46	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/19/19 08:47	10/20/19 04:46	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/19/19 08:47	10/20/19 04:46	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/19/19 08:47	10/20/19 04:46	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/19/19 08:47	10/20/19 04:46	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/19/19 08:47	10/20/19 04:46	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/19/19 08:47	10/20/19 04:46	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/19/19 08:47	10/20/19 04:46	1
Isophorone	0.80	U	10	0.80	ug/L		10/19/19 08:47	10/20/19 04:46	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/19/19 08:47	10/20/19 04:46	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/19/19 08:47	10/20/19 04:46	1
Naphthalene	1.1	U	10	1.1	ug/L		10/19/19 08:47	10/20/19 04:46	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/19/19 08:47	10/20/19 04:46	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/19/19 08:47	10/20/19 04:46	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/19/19 08:47	10/20/19 04:46	1

Client Sample ID: MW-26N_128 Lab Sample ID: 460-194233-1

Date Collected: 10/17/19 11:00 **Matrix: Water**
Date Received: 10/17/19 21:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/19/19 08:47	10/20/19 04:46	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/19/19 08:47	10/20/19 04:46	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/19/19 08:47	10/20/19 04:46	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/19/19 08:47	10/20/19 04:46	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/19/19 08:47	10/20/19 04:46	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/19/19 08:47	10/20/19 04:46	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/19/19 08:47	10/20/19 04:46	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/19/19 08:47	10/20/19 04:46	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/19/19 08:47	10/20/19 04:46	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/19/19 08:47	10/20/19 04:46	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/19/19 08:47	10/20/19 04:46	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/19/19 08:47	10/20/19 04:46	1
Fluorene	0.91	U	10	0.91	ug/L		10/19/19 08:47	10/20/19 04:46	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/19/19 08:47	10/20/19 04:46	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/19/19 08:47	10/20/19 04:46	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/19/19 08:47	10/20/19 04:46	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/19/19 08:47	10/20/19 04:46	1
Anthracene	0.63	U	10	0.63	ug/L		10/19/19 08:47	10/20/19 04:46	1
Carbazole	0.68	U	10	0.68	ug/L		10/19/19 08:47	10/20/19 04:46	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/19/19 08:47	10/20/19 04:46	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/19/19 08:47	10/20/19 04:46	1
Pyrene	1.6	U	10	1.6	ug/L		10/19/19 08:47	10/20/19 04:46	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/19/19 08:47	10/20/19 04:46	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/19/19 08:47	10/20/19 04:46	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/19/19 08:47	10/20/19 04:46	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/19/19 08:47	10/20/19 04:46	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/19/19 08:47	10/20/19 04:46	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/19/19 08:47	10/20/19 04:46	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/19/19 08:47	10/20/19 04:46	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/19/19 08:47	10/20/19 04:46	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/19/19 08:47	10/20/19 04:46	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/19/19 08:47	10/20/19 04:46	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/19/19 08:47	10/20/19 04:46	1
Caprolactam	0.68	U *	10	0.68	ug/L		10/19/19 08:47	10/20/19 04:46	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/19/19 08:47	10/20/19 04:46	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/19/19 08:47	10/20/19 04:46	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/19/19 08:47	10/20/19 04:46	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*9.0*	*J*	*ug/L*		*6.77*		*10/19/19 08:47*	*10/20/19 04:46*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*93*		*51 - 108*	*10/19/19 08:47*	*10/20/19 04:46*	*1*
Phenol-d5 (Surr)	*31*		*14 - 39*	*10/19/19 08:47*	*10/20/19 04:46*	*1*
Terphenyl-d14 (Surr)	*107*		*40 - 148*	*10/19/19 08:47*	*10/20/19 04:46*	*1*
2,4,6-Tribromophenol (Surr)	*94*		*26 - 139*	*10/19/19 08:47*	*10/20/19 04:46*	*1*
2-Fluorophenol (Surr)	*46*		*25 - 58*	*10/19/19 08:47*	*10/20/19 04:46*	*1*
2-Fluorobiphenyl (Surr)	*89*		*45 - 107*	*10/19/19 08:47*	*10/20/19 04:46*	*1*

Client Sample ID: MW-26N_128 Lab Sample ID: 460-194233-1

Date Collected: 10/17/19 11:00 **Matrix: Water**
Date Received: 10/17/19 21:00

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**0.79**		0.10	0.056	mg/L			10/18/19 21:42	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/18/19 21:42	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**35.6**	**D**	1.68	0.20	mg/L			10/19/19 03:24	14
Sulfate	**23.6**	**D**	8.40	4.84	mg/L			10/19/19 03:24	14

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**21700**		250	66.8	ug/L		10/23/19 11:33	10/23/19 23:15	5
Magnesium	**10500**		250	24.8	ug/L		10/23/19 11:33	10/23/19 23:15	5
Potassium	**1980**		250	73.5	ug/L		10/23/19 11:33	10/23/19 23:15	5
Calcium	**19900**		250	233	ug/L		10/23/19 11:33	10/23/19 23:15	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	1.7	U	50.0	1.7	ug/L		10/23/19 09:43	10/23/19 20:00	1
Iron, Dissolved	34.2	U	150	34.2	ug/L		10/23/19 09:43	10/23/19 20:00	1
Manganese, Dissolved	**100**		15.0	0.99	ug/L		10/23/19 09:43	10/23/19 20:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.068	U	0.10	0.068	mg/L			10/22/19 11:29	1
Bicarbonate Alkalinity as CaCO3	**35.9**		5.0	5.0	mg/L			10/21/19 13:28	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/21/19 13:28	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/22/19 13:00	1

Client Sample ID: MW-26N_138 Lab Sample ID: 460-194233-2

Date Collected: 10/17/19 12:00 **Matrix: Water**
Date Received: 10/17/19 21:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/22/19 19:05	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/22/19 19:05	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/22/19 19:05	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/22/19 19:05	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/22/19 19:05	1
Acetone	4.4	U	5.0	4.4	ug/L			10/22/19 19:05	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/22/19 19:05	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/22/19 19:05	1
1,1-Dichloroethane	**0.89**	**J**	1.0	0.26	ug/L			10/22/19 19:05	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/22/19 19:05	1
cis-1,2-Dichloroethene	**0.55**	**J**	1.0	0.22	ug/L			10/22/19 19:05	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/22/19 19:05	1
1,2-Dichloroethane	**0.60**	**J**	1.0	0.43	ug/L			10/22/19 19:05	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/22/19 19:05	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/22/19 19:05	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/22/19 19:05	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/22/19 19:05	1

Client Sample ID: MW-26N_138 Lab Sample ID: 460-194233-2

Date Collected: 10/17/19 12:00 **Matrix: Water**
Date Received: 10/17/19 21:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/22/19 19:05	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/22/19 19:05	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/22/19 19:05	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/22/19 19:05	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/22/19 19:05	1
Benzene	**9.5**		1.0	0.20	ug/L			10/22/19 19:05	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/22/19 19:05	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/22/19 19:05	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/22/19 19:05	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/22/19 19:05	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/22/19 19:05	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/22/19 19:05	1
Toluene	0.38	U	1.0	0.38	ug/L			10/22/19 19:05	1
Chlorobenzene	**3.8**		1.0	0.38	ug/L			10/22/19 19:05	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/22/19 19:05	1
Styrene	0.42	U	1.0	0.42	ug/L			10/22/19 19:05	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/22/19 19:05	1
Diethyl ether	**3.2**		1.0	0.21	ug/L			10/22/19 19:05	1
MTBE	0.47	U	1.0	0.47	ug/L			10/22/19 19:05	1
Tetrahydrofuran	**12**		2.0	1.0	ug/L			10/22/19 19:05	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/22/19 19:05	1
1,4-Dioxane	**260**		50	28	ug/L			10/22/19 19:05	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/22/19 19:05	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/22/19 19:05	1
Isopropylbenzene	**2.3**		1.0	0.34	ug/L			10/22/19 19:05	1
N-Propylbenzene	**1.4**		1.0	0.32	ug/L			10/22/19 19:05	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/22/19 19:05	1
Indane	**0.67**	**J**	1.0	0.35	ug/L			10/22/19 19:05	1
Dichlorofluoromethane	**6.3**		1.0	0.34	ug/L			10/22/19 19:05	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/22/19 19:05	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/22/19 19:05*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*74 - 132*		*10/22/19 19:05*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*10/22/19 19:05*	*1*
4-Bromofluorobenzene	*109*		*77 - 124*		*10/22/19 19:05*	*1*
Dibromofluoromethane (Surr)	*107*		*72 - 131*		*10/22/19 19:05*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.16	U	0.50	0.16	ug/L		10/19/19 08:47	10/21/19 02:21	10
Benzo[a]pyrene	0.22	U	0.50	0.22	ug/L		10/19/19 08:47	10/21/19 02:21	10
Benzo[b]fluoranthene	0.24	U	0.50	0.24	ug/L		10/19/19 08:47	10/21/19 02:21	10
Hexachlorobenzene	0.13	U	0.20	0.13	ug/L		10/19/19 08:47	10/21/19 02:21	10
Pentachlorophenol	1.5	U *	2.0	1.5	ug/L		10/19/19 08:47	10/21/19 02:21	10
Bis(2-chloroethyl)ether	**55**		0.30	0.26	ug/L		10/19/19 08:47	10/21/19 02:21	10

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-194006-1

Client Sample ID: MW-26N_138

Lab Sample ID: 460-194233-2

Date Collected: 10/17/19 12:00
Date Received: 10/17/19 21:00

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/19/19 08:47	10/20/19 05:07	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/19/19 08:47	10/20/19 05:07	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/19/19 08:47	10/20/19 05:07	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/19/19 08:47	10/20/19 05:07	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/19/19 08:47	10/20/19 05:07	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/19/19 08:47	10/20/19 05:07	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/19/19 08:47	10/20/19 05:07	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/19/19 08:47	10/20/19 05:07	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/19/19 08:47	10/20/19 05:07	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/19/19 08:47	10/20/19 05:07	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/19/19 08:47	10/20/19 05:07	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/19/19 08:47	10/20/19 05:07	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/19/19 08:47	10/20/19 05:07	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/19/19 08:47	10/20/19 05:07	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/19/19 08:47	10/20/19 05:07	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/19/19 08:47	10/20/19 05:07	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/19/19 08:47	10/20/19 05:07	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/19/19 08:47	10/20/19 05:07	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/19/19 08:47	10/20/19 05:07	1
Isophorone	0.80	U	10	0.80	ug/L		10/19/19 08:47	10/20/19 05:07	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/19/19 08:47	10/20/19 05:07	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/19/19 08:47	10/20/19 05:07	1
Naphthalene	1.1	U	10	1.1	ug/L		10/19/19 08:47	10/20/19 05:07	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/19/19 08:47	10/20/19 05:07	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/19/19 08:47	10/20/19 05:07	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/19/19 08:47	10/20/19 05:07	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/19/19 08:47	10/20/19 05:07	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/19/19 08:47	10/20/19 05:07	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/19/19 08:47	10/20/19 05:07	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/19/19 08:47	10/20/19 05:07	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/19/19 08:47	10/20/19 05:07	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/19/19 08:47	10/20/19 05:07	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/19/19 08:47	10/20/19 05:07	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/19/19 08:47	10/20/19 05:07	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/19/19 08:47	10/20/19 05:07	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/19/19 08:47	10/20/19 05:07	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/19/19 08:47	10/20/19 05:07	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/19/19 08:47	10/20/19 05:07	1
Fluorene	0.91	U	10	0.91	ug/L		10/19/19 08:47	10/20/19 05:07	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/19/19 08:47	10/20/19 05:07	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/19/19 08:47	10/20/19 05:07	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/19/19 08:47	10/20/19 05:07	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/19/19 08:47	10/20/19 05:07	1
Anthracene	0.63	U	10	0.63	ug/L		10/19/19 08:47	10/20/19 05:07	1
Carbazole	0.68	U	10	0.68	ug/L		10/19/19 08:47	10/20/19 05:07	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/19/19 08:47	10/20/19 05:07	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/19/19 08:47	10/20/19 05:07	1
Pyrene	1.6	U	10	1.6	ug/L		10/19/19 08:47	10/20/19 05:07	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/19/19 08:47	10/20/19 05:07	1

Client Sample ID: MW-26N_138 Lab Sample ID: 460-194233-2

Date Collected: 10/17/19 12:00 **Matrix: Water**
Date Received: 10/17/19 21:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/19/19 08:47	10/20/19 05:07	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/19/19 08:47	10/20/19 05:07	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/19/19 08:47	10/20/19 05:07	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/19/19 08:47	10/20/19 05:07	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/19/19 08:47	10/20/19 05:07	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/19/19 08:47	10/20/19 05:07	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/19/19 08:47	10/20/19 05:07	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/19/19 08:47	10/20/19 05:07	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/19/19 08:47	10/20/19 05:07	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/19/19 08:47	10/20/19 05:07	1
Caprolactam	0.68	U *	10	0.68	ug/L		10/19/19 08:47	10/20/19 05:07	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/19/19 08:47	10/20/19 05:07	1
Bisphenol-A	**17**		10	9.9	ug/L		10/19/19 08:47	10/20/19 05:07	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/19/19 08:47	10/20/19 05:07	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
2-Isopropoxyphenol	*18*	*J N*	*ug/L*		*5.18*	*4812-20-8*	*10/19/19 08:47*	*10/20/19 05:07*	*1*
Unknown	*7.7*	*J*	*ug/L*		*5.76*		*10/19/19 08:47*	*10/20/19 05:07*	*1*
Unknown	*16*	*J*	*ug/L*		*5.93*		*10/19/19 08:47*	*10/20/19 05:07*	*1*
Unknown	*69*	*J*	*ug/L*		*6.78*		*10/19/19 08:47*	*10/20/19 05:07*	*1*
Benzylamine	*8.8*	*J N*	*ug/L*		*7.07*	*100-46-9*	*10/19/19 08:47*	*10/20/19 05:07*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*107*		*51 - 108*	*10/19/19 08:47*	*10/20/19 05:07*	*1*
Phenol-d5 (Surr)	*36*		*14 - 39*	*10/19/19 08:47*	*10/20/19 05:07*	*1*
Terphenyl-d14 (Surr)	*118*		*40 - 148*	*10/19/19 08:47*	*10/20/19 05:07*	*1*
2,4,6-Tribromophenol (Surr)	*115*		*26 - 139*	*10/19/19 08:47*	*10/20/19 05:07*	*1*
2-Fluorophenol (Surr)	*53*		*25 - 58*	*10/19/19 08:47*	*10/20/19 05:07*	*1*
2-Fluorobiphenyl (Surr)	*103*		*45 - 107*	*10/19/19 08:47*	*10/20/19 05:07*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/18/19 21:57	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/18/19 21:57	1
Sulfate	**8.47**		0.60	0.35	mg/L			10/18/19 21:57	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**48.0**	D	2.28	0.27	mg/L			10/19/19 03:39	19

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**23800**		250	66.8	ug/L		10/23/19 11:33	10/23/19 23:20	5
Magnesium	**12300**		250	24.8	ug/L		10/23/19 11:33	10/23/19 23:20	5
Potassium	**2420**		250	73.5	ug/L		10/23/19 11:33	10/23/19 23:20	5
Calcium	**22500**		250	233	ug/L		10/23/19 11:33	10/23/19 23:20	5

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	34.2	U	150	34.2	ug/L		11/05/19 05:09	11/06/19 15:27	1
Manganese	**336**		15.0	0.99	ug/L		11/05/19 05:09	11/06/19 15:27	1

Client Sample ID: MW-26N_138 Lab Sample ID: 460-194233-2

Date Collected: 10/17/19 12:00 **Matrix: Water**
Date Received: 10/17/19 21:00

Method: 6010D - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	**3.8**	**J**	50.0	1.7	ug/L		11/05/19 05:09	11/06/19 15:27	1

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**4.1**	**J**	50.0	1.7	ug/L		10/23/19 09:43	10/23/19 20:04	1
Iron, Dissolved	34.2	U	150	34.2	ug/L		10/23/19 09:43	10/23/19 20:04	1
Manganese, Dissolved	**346**		15.0	0.99	ug/L		10/23/19 09:43	10/23/19 20:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.099**	**J**	0.10	0.068	mg/L			10/22/19 11:07	1
Bicarbonate Alkalinity as CaCO3	**74.4**		5.0	5.0	mg/L			10/21/19 11:48	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/21/19 11:48	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/22/19 13:00	1

Client Sample ID: MW-26N_3X Lab Sample ID: 460-194233-3

Date Collected: 10/17/19 14:30 **Matrix: Water**
Date Received: 10/17/19 21:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/22/19 19:54	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/22/19 19:54	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/22/19 19:54	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/22/19 19:54	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/22/19 19:54	1
Acetone	4.4	U	5.0	4.4	ug/L			10/22/19 19:54	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/22/19 19:54	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/22/19 19:54	1
1,1-Dichloroethane	**0.61**	**J**	1.0	0.26	ug/L			10/22/19 19:54	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/22/19 19:54	1
cis-1,2-Dichloroethene	**0.47**	**J**	1.0	0.22	ug/L			10/22/19 19:54	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/22/19 19:54	1
1,2-Dichloroethane	**0.64**	**J**	1.0	0.43	ug/L			10/22/19 19:54	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/22/19 19:54	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/22/19 19:54	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/22/19 19:54	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/22/19 19:54	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/22/19 19:54	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/22/19 19:54	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/22/19 19:54	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/22/19 19:54	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/22/19 19:54	1
Benzene	**4.9**		1.0	0.20	ug/L			10/22/19 19:54	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/22/19 19:54	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/22/19 19:54	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/22/19 19:54	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/22/19 19:54	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/22/19 19:54	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/22/19 19:54	1

Client Sample ID: MW-26N_3X Lab Sample ID: 460-194233-3

Date Collected: 10/17/19 14:30 **Matrix: Water**
Date Received: 10/17/19 21:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	0.38	U	1.0	0.38	ug/L			10/22/19 19:54	1
Chlorobenzene	**4.2**		1.0	0.38	ug/L			10/22/19 19:54	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/22/19 19:54	1
Styrene	0.42	U	1.0	0.42	ug/L			10/22/19 19:54	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/22/19 19:54	1
Diethyl ether	**2.5**		1.0	0.21	ug/L			10/22/19 19:54	1
MTBE	**0.58**	**J**	1.0	0.47	ug/L			10/22/19 19:54	1
Tetrahydrofuran	**10**		2.0	1.0	ug/L			10/22/19 19:54	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/22/19 19:54	1
1,4-Dioxane	**130**		50	28	ug/L			10/22/19 19:54	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/22/19 19:54	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/22/19 19:54	1
Isopropylbenzene	**1.1**		1.0	0.34	ug/L			10/22/19 19:54	1
N-Propylbenzene	**0.71**	**J**	1.0	0.32	ug/L			10/22/19 19:54	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/22/19 19:54	1
Indane	**0.38**	**J**	1.0	0.35	ug/L			10/22/19 19:54	1
Dichlorofluoromethane	**4.8**		1.0	0.34	ug/L			10/22/19 19:54	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/22/19 19:54	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/22/19 19:54*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*74 - 132*		*10/22/19 19:54*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/22/19 19:54*	*1*
4-Bromofluorobenzene	*109*		*77 - 124*		*10/22/19 19:54*	*1*
Dibromofluoromethane (Surr)	*108*		*72 - 131*		*10/22/19 19:54*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.16	U	0.50	0.16	ug/L		10/19/19 08:47	10/21/19 02:42	10
Benzo[a]pyrene	0.22	U	0.50	0.22	ug/L		10/19/19 08:47	10/21/19 02:42	10
Benzo[b]fluoranthene	0.24	U	0.50	0.24	ug/L		10/19/19 08:47	10/21/19 02:42	10
Hexachlorobenzene	0.13	U	0.20	0.13	ug/L		10/19/19 08:47	10/21/19 02:42	10
Pentachlorophenol	1.5	U *	2.0	1.5	ug/L		10/19/19 08:47	10/21/19 02:42	10
Bis(2-chloroethyl)ether	**33**		0.30	0.26	ug/L		10/19/19 08:47	10/21/19 02:42	10

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/19/19 08:47	10/20/19 05:28	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/19/19 08:47	10/20/19 05:28	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/19/19 08:47	10/20/19 05:28	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/19/19 08:47	10/20/19 05:28	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/19/19 08:47	10/20/19 05:28	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/19/19 08:47	10/20/19 05:28	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/19/19 08:47	10/20/19 05:28	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/19/19 08:47	10/20/19 05:28	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/19/19 08:47	10/20/19 05:28	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/19/19 08:47	10/20/19 05:28	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/19/19 08:47	10/20/19 05:28	1

Client Sample ID: MW-26N_3X Lab Sample ID: 460-194233-3

Date Collected: 10/17/19 14:30 **Matrix: Water**
Date Received: 10/17/19 21:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/19/19 08:47	10/20/19 05:28	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/19/19 08:47	10/20/19 05:28	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/19/19 08:47	10/20/19 05:28	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/19/19 08:47	10/20/19 05:28	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/19/19 08:47	10/20/19 05:28	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/19/19 08:47	10/20/19 05:28	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/19/19 08:47	10/20/19 05:28	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/19/19 08:47	10/20/19 05:28	1
Isophorone	0.80	U	10	0.80	ug/L		10/19/19 08:47	10/20/19 05:28	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/19/19 08:47	10/20/19 05:28	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/19/19 08:47	10/20/19 05:28	1
Naphthalene	1.1	U	10	1.1	ug/L		10/19/19 08:47	10/20/19 05:28	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/19/19 08:47	10/20/19 05:28	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/19/19 08:47	10/20/19 05:28	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/19/19 08:47	10/20/19 05:28	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/19/19 08:47	10/20/19 05:28	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/19/19 08:47	10/20/19 05:28	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/19/19 08:47	10/20/19 05:28	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/19/19 08:47	10/20/19 05:28	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/19/19 08:47	10/20/19 05:28	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/19/19 08:47	10/20/19 05:28	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/19/19 08:47	10/20/19 05:28	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/19/19 08:47	10/20/19 05:28	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/19/19 08:47	10/20/19 05:28	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/19/19 08:47	10/20/19 05:28	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/19/19 08:47	10/20/19 05:28	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/19/19 08:47	10/20/19 05:28	1
Fluorene	0.91	U	10	0.91	ug/L		10/19/19 08:47	10/20/19 05:28	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/19/19 08:47	10/20/19 05:28	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/19/19 08:47	10/20/19 05:28	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/19/19 08:47	10/20/19 05:28	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/19/19 08:47	10/20/19 05:28	1
Anthracene	0.63	U	10	0.63	ug/L		10/19/19 08:47	10/20/19 05:28	1
Carbazole	0.68	U	10	0.68	ug/L		10/19/19 08:47	10/20/19 05:28	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/19/19 08:47	10/20/19 05:28	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/19/19 08:47	10/20/19 05:28	1
Pyrene	1.6	U	10	1.6	ug/L		10/19/19 08:47	10/20/19 05:28	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/19/19 08:47	10/20/19 05:28	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/19/19 08:47	10/20/19 05:28	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/19/19 08:47	10/20/19 05:28	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/19/19 08:47	10/20/19 05:28	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/19/19 08:47	10/20/19 05:28	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/19/19 08:47	10/20/19 05:28	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/19/19 08:47	10/20/19 05:28	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/19/19 08:47	10/20/19 05:28	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/19/19 08:47	10/20/19 05:28	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/19/19 08:47	10/20/19 05:28	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/19/19 08:47	10/20/19 05:28	1
Caprolactam	0.68	U *	10	0.68	ug/L		10/19/19 08:47	10/20/19 05:28	1

Client Sample ID: MW-26N_3X — Lab Sample ID: 460-194233-3

Date Collected: 10/17/19 14:30 **Matrix: Water**
Date Received: 10/17/19 21:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/19/19 08:47	10/20/19 05:28	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/19/19 08:47	10/20/19 05:28	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/19/19 08:47	10/20/19 05:28	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
2-Isopropoxyphenol	*9.0*	*J N*	*ug/L*		*5.18*	*4812-20-8*	*10/19/19 08:47*	*10/20/19 05:28*	*1*
Unknown	*11*	*J*	*ug/L*		*5.93*		*10/19/19 08:47*	*10/20/19 05:28*	*1*
Unknown	*48*	*J*	*ug/L*		*6.78*		*10/19/19 08:47*	*10/20/19 05:28*	*1*
Unknown	*8.8*	*J*	*ug/L*		*7.07*		*10/19/19 08:47*	*10/20/19 05:28*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*109*	*X*	*51 - 108*	*10/19/19 08:47*	*10/20/19 05:28*	*1*
Phenol-d5 (Surr)	*36*		*14 - 39*	*10/19/19 08:47*	*10/20/19 05:28*	*1*
Terphenyl-d14 (Surr)	*114*		*40 - 148*	*10/19/19 08:47*	*10/20/19 05:28*	*1*
2,4,6-Tribromophenol (Surr)	*118*		*26 - 139*	*10/19/19 08:47*	*10/20/19 05:28*	*1*
2-Fluorophenol (Surr)	*53*		*25 - 58*	*10/19/19 08:47*	*10/20/19 05:28*	*1*
2-Fluorobiphenyl (Surr)	*103*		*45 - 107*	*10/19/19 08:47*	*10/20/19 05:28*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**0.15**		0.10	0.056	mg/L			10/18/19 22:12	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/18/19 22:12	1
Sulfate	**16.3**		0.60	0.35	mg/L			10/18/19 22:12	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**46.4**	D	2.16	0.25	mg/L			10/19/19 03:53	18

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**11.8**	J	50.0	1.7	ug/L		10/23/19 09:43	10/23/19 20:08	1
Iron, Dissolved	34.2	U	150	34.2	ug/L		10/23/19 09:43	10/23/19 20:08	1
Manganese, Dissolved	**1540**		15.0	0.99	ug/L		10/23/19 09:43	10/23/19 20:08	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.73	U	2.0	0.73	ug/L		10/22/19 23:26	10/23/19 20:22	2
Barium	**125**		4.0	1.2	ug/L		10/22/19 23:26	10/23/19 20:22	2
Beryllium	0.25	U	0.80	0.25	ug/L		10/22/19 23:26	10/23/19 20:22	2
Cadmium	0.81	U	2.0	0.81	ug/L		10/22/19 23:26	10/23/19 20:22	2
Cobalt	**6.6**		4.0	1.6	ug/L		10/22/19 23:26	10/23/19 20:22	2
Chromium	2.3	U	4.0	2.3	ug/L		10/22/19 23:26	10/23/19 20:22	2
Copper	**4.1**		4.0	2.0	ug/L		10/22/19 23:26	10/23/19 20:22	2
Manganese	**771**		8.0	2.9	ug/L		10/22/19 23:26	10/23/19 20:22	2
Nickel	**8.5**		4.0	2.4	ug/L		10/22/19 23:26	10/23/19 20:22	2
Lead	0.55	U	1.2	0.55	ug/L		10/22/19 23:26	10/23/19 20:22	2
Antimony	0.40	U	2.0	0.40	ug/L		10/22/19 23:26	10/23/19 20:22	2
Thallium	0.16	U	0.80	0.16	ug/L		10/22/19 23:26	10/23/19 20:22	2
Vanadium	**3.5**	J	4.0	1.1	ug/L		10/22/19 23:26	10/23/19 20:22	2
Zinc	11.1	U	16.0	11.1	ug/L		10/22/19 23:26	10/23/19 20:22	2
Sodium	**25300**		200	128	ug/L		10/22/19 23:26	10/23/19 20:22	2

Client Sample ID: MW-26N_3X — Lab Sample ID: 460-194233-3

Date Collected: 10/17/19 14:30 **Matrix: Water**
Date Received: 10/17/19 21:00

Method: 6020B - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	**12300**		200	73.7	ug/L		10/22/19 23:26	10/23/19 20:22	2
Aluminum	18.8	U	40.0	18.8	ug/L		10/22/19 23:26	10/23/19 20:22	2
Potassium	**2430**		200	86.7	ug/L		10/22/19 23:26	10/23/19 20:22	2
Calcium	**21200**		200	98.8	ug/L		10/22/19 23:26	10/23/19 20:22	2
Iron	51.1	U	120	51.1	ug/L		10/22/19 23:26	10/23/19 20:22	2
Selenium	5.4	U	10.0	5.4	ug/L		10/22/19 23:26	10/23/19 20:22	2
Silver	0.59	U	2.0	0.59	ug/L		10/22/19 23:26	10/23/19 20:22	2

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.12	U	0.20	0.12	ug/L		10/22/19 11:06	10/22/19 14:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.24**		0.10	0.068	mg/L			10/22/19 11:09	1
Bicarbonate Alkalinity as CaCO3	**70.3**		5.0	5.0	mg/L			10/21/19 13:35	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/21/19 13:35	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/22/19 13:00	1

Client Sample ID: TBGW_101719 — Lab Sample ID: 460-194233-4

Date Collected: 10/17/19 14:30 **Matrix: Water**
Date Received: 10/17/19 21:00

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/19/19 13:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*92*		*72 - 133*		*10/19/19 13:13*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/22/19 16:15	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/22/19 16:15	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/22/19 16:15	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/22/19 16:15	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/22/19 16:15	1
Acetone	**23**		5.0	4.4	ug/L			10/22/19 16:15	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/22/19 16:15	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/22/19 16:15	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/22/19 16:15	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/22/19 16:15	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/22/19 16:15	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/22/19 16:15	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/22/19 16:15	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/22/19 16:15	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/22/19 16:15	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/22/19 16:15	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/22/19 16:15	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/22/19 16:15	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/22/19 16:15	1

Client Sample ID: TBGW_101719 Lab Sample ID: 460-194233-4

Date Collected: 10/17/19 14:30 **Matrix: Water**
Date Received: 10/17/19 21:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/22/19 16:15	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/22/19 16:15	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/22/19 16:15	1
Benzene	0.20	U	1.0	0.20	ug/L			10/22/19 16:15	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/22/19 16:15	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/22/19 16:15	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/22/19 16:15	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/22/19 16:15	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/22/19 16:15	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/22/19 16:15	1
Toluene	0.38	U	1.0	0.38	ug/L			10/22/19 16:15	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/22/19 16:15	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/22/19 16:15	1
Styrene	0.42	U	1.0	0.42	ug/L			10/22/19 16:15	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/22/19 16:15	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/22/19 16:15	1
MTBE	0.47	U	1.0	0.47	ug/L			10/22/19 16:15	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/22/19 16:15	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/22/19 16:15	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/22/19 16:15	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/22/19 16:15	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/22/19 16:15	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/22/19 16:15	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/22/19 16:15	1
Indane	0.35	U	1.0	0.35	ug/L			10/22/19 16:15	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/22/19 16:15	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/22/19 16:15	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/22/19 16:15*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*74 - 132*		*10/22/19 16:15*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/22/19 16:15*	*1*
4-Bromofluorobenzene	*109*		*77 - 124*		*10/22/19 16:15*	*1*
Dibromofluoromethane (Surr)	*106*		*72 - 131*		*10/22/19 16:15*	*1*

Client Sample ID: UPA-105A-LS Lab Sample ID: 460-194328-1

Date Collected: 10/18/19 10:50 **Matrix: Water**
Date Received: 10/18/19 20:55

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**1.6**		0.40	0.20	ug/L			10/20/19 05:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*90*		*72 - 133*		*10/20/19 05:53*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/23/19 19:11	1

Client Sample ID: UPA-105A-LS Lab Sample ID: 460-194328-1

Date Collected: 10/18/19 10:50 **Matrix: Water**
Date Received: 10/18/19 20:55

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	0.55	U	1.0	0.55	ug/L			10/23/19 19:11	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/23/19 19:11	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/23/19 19:11	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/23/19 19:11	1
Acetone	4.4	U	5.0	4.4	ug/L			10/23/19 19:11	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/23/19 19:11	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/23/19 19:11	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/23/19 19:11	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/23/19 19:11	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/23/19 19:11	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/23/19 19:11	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/23/19 19:11	1
2-Butanone (MEK)	1.9	U *	5.0	1.9	ug/L			10/23/19 19:11	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/23/19 19:11	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/23/19 19:11	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/23/19 19:11	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/23/19 19:11	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/23/19 19:11	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/23/19 19:11	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/23/19 19:11	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/23/19 19:11	1
Benzene	0.20	U	1.0	0.20	ug/L			10/23/19 19:11	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/23/19 19:11	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/23/19 19:11	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/23/19 19:11	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/23/19 19:11	1
Tetrachloroethene	**1.0**		1.0	0.25	ug/L			10/23/19 19:11	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/23/19 19:11	1
Toluene	0.38	U	1.0	0.38	ug/L			10/23/19 19:11	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/23/19 19:11	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/23/19 19:11	1
Styrene	0.42	U	1.0	0.42	ug/L			10/23/19 19:11	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/23/19 19:11	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/23/19 19:11	1
MTBE	0.47	U	1.0	0.47	ug/L			10/23/19 19:11	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/23/19 19:11	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/23/19 19:11	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/23/19 19:11	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/23/19 19:11	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/23/19 19:11	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/23/19 19:11	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/23/19 19:11	1
Indane	0.35	U	1.0	0.35	ug/L			10/23/19 19:11	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/23/19 19:11	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/23/19 19:11	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/23/19 19:11*	*1*

Client Sample Results

Client: Golder Associates Inc. Job ID: 460-194006-1
Project/Site: DS&G Semi-Annual Groundwater

Client Sample ID: UPA-105A-LS Lab Sample ID: 460-194328-1

Date Collected: 10/18/19 10:50 **Matrix: Water**
Date Received: 10/18/19 20:55

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*74 - 132*		*10/23/19 19:11*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/23/19 19:11*	*1*
4-Bromofluorobenzene	*110*		*77 - 124*		*10/23/19 19:11*	*1*
Dibromofluoromethane (Surr)	*110*		*72 - 131*		*10/23/19 19:11*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/20/19 09:41	10/21/19 17:45	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/20/19 09:41	10/21/19 17:45	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/20/19 09:41	10/21/19 17:45	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/20/19 09:41	10/21/19 17:45	1
Pentachlorophenol	0.15	U	0.20	0.15	ug/L		10/20/19 09:41	10/21/19 17:45	1
Bis(2-chloroethyl)ether	**0.17**		0.030	0.026	ug/L		10/20/19 09:41	10/21/19 17:45	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/20/19 09:41	10/21/19 00:33	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/20/19 09:41	10/21/19 00:33	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/20/19 09:41	10/21/19 00:33	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/20/19 09:41	10/21/19 00:33	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/20/19 09:41	10/21/19 00:33	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/20/19 09:41	10/21/19 00:33	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/20/19 09:41	10/21/19 00:33	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/20/19 09:41	10/21/19 00:33	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/20/19 09:41	10/21/19 00:33	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/20/19 09:41	10/21/19 00:33	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/20/19 09:41	10/21/19 00:33	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/20/19 09:41	10/21/19 00:33	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/20/19 09:41	10/21/19 00:33	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/20/19 09:41	10/21/19 00:33	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/20/19 09:41	10/21/19 00:33	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/20/19 09:41	10/21/19 00:33	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/20/19 09:41	10/21/19 00:33	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/20/19 09:41	10/21/19 00:33	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/20/19 09:41	10/21/19 00:33	1
Isophorone	0.80	U	10	0.80	ug/L		10/20/19 09:41	10/21/19 00:33	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/20/19 09:41	10/21/19 00:33	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/20/19 09:41	10/21/19 00:33	1
Naphthalene	1.1	U	10	1.1	ug/L		10/20/19 09:41	10/21/19 00:33	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/20/19 09:41	10/21/19 00:33	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/20/19 09:41	10/21/19 00:33	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/20/19 09:41	10/21/19 00:33	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/20/19 09:41	10/21/19 00:33	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/20/19 09:41	10/21/19 00:33	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/20/19 09:41	10/21/19 00:33	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/20/19 09:41	10/21/19 00:33	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/20/19 09:41	10/21/19 00:33	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/20/19 09:41	10/21/19 00:33	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/20/19 09:41	10/21/19 00:33	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/20/19 09:41	10/21/19 00:33	1

Client Sample ID: UPA-105A-LS Lab Sample ID: 460-194328-1

Date Collected: 10/18/19 10:50 **Matrix: Water**
Date Received: 10/18/19 20:55

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	1.1	U	10	1.1	ug/L		10/20/19 09:41	10/21/19 00:33	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/20/19 09:41	10/21/19 00:33	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/20/19 09:41	10/21/19 00:33	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/20/19 09:41	10/21/19 00:33	1
Fluorene	0.91	U	10	0.91	ug/L		10/20/19 09:41	10/21/19 00:33	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/20/19 09:41	10/21/19 00:33	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/20/19 09:41	10/21/19 00:33	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/20/19 09:41	10/21/19 00:33	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/20/19 09:41	10/21/19 00:33	1
Anthracene	0.63	U	10	0.63	ug/L		10/20/19 09:41	10/21/19 00:33	1
Carbazole	0.68	U	10	0.68	ug/L		10/20/19 09:41	10/21/19 00:33	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/20/19 09:41	10/21/19 00:33	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/20/19 09:41	10/21/19 00:33	1
Pyrene	1.6	U	10	1.6	ug/L		10/20/19 09:41	10/21/19 00:33	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/20/19 09:41	10/21/19 00:33	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/20/19 09:41	10/21/19 00:33	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/20/19 09:41	10/21/19 00:33	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/20/19 09:41	10/21/19 00:33	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/20/19 09:41	10/21/19 00:33	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/20/19 09:41	10/21/19 00:33	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/20/19 09:41	10/21/19 00:33	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/20/19 09:41	10/21/19 00:33	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/20/19 09:41	10/21/19 00:33	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/20/19 09:41	10/21/19 00:33	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/20/19 09:41	10/21/19 00:33	1
Caprolactam	0.68	U	10	0.68	ug/L		10/20/19 09:41	10/21/19 00:33	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/20/19 09:41	10/21/19 00:33	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/20/19 09:41	10/21/19 00:33	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/20/19 09:41	10/21/19 00:33	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/20/19 09:41*	*10/21/19 00:33*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*107*		*51 - 108*	*10/20/19 09:41*	*10/21/19 00:33*	*1*
Phenol-d5 (Surr)	*56*	*X*	*14 - 39*	*10/20/19 09:41*	*10/21/19 00:33*	*1*
Terphenyl-d14 (Surr)	*103*		*40 - 148*	*10/20/19 09:41*	*10/21/19 00:33*	*1*
2,4,6-Tribromophenol (Surr)	*102*		*26 - 139*	*10/20/19 09:41*	*10/21/19 00:33*	*1*
2-Fluorophenol (Surr)	*69*	*X*	*25 - 58*	*10/20/19 09:41*	*10/21/19 00:33*	*1*
2-Fluorobiphenyl (Surr)	*98*		*45 - 107*	*10/20/19 09:41*	*10/21/19 00:33*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**1.77**		0.10	0.056	mg/L			10/19/19 14:14	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/19/19 14:14	1
Sulfate	**11.8**		0.60	0.35	mg/L			10/19/19 14:14	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**51.4**	**D**	2.40	0.28	mg/L			10/19/19 17:13	20

Client Sample ID: UPA-105A-LS — Lab Sample ID: 460-194328-1

Date Collected: 10/18/19 10:50 **Matrix: Water**
Date Received: 10/18/19 20:55

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**29700**		250	66.8	ug/L		10/24/19 05:06	10/24/19 11:07	5
Magnesium	**5280**		250	24.8	ug/L		10/24/19 05:06	10/24/19 11:07	5
Potassium	**2790**		250	73.5	ug/L		10/24/19 05:06	10/24/19 11:07	5
Calcium	**16200**		250	233	ug/L		10/24/19 05:06	10/24/19 11:07	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**14.9**	**J**	50.0	1.7	ug/L		10/23/19 09:43	10/23/19 21:04	1
Iron, Dissolved	**147**	**J**	150	34.2	ug/L		10/23/19 09:43	10/23/19 21:04	1
Manganese, Dissolved	**1220**		15.0	0.99	ug/L		10/23/19 09:43	10/23/19 21:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.068	U	0.10	0.068	mg/L			10/22/19 10:19	1
Bicarbonate Alkalinity as CaCO3	**38.9**		5.0	5.0	mg/L			10/23/19 11:50	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/23/19 11:50	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/22/19 13:00	1

Client Sample ID: UPA-105A-US — Lab Sample ID: 460-194328-2

Date Collected: 10/18/19 11:00 **Matrix: Water**
Date Received: 10/18/19 20:55

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**6.3**		0.40	0.20	ug/L			10/20/19 06:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*91*		*72 - 133*		*10/20/19 06:18*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/23/19 19:35	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/23/19 19:35	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/23/19 19:35	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/23/19 19:35	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/23/19 19:35	1
Acetone	4.4	U	5.0	4.4	ug/L			10/23/19 19:35	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/23/19 19:35	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/23/19 19:35	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/23/19 19:35	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/23/19 19:35	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/23/19 19:35	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/23/19 19:35	1
1,2-Dichloroethane	**0.83**	**J**	1.0	0.43	ug/L			10/23/19 19:35	1
2-Butanone (MEK)	1.9	U *	5.0	1.9	ug/L			10/23/19 19:35	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/23/19 19:35	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/23/19 19:35	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/23/19 19:35	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/23/19 19:35	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/23/19 19:35	1
Trichloroethene	**0.66**	**J**	1.0	0.31	ug/L			10/23/19 19:35	1

Client Sample ID: UPA-105A-US Lab Sample ID: 460-194328-2

Date Collected: 10/18/19 11:00 **Matrix: Water**
Date Received: 10/18/19 20:55

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/23/19 19:35	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/23/19 19:35	1
Benzene	**1.2**		1.0	0.20	ug/L			10/23/19 19:35	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/23/19 19:35	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/23/19 19:35	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/23/19 19:35	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/23/19 19:35	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/23/19 19:35	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/23/19 19:35	1
Toluene	0.38	U	1.0	0.38	ug/L			10/23/19 19:35	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/23/19 19:35	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/23/19 19:35	1
Styrene	0.42	U	1.0	0.42	ug/L			10/23/19 19:35	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/23/19 19:35	1
Diethyl ether	**0.23**	**J**	1.0	0.21	ug/L			10/23/19 19:35	1
MTBE	0.47	U	1.0	0.47	ug/L			10/23/19 19:35	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/23/19 19:35	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/23/19 19:35	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/23/19 19:35	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/23/19 19:35	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/23/19 19:35	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/23/19 19:35	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/23/19 19:35	1
Indane	0.35	U	1.0	0.35	ug/L			10/23/19 19:35	1
Dichlorofluoromethane	**0.52**	**J**	1.0	0.34	ug/L			10/23/19 19:35	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/23/19 19:35	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/23/19 19:35*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*74 - 132*		*10/23/19 19:35*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/23/19 19:35*	*1*
4-Bromofluorobenzene	*110*		*77 - 124*		*10/23/19 19:35*	*1*
Dibromofluoromethane (Surr)	*109*		*72 - 131*		*10/23/19 19:35*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/20/19 09:41	10/21/19 18:06	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/20/19 09:41	10/21/19 18:06	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/20/19 09:41	10/21/19 18:06	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/20/19 09:41	10/21/19 18:06	1
Pentachlorophenol	0.15	U	0.20	0.15	ug/L		10/20/19 09:41	10/21/19 18:06	1
Bis(2-chloroethyl)ether	**1.3**		0.030	0.026	ug/L		10/20/19 09:41	10/21/19 18:06	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/20/19 09:41	10/21/19 00:54	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/20/19 09:41	10/21/19 00:54	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/20/19 09:41	10/21/19 00:54	1

Client Sample ID: UPA-105A-US Lab Sample ID: 460-194328-2

Date Collected: 10/18/19 11:00 **Matrix: Water**
Date Received: 10/18/19 20:55

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methylphenol	0.24	U	10	0.24	ug/L		10/20/19 09:41	10/21/19 00:54	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/20/19 09:41	10/21/19 00:54	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/20/19 09:41	10/21/19 00:54	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/20/19 09:41	10/21/19 00:54	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/20/19 09:41	10/21/19 00:54	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/20/19 09:41	10/21/19 00:54	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/20/19 09:41	10/21/19 00:54	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/20/19 09:41	10/21/19 00:54	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/20/19 09:41	10/21/19 00:54	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/20/19 09:41	10/21/19 00:54	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/20/19 09:41	10/21/19 00:54	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/20/19 09:41	10/21/19 00:54	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/20/19 09:41	10/21/19 00:54	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/20/19 09:41	10/21/19 00:54	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/20/19 09:41	10/21/19 00:54	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/20/19 09:41	10/21/19 00:54	1
Isophorone	0.80	U	10	0.80	ug/L		10/20/19 09:41	10/21/19 00:54	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/20/19 09:41	10/21/19 00:54	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/20/19 09:41	10/21/19 00:54	1
Naphthalene	1.1	U	10	1.1	ug/L		10/20/19 09:41	10/21/19 00:54	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/20/19 09:41	10/21/19 00:54	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/20/19 09:41	10/21/19 00:54	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/20/19 09:41	10/21/19 00:54	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/20/19 09:41	10/21/19 00:54	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/20/19 09:41	10/21/19 00:54	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/20/19 09:41	10/21/19 00:54	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/20/19 09:41	10/21/19 00:54	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/20/19 09:41	10/21/19 00:54	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/20/19 09:41	10/21/19 00:54	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/20/19 09:41	10/21/19 00:54	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/20/19 09:41	10/21/19 00:54	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/20/19 09:41	10/21/19 00:54	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/20/19 09:41	10/21/19 00:54	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/20/19 09:41	10/21/19 00:54	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/20/19 09:41	10/21/19 00:54	1
Fluorene	0.91	U	10	0.91	ug/L		10/20/19 09:41	10/21/19 00:54	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/20/19 09:41	10/21/19 00:54	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/20/19 09:41	10/21/19 00:54	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/20/19 09:41	10/21/19 00:54	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/20/19 09:41	10/21/19 00:54	1
Anthracene	0.63	U	10	0.63	ug/L		10/20/19 09:41	10/21/19 00:54	1
Carbazole	0.68	U	10	0.68	ug/L		10/20/19 09:41	10/21/19 00:54	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/20/19 09:41	10/21/19 00:54	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/20/19 09:41	10/21/19 00:54	1
Pyrene	1.6	U	10	1.6	ug/L		10/20/19 09:41	10/21/19 00:54	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/20/19 09:41	10/21/19 00:54	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/20/19 09:41	10/21/19 00:54	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/20/19 09:41	10/21/19 00:54	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/20/19 09:41	10/21/19 00:54	1

Client Sample ID: UPA-105A-US Lab Sample ID: 460-194328-2

Date Collected: 10/18/19 11:00 **Matrix: Water**
Date Received: 10/18/19 20:55

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/20/19 09:41	10/21/19 00:54	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/20/19 09:41	10/21/19 00:54	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/20/19 09:41	10/21/19 00:54	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/20/19 09:41	10/21/19 00:54	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/20/19 09:41	10/21/19 00:54	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/20/19 09:41	10/21/19 00:54	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/20/19 09:41	10/21/19 00:54	1
Caprolactam	0.68	U	10	0.68	ug/L		10/20/19 09:41	10/21/19 00:54	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/20/19 09:41	10/21/19 00:54	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/20/19 09:41	10/21/19 00:54	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/20/19 09:41	10/21/19 00:54	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*17*	*J*	*ug/L*		*5.11*		*10/20/19 09:41*	*10/21/19 00:54*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*108*		*51 - 108*	*10/20/19 09:41*	*10/21/19 00:54*	*1*
Phenol-d5 (Surr)	*32*		*14 - 39*	*10/20/19 09:41*	*10/21/19 00:54*	*1*
Terphenyl-d14 (Surr)	*62*		*40 - 148*	*10/20/19 09:41*	*10/21/19 00:54*	*1*
2,4,6-Tribromophenol (Surr)	*103*		*26 - 139*	*10/20/19 09:41*	*10/21/19 00:54*	*1*
2-Fluorophenol (Surr)	*50*		*25 - 58*	*10/20/19 09:41*	*10/21/19 00:54*	*1*
2-Fluorobiphenyl (Surr)	*98*		*45 - 107*	*10/20/19 09:41*	*10/21/19 00:54*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/19/19 14:29	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/19/19 14:29	1
Sulfate	**5.24**		0.60	0.35	mg/L			10/19/19 14:29	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**31.4**	**D**	1.44	0.17	mg/L			10/19/19 17:28	12

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**15600**		250	66.8	ug/L		10/24/19 05:06	10/24/19 11:24	5
Magnesium	**4300**		250	24.8	ug/L		10/24/19 05:06	10/24/19 11:24	5
Potassium	**1840**		250	73.5	ug/L		10/24/19 05:06	10/24/19 11:24	5
Calcium	**12500**		250	233	ug/L		10/24/19 05:06	10/24/19 11:24	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	1.7	U	50.0	1.7	ug/L		10/23/19 11:28	10/23/19 21:08	1
Iron, Dissolved	**6520**		150	34.2	ug/L		10/23/19 11:28	10/23/19 21:08	1
Manganese, Dissolved	**276**		15.0	0.99	ug/L		10/23/19 11:28	10/23/19 21:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.068	U	0.10	0.068	mg/L			10/22/19 10:25	1
Bicarbonate Alkalinity as CaCO3	**39.4**		5.0	5.0	mg/L			10/23/19 11:56	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/23/19 11:56	1

Client Sample ID: UPA-105A-US — Lab Sample ID: 460-194328-2

Date Collected: 10/18/19 11:00 **Matrix: Water**
Date Received: 10/18/19 20:55

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	0.58	U	1.0	0.58	mg/L			10/22/19 13:00	1

Client Sample ID: UPA-101A-LSA — Lab Sample ID: 460-194328-3

Date Collected: 10/18/19 15:15 **Matrix: Water**
Date Received: 10/18/19 20:55

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**50**		0.80	0.40	ug/L			10/24/19 13:08	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*94*		*72 - 133*		*10/24/19 13:08*	*2*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/23/19 19:59	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/23/19 19:59	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/23/19 19:59	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/23/19 19:59	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/23/19 19:59	1
Acetone	**5.8**	U	~~5.0~~ 5.8	4.4	ug/L			10/23/19 19:59	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/23/19 19:59	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/23/19 19:59	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/23/19 19:59	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/23/19 19:59	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/23/19 19:59	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/23/19 19:59	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/23/19 19:59	1
2-Butanone (MEK)	1.9	U-*	5.0	1.9	ug/L			10/23/19 19:59	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/23/19 19:59	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/23/19 19:59	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/23/19 19:59	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/23/19 19:59	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/23/19 19:59	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/23/19 19:59	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/23/19 19:59	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/23/19 19:59	1
Benzene	**0.93**	**J**	1.0	0.20	ug/L			10/23/19 19:59	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/23/19 19:59	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/23/19 19:59	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/23/19 19:59	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/23/19 19:59	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/23/19 19:59	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/23/19 19:59	1
Toluene	0.38	U	1.0	0.38	ug/L			10/23/19 19:59	1
Chlorobenzene	**7.8**		1.0	0.38	ug/L			10/23/19 19:59	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/23/19 19:59	1
Styrene	0.42	U	1.0	0.42	ug/L			10/23/19 19:59	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/23/19 19:59	1
Diethyl ether	**3.1**		1.0	0.21	ug/L			10/23/19 19:59	1

Client Sample ID: UPA-101A-LSA Lab Sample ID: 460-194328-3

Date Collected: 10/18/19 15:15 **Matrix: Water**
Date Received: 10/18/19 20:55

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MTBE	**2.3**		1.0	0.47	ug/L			10/23/19 19:59	1
Tetrahydrofuran	**2.8**		2.0	1.0	ug/L			10/23/19 19:59	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/23/19 19:59	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/23/19 19:59	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/23/19 19:59	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/23/19 19:59	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/23/19 19:59	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/23/19 19:59	1
Indane	**0.58**	**J**	1.0	0.35	ug/L			10/23/19 19:59	1
Dichlorofluoromethane	**1.0**		1.0	0.34	ug/L			10/23/19 19:59	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/23/19 19:59	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/23/19 19:59*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*74 - 132*		*10/23/19 19:59*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/23/19 19:59*	*1*
4-Bromofluorobenzene	*110*		*77 - 124*		*10/23/19 19:59*	*1*
Dibromofluoromethane (Surr)	*110*		*72 - 131*		*10/23/19 19:59*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/20/19 09:41	10/21/19 18:27	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/20/19 09:41	10/21/19 18:27	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/20/19 09:41	10/21/19 18:27	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/20/19 09:41	10/21/19 18:27	1
Pentachlorophenol	0.15	U	0.20	0.15	ug/L		10/20/19 09:41	10/21/19 18:27	1
Bis(2-chloroethyl)ether	**7.5**		0.030	0.026	ug/L		10/20/19 09:41	10/21/19 18:27	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/20/19 09:41	10/21/19 01:15	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/20/19 09:41	10/21/19 01:15	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/20/19 09:41	10/21/19 01:15	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/20/19 09:41	10/21/19 01:15	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/20/19 09:41	10/21/19 01:15	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/20/19 09:41	10/21/19 01:15	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/20/19 09:41	10/21/19 01:15	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/20/19 09:41	10/21/19 01:15	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/20/19 09:41	10/21/19 01:15	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/20/19 09:41	10/21/19 01:15	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/20/19 09:41	10/21/19 01:15	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/20/19 09:41	10/21/19 01:15	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/20/19 09:41	10/21/19 01:15	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/20/19 09:41	10/21/19 01:15	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/20/19 09:41	10/21/19 01:15	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/20/19 09:41	10/21/19 01:15	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/20/19 09:41	10/21/19 01:15	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/20/19 09:41	10/21/19 01:15	1

Client Sample ID: UPA-101A-LSA Lab Sample ID: 460-194328-3

Date Collected: 10/18/19 15:15 **Matrix: Water**
Date Received: 10/18/19 20:55

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/20/19 09:41	10/21/19 01:15	1
Isophorone	0.80	U	10	0.80	ug/L		10/20/19 09:41	10/21/19 01:15	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/20/19 09:41	10/21/19 01:15	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/20/19 09:41	10/21/19 01:15	1
Naphthalene	1.1	U	10	1.1	ug/L		10/20/19 09:41	10/21/19 01:15	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/20/19 09:41	10/21/19 01:15	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/20/19 09:41	10/21/19 01:15	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/20/19 09:41	10/21/19 01:15	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/20/19 09:41	10/21/19 01:15	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/20/19 09:41	10/21/19 01:15	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/20/19 09:41	10/21/19 01:15	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/20/19 09:41	10/21/19 01:15	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/20/19 09:41	10/21/19 01:15	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/20/19 09:41	10/21/19 01:15	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/20/19 09:41	10/21/19 01:15	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/20/19 09:41	10/21/19 01:15	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/20/19 09:41	10/21/19 01:15	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/20/19 09:41	10/21/19 01:15	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/20/19 09:41	10/21/19 01:15	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/20/19 09:41	10/21/19 01:15	1
Fluorene	0.91	U	10	0.91	ug/L		10/20/19 09:41	10/21/19 01:15	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/20/19 09:41	10/21/19 01:15	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/20/19 09:41	10/21/19 01:15	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/20/19 09:41	10/21/19 01:15	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/20/19 09:41	10/21/19 01:15	1
Anthracene	0.63	U	10	0.63	ug/L		10/20/19 09:41	10/21/19 01:15	1
Carbazole	0.68	U	10	0.68	ug/L		10/20/19 09:41	10/21/19 01:15	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/20/19 09:41	10/21/19 01:15	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/20/19 09:41	10/21/19 01:15	1
Pyrene	1.6	U	10	1.6	ug/L		10/20/19 09:41	10/21/19 01:15	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/20/19 09:41	10/21/19 01:15	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/20/19 09:41	10/21/19 01:15	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/20/19 09:41	10/21/19 01:15	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/20/19 09:41	10/21/19 01:15	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/20/19 09:41	10/21/19 01:15	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/20/19 09:41	10/21/19 01:15	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/20/19 09:41	10/21/19 01:15	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/20/19 09:41	10/21/19 01:15	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/20/19 09:41	10/21/19 01:15	1
Diphenyl ether	**2.4**	**J**	10	1.2	ug/L		10/20/19 09:41	10/21/19 01:15	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/20/19 09:41	10/21/19 01:15	1
Caprolactam	0.68	U	10	0.68	ug/L		10/20/19 09:41	10/21/19 01:15	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/20/19 09:41	10/21/19 01:15	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/20/19 09:41	10/21/19 01:15	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/20/19 09:41	10/21/19 01:15	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane	*7.6*	*J N*	*ug/L*		*1.90*	*123-91-1*	*10/20/19 09:41*	*10/21/19 01:15*	*1*
Unknown	*13*	*J*	*ug/L*		*7.11*		*10/20/19 09:41*	*10/21/19 01:15*	*1*
Unknown	*15*	*J*	*ug/L*		*9.98*		*10/20/19 09:41*	*10/21/19 01:15*	*1*

Client Sample ID: UPA-101A-LSA — Lab Sample ID: 460-194328-3

Date Collected: 10/18/19 15:15 **Matrix: Water**
Date Received: 10/18/19 20:55

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*93*		*51 - 108*	*10/20/19 09:41*	*10/21/19 01:15*	*1*
Phenol-d5 (Surr)	*29*		*14 - 39*	*10/20/19 09:41*	*10/21/19 01:15*	*1*
Terphenyl-d14 (Surr)	*55*		*40 - 148*	*10/20/19 09:41*	*10/21/19 01:15*	*1*
2,4,6-Tribromophenol (Surr)	*92*		*26 - 139*	*10/20/19 09:41*	*10/21/19 01:15*	*1*
2-Fluorophenol (Surr)	*45*		*25 - 58*	*10/20/19 09:41*	*10/21/19 01:15*	*1*
2-Fluorobiphenyl (Surr)	*90*		*45 - 107*	*10/20/19 09:41*	*10/21/19 01:15*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/19/19 14:44	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/19/19 14:44	1
Sulfate	**17.2**		0.60	0.35	mg/L			10/19/19 14:44	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**37.7**	D	1.68	0.20	mg/L			10/19/19 17:43	14

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**27000**		250	66.8	ug/L		10/24/19 05:06	10/24/19 11:27	5
Magnesium	**11200**		250	24.8	ug/L		10/24/19 05:06	10/24/19 11:27	5
Potassium	**8860**		250	73.5	ug/L		10/24/19 05:06	10/24/19 11:27	5
Calcium	**42300**		250	233	ug/L		10/24/19 05:06	10/24/19 11:27	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**9.2**	J	50.0	1.7	ug/L		10/23/19 11:28	10/23/19 23:19	1
Iron, Dissolved	**44300**		150	34.2	ug/L		10/23/19 11:28	10/23/19 23:19	1
Manganese, Dissolved	**1440**		15.0	0.99	ug/L		10/23/19 11:28	10/23/19 23:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.94**		0.10	0.068	mg/L			10/22/19 10:36	1
Bicarbonate Alkalinity as CaCO3	**153**		5.0	5.0	mg/L			10/23/19 12:04	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/23/19 12:04	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/22/19 13:00	1

Client Sample ID: UPA-101A-LSB — Lab Sample ID: 460-194328-4

Date Collected: 10/18/19 14:55 **Matrix: Water**
Date Received: 10/18/19 20:55

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/23/19 20:23	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/23/19 20:23	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/23/19 20:23	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/23/19 20:23	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/23/19 20:23	1
Acetone	4.4	U	5.0	4.4	ug/L			10/23/19 20:23	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/23/19 20:23	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/23/19 20:23	1
1,1-Dichloroethane	**0.30**	J	1.0	0.26	ug/L			10/23/19 20:23	1

Client Sample ID: UPA-101A-LSB Lab Sample ID: 460-194328-4

Date Collected: 10/18/19 14:55 **Matrix: Water**
Date Received: 10/18/19 20:55

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/23/19 20:23	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/23/19 20:23	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/23/19 20:23	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/23/19 20:23	1
2-Butanone (MEK)	1.9	U *	5.0	1.9	ug/L			10/23/19 20:23	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/23/19 20:23	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/23/19 20:23	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/23/19 20:23	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/23/19 20:23	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/23/19 20:23	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/23/19 20:23	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/23/19 20:23	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/23/19 20:23	1
Benzene	**12**		1.0	0.20	ug/L			10/23/19 20:23	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/23/19 20:23	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/23/19 20:23	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/23/19 20:23	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/23/19 20:23	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/23/19 20:23	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/23/19 20:23	1
Toluene	0.38	U	1.0	0.38	ug/L			10/23/19 20:23	1
Chlorobenzene	**14**		1.0	0.38	ug/L			10/23/19 20:23	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/23/19 20:23	1
Styrene	0.42	U	1.0	0.42	ug/L			10/23/19 20:23	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/23/19 20:23	1
Diethyl ether	**5.1**		1.0	0.21	ug/L			10/23/19 20:23	1
MTBE	**1.8**		1.0	0.47	ug/L			10/23/19 20:23	1
Tetrahydrofuran	**7.0**		2.0	1.0	ug/L			10/23/19 20:23	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/23/19 20:23	1
1,4-Dioxane	**120**		50	28	ug/L			10/23/19 20:23	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/23/19 20:23	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/23/19 20:23	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/23/19 20:23	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/23/19 20:23	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/23/19 20:23	1
Indane	0.35	U	1.0	0.35	ug/L			10/23/19 20:23	1
Dichlorofluoromethane	**1.2**		1.0	0.34	ug/L			10/23/19 20:23	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/23/19 20:23	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/23/19 20:23*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*74 - 132*		*10/23/19 20:23*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/23/19 20:23*	*1*
4-Bromofluorobenzene	*111*		*77 - 124*		*10/23/19 20:23*	*1*
Dibromofluoromethane (Surr)	*108*		*72 - 131*		*10/23/19 20:23*	*1*

Client Sample Results

Client: Golder Associates Inc. Job ID: 460-194006-1
Project/Site: DS&G Semi-Annual Groundwater

Client Sample ID: UPA-101A-LSB Lab Sample ID: 460-194328-4

Date Collected: 10/18/19 14:55 **Matrix: Water**
Date Received: 10/18/19 20:55

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.078	U	0.25	0.078	ug/L		10/20/19 09:41	10/22/19 16:58	5
Benzo[a]pyrene	0.11	U	0.25	0.11	ug/L		10/20/19 09:41	10/22/19 16:58	5
Benzo[b]fluoranthene	0.12	U	0.25	0.12	ug/L		10/20/19 09:41	10/22/19 16:58	5
Hexachlorobenzene	0.066	U	0.10	0.066	ug/L		10/20/19 09:41	10/22/19 16:58	5
Pentachlorophenol	0.77	U	1.0	0.77	ug/L		10/20/19 09:41	10/22/19 16:58	5
Bis(2-chloroethyl)ether	**20**		0.15	0.13	ug/L		10/20/19 09:41	10/22/19 16:58	5

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/20/19 09:41	10/21/19 01:35	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/20/19 09:41	10/21/19 01:35	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/20/19 09:41	10/21/19 01:35	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/20/19 09:41	10/21/19 01:35	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/20/19 09:41	10/21/19 01:35	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/20/19 09:41	10/21/19 01:35	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/20/19 09:41	10/21/19 01:35	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/20/19 09:41	10/21/19 01:35	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/20/19 09:41	10/21/19 01:35	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/20/19 09:41	10/21/19 01:35	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/20/19 09:41	10/21/19 01:35	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/20/19 09:41	10/21/19 01:35	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/20/19 09:41	10/21/19 01:35	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/20/19 09:41	10/21/19 01:35	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/20/19 09:41	10/21/19 01:35	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/20/19 09:41	10/21/19 01:35	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/20/19 09:41	10/21/19 01:35	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/20/19 09:41	10/21/19 01:35	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/20/19 09:41	10/21/19 01:35	1
Isophorone	0.80	U	10	0.80	ug/L		10/20/19 09:41	10/21/19 01:35	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/20/19 09:41	10/21/19 01:35	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/20/19 09:41	10/21/19 01:35	1
Naphthalene	1.1	U	10	1.1	ug/L		10/20/19 09:41	10/21/19 01:35	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/20/19 09:41	10/21/19 01:35	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/20/19 09:41	10/21/19 01:35	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/20/19 09:41	10/21/19 01:35	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/20/19 09:41	10/21/19 01:35	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/20/19 09:41	10/21/19 01:35	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/20/19 09:41	10/21/19 01:35	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/20/19 09:41	10/21/19 01:35	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/20/19 09:41	10/21/19 01:35	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/20/19 09:41	10/21/19 01:35	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/20/19 09:41	10/21/19 01:35	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/20/19 09:41	10/21/19 01:35	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/20/19 09:41	10/21/19 01:35	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/20/19 09:41	10/21/19 01:35	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/20/19 09:41	10/21/19 01:35	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/20/19 09:41	10/21/19 01:35	1
Fluorene	0.91	U	10	0.91	ug/L		10/20/19 09:41	10/21/19 01:35	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/20/19 09:41	10/21/19 01:35	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/20/19 09:41	10/21/19 01:35	1

Client Sample ID: UPA-101A-LSB Lab Sample ID: 460-194328-4

Date Collected: 10/18/19 14:55 **Matrix: Water**
Date Received: 10/18/19 20:55

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/20/19 09:41	10/21/19 01:35	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/20/19 09:41	10/21/19 01:35	1
Anthracene	0.63	U	10	0.63	ug/L		10/20/19 09:41	10/21/19 01:35	1
Carbazole	0.68	U	10	0.68	ug/L		10/20/19 09:41	10/21/19 01:35	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/20/19 09:41	10/21/19 01:35	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/20/19 09:41	10/21/19 01:35	1
Pyrene	1.6	U	10	1.6	ug/L		10/20/19 09:41	10/21/19 01:35	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/20/19 09:41	10/21/19 01:35	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/20/19 09:41	10/21/19 01:35	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/20/19 09:41	10/21/19 01:35	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/20/19 09:41	10/21/19 01:35	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/20/19 09:41	10/21/19 01:35	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/20/19 09:41	10/21/19 01:35	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/20/19 09:41	10/21/19 01:35	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/20/19 09:41	10/21/19 01:35	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/20/19 09:41	10/21/19 01:35	1
Diphenyl ether	**2.9**	**J**	10	1.2	ug/L		10/20/19 09:41	10/21/19 01:35	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/20/19 09:41	10/21/19 01:35	1
Caprolactam	0.68	U	10	0.68	ug/L		10/20/19 09:41	10/21/19 01:35	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/20/19 09:41	10/21/19 01:35	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/20/19 09:41	10/21/19 01:35	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/20/19 09:41	10/21/19 01:35	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane	*17*	*J N*	*ug/L*		*1.90*	*123-91-1*	*10/20/19 09:41*	*10/21/19 01:35*	*1*
Unknown	*6.7*	*J*	*ug/L*		*6.87*		*10/20/19 09:41*	*10/21/19 01:35*	*1*
Unknown	*8.1*	*J*	*ug/L*		*7.11*		*10/20/19 09:41*	*10/21/19 01:35*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*103*		*51 - 108*	*10/20/19 09:41*	*10/21/19 01:35*	*1*
Phenol-d5 (Surr)	*31*		*14 - 39*	*10/20/19 09:41*	*10/21/19 01:35*	*1*
Terphenyl-d14 (Surr)	*73*		*40 - 148*	*10/20/19 09:41*	*10/21/19 01:35*	*1*
2,4,6-Tribromophenol (Surr)	*107*		*26 - 139*	*10/20/19 09:41*	*10/21/19 01:35*	*1*
2-Fluorophenol (Surr)	*51*		*25 - 58*	*10/20/19 09:41*	*10/21/19 01:35*	*1*
2-Fluorobiphenyl (Surr)	*98*		*45 - 107*	*10/20/19 09:41*	*10/21/19 01:35*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/19/19 14:59	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/19/19 14:59	1
Sulfate	**9.34**		0.60	0.35	mg/L			10/19/19 14:59	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**37.0**	**D**	1.68	0.20	mg/L			10/19/19 17:57	14

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**29000**		250	66.8	ug/L		10/24/19 05:06	10/24/19 11:29	5
Magnesium	**10200**		250	24.8	ug/L		10/24/19 05:06	10/24/19 11:29	5
Potassium	**5380**		250	73.5	ug/L		10/24/19 05:06	10/24/19 11:29	5

Client Sample ID: UPA-101A-LSB — Lab Sample ID: 460-194328-4

Date Collected: 10/18/19 14:55 **Matrix: Water**
Date Received: 10/18/19 20:55

Method: 200.8 - Metals (ICP/MS) - Total Recoverable (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**36000**		250	233	ug/L		10/24/19 05:06	10/24/19 11:29	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**38.2**	J	50.0	1.7	ug/L		10/23/19 11:28	10/23/19 23:23	1
Iron, Dissolved	**24200**		150	34.2	ug/L		10/23/19 11:28	10/23/19 23:23	1
Manganese, Dissolved	**1610**		15.0	0.99	ug/L		10/23/19 11:28	10/23/19 23:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.81**		0.10	0.068	mg/L			10/22/19 10:38	1
Bicarbonate Alkalinity as CaCO3	**148**		5.0	5.0	mg/L			10/23/19 12:11	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/23/19 12:11	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/22/19 13:00	1

Client Sample ID: TBGW_101819 — Lab Sample ID: 460-194328-5

Date Collected: 10/18/19 00:00 **Matrix: Water**
Date Received: 10/18/19 20:55

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/20/19 01:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*92*		*72 - 133*		*10/20/19 01:15*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/23/19 16:22	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/23/19 16:22	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/23/19 16:22	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/23/19 16:22	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/23/19 16:22	1
Acetone	**7.0**		5.0	4.4	ug/L			10/23/19 16:22	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/23/19 16:22	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/23/19 16:22	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/23/19 16:22	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/23/19 16:22	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/23/19 16:22	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/23/19 16:22	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/23/19 16:22	1
2-Butanone (MEK)	1.9	U *	5.0	1.9	ug/L			10/23/19 16:22	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/23/19 16:22	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/23/19 16:22	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/23/19 16:22	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/23/19 16:22	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/23/19 16:22	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/23/19 16:22	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/23/19 16:22	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/23/19 16:22	1
Benzene	0.20	U	1.0	0.20	ug/L			10/23/19 16:22	1

Client Sample ID: TBGW_101819 Lab Sample ID: 460-194328-5

Date Collected: 10/18/19 00:00 **Matrix: Water**
Date Received: 10/18/19 20:55

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/23/19 16:22	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/23/19 16:22	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/23/19 16:22	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/23/19 16:22	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/23/19 16:22	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/23/19 16:22	1
Toluene	0.38	U	1.0	0.38	ug/L			10/23/19 16:22	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/23/19 16:22	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/23/19 16:22	1
Styrene	0.42	U	1.0	0.42	ug/L			10/23/19 16:22	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/23/19 16:22	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/23/19 16:22	1
MTBE	0.47	U	1.0	0.47	ug/L			10/23/19 16:22	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/23/19 16:22	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/23/19 16:22	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/23/19 16:22	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/23/19 16:22	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/23/19 16:22	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/23/19 16:22	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/23/19 16:22	1
Indane	0.35	U	1.0	0.35	ug/L			10/23/19 16:22	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/23/19 16:22	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/23/19 16:22	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/23/19 16:22*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*74 - 132*		*10/23/19 16:22*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/23/19 16:22*	*1*
4-Bromofluorobenzene	*110*		*77 - 124*		*10/23/19 16:22*	*1*
Dibromofluoromethane (Surr)	*108*		*72 - 131*		*10/23/19 16:22*	*1*

Client Sample Results

Client: Golder Associates Inc. Job ID: 460-194514-1
Project/Site: DS&G Semi-Annual Groundwater

Client Sample ID: RT-1-UP Lab Sample ID: 460-194514-1

Date Collected: 10/21/19 10:00 **Matrix: Water**
Date Received: 10/21/19 20:35

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/25/19 19:51	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/25/19 19:51	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/25/19 19:51	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/25/19 19:51	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/25/19 19:51	1
Acetone	4.4	U	5.0	4.4	ug/L			10/25/19 19:51	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/25/19 19:51	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/25/19 19:51	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/25/19 19:51	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/25/19 19:51	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/25/19 19:51	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/25/19 19:51	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/25/19 19:51	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/25/19 19:51	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/25/19 19:51	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/25/19 19:51	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/25/19 19:51	1
1,2-Dichloropropane	0.35	U *	1.0	0.35	ug/L			10/25/19 19:51	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/25/19 19:51	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/25/19 19:51	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/25/19 19:51	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/25/19 19:51	1
Benzene	0.20	U	1.0	0.20	ug/L			10/25/19 19:51	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/25/19 19:51	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/25/19 19:51	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/25/19 19:51	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/25/19 19:51	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/25/19 19:51	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/25/19 19:51	1
Toluene	0.38	U	1.0	0.38	ug/L			10/25/19 19:51	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/25/19 19:51	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/25/19 19:51	1
Styrene	0.42	U	1.0	0.42	ug/L			10/25/19 19:51	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/25/19 19:51	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/25/19 19:51	1
MTBE	0.47	U	1.0	0.47	ug/L			10/25/19 19:51	1
Tetrahydrofuran	**1.4**	**J**	2.0	1.0	ug/L			10/25/19 19:51	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/25/19 19:51	1
1,4-Dioxane	**78**		50	28	ug/L			10/25/19 19:51	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/25/19 19:51	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/25/19 19:51	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/25/19 19:51	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/25/19 19:51	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/25/19 19:51	1
Indane	0.35	U	1.0	0.35	ug/L			10/25/19 19:51	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/25/19 19:51	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/25/19 19:51	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/25/19 19:51*	*1*

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-194514-1

Client Sample ID: RT-1-UP

Lab Sample ID: 460-194514-1

Date Collected: 10/21/19 10:00
Date Received: 10/21/19 20:35

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*74 - 132*		*10/25/19 19:51*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/25/19 19:51*	*1*
4-Bromofluorobenzene	*96*		*77 - 124*		*10/25/19 19:51*	*1*
Dibromofluoromethane (Surr)	*108*		*72 - 131*		*10/25/19 19:51*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/22/19 17:37	10/24/19 09:35	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/22/19 17:37	10/24/19 09:35	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/22/19 17:37	10/24/19 09:35	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/22/19 17:37	10/24/19 09:35	1
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/22/19 17:37	10/24/19 09:35	1
Bis(2-chloroethyl)ether	0.026	U	0.030	0.026	ug/L		10/22/19 17:37	10/24/19 09:35	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/22/19 17:37	10/23/19 11:38	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/22/19 17:37	10/23/19 11:38	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/22/19 17:37	10/23/19 11:38	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/22/19 17:37	10/23/19 11:38	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/22/19 17:37	10/23/19 11:38	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/22/19 17:37	10/23/19 11:38	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/22/19 17:37	10/23/19 11:38	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/22/19 17:37	10/23/19 11:38	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/22/19 17:37	10/23/19 11:38	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/22/19 17:37	10/23/19 11:38	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/22/19 17:37	10/23/19 11:38	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/22/19 17:37	10/23/19 11:38	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/22/19 17:37	10/23/19 11:38	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/22/19 17:37	10/23/19 11:38	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/22/19 17:37	10/23/19 11:38	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/22/19 17:37	10/23/19 11:38	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/22/19 17:37	10/23/19 11:38	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/22/19 17:37	10/23/19 11:38	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/22/19 17:37	10/23/19 11:38	1
Isophorone	0.80	U	10	0.80	ug/L		10/22/19 17:37	10/23/19 11:38	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/22/19 17:37	10/23/19 11:38	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/22/19 17:37	10/23/19 11:38	1
Naphthalene	1.1	U	10	1.1	ug/L		10/22/19 17:37	10/23/19 11:38	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/22/19 17:37	10/23/19 11:38	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/22/19 17:37	10/23/19 11:38	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/22/19 17:37	10/23/19 11:38	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/22/19 17:37	10/23/19 11:38	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/22/19 17:37	10/23/19 11:38	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/22/19 17:37	10/23/19 11:38	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/22/19 17:37	10/23/19 11:38	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/22/19 17:37	10/23/19 11:38	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/22/19 17:37	10/23/19 11:38	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/22/19 17:37	10/23/19 11:38	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/22/19 17:37	10/23/19 11:38	1

Client Sample ID: RT-1-UP — Lab Sample ID: 460-194514-1

Date Collected: 10/21/19 10:00 **Matrix: Water**
Date Received: 10/21/19 20:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	1.1	U	10	1.1	ug/L		10/22/19 17:37	10/23/19 11:38	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/22/19 17:37	10/23/19 11:38	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/22/19 17:37	10/23/19 11:38	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/22/19 17:37	10/23/19 11:38	1
Fluorene	0.91	U	10	0.91	ug/L		10/22/19 17:37	10/23/19 11:38	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/22/19 17:37	10/23/19 11:38	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/22/19 17:37	10/23/19 11:38	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/22/19 17:37	10/23/19 11:38	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/22/19 17:37	10/23/19 11:38	1
Anthracene	0.63	U	10	0.63	ug/L		10/22/19 17:37	10/23/19 11:38	1
Carbazole	0.68	U	10	0.68	ug/L		10/22/19 17:37	10/23/19 11:38	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/22/19 17:37	10/23/19 11:38	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/22/19 17:37	10/23/19 11:38	1
Pyrene	1.6	U	10	1.6	ug/L		10/22/19 17:37	10/23/19 11:38	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/22/19 17:37	10/23/19 11:38	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/22/19 17:37	10/23/19 11:38	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/22/19 17:37	10/23/19 11:38	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/22/19 17:37	10/23/19 11:38	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/22/19 17:37	10/23/19 11:38	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/22/19 17:37	10/23/19 11:38	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/22/19 17:37	10/23/19 11:38	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/22/19 17:37	10/23/19 11:38	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/22/19 17:37	10/23/19 11:38	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/22/19 17:37	10/23/19 11:38	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/22/19 17:37	10/23/19 11:38	1
Caprolactam	0.68	U	10	0.68	ug/L		10/22/19 17:37	10/23/19 11:38	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/22/19 17:37	10/23/19 11:38	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/22/19 17:37	10/23/19 11:38	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/22/19 17:37	10/23/19 11:38	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane	*12*	*J N*	*ug/L*		*1.90*	*123-91-1*	*10/22/19 17:37*	*10/23/19 11:38*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*93*		*51 - 108*	*10/22/19 17:37*	*10/23/19 11:38*	*1*
Phenol-d5 (Surr)	*31*		*14 - 39*	*10/22/19 17:37*	*10/23/19 11:38*	*1*
Terphenyl-d14 (Surr)	*89*		*40 - 148*	*10/22/19 17:37*	*10/23/19 11:38*	*1*
2,4,6-Tribromophenol (Surr)	*106*		*26 - 139*	*10/22/19 17:37*	*10/23/19 11:38*	*1*
2-Fluorophenol (Surr)	*46*		*25 - 58*	*10/22/19 17:37*	*10/23/19 11:38*	*1*
2-Fluorobiphenyl (Surr)	*80*		*45 - 107*	*10/22/19 17:37*	*10/23/19 11:38*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/22/19 20:58	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/22/19 20:58	1
Sulfate	**0.86**		0.60	0.35	mg/L			10/22/19 20:58	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**26.6**	D	1.20	0.14	mg/L			10/23/19 05:18	10

Client Sample ID: RT-1-UP — Lab Sample ID: 460-194514-1

Date Collected: 10/21/19 10:00 **Matrix: Water**
Date Received: 10/21/19 20:35

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**5980**		250	66.8	ug/L		10/24/19 05:06	10/24/19 11:36	5
Magnesium	**3100**		250	24.8	ug/L		10/24/19 05:06	10/24/19 11:36	5
Potassium	**2070**		250	73.5	ug/L		10/24/19 05:06	10/24/19 11:36	5
Calcium	**10200**		250	233	ug/L		10/24/19 05:06	10/24/19 11:36	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**18.5**	J	50.0	1.7	ug/L		10/25/19 08:01	10/25/19 20:37	1
Iron, Dissolved	**4670**		150	34.2	ug/L		10/25/19 08:01	10/25/19 20:37	1
Manganese, Dissolved	**167**		15.0	0.99	ug/L		10/25/19 08:01	10/25/19 20:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.068	U	0.10	0.068	mg/L			10/23/19 13:14	1
Bicarbonate Alkalinity as CaCO3	**15.2**		5.0	5.0	mg/L			10/23/19 13:46	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/23/19 13:46	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/23/19 16:00	1

Client Sample ID: UPA-01 — Lab Sample ID: 460-194514-2

Date Collected: 10/21/19 11:35 **Matrix: Water**
Date Received: 10/21/19 20:35

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/25/19 20:09	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/25/19 20:09	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/25/19 20:09	1
Chloroethane	**0.52**	J	1.0	0.32	ug/L			10/25/19 20:09	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/25/19 20:09	1
Acetone	4.4	U	5.0	4.4	ug/L			10/25/19 20:09	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/25/19 20:09	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/25/19 20:09	1
1,1-Dichloroethane	**1.3**		1.0	0.26	ug/L			10/25/19 20:09	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/25/19 20:09	1
cis-1,2-Dichloroethene	**0.68**	J	1.0	0.22	ug/L			10/25/19 20:09	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/25/19 20:09	1
1,2-Dichloroethane	**0.74**	J	1.0	0.43	ug/L			10/25/19 20:09	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/25/19 20:09	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/25/19 20:09	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/25/19 20:09	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/25/19 20:09	1
1,2-Dichloropropane	0.35	U *	1.0	0.35	ug/L			10/25/19 20:09	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/25/19 20:09	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/25/19 20:09	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/25/19 20:09	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/25/19 20:09	1
Benzene	**110**		1.0	0.20	ug/L			10/25/19 20:09	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/25/19 20:09	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/25/19 20:09	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/25/19 20:09	1

Client Sample ID: UPA-01 Lab Sample ID: 460-194514-2

Date Collected: 10/21/19 11:35 **Matrix: Water**
Date Received: 10/21/19 20:35

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/25/19 20:09	1
Tetrachloroethene	**1.5**		1.0	0.25	ug/L			10/25/19 20:09	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/25/19 20:09	1
Toluene	0.38	U	1.0	0.38	ug/L			10/25/19 20:09	1
Chlorobenzene	**4.3**		1.0	0.38	ug/L			10/25/19 20:09	1
Ethylbenzene	**12**		1.0	0.30	ug/L			10/25/19 20:09	1
Styrene	0.42	U	1.0	0.42	ug/L			10/25/19 20:09	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/25/19 20:09	1
Diethyl ether	**2.7**		1.0	0.21	ug/L			10/25/19 20:09	1
MTBE	0.47	U	1.0	0.47	ug/L			10/25/19 20:09	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/25/19 20:09	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/25/19 20:09	1
1,4-Dioxane	**130**		50	28	ug/L			10/25/19 20:09	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/25/19 20:09	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/25/19 20:09	1
Isopropylbenzene	**11**		1.0	0.34	ug/L			10/25/19 20:09	1
N-Propylbenzene	**12**		1.0	0.32	ug/L			10/25/19 20:09	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/25/19 20:09	1
Indane	**10**		1.0	0.35	ug/L			10/25/19 20:09	1
Dichlorofluoromethane	**8.5**		1.0	0.34	ug/L			10/25/19 20:09	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/25/19 20:09	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Benzenediol, diacetate	*20*	*J N*	*ug/L*		*13.16*	*1205-91-0*		*10/25/19 20:09*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*74 - 132*		*10/25/19 20:09*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/25/19 20:09*	*1*
4-Bromofluorobenzene	*97*		*77 - 124*		*10/25/19 20:09*	*1*
Dibromofluoromethane (Surr)	*108*		*72 - 131*		*10/25/19 20:09*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/22/19 17:37	10/24/19 09:56	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/22/19 17:37	10/24/19 09:56	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/22/19 17:37	10/24/19 09:56	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/22/19 17:37	10/24/19 09:56	1
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/22/19 17:37	10/24/19 09:56	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	**0.56**	**J**	10	0.29	ug/L		10/22/19 17:37	10/23/19 11:59	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/22/19 17:37	10/23/19 11:59	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/22/19 17:37	10/23/19 11:59	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/22/19 17:37	10/23/19 11:59	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/22/19 17:37	10/23/19 11:59	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/22/19 17:37	10/23/19 11:59	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/22/19 17:37	10/23/19 11:59	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/22/19 17:37	10/23/19 11:59	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/22/19 17:37	10/23/19 11:59	1

Client Sample ID: UPA-01 Lab Sample ID: 460-194514-2

Date Collected: 10/21/19 11:35 **Matrix: Water**
Date Received: 10/21/19 20:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/22/19 17:37	10/23/19 11:59	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/22/19 17:37	10/23/19 11:59	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/22/19 17:37	10/23/19 11:59	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/22/19 17:37	10/23/19 11:59	1
Bis(2-chloroethyl)ether	**55**		1.0	0.30	ug/L		10/22/19 17:37	10/23/19 11:59	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/22/19 17:37	10/23/19 11:59	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/22/19 17:37	10/23/19 11:59	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/22/19 17:37	10/23/19 11:59	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/22/19 17:37	10/23/19 11:59	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/22/19 17:37	10/23/19 11:59	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/22/19 17:37	10/23/19 11:59	1
Isophorone	0.80	U	10	0.80	ug/L		10/22/19 17:37	10/23/19 11:59	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/22/19 17:37	10/23/19 11:59	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/22/19 17:37	10/23/19 11:59	1
Naphthalene	1.1	U	10	1.1	ug/L		10/22/19 17:37	10/23/19 11:59	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/22/19 17:37	10/23/19 11:59	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/22/19 17:37	10/23/19 11:59	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/22/19 17:37	10/23/19 11:59	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/22/19 17:37	10/23/19 11:59	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/22/19 17:37	10/23/19 11:59	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/22/19 17:37	10/23/19 11:59	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/22/19 17:37	10/23/19 11:59	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/22/19 17:37	10/23/19 11:59	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/22/19 17:37	10/23/19 11:59	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/22/19 17:37	10/23/19 11:59	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/22/19 17:37	10/23/19 11:59	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/22/19 17:37	10/23/19 11:59	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/22/19 17:37	10/23/19 11:59	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/22/19 17:37	10/23/19 11:59	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/22/19 17:37	10/23/19 11:59	1
Fluorene	0.91	U	10	0.91	ug/L		10/22/19 17:37	10/23/19 11:59	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/22/19 17:37	10/23/19 11:59	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/22/19 17:37	10/23/19 11:59	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/22/19 17:37	10/23/19 11:59	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/22/19 17:37	10/23/19 11:59	1
Anthracene	0.63	U	10	0.63	ug/L		10/22/19 17:37	10/23/19 11:59	1
Carbazole	0.68	U	10	0.68	ug/L		10/22/19 17:37	10/23/19 11:59	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/22/19 17:37	10/23/19 11:59	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/22/19 17:37	10/23/19 11:59	1
Pyrene	1.6	U	10	1.6	ug/L		10/22/19 17:37	10/23/19 11:59	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/22/19 17:37	10/23/19 11:59	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/22/19 17:37	10/23/19 11:59	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/22/19 17:37	10/23/19 11:59	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/22/19 17:37	10/23/19 11:59	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/22/19 17:37	10/23/19 11:59	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/22/19 17:37	10/23/19 11:59	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/22/19 17:37	10/23/19 11:59	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/22/19 17:37	10/23/19 11:59	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/22/19 17:37	10/23/19 11:59	1

Client Sample ID: UPA-01 Lab Sample ID: 460-194514-2

Date Collected: 10/21/19 11:35 **Matrix: Water**
Date Received: 10/21/19 20:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diphenyl ether	**1.6**	**J**	10	1.2	ug/L		10/22/19 17:37	10/23/19 11:59	1
n,n'-Dimethylaniline	**5.8**		1.0	0.91	ug/L		10/22/19 17:37	10/23/19 11:59	1
Caprolactam	0.68	U	10	0.68	ug/L		10/22/19 17:37	10/23/19 11:59	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/22/19 17:37	10/23/19 11:59	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/22/19 17:37	10/23/19 11:59	1
N-Methylaniline	**3.2**	**J**	5.0	0.48	ug/L		10/22/19 17:37	10/23/19 11:59	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane	*21*	*J N*	*ug/L*		*1.90*	*123-91-1*	*10/22/19 17:37*	*10/23/19 11:59*	*1*
Benzene, (1-methylethyl)-	*9.0*	*J N*	*ug/L*		*3.73*	*98-82-8*	*10/22/19 17:37*	*10/23/19 11:59*	*1*
Benzene, propyl-	*8.8*	*J N*	*ug/L*		*3.99*	*103-65-1*	*10/22/19 17:37*	*10/23/19 11:59*	*1*
Indane	*12*	*J N*	*ug/L*		*4.65*	*496-11-7*	*10/22/19 17:37*	*10/23/19 11:59*	*1*
2-Isopropoxyphenol	*31*	*J N*	*ug/L*		*5.54*	*4812-20-8*	*10/22/19 17:37*	*10/23/19 11:59*	*1*
2-Propanone, 1-phenoxy-	*7.1*	*J N*	*ug/L*		*5.80*	*621-87-4*	*10/22/19 17:37*	*10/23/19 11:59*	*1*
Unknown	*17*	*J*	*ug/L*		*6.11*		*10/22/19 17:37*	*10/23/19 11:59*	*1*
Unknown	*13*	*J*	*ug/L*		*6.27*		*10/22/19 17:37*	*10/23/19 11:59*	*1*
Unknown	*14*	*J*	*ug/L*		*6.50*		*10/22/19 17:37*	*10/23/19 11:59*	*1*
Unknown	*120*	*J*	*ug/L*		*7.12*		*10/22/19 17:37*	*10/23/19 11:59*	*1*
Benzenamine, 3-methyl-	*16*	*J N*	*ug/L*		*7.41*	*108-44-1*	*10/22/19 17:37*	*10/23/19 11:59*	*1*
Unknown	*12*	*J*	*ug/L*		*7.92*		*10/22/19 17:37*	*10/23/19 11:59*	*1*
Unknown	*7.2*	*J*	*ug/L*		*9.06*		*10/22/19 17:37*	*10/23/19 11:59*	*1*
Unknown	*8.5*	*J*	*ug/L*		*9.80*		*10/22/19 17:37*	*10/23/19 11:59*	*1*
Unknown	*10*	*J*	*ug/L*		*11.71*		*10/22/19 17:37*	*10/23/19 11:59*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*94*		*51 - 108*	*10/22/19 17:37*	*10/23/19 11:59*	*1*
Phenol-d5 (Surr)	*33*		*14 - 39*	*10/22/19 17:37*	*10/23/19 11:59*	*1*
Terphenyl-d14 (Surr)	*84*		*40 - 148*	*10/22/19 17:37*	*10/23/19 11:59*	*1*
2,4,6-Tribromophenol (Surr)	*115*		*26 - 139*	*10/22/19 17:37*	*10/23/19 11:59*	*1*
2-Fluorophenol (Surr)	*48*		*25 - 58*	*10/22/19 17:37*	*10/23/19 11:59*	*1*
2-Fluorobiphenyl (Surr)	*82*		*45 - 107*	*10/22/19 17:37*	*10/23/19 11:59*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/22/19 21:43	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/22/19 21:43	1
Sulfate	**7.11**		0.60	0.35	mg/L			10/22/19 21:43	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**48.3**	**D**	2.16	0.25	mg/L			10/23/19 05:33	18

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**22400**		250	66.8	ug/L		10/24/19 05:06	10/24/19 11:39	5
Magnesium	**6030**		250	24.8	ug/L		10/24/19 05:06	10/24/19 11:39	5
Potassium	**2870**		250	73.5	ug/L		10/24/19 05:06	10/24/19 11:39	5
Calcium	**18000**		250	233	ug/L		10/24/19 05:06	10/24/19 11:39	5

Client Sample ID: UPA-01 Lab Sample ID: 460-194514-2

Date Collected: 10/21/19 11:35 **Matrix: Water**
Date Received: 10/21/19 20:35

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**20.3**	**J**	50.0	1.7	ug/L		10/25/19 08:01	10/25/19 20:41	1
Iron, Dissolved	**20500**		150	34.2	ug/L		10/25/19 08:01	10/25/19 20:41	1
Manganese, Dissolved	**2880**		15.0	0.99	ug/L		10/25/19 08:01	10/25/19 20:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.12**		0.10	0.068	mg/L			10/23/19 13:16	1
Bicarbonate Alkalinity as CaCO3	**58.1**		5.0	5.0	mg/L			10/23/19 13:53	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/23/19 13:53	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/23/19 16:00	1

Client Sample ID: DDA-12-US Lab Sample ID: 460-194514-3

Date Collected: 10/21/19 11:20 **Matrix: Water**
Date Received: 10/21/19 20:35

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**75**	J-	2.0	1.0	ug/L			10/24/19 07:04	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*68*	*X*	*72 - 133*		*10/24/19 07:04*	*5*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	2.0	U	5.0	2.0	ug/L			10/25/19 05:23	5
Bromomethane	2.8	U	5.0	2.8	ug/L			10/25/19 05:23	5
Vinyl chloride	0.86	U	5.0	0.86	ug/L			10/25/19 05:23	5
Chloroethane	1.6	U	5.0	1.6	ug/L			10/25/19 05:23	5
Methylene Chloride	1.6	U	5.0	1.6	ug/L			10/25/19 05:23	5
Acetone	22	U	25	22	ug/L			10/25/19 05:23	5
Carbon disulfide	4.1	U	5.0	4.1	ug/L			10/25/19 05:23	5
1,1-Dichloroethene	1.3	U	5.0	1.3	ug/L			10/25/19 05:23	5
1,1-Dichloroethane	1.3	U	5.0	1.3	ug/L			10/25/19 05:23	5
trans-1,2-Dichloroethene	1.2	U	5.0	1.2	ug/L			10/25/19 05:23	5
cis-1,2-Dichloroethene	1.1	U	5.0	1.1	ug/L			10/25/19 05:23	5
Chloroform	1.6	U	5.0	1.6	ug/L			10/25/19 05:23	5
1,2-Dichloroethane	2.2	U	5.0	2.2	ug/L			10/25/19 05:23	5
2-Butanone (MEK)	9.3	U	25	9.3	ug/L			10/25/19 05:23	5
1,1,1-Trichloroethane	1.2	U	5.0	1.2	ug/L			10/25/19 05:23	5
Carbon tetrachloride	1.0	U	5.0	1.0	ug/L			10/25/19 05:23	5
Bromodichloromethane	1.7	U	5.0	1.7	ug/L			10/25/19 05:23	5
1,2-Dichloropropane	1.8	U	5.0	1.8	ug/L			10/25/19 05:23	5
cis-1,3-Dichloropropene	1.1	U	5.0	1.1	ug/L			10/25/19 05:23	5
Trichloroethene	1.6	U	5.0	1.6	ug/L			10/25/19 05:23	5
Dibromochloromethane	1.4	U	5.0	1.4	ug/L			10/25/19 05:23	5
1,1,2-Trichloroethane	2.2	U	5.0	2.2	ug/L			10/25/19 05:23	5
Benzene	**38**		5.0	1.0	ug/L			10/25/19 05:23	5
trans-1,3-Dichloropropene	2.4	U	5.0	2.4	ug/L			10/25/19 05:23	5
Bromoform	2.7	U	5.0	2.7	ug/L			10/25/19 05:23	5
4-Methyl-2-pentanone	6.5	U	25	6.5	ug/L			10/25/19 05:23	5
2-Hexanone	5.7	U	25	5.7	ug/L			10/25/19 05:23	5

Client Sample ID: DDA-12-US Lab Sample ID: 460-194514-3

Date Collected: 10/21/19 11:20 **Matrix: Water**
Date Received: 10/21/19 20:35

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	1.2	U	5.0	1.2	ug/L			10/25/19 05:23	5
1,1,2,2-Tetrachloroethane	1.8	U	5.0	1.8	ug/L			10/25/19 05:23	5
Toluene	**3.3**	**J**	5.0	1.9	ug/L			10/25/19 05:23	5
Chlorobenzene	**4.0**	**J**	5.0	1.9	ug/L			10/25/19 05:23	5
Ethylbenzene	**12**		5.0	1.5	ug/L			10/25/19 05:23	5
Styrene	2.1	U	5.0	2.1	ug/L			10/25/19 05:23	5
Xylenes, Total	**1600**		10	3.3	ug/L			10/25/19 05:23	5
Diethyl ether	1.1	U	5.0	1.1	ug/L			10/25/19 05:23	5
MTBE	2.3	U	5.0	2.3	ug/L			10/25/19 05:23	5
Tetrahydrofuran	5.2	U	10	5.2	ug/L			10/25/19 05:23	5
Cyclohexane	**56**		5.0	1.6	ug/L			10/25/19 05:23	5
1,2,4-Trimethylbenzene	**1200**		5.0	1.9	ug/L			10/25/19 05:23	5
1,3,5-Trimethylbenzene	**280**		5.0	1.6	ug/L			10/25/19 05:23	5
Isopropylbenzene	**88**		5.0	1.7	ug/L			10/25/19 05:23	5
N-Propylbenzene	**160**		5.0	1.6	ug/L			10/25/19 05:23	5
Methylcyclohexane	**120**		5.0	1.3	ug/L			10/25/19 05:23	5
Indane	**110**		5.0	1.7	ug/L			10/25/19 05:23	5
Dichlorofluoromethane	**2.0**	**J**	5.0	1.7	ug/L			10/25/19 05:23	5
1,2,3-Trimethylbenzene	**260**		5.0	1.8	ug/L			10/25/19 05:23	5

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Cyclopentane, 1,2-dimethyl-	*28*	*J N*	*ug/L*		*4.88*	*2452-99-5*		*10/25/19 05:23*	*5*
Benzene, 1-ethyl-3-methyl-	*230*	*J N*	*ug/L*		*10.28*	*620-14-4*		*10/25/19 05:23*	*5*
Benzene, 1-ethyl-4-methyl-	*130*	*J N*	*ug/L*		*10.30*	*622-96-8*		*10/25/19 05:23*	*5*
Benzene, 1-ethyl-2-methyl-	*240*	*J N*	*ug/L*		*10.57*	*611-14-3*		*10/25/19 05:23*	*5*
Benzene, 1-methyl-2-(1-methylethyl)-	*27*	*J N*	*ug/L*		*11.39*	*527-84-4*		*10/25/19 05:23*	*5*
Benzene, 4-ethyl-1,2-dimethyl-	*27*	*J N*	*ug/L*		*11.71*	*934-80-5*		*10/25/19 05:23*	*5*
Naphthalene, 2-methyl-	*26*	*J N*	*ug/L*		*13.79*	*91-57-6*		*10/25/19 05:23*	*5*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*74 - 132*		*10/25/19 05:23*	*5*
Toluene-d8 (Surr)	*105*		*80 - 120*		*10/25/19 05:23*	*5*
4-Bromofluorobenzene	*103*		*77 - 124*		*10/25/19 05:23*	*5*
Dibromofluoromethane (Surr)	*95*		*72 - 131*		*10/25/19 05:23*	*5*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	**0.024**	**J**	0.050	0.016	ug/L		10/22/19 17:37	10/24/19 08:19	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/22/19 17:37	10/24/19 08:19	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/22/19 17:37	10/24/19 08:19	1
Hexachlorobenzene	**0.023**		0.020	0.013	ug/L		10/22/19 17:37	10/24/19 08:19	1
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/22/19 17:37	10/24/19 08:19	1
Bis(2-chloroethyl)ether	**2.8**		0.030	0.026	ug/L		10/22/19 17:37	10/24/19 08:19	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/22/19 17:37	10/23/19 12:20	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/22/19 17:37	10/23/19 12:20	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/22/19 17:37	10/23/19 12:20	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/22/19 17:37	10/23/19 12:20	1

Client Sample ID: DDA-12-US Lab Sample ID: 460-194514-3

Date Collected: 10/21/19 11:20 **Matrix: Water**
Date Received: 10/21/19 20:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/22/19 17:37	10/23/19 12:20	1
2,4-Dimethylphenol	**3.6**	**J**	10	0.24	ug/L		10/22/19 17:37	10/23/19 12:20	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/22/19 17:37	10/23/19 12:20	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/22/19 17:37	10/23/19 12:20	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/22/19 17:37	10/23/19 12:20	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/22/19 17:37	10/23/19 12:20	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/22/19 17:37	10/23/19 12:20	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/22/19 17:37	10/23/19 12:20	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/22/19 17:37	10/23/19 12:20	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/22/19 17:37	10/23/19 12:20	1
1,4-Dichlorobenzene	**1.7**	**J**	10	1.3	ug/L		10/22/19 17:37	10/23/19 12:20	1
1,2-Dichlorobenzene	**2.6**	**J**	10	1.3	ug/L		10/22/19 17:37	10/23/19 12:20	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/22/19 17:37	10/23/19 12:20	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/22/19 17:37	10/23/19 12:20	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/22/19 17:37	10/23/19 12:20	1
Isophorone	0.80	U	10	0.80	ug/L		10/22/19 17:37	10/23/19 12:20	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/22/19 17:37	10/23/19 12:20	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/22/19 17:37	10/23/19 12:20	1
Naphthalene	**14**		10	1.1	ug/L		10/22/19 17:37	10/23/19 12:20	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/22/19 17:37	10/23/19 12:20	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/22/19 17:37	10/23/19 12:20	1
2-Methylnaphthalene	**2.0**	**J**	10	1.1	ug/L		10/22/19 17:37	10/23/19 12:20	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/22/19 17:37	10/23/19 12:20	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/22/19 17:37	10/23/19 12:20	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/22/19 17:37	10/23/19 12:20	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/22/19 17:37	10/23/19 12:20	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/22/19 17:37	10/23/19 12:20	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/22/19 17:37	10/23/19 12:20	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/22/19 17:37	10/23/19 12:20	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/22/19 17:37	10/23/19 12:20	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/22/19 17:37	10/23/19 12:20	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/22/19 17:37	10/23/19 12:20	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/22/19 17:37	10/23/19 12:20	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/22/19 17:37	10/23/19 12:20	1
Fluorene	0.91	U	10	0.91	ug/L		10/22/19 17:37	10/23/19 12:20	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/22/19 17:37	10/23/19 12:20	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/22/19 17:37	10/23/19 12:20	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/22/19 17:37	10/23/19 12:20	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/22/19 17:37	10/23/19 12:20	1
Anthracene	0.63	U	10	0.63	ug/L		10/22/19 17:37	10/23/19 12:20	1
Carbazole	0.68	U	10	0.68	ug/L		10/22/19 17:37	10/23/19 12:20	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/22/19 17:37	10/23/19 12:20	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/22/19 17:37	10/23/19 12:20	1
Pyrene	1.6	U	10	1.6	ug/L		10/22/19 17:37	10/23/19 12:20	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/22/19 17:37	10/23/19 12:20	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/22/19 17:37	10/23/19 12:20	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/22/19 17:37	10/23/19 12:20	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/22/19 17:37	10/23/19 12:20	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/22/19 17:37	10/23/19 12:20	1

Client Sample ID: DDA-12-US Lab Sample ID: 460-194514-3

Date Collected: 10/21/19 11:20 **Matrix: Water**
Date Received: 10/21/19 20:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/22/19 17:37	10/23/19 12:20	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/22/19 17:37	10/23/19 12:20	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/22/19 17:37	10/23/19 12:20	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/22/19 17:37	10/23/19 12:20	1
Diphenyl ether	**14**		10	1.2	ug/L		10/22/19 17:37	10/23/19 12:20	1
n,n'-Dimethylaniline	**9.3**		1.0	0.91	ug/L		10/22/19 17:37	10/23/19 12:20	1
Caprolactam	0.68	U	10	0.68	ug/L		10/22/19 17:37	10/23/19 12:20	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/22/19 17:37	10/23/19 12:20	1
Bisphenol-A	**11**		10	9.9	ug/L		10/22/19 17:37	10/23/19 12:20	1
N-Methylaniline	**2.5**	**J**	5.0	0.48	ug/L		10/22/19 17:37	10/23/19 12:20	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane	*12*	*J N*	*ug/L*		*1.90*	*123-91-1*	*10/22/19 17:37*	*10/23/19 12:20*	*1*
Benzene, (1-methylethyl)-	*67*	*J N*	*ug/L*		*3.74*	*98-82-8*	*10/22/19 17:37*	*10/23/19 12:20*	*1*
Benzene, propyl-	*110*	*J N*	*ug/L*		*3.99*	*103-65-1*	*10/22/19 17:37*	*10/23/19 12:20*	*1*
Benzene, 1-ethyl-2-methyl-	*230*	*J N*	*ug/L*		*4.05*	*611-14-3*	*10/22/19 17:37*	*10/23/19 12:20*	*1*
Benzene, 1-ethyl-3-methyl-	*160*	*J N*	*ug/L*		*4.20*	*620-14-4*	*10/22/19 17:37*	*10/23/19 12:20*	*1*
Benzene, 1,3,5-trimethyl-	*600*	*J N*	*ug/L*		*4.33*	*108-67-8*	*10/22/19 17:37*	*10/23/19 12:20*	*1*
Benzene, 1,2,3-trimethyl-	*190*	*J N*	*ug/L*		*4.54*	*526-73-8*	*10/22/19 17:37*	*10/23/19 12:20*	*1*
Benzene, 1,3-diethyl-	*12*	*J N*	*ug/L*		*4.71*	*141-93-5*	*10/22/19 17:37*	*10/23/19 12:20*	*1*
Benzene, 1-ethyl-2,3-dimethyl-	*26*	*J N*	*ug/L*		*4.78*	*933-98-2*	*10/22/19 17:37*	*10/23/19 12:20*	*1*
Benzene, 2-ethyl-1,4-dimethyl-	*23*	*J N*	*ug/L*		*4.92*	*1758-88-9*	*10/22/19 17:37*	*10/23/19 12:20*	*1*
Benzene, 1,2,3,5-tetramethyl-	*12*	*J N*	*ug/L*		*5.23*	*527-53-7*	*10/22/19 17:37*	*10/23/19 12:20*	*1*
Unknown	*18*	*J*	*ug/L*		*6.11*		*10/22/19 17:37*	*10/23/19 12:20*	*1*
Unknown	*96*	*J*	*ug/L*		*7.11*		*10/22/19 17:37*	*10/23/19 12:20*	*1*
Unknown	*9.8*	*J*	*ug/L*		*7.41*		*10/22/19 17:37*	*10/23/19 12:20*	*1*
Unknown	*12*	*J*	*ug/L*		*7.75*		*10/22/19 17:37*	*10/23/19 12:20*	*1*
1,3,5-Triazine-2,4,6(1H,3H,5H) -trione, 1,3,5-tri-2-propenyl-	*62*	*J N*	*ug/L*		*8.06*	*1025-15-6*	*10/22/19 17:37*	*10/23/19 12:20*	*1*
Unknown	*9.1*	*J*	*ug/L*		*8.32*		*10/22/19 17:37*	*10/23/19 12:20*	*1*
Urea, N,N'-dimethyl-N,N'-diphenyl-	*8.6*	*J N*	*ug/L*		*8.90*	*611-92-7*	*10/22/19 17:37*	*10/23/19 12:20*	*1*
Unknown	*14*	*J*	*ug/L*		*10.81*		*10/22/19 17:37*	*10/23/19 12:20*	*1*
Unknown	*38*	*J*	*ug/L*		*12.58*		*10/22/19 17:37*	*10/23/19 12:20*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*87*		*51 - 108*	*10/22/19 17:37*	*10/23/19 12:20*	*1*
Phenol-d5 (Surr)	*27*		*14 - 39*	*10/22/19 17:37*	*10/23/19 12:20*	*1*
Terphenyl-d14 (Surr)	*75*		*40 - 148*	*10/22/19 17:37*	*10/23/19 12:20*	*1*
2,4,6-Tribromophenol (Surr)	*108*		*26 - 139*	*10/22/19 17:37*	*10/23/19 12:20*	*1*
2-Fluorophenol (Surr)	*42*		*25 - 58*	*10/22/19 17:37*	*10/23/19 12:20*	*1*
2-Fluorobiphenyl (Surr)	*77*		*45 - 107*	*10/22/19 17:37*	*10/23/19 12:20*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/22/19 21:58	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/22/19 21:58	1
Sulfate	0.35	U	0.60	0.35	mg/L			10/22/19 21:58	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**38.7**	**D**	1.80	0.21	mg/L			10/23/19 05:48	15

Client Sample ID: DDA-12-US — Lab Sample ID: 460-194514-3

Date Collected: 10/21/19 11:20 **Matrix: Water**
Date Received: 10/21/19 20:35

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**17800**		250	66.8	ug/L		10/24/19 05:06	10/24/19 11:41	5
Magnesium	**2200**		250	24.8	ug/L		10/24/19 05:06	10/24/19 11:41	5
Potassium	**4470**		250	73.5	ug/L		10/24/19 05:06	10/24/19 11:41	5
Calcium	**7420**		250	233	ug/L		10/24/19 05:06	10/24/19 11:41	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**15.4**	J	100	3.3	ug/L		10/25/19 08:01	10/25/19 20:44	2
Iron, Dissolved	**46100**		300	68.4	ug/L		10/25/19 08:01	10/25/19 20:44	2
Manganese, Dissolved	**330**		30.0	2.0	ug/L		10/25/19 08:01	10/25/19 20:44	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**4.4**		0.10	0.068	mg/L			10/23/19 12:05	1
Bicarbonate Alkalinity as CaCO3	**36.1**		5.0	5.0	mg/L			10/23/19 14:00	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/23/19 14:00	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/23/19 16:00	1

Client Sample ID: DDA-02 — Lab Sample ID: 460-194514-4

Date Collected: 10/21/19 13:40 **Matrix: Water**
Date Received: 10/21/19 20:35

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**4.8**		0.40	0.20	ug/L			10/25/19 13:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*94*		*72 - 133*		*10/25/19 13:27*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/25/19 12:52	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/25/19 12:52	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/25/19 12:52	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/25/19 12:52	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/25/19 12:52	1
Acetone	4.4	U	5.0	4.4	ug/L			10/25/19 12:52	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/25/19 12:52	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/25/19 12:52	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/25/19 12:52	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/25/19 12:52	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/25/19 12:52	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/25/19 12:52	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/25/19 12:52	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/25/19 12:52	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/25/19 12:52	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/25/19 12:52	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/25/19 12:52	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/25/19 12:52	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/25/19 12:52	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/25/19 12:52	1

Client Sample ID: DDA-02 Lab Sample ID: 460-194514-4

Date Collected: 10/21/19 13:40 **Matrix: Water**
Date Received: 10/21/19 20:35

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/25/19 12:52	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/25/19 12:52	1
Benzene	**0.70**	**J**	1.0	0.20	ug/L			10/25/19 12:52	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/25/19 12:52	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/25/19 12:52	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/25/19 12:52	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/25/19 12:52	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/25/19 12:52	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/25/19 12:52	1
Toluene	0.38	U	1.0	0.38	ug/L			10/25/19 12:52	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/25/19 12:52	1
Ethylbenzene	**0.42**	**J**	1.0	0.30	ug/L			10/25/19 12:52	1
Styrene	0.42	U	1.0	0.42	ug/L			10/25/19 12:52	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/25/19 12:52	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/25/19 12:52	1
MTBE	**0.87**	**J**	1.0	0.47	ug/L			10/25/19 12:52	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/25/19 12:52	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/25/19 12:52	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/25/19 12:52	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/25/19 12:52	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/25/19 12:52	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/25/19 12:52	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/25/19 12:52	1
Indane	0.35	U	1.0	0.35	ug/L			10/25/19 12:52	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/25/19 12:52	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/25/19 12:52	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/25/19 12:52*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*87*		*74 - 132*		*10/25/19 12:52*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*10/25/19 12:52*	*1*
4-Bromofluorobenzene	*96*		*77 - 124*		*10/25/19 12:52*	*1*
Dibromofluoromethane (Surr)	*95*		*72 - 131*		*10/25/19 12:52*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/22/19 17:37	10/24/19 08:40	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/22/19 17:37	10/24/19 08:40	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/22/19 17:37	10/24/19 08:40	1
Hexachlorobenzene	**0.014**	**J**	0.020	0.013	ug/L		10/22/19 17:37	10/24/19 08:40	1
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/22/19 17:37	10/24/19 08:40	1
Bis(2-chloroethyl)ether	**0.15**		0.030	0.026	ug/L		10/22/19 17:37	10/24/19 08:40	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/22/19 17:37	10/23/19 12:41	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/22/19 17:37	10/23/19 12:41	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/22/19 17:37	10/23/19 12:41	1

Client Sample ID: DDA-02 Lab Sample ID: 460-194514-4

Date Collected: 10/21/19 13:40 **Matrix: Water**
Date Received: 10/21/19 20:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methylphenol	0.24	U	10	0.24	ug/L		10/22/19 17:37	10/23/19 12:41	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/22/19 17:37	10/23/19 12:41	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/22/19 17:37	10/23/19 12:41	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/22/19 17:37	10/23/19 12:41	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/22/19 17:37	10/23/19 12:41	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/22/19 17:37	10/23/19 12:41	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/22/19 17:37	10/23/19 12:41	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/22/19 17:37	10/23/19 12:41	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/22/19 17:37	10/23/19 12:41	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/22/19 17:37	10/23/19 12:41	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/22/19 17:37	10/23/19 12:41	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/22/19 17:37	10/23/19 12:41	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/22/19 17:37	10/23/19 12:41	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/22/19 17:37	10/23/19 12:41	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/22/19 17:37	10/23/19 12:41	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/22/19 17:37	10/23/19 12:41	1
Isophorone	0.80	U	10	0.80	ug/L		10/22/19 17:37	10/23/19 12:41	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/22/19 17:37	10/23/19 12:41	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/22/19 17:37	10/23/19 12:41	1
Naphthalene	1.1	U	10	1.1	ug/L		10/22/19 17:37	10/23/19 12:41	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/22/19 17:37	10/23/19 12:41	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/22/19 17:37	10/23/19 12:41	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/22/19 17:37	10/23/19 12:41	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/22/19 17:37	10/23/19 12:41	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/22/19 17:37	10/23/19 12:41	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/22/19 17:37	10/23/19 12:41	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/22/19 17:37	10/23/19 12:41	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/22/19 17:37	10/23/19 12:41	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/22/19 17:37	10/23/19 12:41	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/22/19 17:37	10/23/19 12:41	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/22/19 17:37	10/23/19 12:41	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/22/19 17:37	10/23/19 12:41	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/22/19 17:37	10/23/19 12:41	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/22/19 17:37	10/23/19 12:41	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/22/19 17:37	10/23/19 12:41	1
Fluorene	0.91	U	10	0.91	ug/L		10/22/19 17:37	10/23/19 12:41	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/22/19 17:37	10/23/19 12:41	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/22/19 17:37	10/23/19 12:41	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/22/19 17:37	10/23/19 12:41	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/22/19 17:37	10/23/19 12:41	1
Anthracene	0.63	U	10	0.63	ug/L		10/22/19 17:37	10/23/19 12:41	1
Carbazole	0.68	U	10	0.68	ug/L		10/22/19 17:37	10/23/19 12:41	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/22/19 17:37	10/23/19 12:41	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/22/19 17:37	10/23/19 12:41	1
Pyrene	1.6	U	10	1.6	ug/L		10/22/19 17:37	10/23/19 12:41	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/22/19 17:37	10/23/19 12:41	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/22/19 17:37	10/23/19 12:41	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/22/19 17:37	10/23/19 12:41	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/22/19 17:37	10/23/19 12:41	1

Client Sample ID: DDA-02 Lab Sample ID: 460-194514-4

Date Collected: 10/21/19 13:40 **Matrix: Water**
Date Received: 10/21/19 20:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/22/19 17:37	10/23/19 12:41	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/22/19 17:37	10/23/19 12:41	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/22/19 17:37	10/23/19 12:41	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/22/19 17:37	10/23/19 12:41	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/22/19 17:37	10/23/19 12:41	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/22/19 17:37	10/23/19 12:41	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/22/19 17:37	10/23/19 12:41	1
Caprolactam	0.68	U	10	0.68	ug/L		10/22/19 17:37	10/23/19 12:41	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/22/19 17:37	10/23/19 12:41	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/22/19 17:37	10/23/19 12:41	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/22/19 17:37	10/23/19 12:41	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/22/19 17:37*	*10/23/19 12:41*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*88*		*51 - 108*	*10/22/19 17:37*	*10/23/19 12:41*	*1*
Phenol-d5 (Surr)	*29*		*14 - 39*	*10/22/19 17:37*	*10/23/19 12:41*	*1*
Terphenyl-d14 (Surr)	*75*		*40 - 148*	*10/22/19 17:37*	*10/23/19 12:41*	*1*
2,4,6-Tribromophenol (Surr)	*97*		*26 - 139*	*10/22/19 17:37*	*10/23/19 12:41*	*1*
2-Fluorophenol (Surr)	*42*		*25 - 58*	*10/22/19 17:37*	*10/23/19 12:41*	*1*
2-Fluorobiphenyl (Surr)	*75*		*45 - 107*	*10/22/19 17:37*	*10/23/19 12:41*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/22/19 22:33	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/22/19 22:33	1
Sulfate	**17.2**		0.60	0.35	mg/L			10/22/19 22:33	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**30.3**	D	1.44	0.17	mg/L			10/23/19 06:02	12

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**19400**		250	66.8	ug/L		10/24/19 05:06	10/24/19 11:44	5
Magnesium	**5420**		250	24.8	ug/L		10/24/19 05:06	10/24/19 11:44	5
Potassium	**2680**		250	73.5	ug/L		10/24/19 05:06	10/24/19 11:44	5
Calcium	**10500**		250	233	ug/L		10/24/19 05:06	10/24/19 11:44	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**18.8**	J	50.0	1.7	ug/L		10/25/19 08:01	10/25/19 20:48	1
Iron, Dissolved	**19100**		150	34.2	ug/L		10/25/19 08:01	10/25/19 20:48	1
Manganese, Dissolved	**1520**		15.0	0.99	ug/L		10/25/19 08:01	10/25/19 20:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.77**		0.10	0.068	mg/L			10/23/19 12:06	1
Bicarbonate Alkalinity as CaCO3	**49.4**		5.0	5.0	mg/L			10/23/19 14:07	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/23/19 14:07	1

Client Sample ID: DDA-02 Lab Sample ID: 460-194514-4

Date Collected: 10/21/19 13:40 **Matrix: Water**
Date Received: 10/21/19 20:35

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	0.58	U	1.0	0.58	mg/L			10/23/19 16:00	1

Client Sample ID: TBGW_102119 Lab Sample ID: 460-194514-5

Date Collected: 10/21/19 13:40 **Matrix: Water**
Date Received: 10/21/19 20:35

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/23/19 11:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*89*		*72 - 133*		*10/23/19 11:18*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/24/19 23:48	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/24/19 23:48	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/24/19 23:48	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/24/19 23:48	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/24/19 23:48	1
Acetone	**13**		5.0	4.4	ug/L			10/24/19 23:48	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/24/19 23:48	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/24/19 23:48	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/24/19 23:48	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/24/19 23:48	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/24/19 23:48	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/24/19 23:48	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/24/19 23:48	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/24/19 23:48	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/24/19 23:48	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/24/19 23:48	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/24/19 23:48	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/24/19 23:48	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/24/19 23:48	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/24/19 23:48	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/24/19 23:48	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/24/19 23:48	1
Benzene	0.20	U	1.0	0.20	ug/L			10/24/19 23:48	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/24/19 23:48	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/24/19 23:48	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/24/19 23:48	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/24/19 23:48	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/24/19 23:48	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/24/19 23:48	1
Toluene	0.38	U	1.0	0.38	ug/L			10/24/19 23:48	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/24/19 23:48	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/24/19 23:48	1
Styrene	0.42	U	1.0	0.42	ug/L			10/24/19 23:48	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/24/19 23:48	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/24/19 23:48	1

Client Sample ID: TBGW_102119 Lab Sample ID: 460-194514-5

Date Collected: 10/21/19 13:40 **Matrix: Water**
Date Received: 10/21/19 20:35

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MTBE	0.47	U	1.0	0.47	ug/L			10/24/19 23:48	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/24/19 23:48	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/24/19 23:48	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/24/19 23:48	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/24/19 23:48	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/24/19 23:48	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/24/19 23:48	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/24/19 23:48	1
Indane	0.35	U	1.0	0.35	ug/L			10/24/19 23:48	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/24/19 23:48	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/24/19 23:48	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/24/19 23:48*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*74 - 132*		*10/24/19 23:48*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*10/24/19 23:48*	*1*
4-Bromofluorobenzene	*101*		*77 - 124*		*10/24/19 23:48*	*1*
Dibromofluoromethane (Surr)	*102*		*72 - 131*		*10/24/19 23:48*	*1*

Client Sample ID: DDA-03 Lab Sample ID: 460-194632-1

Date Collected: 10/22/19 10:40 **Matrix: Water**
Date Received: 10/22/19 20:40

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/23/19 19:43	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/23/19 19:43	1
Sulfate	**20.4**		0.60	0.35	mg/L			10/23/19 19:43	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**71.5**	D	3.24	0.38	mg/L			10/24/19 05:00	27

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**40300**		250	66.8	ug/L		10/25/19 08:02	10/25/19 17:48	5
Magnesium	**8740**		250	24.8	ug/L		10/25/19 08:02	10/25/19 17:48	5
Potassium	**3420**		250	73.5	ug/L		10/25/19 08:02	10/25/19 17:48	5
Calcium	**16700**		250	233	ug/L		10/25/19 08:02	10/25/19 17:48	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.079**	J	0.10	0.068	mg/L			10/25/19 10:47	1
Bicarbonate Alkalinity as CaCO3	**56.5**		5.0	5.0	mg/L			10/25/19 17:43	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/25/19 17:43	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/25/19 17:30	1

Client Sample ID: DDA-06 Lab Sample ID: 460-194632-2

Date Collected: 10/22/19 12:20 **Matrix: Water**
Date Received: 10/22/19 20:40

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**0.20**		0.10	0.056	mg/L			10/24/19 01:18	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/24/19 01:18	1
Sulfate	**5.65**		0.60	0.35	mg/L			10/24/19 01:18	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**85.9**	D	3.84	0.45	mg/L			10/24/19 07:28	32

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**35800**		250	66.8	ug/L		10/25/19 08:02	10/25/19 18:39	5
Magnesium	**34900**		250	24.8	ug/L		10/25/19 08:02	10/25/19 18:39	5
Potassium	**3510**		250	73.5	ug/L		10/25/19 08:02	10/25/19 18:39	5
Calcium	**13200**		250	233	ug/L		10/25/19 08:02	10/25/19 18:39	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**2.6**		0.10	0.068	mg/L			10/25/19 10:49	1
Bicarbonate Alkalinity as CaCO3	**119**		5.0	5.0	mg/L			10/25/19 17:51	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/25/19 17:51	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/25/19 17:30	1

Client Sample ID: PW-1(U) Lab Sample ID: 460-194632-3

Date Collected: 10/22/19 15:15 **Matrix: Water**
Date Received: 10/22/19 20:40

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**41**		0.40	0.20	ug/L			10/24/19 03:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*92*		*72 - 133*		*10/24/19 03:37*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/27/19 03:01	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/27/19 03:01	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/27/19 03:01	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/27/19 03:01	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/27/19 03:01	1
Acetone	4.4	U	5.0	4.4	ug/L			10/27/19 03:01	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/27/19 03:01	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/27/19 03:01	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/27/19 03:01	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/27/19 03:01	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/27/19 03:01	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/27/19 03:01	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/27/19 03:01	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/27/19 03:01	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/27/19 03:01	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/27/19 03:01	1

Client Sample ID: PW-1(U) Lab Sample ID: 460-194632-3

Date Collected: 10/22/19 15:15 **Matrix: Water**
Date Received: 10/22/19 20:40

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/27/19 03:01	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/27/19 03:01	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/27/19 03:01	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/27/19 03:01	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/27/19 03:01	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/27/19 03:01	1
Benzene	**15**		1.0	0.20	ug/L			10/27/19 03:01	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/27/19 03:01	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/27/19 03:01	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/27/19 03:01	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/27/19 03:01	1
Tetrachloroethene	**3.0**		1.0	0.25	ug/L			10/27/19 03:01	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/27/19 03:01	1
Toluene	0.38	U	1.0	0.38	ug/L			10/27/19 03:01	1
Chlorobenzene	**1.9**		1.0	0.38	ug/L			10/27/19 03:01	1
Ethylbenzene	**3.0**		1.0	0.30	ug/L			10/27/19 03:01	1
Styrene	0.42	U	1.0	0.42	ug/L			10/27/19 03:01	1
Xylenes, Total	**17**		2.0	0.65	ug/L			10/27/19 03:01	1
Diethyl ether	**0.56**	**J**	1.0	0.21	ug/L			10/27/19 03:01	1
MTBE	0.47	U	1.0	0.47	ug/L			10/27/19 03:01	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/27/19 03:01	1
Cyclohexane	**0.75**	**J**	1.0	0.32	ug/L			10/27/19 03:01	1
1,4-Dioxane	**47**	**J**	50	28	ug/L			10/27/19 03:01	1
1,2,4-Trimethylbenzene	**8.4**		1.0	0.37	ug/L			10/27/19 03:01	1
1,3,5-Trimethylbenzene	**2.0**		1.0	0.33	ug/L			10/27/19 03:01	1
Isopropylbenzene	**1.5**		1.0	0.34	ug/L			10/27/19 03:01	1
N-Propylbenzene	**1.7**		1.0	0.32	ug/L			10/27/19 03:01	1
Methylcyclohexane	**1.3**		1.0	0.26	ug/L			10/27/19 03:01	1
Indane	**2.8**		1.0	0.35	ug/L			10/27/19 03:01	1
Dichlorofluoromethane	**0.40**	**J**	1.0	0.34	ug/L			10/27/19 03:01	1
1,2,3-Trimethylbenzene	**2.1**		1.0	0.36	ug/L			10/27/19 03:01	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/27/19 03:01*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*74 - 132*		*10/27/19 03:01*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/27/19 03:01*	*1*
4-Bromofluorobenzene	*98*		*77 - 124*		*10/27/19 03:01*	*1*
Dibromofluoromethane (Surr)	*99*		*72 - 131*		*10/27/19 03:01*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/24/19 09:54	10/25/19 06:52	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/24/19 09:54	10/25/19 06:52	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/24/19 09:54	10/25/19 06:52	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/24/19 09:54	10/25/19 06:52	1
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/24/19 09:54	10/25/19 06:52	1
Bis(2-chloroethyl)ether	**5.6**		0.030	0.026	ug/L		10/24/19 09:54	10/25/19 06:52	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-194514-1

Client Sample ID: PW-1(U)

Lab Sample ID: 460-194632-3

Date Collected: 10/22/19 15:15
Date Received: 10/22/19 20:40

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/24/19 09:54	10/25/19 03:48	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/24/19 09:54	10/25/19 03:48	1
2-Methylphenol	0.26	U	10	0.26	ug/L		10/24/19 09:54	10/25/19 03:48	1
4-Methylphenol	0.24	U	10	0.24	ug/L		10/24/19 09:54	10/25/19 03:48	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/24/19 09:54	10/25/19 03:48	1
2,4-Dimethylphenol	0.24	U	10	0.24	ug/L		10/24/19 09:54	10/25/19 03:48	1
2,4-Dichlorophenol	0.42	U	10	0.42	ug/L		10/24/19 09:54	10/25/19 03:48	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/24/19 09:54	10/25/19 03:48	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		10/24/19 09:54	10/25/19 03:48	1
2,4,5-Trichlorophenol	0.28	U	10	0.28	ug/L		10/24/19 09:54	10/25/19 03:48	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/24/19 09:54	10/25/19 03:48	1
4-Nitrophenol	0.69	U	20	0.69	ug/L		10/24/19 09:54	10/25/19 03:48	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/24/19 09:54	10/25/19 03:48	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/24/19 09:54	10/25/19 03:48	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/24/19 09:54	10/25/19 03:48	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/24/19 09:54	10/25/19 03:48	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/24/19 09:54	10/25/19 03:48	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/24/19 09:54	10/25/19 03:48	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/24/19 09:54	10/25/19 03:48	1
Isophorone	0.80	U	10	0.80	ug/L		10/24/19 09:54	10/25/19 03:48	1
Bis(2-chloroethoxy)methane	0.24	U	10	0.24	ug/L		10/24/19 09:54	10/25/19 03:48	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/24/19 09:54	10/25/19 03:48	1
Naphthalene	1.1	U	10	1.1	ug/L		10/24/19 09:54	10/25/19 03:48	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/24/19 09:54	10/25/19 03:48	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/24/19 09:54	10/25/19 03:48	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/24/19 09:54	10/25/19 03:48	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/24/19 09:54	10/25/19 03:48	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/24/19 09:54	10/25/19 03:48	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/24/19 09:54	10/25/19 03:48	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/24/19 09:54	10/25/19 03:48	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/24/19 09:54	10/25/19 03:48	1
2,6-Dinitrotoluene	0.39	U	2.0	0.39	ug/L		10/24/19 09:54	10/25/19 03:48	1
3-Nitroaniline	0.96	U	10	0.96	ug/L		10/24/19 09:54	10/25/19 03:48	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/24/19 09:54	10/25/19 03:48	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/24/19 09:54	10/25/19 03:48	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/24/19 09:54	10/25/19 03:48	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/24/19 09:54	10/25/19 03:48	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/24/19 09:54	10/25/19 03:48	1
Fluorene	0.91	U	10	0.91	ug/L		10/24/19 09:54	10/25/19 03:48	1
4-Nitroaniline	0.54	U	10	0.54	ug/L		10/24/19 09:54	10/25/19 03:48	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/24/19 09:54	10/25/19 03:48	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/24/19 09:54	10/25/19 03:48	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/24/19 09:54	10/25/19 03:48	1
Anthracene	0.63	U	10	0.63	ug/L		10/24/19 09:54	10/25/19 03:48	1
Carbazole	0.68	U	10	0.68	ug/L		10/24/19 09:54	10/25/19 03:48	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/24/19 09:54	10/25/19 03:48	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/24/19 09:54	10/25/19 03:48	1
Pyrene	1.6	U	10	1.6	ug/L		10/24/19 09:54	10/25/19 03:48	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/24/19 09:54	10/25/19 03:48	1

Client Sample Results

Client: Golder Associates Inc. Job ID: 460-194514-1
Project/Site: DS&G Semi-Annual Groundwater

Client Sample ID: PW-1(U) Lab Sample ID: 460-194632-3

Date Collected: 10/22/19 15:15 **Matrix: Water**
Date Received: 10/22/19 20:40

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/24/19 09:54	10/25/19 03:48	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/24/19 09:54	10/25/19 03:48	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/24/19 09:54	10/25/19 03:48	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/24/19 09:54	10/25/19 03:48	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/24/19 09:54	10/25/19 03:48	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/24/19 09:54	10/25/19 03:48	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/24/19 09:54	10/25/19 03:48	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/24/19 09:54	10/25/19 03:48	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/24/19 09:54	10/25/19 03:48	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/24/19 09:54	10/25/19 03:48	1
Caprolactam	0.68	~~U~~ UJ	10	0.68	ug/L		10/24/19 09:54	10/25/19 03:48	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/24/19 09:54	10/25/19 03:48	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/24/19 09:54	10/25/19 03:48	1
N-Methylaniline	0.48	U	5.0	0.48	ug/L		10/24/19 09:54	10/25/19 03:48	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/24/19 09:54*	*10/25/19 03:48*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*70*		*51 - 108*	*10/24/19 09:54*	*10/25/19 03:48*	*1*
Phenol-d5 (Surr)	*22*		*14 - 39*	*10/24/19 09:54*	*10/25/19 03:48*	*1*
Terphenyl-d14 (Surr)	*72*		*40 - 148*	*10/24/19 09:54*	*10/25/19 03:48*	*1*
2,4,6-Tribromophenol (Surr)	*67*		*26 - 139*	*10/24/19 09:54*	*10/25/19 03:48*	*1*
2-Fluorophenol (Surr)	*33*		*25 - 58*	*10/24/19 09:54*	*10/25/19 03:48*	*1*
2-Fluorobiphenyl (Surr)	*68*		*45 - 107*	*10/24/19 09:54*	*10/25/19 03:48*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**0.91**		0.10	0.056	mg/L			10/24/19 00:35	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/24/19 00:35	1
Sulfate	**15.5**		0.60	0.35	mg/L			10/24/19 00:35	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**50.0**	D	2.28	0.27	mg/L			10/24/19 03:03	19

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**29300**		250	66.8	ug/L		10/25/19 08:02	10/25/19 18:08	5
Magnesium	**9710**		250	24.8	ug/L		10/25/19 08:02	10/25/19 18:08	5
Potassium	**3060**		250	73.5	ug/L		10/25/19 08:02	10/25/19 18:08	5
Calcium	**15600**		250	233	ug/L		10/25/19 08:02	10/25/19 18:08	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**23.9**	J	50.0	1.7	ug/L		10/26/19 09:47	10/30/19 02:55	1
Iron, Dissolved	**25800**		150	34.2	ug/L		10/26/19 09:47	10/30/19 02:55	1
Manganese, Dissolved	**1910**		15.0	0.99	ug/L		10/26/19 09:47	10/30/19 02:55	1

Client Sample ID: PW-1(U) Lab Sample ID: 460-194632-3

Date Collected: 10/22/19 15:15 **Matrix: Water**
Date Received: 10/22/19 20:40

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.38**		0.10	0.068	mg/L			10/25/19 10:50	1
Bicarbonate Alkalinity as CaCO3	**81.7**		5.0	5.0	mg/L			10/25/19 17:58	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/25/19 17:58	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/25/19 17:30	1

Client Sample ID: TBGW_102219 Lab Sample ID: 460-194632-4

Date Collected: 10/22/19 15:15 **Matrix: Water**
Date Received: 10/22/19 20:40

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.40	0.20	ug/L			10/24/19 03:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*72 - 133*		*10/24/19 03:12*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/26/19 09:20	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/26/19 09:20	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/26/19 09:20	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/26/19 09:20	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/26/19 09:20	1
Acetone	**9.5**		5.0	4.4	ug/L			10/26/19 09:20	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/26/19 09:20	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/26/19 09:20	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/26/19 09:20	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/26/19 09:20	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/26/19 09:20	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/26/19 09:20	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/26/19 09:20	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/26/19 09:20	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/26/19 09:20	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/26/19 09:20	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/26/19 09:20	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/26/19 09:20	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/26/19 09:20	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/26/19 09:20	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/26/19 09:20	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/26/19 09:20	1
Benzene	0.20	U	1.0	0.20	ug/L			10/26/19 09:20	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/26/19 09:20	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/26/19 09:20	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/26/19 09:20	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/26/19 09:20	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/26/19 09:20	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/26/19 09:20	1
Toluene	0.38	U	1.0	0.38	ug/L			10/26/19 09:20	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/26/19 09:20	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/26/19 09:20	1

Client Sample ID: TBGW_102219 Lab Sample ID: 460-194632-4

Date Collected: 10/22/19 15:15 **Matrix: Water**
Date Received: 10/22/19 20:40

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	0.42	U	1.0	0.42	ug/L			10/26/19 09:20	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/26/19 09:20	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/26/19 09:20	1
MTBE	0.47	U	1.0	0.47	ug/L			10/26/19 09:20	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/26/19 09:20	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/26/19 09:20	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/26/19 09:20	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/26/19 09:20	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/26/19 09:20	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/26/19 09:20	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/26/19 09:20	1
Indane	0.35	U	1.0	0.35	ug/L			10/26/19 09:20	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/26/19 09:20	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/26/19 09:20	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Isopropyl Alcohol	*5.4*	*J N*	*ug/L*		*2.61*	*67-63-0*		*10/26/19 09:20*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*74 - 132*		*10/26/19 09:20*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/26/19 09:20*	*1*
4-Bromofluorobenzene	*95*		*77 - 124*		*10/26/19 09:20*	*1*
Dibromofluoromethane (Surr)	*106*		*72 - 131*		*10/26/19 09:20*	*1*

Client Sample ID: DGC-2S Lab Sample ID: 460-194732-1

Date Collected: 10/23/19 10:40 **Matrix: Water**
Date Received: 10/23/19 20:50

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**22.5**		1.08	0.13	mg/L			10/25/19 06:45	9
Nitrate as N	**0.062**	**J**	0.10	0.056	mg/L			10/24/19 23:24	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/24/19 23:24	1
Sulfate	**21.0**		0.60	0.35	mg/L			10/24/19 23:24	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**15800**		250	66.8	ug/L		10/29/19 09:04	10/29/19 13:21	5
Magnesium	**6980**		250	24.8	ug/L		10/29/19 09:04	10/29/19 13:21	5
Potassium	**3070**		250	73.5	ug/L		10/29/19 09:04	10/29/19 13:21	5
Calcium	**14900**		250	233	ug/L		10/29/19 09:04	10/29/19 13:21	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.13**		0.10	0.068	mg/L			10/25/19 16:30	1
Bicarbonate Alkalinity as CaCO3	**51.3**		5.0	5.0	mg/L			10/29/19 09:05	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/29/19 09:05	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/25/19 17:30	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-194514-1

Client Sample ID: PZ-5-EXT

Lab Sample ID: 460-194826-3

Date Collected: 10/24/19 10:30
Date Received: 10/25/19 10:09

Matrix: Water

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.7	U	2.0	1.7	ug/L			10/27/19 06:21	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*79*		*72 - 133*		*10/27/19 06:21*	*5*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.80	U	2.0	0.80	ug/L			10/30/19 10:03	2
Bromomethane	1.1	U	2.0	1.1	ug/L			10/30/19 10:03	2
Vinyl chloride	**0.74**	**J**	2.0	0.34	ug/L			10/30/19 10:03	2
Chloroethane	0.64	U	2.0	0.64	ug/L			10/30/19 10:03	2
Methylene Chloride	0.63	U	2.0	0.63	ug/L			10/30/19 10:03	2
Acetone	8.8	U	10	8.8	ug/L			10/30/19 10:03	2
Carbon disulfide	1.6	U	2.0	1.6	ug/L			10/30/19 10:03	2
1,1-Dichloroethene	0.53	U	2.0	0.53	ug/L			10/30/19 10:03	2
1,1-Dichloroethane	0.53	U	2.0	0.53	ug/L			10/30/19 10:03	2
trans-1,2-Dichloroethene	0.47	U	2.0	0.47	ug/L			10/30/19 10:03	2
cis-1,2-Dichloroethene	**13**		2.0	0.44	ug/L			10/30/19 10:03	2
Chloroform	0.65	U	2.0	0.65	ug/L			10/30/19 10:03	2
1,2-Dichloroethane	0.86	U	2.0	0.86	ug/L			10/30/19 10:03	2
2-Butanone (MEK)	3.7	U	10	3.7	ug/L			10/30/19 10:03	2
1,1,1-Trichloroethane	0.48	U	2.0	0.48	ug/L			10/30/19 10:03	2
Carbon tetrachloride	0.42	U	2.0	0.42	ug/L			10/30/19 10:03	2
Bromodichloromethane	0.69	U	2.0	0.69	ug/L			10/30/19 10:03	2
1,2-Dichloropropane	0.71	U	2.0	0.71	ug/L			10/30/19 10:03	2
cis-1,3-Dichloropropene	0.44	U	2.0	0.44	ug/L			10/30/19 10:03	2
Trichloroethene	0.63	U	2.0	0.63	ug/L			10/30/19 10:03	2
Dibromochloromethane	0.56	U	2.0	0.56	ug/L			10/30/19 10:03	2
1,1,2-Trichloroethane	0.87	U	2.0	0.87	ug/L			10/30/19 10:03	2
Benzene	**0.43**	**J**	2.0	0.41	ug/L			10/30/19 10:03	2
trans-1,3-Dichloropropene	0.97	U	2.0	0.97	ug/L			10/30/19 10:03	2
Bromoform	1.1	U	2.0	1.1	ug/L			10/30/19 10:03	2
4-Methyl-2-pentanone	2.6	U	10	2.6	ug/L			10/30/19 10:03	2
2-Hexanone	2.3	U	10	2.3	ug/L			10/30/19 10:03	2
Tetrachloroethene	0.50	U	2.0	0.50	ug/L			10/30/19 10:03	2
1,1,2,2-Tetrachloroethane	0.73	U *	2.0	0.73	ug/L			10/30/19 10:03	2
Toluene	**110**		2.0	0.76	ug/L			10/30/19 10:03	2
Chlorobenzene	**2.4**		2.0	0.75	ug/L			10/30/19 10:03	2
Ethylbenzene	**310**		2.0	0.60	ug/L			10/30/19 10:03	2
Styrene	0.83	U	2.0	0.83	ug/L			10/30/19 10:03	2
Xylenes, Total	**700**		4.0	1.3	ug/L			10/30/19 10:03	2
Diethyl ether	0.42	U	2.0	0.42	ug/L			10/30/19 10:03	2
MTBE	0.93	U	2.0	0.93	ug/L			10/30/19 10:03	2
Tetrahydrofuran	2.1	U	4.0	2.1	ug/L			10/30/19 10:03	2
Cyclohexane	**8.9**		2.0	0.64	ug/L			10/30/19 10:03	2
1,2,4-Trimethylbenzene	**600**		2.0	0.75	ug/L			10/30/19 10:03	2
1,3,5-Trimethylbenzene	**78**		2.0	0.65	ug/L			10/30/19 10:03	2
Isopropylbenzene	**51**		2.0	0.67	ug/L			10/30/19 10:03	2
N-Propylbenzene	**74**		2.0	0.64	ug/L			10/30/19 10:03	2
Methylcyclohexane	**15**		2.0	0.52	ug/L			10/30/19 10:03	2

Client Sample ID: PZ-5-EXT — Lab Sample ID: 460-194826-3

Date Collected: 10/24/19 10:30 **Matrix: Water**
Date Received: 10/25/19 10:09

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Indane	**64**		2.0	0.69	ug/L			10/30/19 10:03	2
Dichlorofluoromethane	0.68	U	2.0	0.68	ug/L			10/30/19 10:03	2
1,2,3-Trimethylbenzene	**150**		2.0	0.72	ug/L			10/30/19 10:03	2

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*16*	*J*	*ug/L*		*4.54*			*10/30/19 10:03*	*2*
Benzene, 1-ethyl-3-methyl-	*45*	*J N*	*ug/L*		*10.07*	*620-14-4*		*10/30/19 10:03*	*2*
Benzene, 1-ethyl-4-methyl-	*92*	*J N*	*ug/L*		*10.09*	*622-96-8*		*10/30/19 10:03*	*2*
Benzene, 1-ethyl-2-methyl-	*100*	*J N*	*ug/L*		*10.37*	*611-14-3*		*10/30/19 10:03*	*2*
Benzene, 1,4-diethyl-	*14*	*J N*	*ug/L*		*11.21*	*105-05-5*		*10/30/19 10:03*	*2*
Benzene, 2-ethyl-1,4-dimethyl-	*11*	*J N*	*ug/L*		*11.46*	*1758-88-9*		*10/30/19 10:03*	*2*
Benzene, 1-ethyl-2,4-dimethyl-	*17*	*J N*	*ug/L*		*11.54*	*874-41-9*		*10/30/19 10:03*	*2*
Naphthalene	*11*	*J N*	*ug/L*		*12.77*	*91-20-3*		*10/30/19 10:03*	*2*
Unknown	*35*	*J*	*ug/L*		*13.16*			*10/30/19 10:03*	*2*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*74 - 132*		*10/30/19 10:03*	*2*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/30/19 10:03*	*2*
4-Bromofluorobenzene	*93*		*77 - 124*		*10/30/19 10:03*	*2*
Dibromofluoromethane (Surr)	*100*		*72 - 131*		*10/30/19 10:03*	*2*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/26/19 09:05	10/27/19 00:32	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/26/19 09:05	10/27/19 00:32	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/26/19 09:05	10/27/19 00:32	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/26/19 09:05	10/27/19 00:32	1
Pentachlorophenol	0.15	~~U *~~ UJ	0.20	0.15	ug/L		10/26/19 09:05	10/27/19 00:32	1
Bis(2-chloroethyl)ether	0.026	U	0.030	0.026	ug/L		10/26/19 09:05	10/27/19 00:32	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	**1.0**	**J**	10	0.29	ug/L		10/26/19 09:05	10/27/19 03:55	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/26/19 09:05	10/27/19 03:55	1
2-Methylphenol	0.67	U	10	0.67	ug/L		10/26/19 09:05	10/27/19 03:55	1
4-Methylphenol	**0.89**	**J**	10	0.65	ug/L		10/26/19 09:05	10/27/19 03:55	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/26/19 09:05	10/27/19 03:55	1
2,4-Dimethylphenol	**1.5**	**J**	10	0.62	ug/L		10/26/19 09:05	10/27/19 03:55	1
2,4-Dichlorophenol	1.1	U	10	1.1	ug/L		10/26/19 09:05	10/27/19 03:55	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/26/19 09:05	10/27/19 03:55	1
2,4,6-Trichlorophenol	0.86	U	10	0.86	ug/L		10/26/19 09:05	10/27/19 03:55	1
2,4,5-Trichlorophenol	0.88	U	10	0.88	ug/L		10/26/19 09:05	10/27/19 03:55	1
2,4-Dinitrophenol	14	U *	20	14	ug/L		10/26/19 09:05	10/27/19 03:55	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		10/26/19 09:05	10/27/19 03:55	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/26/19 09:05	10/27/19 03:55	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/26/19 09:05	10/27/19 03:55	1
1,4-Dichlorobenzene	**1.6**	**J**	10	1.3	ug/L		10/26/19 09:05	10/27/19 03:55	1
1,2-Dichlorobenzene	**1.6**	**J**	10	1.3	ug/L		10/26/19 09:05	10/27/19 03:55	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/26/19 09:05	10/27/19 03:55	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		10/26/19 09:05	10/27/19 03:55	1

Client Sample ID: PZ-5-EXT Lab Sample ID: 460-194826-3

Date Collected: 10/24/19 10:30 **Matrix: Water**
Date Received: 10/25/19 10:09

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/26/19 09:05	10/27/19 03:55	1
Isophorone	0.80	U	10	0.80	ug/L		10/26/19 09:05	10/27/19 03:55	1
Bis(2-chloroethoxy)methane	0.59	U	10	0.59	ug/L		10/26/19 09:05	10/27/19 03:55	1
1,2,4-Trichlorobenzene	**1.2**	**J**	2.0	0.64	ug/L		10/26/19 09:05	10/27/19 03:55	1
Naphthalene	**6.5**	**J**	10	1.1	ug/L		10/26/19 09:05	10/27/19 03:55	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/26/19 09:05	10/27/19 03:55	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/26/19 09:05	10/27/19 03:55	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/26/19 09:05	10/27/19 03:55	1
Hexachlorocyclopentadiene	3.6	U	10	3.6	ug/L		10/26/19 09:05	10/27/19 03:55	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/26/19 09:05	10/27/19 03:55	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/26/19 09:05	10/27/19 03:55	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/26/19 09:05	10/27/19 03:55	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/26/19 09:05	10/27/19 03:55	1
2,6-Dinitrotoluene	0.83	U	2.0	0.83	ug/L		10/26/19 09:05	10/27/19 03:55	1
3-Nitroaniline	1.9	U	10	1.9	ug/L		10/26/19 09:05	10/27/19 03:55	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/26/19 09:05	10/27/19 03:55	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/26/19 09:05	10/27/19 03:55	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/26/19 09:05	10/27/19 03:55	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/26/19 09:05	10/27/19 03:55	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/26/19 09:05	10/27/19 03:55	1
Fluorene	0.91	U	10	0.91	ug/L		10/26/19 09:05	10/27/19 03:55	1
4-Nitroaniline	1.2	U	10	1.2	ug/L		10/26/19 09:05	10/27/19 03:55	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/26/19 09:05	10/27/19 03:55	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/26/19 09:05	10/27/19 03:55	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/26/19 09:05	10/27/19 03:55	1
Anthracene	0.63	U	10	0.63	ug/L		10/26/19 09:05	10/27/19 03:55	1
Carbazole	0.68	U	10	0.68	ug/L		10/26/19 09:05	10/27/19 03:55	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/26/19 09:05	10/27/19 03:55	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/26/19 09:05	10/27/19 03:55	1
Pyrene	1.6	U	10	1.6	ug/L		10/26/19 09:05	10/27/19 03:55	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/26/19 09:05	10/27/19 03:55	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/26/19 09:05	10/27/19 03:55	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/26/19 09:05	10/27/19 03:55	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/26/19 09:05	10/27/19 03:55	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/26/19 09:05	10/27/19 03:55	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/26/19 09:05	10/27/19 03:55	1
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		10/26/19 09:05	10/27/19 03:55	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/26/19 09:05	10/27/19 03:55	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/26/19 09:05	10/27/19 03:55	1
Diphenyl ether	**6.4**	**J**	10	1.2	ug/L		10/26/19 09:05	10/27/19 03:55	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/26/19 09:05	10/27/19 03:55	1
Caprolactam	0.68	~~U~~ UJ	10	0.68	ug/L		10/26/19 09:05	10/27/19 03:55	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/26/19 09:05	10/27/19 03:55	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/26/19 09:05	10/27/19 03:55	1
N-Methylaniline	1.3	U	5.0	1.3	ug/L		10/26/19 09:05	10/27/19 03:55	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Cyclohexane, methyl-	*6.4*	*J N*	*ug/L*		*2.04*	*108-87-2*	*10/26/19 09:05*	*10/27/19 03:55*	*1*
Benzene, 1,3-dimethyl-	*8.6*	*J N*	*ug/L*		*3.46*	*108-38-3*	*10/26/19 09:05*	*10/27/19 03:55*	*1*
Benzene, (1-methylethyl)-	*38*	*J N*	*ug/L*		*3.73*	*98-82-8*	*10/26/19 09:05*	*10/27/19 03:55*	*1*

Client Sample ID: PZ-5-EXT — Lab Sample ID: 460-194826-3

Date Collected: 10/24/19 10:30 **Matrix: Water**
Date Received: 10/25/19 10:09

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Benzene, propyl-	49	J N	ug/L		3.98	103-65-1	10/26/19 09:05	10/27/19 03:55	1
Benzene, 1-ethyl-2-methyl-	71	J N	ug/L		4.07	611-14-3	10/26/19 09:05	10/27/19 03:55	1
Benzene, 1-ethyl-3-methyl-	52	J N	ug/L		4.19	620-14-4	10/26/19 09:05	10/27/19 03:55	1
Benzene, 1,2,3-trimethyl-	340	J N	ug/L		4.32	526-73-8	10/26/19 09:05	10/27/19 03:55	1
Benzene, 1,2,4-trimethyl-	95	J N	ug/L		4.53	95-63-6	10/26/19 09:05	10/27/19 03:55	1
Indane	43	J N	ug/L		4.65	496-11-7	10/26/19 09:05	10/27/19 03:55	1
Benzene, 1,4-diethyl-	11	J N	ug/L		4.78	105-05-5	10/26/19 09:05	10/27/19 03:55	1
Benzene, 2-ethyl-1,4-dimethyl-	12	J N	ug/L		4.91	1758-88-9	10/26/19 09:05	10/27/19 03:55	1
Benzene, 4-ethyl-1,2-dimethyl-	9.4	J N	ug/L		5.12	934-80-5	10/26/19 09:05	10/27/19 03:55	1
Unknown	22	J	ug/L		6.11		10/26/19 09:05	10/27/19 03:55	1
Unknown	15	J	ug/L		7.11		10/26/19 09:05	10/27/19 03:55	1
Unknown	7.5	J	ug/L		7.57		10/26/19 09:05	10/27/19 03:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	85		51 - 108	10/26/19 09:05	10/27/19 03:55	1
Phenol-d5 (Surr)	30		14 - 39	10/26/19 09:05	10/27/19 03:55	1
Terphenyl-d14 (Surr)	86		40 - 148	10/26/19 09:05	10/27/19 03:55	1
2,4,6-Tribromophenol (Surr)	116		26 - 139	10/26/19 09:05	10/27/19 03:55	1
2-Fluorophenol (Surr)	43		25 - 58	10/26/19 09:05	10/27/19 03:55	1
2-Fluorobiphenyl (Surr)	81		45 - 107	10/26/19 09:05	10/27/19 03:55	1

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	1.7	U	50.0	1.7	ug/L		10/30/19 09:19	10/30/19 23:34	1
Iron, Dissolved	**31500**		150	34.2	ug/L		10/30/19 09:19	10/30/19 23:34	1
Manganese, Dissolved	**688**		15.0	0.99	ug/L		10/30/19 09:19	10/30/19 23:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.36**		0.10	0.068	mg/L			10/28/19 15:09	1

Client Sample ID: PZ-11-EXT — Lab Sample ID: 460-194826-4

Date Collected: 10/24/19 11:00 **Matrix: Water**
Date Received: 10/25/19 10:09

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**44**	J-	2.0	1.7	ug/L			10/27/19 06:45	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	70	X	72 - 133		10/27/19 06:45	5

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	8.0	U	20	8.0	ug/L			10/30/19 09:45	20
Bromomethane	11	U	20	11	ug/L			10/30/19 09:45	20
Vinyl chloride	3.4	U	20	3.4	ug/L			10/30/19 09:45	20
Chloroethane	6.4	U	20	6.4	ug/L			10/30/19 09:45	20
Methylene Chloride	6.3	U	20	6.3	ug/L			10/30/19 09:45	20
Acetone	88	U	100	88	ug/L			10/30/19 09:45	20
Carbon disulfide	16	U	20	16	ug/L			10/30/19 09:45	20

Client Sample ID: PZ-11-EXT Lab Sample ID: 460-194826-4

Date Collected: 10/24/19 11:00 **Matrix: Water**
Date Received: 10/25/19 10:09

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	5.3	U	20	5.3	ug/L			10/30/19 09:45	20
1,1-Dichloroethane	5.3	U	20	5.3	ug/L			10/30/19 09:45	20
trans-1,2-Dichloroethene	4.7	U	20	4.7	ug/L			10/30/19 09:45	20
cis-1,2-Dichloroethene	4.4	U	20	4.4	ug/L			10/30/19 09:45	20
Chloroform	6.5	U	20	6.5	ug/L			10/30/19 09:45	20
1,2-Dichloroethane	8.6	U	20	8.6	ug/L			10/30/19 09:45	20
2-Butanone (MEK)	37	U	100	37	ug/L			10/30/19 09:45	20
1,1,1-Trichloroethane	4.8	U	20	4.8	ug/L			10/30/19 09:45	20
Carbon tetrachloride	4.2	U	20	4.2	ug/L			10/30/19 09:45	20
Bromodichloromethane	6.9	U	20	6.9	ug/L			10/30/19 09:45	20
1,2-Dichloropropane	7.1	U	20	7.1	ug/L			10/30/19 09:45	20
cis-1,3-Dichloropropene	4.4	U	20	4.4	ug/L			10/30/19 09:45	20
Trichloroethene	6.3	U	20	6.3	ug/L			10/30/19 09:45	20
Dibromochloromethane	5.6	U	20	5.6	ug/L			10/30/19 09:45	20
1,1,2-Trichloroethane	8.7	U	20	8.7	ug/L			10/30/19 09:45	20
Benzene	**300**		20	4.1	ug/L			10/30/19 09:45	20
trans-1,3-Dichloropropene	9.7	U	20	9.7	ug/L			10/30/19 09:45	20
Bromoform	11	U	20	11	ug/L			10/30/19 09:45	20
4-Methyl-2-pentanone	26	U	100	26	ug/L			10/30/19 09:45	20
2-Hexanone	23	U	100	23	ug/L			10/30/19 09:45	20
Tetrachloroethene	5.0	U	20	5.0	ug/L			10/30/19 09:45	20
1,1,2,2-Tetrachloroethane	7.3	U *	20	7.3	ug/L			10/30/19 09:45	20
Toluene	7.6	U	20	7.6	ug/L			10/30/19 09:45	20
Chlorobenzene	**92**		20	7.5	ug/L			10/30/19 09:45	20
Ethylbenzene	**8.7**	**J**	20	6.0	ug/L			10/30/19 09:45	20
Styrene	8.3	U	20	8.3	ug/L			10/30/19 09:45	20
Xylenes, Total	**5400**		40	13	ug/L			10/30/19 09:45	20
Diethyl ether	4.2	U	20	4.2	ug/L			10/30/19 09:45	20
MTBE	9.3	U	20	9.3	ug/L			10/30/19 09:45	20
Tetrahydrofuran	21	U	40	21	ug/L			10/30/19 09:45	20
Cyclohexane	**21**		20	6.4	ug/L			10/30/19 09:45	20
1,2,4-Trimethylbenzene	**2100**		20	7.5	ug/L			10/30/19 09:45	20
1,3,5-Trimethylbenzene	**550**		20	6.5	ug/L			10/30/19 09:45	20
Isopropylbenzene	**120**		20	6.7	ug/L			10/30/19 09:45	20
N-Propylbenzene	**330**		20	6.4	ug/L			10/30/19 09:45	20
Methylcyclohexane	**39**		20	5.2	ug/L			10/30/19 09:45	20
Indane	**320**		20	6.9	ug/L			10/30/19 09:45	20
Dichlorofluoromethane	6.8	U	20	6.8	ug/L			10/30/19 09:45	20
1,2,3-Trimethylbenzene	**590**		20	7.2	ug/L			10/30/19 09:45	20

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, 1-ethyl-3-methyl-	*550*	*J N*	*ug/L*		*10.07*	*620-14-4*		*10/30/19 09:45*	*20*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*74 - 132*		*10/30/19 09:45*	*20*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/30/19 09:45*	*20*
4-Bromofluorobenzene	*95*		*77 - 124*		*10/30/19 09:45*	*20*
Dibromofluoromethane (Surr)	*99*		*72 - 131*		*10/30/19 09:45*	*20*

Client Sample Results

Client: Golder Associates Inc. Job ID: 460-194514-1
Project/Site: DS&G Semi-Annual Groundwater

Client Sample ID: PZ-11-EXT Lab Sample ID: 460-194826-4

Date Collected: 10/24/19 11:00 **Matrix: Water**
Date Received: 10/25/19 10:09

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	**0.019**	**J**	0.050	0.016	ug/L		10/26/19 09:05	10/27/19 00:53	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/26/19 09:05	10/27/19 00:53	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/26/19 09:05	10/27/19 00:53	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/26/19 09:05	10/27/19 00:53	1
Pentachlorophenol	0.15	~~U *~~ UJ	0.20	0.15	ug/L		10/26/19 09:05	10/27/19 00:53	1
Bis(2-chloroethyl)ether	**4.6**		0.030	0.026	ug/L		10/26/19 09:05	10/27/19 00:53	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/26/19 09:05	10/27/19 04:16	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/26/19 09:05	10/27/19 04:16	1
2-Methylphenol	0.67	U	10	0.67	ug/L		10/26/19 09:05	10/27/19 04:16	1
4-Methylphenol	0.65	U	10	0.65	ug/L		10/26/19 09:05	10/27/19 04:16	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/26/19 09:05	10/27/19 04:16	1
2,4-Dimethylphenol	**10**		10	0.62	ug/L		10/26/19 09:05	10/27/19 04:16	1
2,4-Dichlorophenol	1.1	U	10	1.1	ug/L		10/26/19 09:05	10/27/19 04:16	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/26/19 09:05	10/27/19 04:16	1
2,4,6-Trichlorophenol	0.86	U	10	0.86	ug/L		10/26/19 09:05	10/27/19 04:16	1
2,4,5-Trichlorophenol	0.88	U	10	0.88	ug/L		10/26/19 09:05	10/27/19 04:16	1
2,4-Dinitrophenol	14	U *	20	14	ug/L		10/26/19 09:05	10/27/19 04:16	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		10/26/19 09:05	10/27/19 04:16	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/26/19 09:05	10/27/19 04:16	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/26/19 09:05	10/27/19 04:16	1
1,4-Dichlorobenzene	**2.6**	**J**	10	1.3	ug/L		10/26/19 09:05	10/27/19 04:16	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/26/19 09:05	10/27/19 04:16	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/26/19 09:05	10/27/19 04:16	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		10/26/19 09:05	10/27/19 04:16	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/26/19 09:05	10/27/19 04:16	1
Isophorone	0.80	U	10	0.80	ug/L		10/26/19 09:05	10/27/19 04:16	1
Bis(2-chloroethoxy)methane	0.59	U	10	0.59	ug/L		10/26/19 09:05	10/27/19 04:16	1
1,2,4-Trichlorobenzene	0.64	U	2.0	0.64	ug/L		10/26/19 09:05	10/27/19 04:16	1
Naphthalene	**56**		10	1.1	ug/L		10/26/19 09:05	10/27/19 04:16	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/26/19 09:05	10/27/19 04:16	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/26/19 09:05	10/27/19 04:16	1
2-Methylnaphthalene	**3.6**	**J**	10	1.1	ug/L		10/26/19 09:05	10/27/19 04:16	1
Hexachlorocyclopentadiene	3.6	U	10	3.6	ug/L		10/26/19 09:05	10/27/19 04:16	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/26/19 09:05	10/27/19 04:16	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/26/19 09:05	10/27/19 04:16	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/26/19 09:05	10/27/19 04:16	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/26/19 09:05	10/27/19 04:16	1
2,6-Dinitrotoluene	0.83	U	2.0	0.83	ug/L		10/26/19 09:05	10/27/19 04:16	1
3-Nitroaniline	1.9	U	10	1.9	ug/L		10/26/19 09:05	10/27/19 04:16	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/26/19 09:05	10/27/19 04:16	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/26/19 09:05	10/27/19 04:16	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/26/19 09:05	10/27/19 04:16	1
Diethyl phthalate	**6.2**	**J**	10	0.98	ug/L		10/26/19 09:05	10/27/19 04:16	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/26/19 09:05	10/27/19 04:16	1
Fluorene	0.91	U	10	0.91	ug/L		10/26/19 09:05	10/27/19 04:16	1
4-Nitroaniline	1.2	U	10	1.2	ug/L		10/26/19 09:05	10/27/19 04:16	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/26/19 09:05	10/27/19 04:16	1

Client Sample ID: PZ-11-EXT Lab Sample ID: 460-194826-4

Date Collected: 10/24/19 11:00 **Matrix: Water**
Date Received: 10/25/19 10:09

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/26/19 09:05	10/27/19 04:16	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/26/19 09:05	10/27/19 04:16	1
Anthracene	0.63	U	10	0.63	ug/L		10/26/19 09:05	10/27/19 04:16	1
Carbazole	0.68	U	10	0.68	ug/L		10/26/19 09:05	10/27/19 04:16	1
Di-n-butyl phthalate	**2.9**	**J**	10	0.84	ug/L		10/26/19 09:05	10/27/19 04:16	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/26/19 09:05	10/27/19 04:16	1
Pyrene	1.6	U	10	1.6	ug/L		10/26/19 09:05	10/27/19 04:16	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/26/19 09:05	10/27/19 04:16	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/26/19 09:05	10/27/19 04:16	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/26/19 09:05	10/27/19 04:16	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/26/19 09:05	10/27/19 04:16	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/26/19 09:05	10/27/19 04:16	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/26/19 09:05	10/27/19 04:16	1
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		10/26/19 09:05	10/27/19 04:16	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/26/19 09:05	10/27/19 04:16	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/26/19 09:05	10/27/19 04:16	1
Diphenyl ether	**40**		10	1.2	ug/L		10/26/19 09:05	10/27/19 04:16	1
n,n'-Dimethylaniline	**1.4**		1.0	0.91	ug/L		10/26/19 09:05	10/27/19 04:16	1
Caprolactam	0.68	~~U~~ UJ	10	0.68	ug/L		10/26/19 09:05	10/27/19 04:16	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/26/19 09:05	10/27/19 04:16	1
Bisphenol-A	**120**		10	9.9	ug/L		10/26/19 09:05	10/27/19 04:16	1
N-Methylaniline	**1.9**	**J**	5.0	1.3	ug/L		10/26/19 09:05	10/27/19 04:16	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, (1-methylethyl)-	*78*	*J N*	*ug/L*		*3.73*	*98-82-8*	*10/26/19 09:05*	*10/27/19 04:16*	*1*
Benzene, propyl-	*170*	*J N*	*ug/L*		*3.99*	*103-65-1*	*10/26/19 09:05*	*10/27/19 04:16*	*1*
Benzene, 1-ethyl-2-methyl-	*250*	*J N*	*ug/L*		*4.04*	*611-14-3*	*10/26/19 09:05*	*10/27/19 04:16*	*1*
Benzene, 1,2,3-trimethyl-	*870*	*J N*	*ug/L*		*4.33*	*526-73-8*	*10/26/19 09:05*	*10/27/19 04:16*	*1*
Benzene, 1,3,5-trimethyl-	*330*	*J N*	*ug/L*		*4.54*	*108-67-8*	*10/26/19 09:05*	*10/27/19 04:16*	*1*
Indane	*190*	*J N*	*ug/L*		*4.65*	*496-11-7*	*10/26/19 09:05*	*10/27/19 04:16*	*1*
Benzene, 1,3-diethyl-	*31*	*J N*	*ug/L*		*4.71*	*141-93-5*	*10/26/19 09:05*	*10/27/19 04:16*	*1*
Benzene, 1,4-diethyl-	*45*	*J N*	*ug/L*		*4.78*	*105-05-5*	*10/26/19 09:05*	*10/27/19 04:16*	*1*
Benzene, 1-ethyl-2,3-dimethyl-	*40*	*J N*	*ug/L*		*4.92*	*933-98-2*	*10/26/19 09:05*	*10/27/19 04:16*	*1*
Benzene, 1,2,3,4-tetramethyl-	*21*	*J N*	*ug/L*		*5.23*	*488-23-3*	*10/26/19 09:05*	*10/27/19 04:16*	*1*
1-Phenyl-1-butene	*16*	*J N*	*ug/L*		*5.44*	*824-90-8*	*10/26/19 09:05*	*10/27/19 04:16*	*1*
Biphenyl	*18*	*J N*	*ug/L*		*6.80*	*92-52-4*	*10/26/19 09:05*	*10/27/19 04:16*	*1*
Unknown	*28*	*J*	*ug/L*		*7.11*		*10/26/19 09:05*	*10/27/19 04:16*	*1*
Unknown	*13*	*J*	*ug/L*		*7.21*		*10/26/19 09:05*	*10/27/19 04:16*	*1*
5-Methyl-2,4-diisopropylphenol	*16*	*J N*	*ug/L*		*7.26*	*40625-96-5*	*10/26/19 09:05*	*10/27/19 04:16*	*1*
Unknown	*17*	*J*	*ug/L*		*7.41*		*10/26/19 09:05*	*10/27/19 04:16*	*1*
Unknown	*26*	*J*	*ug/L*		*8.31*		*10/26/19 09:05*	*10/27/19 04:16*	*1*
Unknown	*18*	*J*	*ug/L*		*8.35*		*10/26/19 09:05*	*10/27/19 04:16*	*1*
Unknown	*17*	*J*	*ug/L*		*8.48*		*10/26/19 09:05*	*10/27/19 04:16*	*1*
Unknown	*84*	*J*	*ug/L*		*12.54*		*10/26/19 09:05*	*10/27/19 04:16*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*92*		*51 - 108*	*10/26/19 09:05*	*10/27/19 04:16*	*1*
Phenol-d5 (Surr)	*32*		*14 - 39*	*10/26/19 09:05*	*10/27/19 04:16*	*1*
Terphenyl-d14 (Surr)	*93*		*40 - 148*	*10/26/19 09:05*	*10/27/19 04:16*	*1*
2,4,6-Tribromophenol (Surr)	*130*		*26 - 139*	*10/26/19 09:05*	*10/27/19 04:16*	*1*

Client Sample ID: PZ-11-EXT — Lab Sample ID: 460-194826-4

Date Collected: 10/24/19 11:00 **Matrix: Water**
Date Received: 10/25/19 10:09

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*45*		*25 - 58*	*10/26/19 09:05*	*10/27/19 04:16*	*1*
2-Fluorobiphenyl (Surr)	*88*		*45 - 107*	*10/26/19 09:05*	*10/27/19 04:16*	*1*

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**21.3**	**J**	50.0	1.7	ug/L		10/30/19 09:19	10/30/19 23:38	1
Iron, Dissolved	**39600**		150	34.2	ug/L		10/30/19 09:19	10/30/19 23:38	1
Manganese, Dissolved	**135**		15.0	0.99	ug/L		10/30/19 09:19	10/30/19 23:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**3.1**		0.10	0.068	mg/L			10/28/19 15:20	1

Client Sample ID: DDA-19-TZ — Lab Sample ID: 460-194826-5

Date Collected: 10/24/19 13:35 **Matrix: Water**
Date Received: 10/25/19 10:09

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**43**		0.40	0.33	ug/L			10/26/19 17:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*93*		*72 - 133*		*10/26/19 17:54*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/30/19 02:37	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/30/19 02:37	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/30/19 02:37	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/30/19 02:37	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/30/19 02:37	1
Acetone	4.4	U	5.0	4.4	ug/L			10/30/19 02:37	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/30/19 02:37	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/30/19 02:37	1
1,1-Dichloroethane	**0.39**	**J**	1.0	0.26	ug/L			10/30/19 02:37	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/30/19 02:37	1
cis-1,2-Dichloroethene	**1.1**		1.0	0.22	ug/L			10/30/19 02:37	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/30/19 02:37	1
1,2-Dichloroethane	**1.2**		1.0	0.43	ug/L			10/30/19 02:37	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/30/19 02:37	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/30/19 02:37	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/30/19 02:37	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/30/19 02:37	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/30/19 02:37	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/30/19 02:37	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/30/19 02:37	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/30/19 02:37	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/30/19 02:37	1
Benzene	**33**		1.0	0.20	ug/L			10/30/19 02:37	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/30/19 02:37	1

Client Sample ID: DDA-19-TZ Lab Sample ID: 460-194826-5

Date Collected: 10/24/19 13:35 **Matrix: Water**
Date Received: 10/25/19 10:09

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	0.54	U	1.0	0.54	ug/L			10/30/19 02:37	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/30/19 02:37	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/30/19 02:37	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/30/19 02:37	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/30/19 02:37	1
Toluene	0.38	U	1.0	0.38	ug/L			10/30/19 02:37	1
Chlorobenzene	**0.93**	**J**	1.0	0.38	ug/L			10/30/19 02:37	1
Ethylbenzene	**0.42**	**J**	1.0	0.30	ug/L			10/30/19 02:37	1
Styrene	0.42	U	1.0	0.42	ug/L			10/30/19 02:37	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/30/19 02:37	1
Diethyl ether	**1.3**		1.0	0.21	ug/L			10/30/19 02:37	1
MTBE	0.47	U	1.0	0.47	ug/L			10/30/19 02:37	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/30/19 02:37	1
Cyclohexane	**0.47**	**J**	1.0	0.32	ug/L			10/30/19 02:37	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/30/19 02:37	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/30/19 02:37	1
Isopropylbenzene	**1.5**		1.0	0.34	ug/L			10/30/19 02:37	1
N-Propylbenzene	**2.1**		1.0	0.32	ug/L			10/30/19 02:37	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/30/19 02:37	1
Indane	**1.6**		1.0	0.35	ug/L			10/30/19 02:37	1
Dichlorofluoromethane	**5.0**		1.0	0.34	ug/L			10/30/19 02:37	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/30/19 02:37	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/30/19 02:37*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*74 - 132*		*10/30/19 02:37*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/30/19 02:37*	*1*
4-Bromofluorobenzene	*96*		*77 - 124*		*10/30/19 02:37*	*1*
Dibromofluoromethane (Surr)	*100*		*72 - 131*		*10/30/19 02:37*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	**0.13**		0.10	0.031	ug/L		10/26/19 09:05	10/28/19 07:19	2
Benzo[a]pyrene	**0.070**	**J**	0.10	0.043	ug/L		10/26/19 09:05	10/28/19 07:19	2
Benzo[b]fluoranthene	**0.052**	**J**	0.10	0.048	ug/L		10/26/19 09:05	10/28/19 07:19	2
Hexachlorobenzene	0.026	U	0.040	0.026	ug/L		10/26/19 09:05	10/28/19 07:19	2
Pentachlorophenol	0.31	~~U~~ UJ	0.40	0.31	ug/L		10/26/19 09:05	10/28/19 07:19	2
Bis(2-chloroethyl)ether	**13**		0.060	0.052	ug/L		10/26/19 09:05	10/28/19 07:19	2

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/26/19 09:05	10/27/19 04:37	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/26/19 09:05	10/27/19 04:37	1
2-Methylphenol	0.67	U	10	0.67	ug/L		10/26/19 09:05	10/27/19 04:37	1
4-Methylphenol	0.65	U	10	0.65	ug/L		10/26/19 09:05	10/27/19 04:37	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/26/19 09:05	10/27/19 04:37	1
2,4-Dimethylphenol	0.62	U	10	0.62	ug/L		10/26/19 09:05	10/27/19 04:37	1
2,4-Dichlorophenol	1.1	U	10	1.1	ug/L		10/26/19 09:05	10/27/19 04:37	1

Client Sample ID: DDA-19-TZ Lab Sample ID: 460-194826-5

Date Collected: 10/24/19 13:35 **Matrix: Water**
Date Received: 10/25/19 10:09

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/26/19 09:05	10/27/19 04:37	1
2,4,6-Trichlorophenol	0.86	U	10	0.86	ug/L		10/26/19 09:05	10/27/19 04:37	1
2,4,5-Trichlorophenol	0.88	U	10	0.88	ug/L		10/26/19 09:05	10/27/19 04:37	1
2,4-Dinitrophenol	14	U *	20	14	ug/L		10/26/19 09:05	10/27/19 04:37	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		10/26/19 09:05	10/27/19 04:37	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/26/19 09:05	10/27/19 04:37	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/26/19 09:05	10/27/19 04:37	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/26/19 09:05	10/27/19 04:37	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/26/19 09:05	10/27/19 04:37	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/26/19 09:05	10/27/19 04:37	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		10/26/19 09:05	10/27/19 04:37	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/26/19 09:05	10/27/19 04:37	1
Isophorone	0.80	U	10	0.80	ug/L		10/26/19 09:05	10/27/19 04:37	1
Bis(2-chloroethoxy)methane	0.59	U	10	0.59	ug/L		10/26/19 09:05	10/27/19 04:37	1
1,2,4-Trichlorobenzene	0.64	U	2.0	0.64	ug/L		10/26/19 09:05	10/27/19 04:37	1
Naphthalene	1.1	U	10	1.1	ug/L		10/26/19 09:05	10/27/19 04:37	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/26/19 09:05	10/27/19 04:37	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/26/19 09:05	10/27/19 04:37	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/26/19 09:05	10/27/19 04:37	1
Hexachlorocyclopentadiene	3.6	U	10	3.6	ug/L		10/26/19 09:05	10/27/19 04:37	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/26/19 09:05	10/27/19 04:37	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/26/19 09:05	10/27/19 04:37	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/26/19 09:05	10/27/19 04:37	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/26/19 09:05	10/27/19 04:37	1
2,6-Dinitrotoluene	0.83	U	2.0	0.83	ug/L		10/26/19 09:05	10/27/19 04:37	1
3-Nitroaniline	1.9	U	10	1.9	ug/L		10/26/19 09:05	10/27/19 04:37	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/26/19 09:05	10/27/19 04:37	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/26/19 09:05	10/27/19 04:37	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/26/19 09:05	10/27/19 04:37	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/26/19 09:05	10/27/19 04:37	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/26/19 09:05	10/27/19 04:37	1
Fluorene	0.91	U	10	0.91	ug/L		10/26/19 09:05	10/27/19 04:37	1
4-Nitroaniline	1.2	U	10	1.2	ug/L		10/26/19 09:05	10/27/19 04:37	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/26/19 09:05	10/27/19 04:37	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/26/19 09:05	10/27/19 04:37	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/26/19 09:05	10/27/19 04:37	1
Anthracene	0.63	U	10	0.63	ug/L		10/26/19 09:05	10/27/19 04:37	1
Carbazole	0.68	U	10	0.68	ug/L		10/26/19 09:05	10/27/19 04:37	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/26/19 09:05	10/27/19 04:37	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/26/19 09:05	10/27/19 04:37	1
Pyrene	1.6	U	10	1.6	ug/L		10/26/19 09:05	10/27/19 04:37	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/26/19 09:05	10/27/19 04:37	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/26/19 09:05	10/27/19 04:37	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/26/19 09:05	10/27/19 04:37	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/26/19 09:05	10/27/19 04:37	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/26/19 09:05	10/27/19 04:37	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/26/19 09:05	10/27/19 04:37	1
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		10/26/19 09:05	10/27/19 04:37	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/26/19 09:05	10/27/19 04:37	1

Client Sample ID: DDA-19-TZ — Lab Sample ID: 460-194826-5

Date Collected: 10/24/19 13:35 **Matrix: Water**
Date Received: 10/25/19 10:09

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/26/19 09:05	10/27/19 04:37	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/26/19 09:05	10/27/19 04:37	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/26/19 09:05	10/27/19 04:37	1
Caprolactam	0.68	~~U *~~ UJ	10	0.68	ug/L		10/26/19 09:05	10/27/19 04:37	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/26/19 09:05	10/27/19 04:37	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/26/19 09:05	10/27/19 04:37	1
N-Methylaniline	1.3	U	5.0	1.3	ug/L		10/26/19 09:05	10/27/19 04:37	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
2-Isopropoxyphenol	*11*	*J N*	*ug/L*		*5.53*	*4812-20-8*	*10/26/19 09:05*	*10/27/19 04:37*	*1*
Unknown	*25*	*J*	*ug/L*		*7.11*		*10/26/19 09:05*	*10/27/19 04:37*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*94*		*51 - 108*	*10/26/19 09:05*	*10/27/19 04:37*	*1*
Phenol-d5 (Surr)	*31*		*14 - 39*	*10/26/19 09:05*	*10/27/19 04:37*	*1*
Terphenyl-d14 (Surr)	*91*		*40 - 148*	*10/26/19 09:05*	*10/27/19 04:37*	*1*
2,4,6-Tribromophenol (Surr)	*124*		*26 - 139*	*10/26/19 09:05*	*10/27/19 04:37*	*1*
2-Fluorophenol (Surr)	*49*		*25 - 58*	*10/26/19 09:05*	*10/27/19 04:37*	*1*
2-Fluorobiphenyl (Surr)	*89*		*45 - 107*	*10/26/19 09:05*	*10/27/19 04:37*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**44.7**		2.04	0.24	mg/L			10/28/19 21:36	17
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/25/19 21:21	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/25/19 21:21	1
Sulfate	**8.63**		0.60	0.35	mg/L			10/25/19 21:21	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**27100**		250	66.8	ug/L		10/30/19 03:53	10/30/19 12:40	5
Magnesium	**8440**		250	24.8	ug/L		10/30/19 03:53	10/30/19 12:40	5
Potassium	**1770**		250	73.5	ug/L		10/30/19 03:53	10/30/19 12:40	5
Calcium	**17200**		250	233	ug/L		10/30/19 03:53	10/30/19 12:40	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	**26400**		150	34.2	ug/L		10/30/19 09:19	10/30/19 23:42	1
Manganese, Dissolved	**554**		15.0	0.99	ug/L		10/30/19 09:19	10/30/19 23:42	1
Cobalt, Dissolved	**11.2**	J	50.0	1.7	ug/L		10/30/19 09:19	10/30/19 23:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.64**		0.10	0.068	mg/L			10/28/19 15:21	1
Bicarbonate Alkalinity as CaCO3	**63.6**		5.0	5.0	mg/L			10/29/19 11:08	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/29/19 11:08	1
Alkalinity	**63.6**		5.0	5.0	mg/L			10/29/19 11:08	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/28/19 19:00	1

Client Sample ID: DDA-19-US Lab Sample ID: 460-194826-6

Date Collected: 10/24/19 12:50 **Matrix: Water**
Date Received: 10/25/19 10:09

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/30/19 02:56	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/30/19 02:56	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/30/19 02:56	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/30/19 02:56	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/30/19 02:56	1
Acetone	4.4	U	5.0	4.4	ug/L			10/30/19 02:56	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/30/19 02:56	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/30/19 02:56	1
1,1-Dichloroethane	**1.1**		1.0	0.26	ug/L			10/30/19 02:56	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/30/19 02:56	1
cis-1,2-Dichloroethene	**2.8**		1.0	0.22	ug/L			10/30/19 02:56	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/30/19 02:56	1
1,2-Dichloroethane	**3.5**		1.0	0.43	ug/L			10/30/19 02:56	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/30/19 02:56	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/30/19 02:56	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/30/19 02:56	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/30/19 02:56	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/30/19 02:56	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/30/19 02:56	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/30/19 02:56	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/30/19 02:56	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/30/19 02:56	1
Benzene	**91**		1.0	0.20	ug/L			10/30/19 02:56	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/30/19 02:56	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/30/19 02:56	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/30/19 02:56	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/30/19 02:56	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/30/19 02:56	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/30/19 02:56	1
Toluene	0.38	U	1.0	0.38	ug/L			10/30/19 02:56	1
Chlorobenzene	**3.2**		1.0	0.38	ug/L			10/30/19 02:56	1
Ethylbenzene	**2.6**		1.0	0.30	ug/L			10/30/19 02:56	1
Styrene	0.42	U	1.0	0.42	ug/L			10/30/19 02:56	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/30/19 02:56	1
Diethyl ether	**3.9**		1.0	0.21	ug/L			10/30/19 02:56	1
MTBE	0.47	U	1.0	0.47	ug/L			10/30/19 02:56	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/30/19 02:56	1
Cyclohexane	**3.6**		1.0	0.32	ug/L			10/30/19 02:56	1
1,4-Dioxane	**190**		50	28	ug/L			10/30/19 02:56	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/30/19 02:56	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/30/19 02:56	1
Isopropylbenzene	**3.8**		1.0	0.34	ug/L			10/30/19 02:56	1
N-Propylbenzene	**3.6**		1.0	0.32	ug/L			10/30/19 02:56	1
Methylcyclohexane	**5.1**		1.0	0.26	ug/L			10/30/19 02:56	1
Indane	**3.7**		1.0	0.35	ug/L			10/30/19 02:56	1
Dichlorofluoromethane	**13**		1.0	0.34	ug/L			10/30/19 02:56	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/30/19 02:56	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1,3-Benzenediol, diacetate	*14*	*J N*	*ug/L*		*13.16*	*108-58-7*		*10/30/19 02:56*	*1*

Client Sample Results

Client: Golder Associates Inc. Job ID: 460-194514-1
Project/Site: DS&G Semi-Annual Groundwater

Client Sample ID: DDA-19-US Lab Sample ID: 460-194826-6

Date Collected: 10/24/19 12:50 **Matrix: Water**
Date Received: 10/25/19 10:09

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*74 - 132*		*10/30/19 02:56*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/30/19 02:56*	*1*
4-Bromofluorobenzene	*97*		*77 - 124*		*10/30/19 02:56*	*1*
Dibromofluoromethane (Surr)	*100*		*72 - 131*		*10/30/19 02:56*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	**0.46**		0.25	0.078	ug/L		10/26/19 09:05	10/28/19 07:41	5
Benzo[a]pyrene	**0.34**		0.25	0.11	ug/L		10/26/19 09:05	10/28/19 07:41	5
Benzo[b]fluoranthene	**0.31**		0.25	0.12	ug/L		10/26/19 09:05	10/28/19 07:41	5
Hexachlorobenzene	0.066	U	0.10	0.066	ug/L		10/26/19 09:05	10/28/19 07:41	5
Pentachlorophenol	0.77	~~U~~ * UJ	1.0	0.77	ug/L		10/26/19 09:05	10/28/19 07:41	5
Bis(2-chloroethyl)ether	**21**		0.15	0.13	ug/L		10/26/19 09:05	10/28/19 07:41	5

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	**0.64**	**J**	10	0.29	ug/L		10/26/19 09:05	10/27/19 04:58	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/26/19 09:05	10/27/19 04:58	1
2-Methylphenol	0.67	U	10	0.67	ug/L		10/26/19 09:05	10/27/19 04:58	1
4-Methylphenol	0.65	U	10	0.65	ug/L		10/26/19 09:05	10/27/19 04:58	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/26/19 09:05	10/27/19 04:58	1
2,4-Dimethylphenol	0.62	U	10	0.62	ug/L		10/26/19 09:05	10/27/19 04:58	1
2,4-Dichlorophenol	1.1	U	10	1.1	ug/L		10/26/19 09:05	10/27/19 04:58	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/26/19 09:05	10/27/19 04:58	1
2,4,6-Trichlorophenol	0.86	U	10	0.86	ug/L		10/26/19 09:05	10/27/19 04:58	1
2,4,5-Trichlorophenol	0.88	U	10	0.88	ug/L		10/26/19 09:05	10/27/19 04:58	1
2,4-Dinitrophenol	14	U *	20	14	ug/L		10/26/19 09:05	10/27/19 04:58	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		10/26/19 09:05	10/27/19 04:58	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/26/19 09:05	10/27/19 04:58	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/26/19 09:05	10/27/19 04:58	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/26/19 09:05	10/27/19 04:58	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/26/19 09:05	10/27/19 04:58	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/26/19 09:05	10/27/19 04:58	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		10/26/19 09:05	10/27/19 04:58	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/26/19 09:05	10/27/19 04:58	1
Isophorone	0.80	U	10	0.80	ug/L		10/26/19 09:05	10/27/19 04:58	1
Bis(2-chloroethoxy)methane	0.59	U	10	0.59	ug/L		10/26/19 09:05	10/27/19 04:58	1
1,2,4-Trichlorobenzene	0.64	U	2.0	0.64	ug/L		10/26/19 09:05	10/27/19 04:58	1
Naphthalene	1.1	U	10	1.1	ug/L		10/26/19 09:05	10/27/19 04:58	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/26/19 09:05	10/27/19 04:58	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/26/19 09:05	10/27/19 04:58	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/26/19 09:05	10/27/19 04:58	1
Hexachlorocyclopentadiene	3.6	U	10	3.6	ug/L		10/26/19 09:05	10/27/19 04:58	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/26/19 09:05	10/27/19 04:58	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/26/19 09:05	10/27/19 04:58	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/26/19 09:05	10/27/19 04:58	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/26/19 09:05	10/27/19 04:58	1
2,6-Dinitrotoluene	0.83	U	2.0	0.83	ug/L		10/26/19 09:05	10/27/19 04:58	1
3-Nitroaniline	1.9	U	10	1.9	ug/L		10/26/19 09:05	10/27/19 04:58	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/26/19 09:05	10/27/19 04:58	1

Client Sample ID: DDA-19-US Lab Sample ID: 460-194826-6

Date Collected: 10/24/19 12:50 **Matrix: Water**
Date Received: 10/25/19 10:09

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	1.1	U	10	1.1	ug/L		10/26/19 09:05	10/27/19 04:58	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/26/19 09:05	10/27/19 04:58	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/26/19 09:05	10/27/19 04:58	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/26/19 09:05	10/27/19 04:58	1
Fluorene	0.91	U	10	0.91	ug/L		10/26/19 09:05	10/27/19 04:58	1
4-Nitroaniline	1.2	U	10	1.2	ug/L		10/26/19 09:05	10/27/19 04:58	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/26/19 09:05	10/27/19 04:58	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/26/19 09:05	10/27/19 04:58	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/26/19 09:05	10/27/19 04:58	1
Anthracene	0.63	U	10	0.63	ug/L		10/26/19 09:05	10/27/19 04:58	1
Carbazole	0.68	U	10	0.68	ug/L		10/26/19 09:05	10/27/19 04:58	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/26/19 09:05	10/27/19 04:58	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/26/19 09:05	10/27/19 04:58	1
Pyrene	1.6	U	10	1.6	ug/L		10/26/19 09:05	10/27/19 04:58	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/26/19 09:05	10/27/19 04:58	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/26/19 09:05	10/27/19 04:58	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/26/19 09:05	10/27/19 04:58	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/26/19 09:05	10/27/19 04:58	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/26/19 09:05	10/27/19 04:58	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/26/19 09:05	10/27/19 04:58	1
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		10/26/19 09:05	10/27/19 04:58	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/26/19 09:05	10/27/19 04:58	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/26/19 09:05	10/27/19 04:58	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/26/19 09:05	10/27/19 04:58	1
n,n'-Dimethylaniline	**1.6**		1.0	0.91	ug/L		10/26/19 09:05	10/27/19 04:58	1
Caprolactam	0.68	~~U~~ UJ	10	0.68	ug/L		10/26/19 09:05	10/27/19 04:58	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/26/19 09:05	10/27/19 04:58	1
Bisphenol-A	**10**		10	9.9	ug/L		10/26/19 09:05	10/27/19 04:58	1
N-Methylaniline	1.3	U	5.0	1.3	ug/L		10/26/19 09:05	10/27/19 04:58	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Urethane	*9.9*	*J N*	*ug/L*		*2.77*	*51-79-6*	*10/26/19 09:05*	*10/27/19 04:58*	*1*
Unknown	*11*	*J*	*ug/L*		*3.03*		*10/26/19 09:05*	*10/27/19 04:58*	*1*
2-Isopropoxyphenol	*39*	*J N*	*ug/L*		*5.54*	*4812-20-8*	*10/26/19 09:05*	*10/27/19 04:58*	*1*
2-Propanone, 1-phenoxy-	*7.6*	*J N*	*ug/L*		*5.80*	*621-87-4*	*10/26/19 09:05*	*10/27/19 04:58*	*1*
1-Phenoxypropan-2-ol	*15*	*J N*	*ug/L*		*5.99*	*770-35-4*	*10/26/19 09:05*	*10/27/19 04:58*	*1*
Unknown	*9.1*	*J*	*ug/L*		*6.11*		*10/26/19 09:05*	*10/27/19 04:58*	*1*
Unknown	*12*	*J*	*ug/L*		*6.27*		*10/26/19 09:05*	*10/27/19 04:58*	*1*
Unknown	*8.1*	*J*	*ug/L*		*6.41*		*10/26/19 09:05*	*10/27/19 04:58*	*1*
Unknown	*13*	*J*	*ug/L*		*6.50*		*10/26/19 09:05*	*10/27/19 04:58*	*1*
Unknown	*54*	*J*	*ug/L*		*7.11*		*10/26/19 09:05*	*10/27/19 04:58*	*1*
Unknown	*21*	*J*	*ug/L*		*7.41*		*10/26/19 09:05*	*10/27/19 04:58*	*1*
Unknown	*9.1*	*J*	*ug/L*		*7.84*		*10/26/19 09:05*	*10/27/19 04:58*	*1*
Unknown	*11*	*J*	*ug/L*		*7.91*		*10/26/19 09:05*	*10/27/19 04:58*	*1*
Unknown	*14*	*J*	*ug/L*		*11.65*		*10/26/19 09:05*	*10/27/19 04:58*	*1*
Unknown	*6.6*	*J*	*ug/L*		*12.35*		*10/26/19 09:05*	*10/27/19 04:58*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*93*		*51 - 108*	*10/26/19 09:05*	*10/27/19 04:58*	*1*
Phenol-d5 (Surr)	*34*		*14 - 39*	*10/26/19 09:05*	*10/27/19 04:58*	*1*

Client Sample ID: DDA-19-US — Lab Sample ID: 460-194826-6

Date Collected: 10/24/19 12:50 **Matrix: Water**
Date Received: 10/25/19 10:09

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14 (Surr)	*91*		*40 - 148*	*10/26/19 09:05*	*10/27/19 04:58*	*1*
2,4,6-Tribromophenol (Surr)	*118*		*26 - 139*	*10/26/19 09:05*	*10/27/19 04:58*	*1*
2-Fluorophenol (Surr)	*50*		*25 - 58*	*10/26/19 09:05*	*10/27/19 04:58*	*1*
2-Fluorobiphenyl (Surr)	*88*		*45 - 107*	*10/26/19 09:05*	*10/27/19 04:58*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**45.3**		2.04	0.24	mg/L			10/28/19 20:36	17
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/25/19 20:47	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/25/19 20:47	1
Sulfate	**9.13**		0.60	0.35	mg/L			10/25/19 20:47	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**42100**		250	66.8	ug/L		10/30/19 03:53	10/30/19 12:43	5
Magnesium	**9300**		250	24.8	ug/L		10/30/19 03:53	10/30/19 12:43	5
Potassium	**2290**		250	73.5	ug/L		10/30/19 03:53	10/30/19 12:43	5
Calcium	**22400**		250	233	ug/L		10/30/19 03:53	10/30/19 12:43	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	**21100**		150	34.2	ug/L		10/30/19 09:19	10/30/19 23:46	1
Manganese, Dissolved	**1430**		15.0	0.99	ug/L		10/30/19 09:19	10/30/19 23:46	1
Cobalt, Dissolved	**6.5**	J	50.0	1.7	ug/L		10/30/19 09:19	10/30/19 23:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.15**		0.10	0.068	mg/L			10/28/19 15:23	1
Bicarbonate Alkalinity as CaCO3	**103**		5.0	5.0	mg/L			10/29/19 11:15	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/29/19 11:15	1
Alkalinity	**103**		5.0	5.0	mg/L			10/29/19 11:15	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/28/19 19:00	1

Client Sample ID: TBGW_102419 — Lab Sample ID: 460-194826-7

Date Collected: 10/24/19 00:00 **Matrix: Water**
Date Received: 10/25/19 10:09

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.33	U	0.40	0.33	ug/L			10/30/19 13:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*72 - 133*		*10/30/19 13:40*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/30/19 01:42	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/30/19 01:42	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/30/19 01:42	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/30/19 01:42	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/30/19 01:42	1

Client Sample ID: TBGW_102419 Lab Sample ID: 460-194826-7

Date Collected: 10/24/19 00:00 **Matrix: Water**
Date Received: 10/25/19 10:09

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**7.6**		5.0	4.4	ug/L			10/30/19 01:42	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/30/19 01:42	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/30/19 01:42	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/30/19 01:42	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/30/19 01:42	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/30/19 01:42	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/30/19 01:42	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/30/19 01:42	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/30/19 01:42	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/30/19 01:42	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/30/19 01:42	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/30/19 01:42	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/30/19 01:42	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/30/19 01:42	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/30/19 01:42	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/30/19 01:42	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/30/19 01:42	1
Benzene	0.20	U	1.0	0.20	ug/L			10/30/19 01:42	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/30/19 01:42	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/30/19 01:42	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/30/19 01:42	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/30/19 01:42	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/30/19 01:42	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/30/19 01:42	1
Toluene	0.38	U	1.0	0.38	ug/L			10/30/19 01:42	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/30/19 01:42	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/30/19 01:42	1
Styrene	0.42	U	1.0	0.42	ug/L			10/30/19 01:42	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/30/19 01:42	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/30/19 01:42	1
MTBE	0.47	U	1.0	0.47	ug/L			10/30/19 01:42	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/30/19 01:42	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/30/19 01:42	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/30/19 01:42	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/30/19 01:42	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/30/19 01:42	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/30/19 01:42	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/30/19 01:42	1
Indane	0.35	U	1.0	0.35	ug/L			10/30/19 01:42	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/30/19 01:42	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/30/19 01:42	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Isopropyl Alcohol	*7.2*	*J N*	*ug/L*		*2.61*	*67-63-0*		*10/30/19 01:42*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*74 - 132*		*10/30/19 01:42*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/30/19 01:42*	*1*
4-Bromofluorobenzene	*96*		*77 - 124*		*10/30/19 01:42*	*1*
Dibromofluoromethane (Surr)	*99*		*72 - 131*		*10/30/19 01:42*	*1*

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-194826-2
SDG: 194826-2

Client Sample ID: DGC-5 (40)

Lab Sample ID: 460-194826-1

Date Collected: 10/24/19 10:30
Date Received: 10/25/19 10:09

Matrix: Water

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**11**		0.40	0.33	ug/L			10/30/19 10:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*98*		*72 - 133*		*10/30/19 10:43*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/30/19 02:01	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/30/19 02:01	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/30/19 02:01	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/30/19 02:01	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/30/19 02:01	1
Acetone	4.4	U	5.0	4.4	ug/L			10/30/19 02:01	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/30/19 02:01	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/30/19 02:01	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/30/19 02:01	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/30/19 02:01	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/30/19 02:01	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/30/19 02:01	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/30/19 02:01	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/30/19 02:01	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/30/19 02:01	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/30/19 02:01	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/30/19 02:01	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/30/19 02:01	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/30/19 02:01	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/30/19 02:01	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/30/19 02:01	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/30/19 02:01	1
Benzene	**0.20**	**J**	1.0	0.20	ug/L			10/30/19 02:01	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/30/19 02:01	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/30/19 02:01	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/30/19 02:01	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/30/19 02:01	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/30/19 02:01	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/30/19 02:01	1
Toluene	0.38	U	1.0	0.38	ug/L			10/30/19 02:01	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/30/19 02:01	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/30/19 02:01	1
Styrene	0.42	U	1.0	0.42	ug/L			10/30/19 02:01	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/30/19 02:01	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/30/19 02:01	1
MTBE	0.47	U	1.0	0.47	ug/L			10/30/19 02:01	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/30/19 02:01	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/30/19 02:01	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/30/19 02:01	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/30/19 02:01	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/30/19 02:01	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/30/19 02:01	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/30/19 02:01	1

Client Sample ID: DGC-5 (40) Lab Sample ID: 460-194826-1

Date Collected: 10/24/19 10:30 **Matrix: Water**
Date Received: 10/25/19 10:09

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Indane	0.35	U	1.0	0.35	ug/L			10/30/19 02:01	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/30/19 02:01	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/30/19 02:01	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/30/19 02:01*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*74 - 132*		*10/30/19 02:01*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/30/19 02:01*	*1*
4-Bromofluorobenzene	*96*		*77 - 124*		*10/30/19 02:01*	*1*
Dibromofluoromethane (Surr)	*99*		*72 - 131*		*10/30/19 02:01*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/29/19 09:30	10/30/19 04:05	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/29/19 09:30	10/30/19 04:05	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/29/19 09:30	10/30/19 04:05	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/29/19 09:30	10/30/19 04:05	1
Pentachlorophenol	0.15	~~U *~~ UJ	0.20	0.15	ug/L		10/29/19 09:30	10/30/19 04:05	1
Bis(2-chloroethyl)ether	**0.96**		0.030	0.026	ug/L		10/29/19 09:30	10/30/19 04:05	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/29/19 09:30	10/29/19 23:21	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/29/19 09:30	10/29/19 23:21	1
2-Methylphenol	0.67	U	10	0.67	ug/L		10/29/19 09:30	10/29/19 23:21	1
4-Methylphenol	0.65	U	10	0.65	ug/L		10/29/19 09:30	10/29/19 23:21	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/29/19 09:30	10/29/19 23:21	1
2,4-Dimethylphenol	0.62	U	10	0.62	ug/L		10/29/19 09:30	10/29/19 23:21	1
2,4-Dichlorophenol	1.1	U	10	1.1	ug/L		10/29/19 09:30	10/29/19 23:21	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/29/19 09:30	10/29/19 23:21	1
2,4,6-Trichlorophenol	0.86	U	10	0.86	ug/L		10/29/19 09:30	10/29/19 23:21	1
2,4,5-Trichlorophenol	0.88	U	10	0.88	ug/L		10/29/19 09:30	10/29/19 23:21	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/29/19 09:30	10/29/19 23:21	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		10/29/19 09:30	10/29/19 23:21	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/29/19 09:30	10/29/19 23:21	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/29/19 09:30	10/29/19 23:21	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/29/19 09:30	10/29/19 23:21	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/29/19 09:30	10/29/19 23:21	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/29/19 09:30	10/29/19 23:21	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		10/29/19 09:30	10/29/19 23:21	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/29/19 09:30	10/29/19 23:21	1
Isophorone	0.80	U *	10	0.80	ug/L		10/29/19 09:30	10/29/19 23:21	1
Bis(2-chloroethoxy)methane	0.59	U *	10	0.59	ug/L		10/29/19 09:30	10/29/19 23:21	1
1,2,4-Trichlorobenzene	0.64	U	2.0	0.64	ug/L		10/29/19 09:30	10/29/19 23:21	1
Naphthalene	1.1	U	10	1.1	ug/L		10/29/19 09:30	10/29/19 23:21	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/29/19 09:30	10/29/19 23:21	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/29/19 09:30	10/29/19 23:21	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/29/19 09:30	10/29/19 23:21	1

Client Sample ID: DGC-5 (40) Lab Sample ID: 460-194826-1

Date Collected: 10/24/19 10:30 **Matrix: Water**
Date Received: 10/25/19 10:09

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorocyclopentadiene	3.6	U	10	3.6	ug/L		10/29/19 09:30	10/29/19 23:21	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/29/19 09:30	10/29/19 23:21	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/29/19 09:30	10/29/19 23:21	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/29/19 09:30	10/29/19 23:21	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/29/19 09:30	10/29/19 23:21	1
2,6-Dinitrotoluene	0.83	U	2.0	0.83	ug/L		10/29/19 09:30	10/29/19 23:21	1
3-Nitroaniline	1.9	U	10	1.9	ug/L		10/29/19 09:30	10/29/19 23:21	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/29/19 09:30	10/29/19 23:21	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/29/19 09:30	10/29/19 23:21	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/29/19 09:30	10/29/19 23:21	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/29/19 09:30	10/29/19 23:21	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/29/19 09:30	10/29/19 23:21	1
Fluorene	0.91	U	10	0.91	ug/L		10/29/19 09:30	10/29/19 23:21	1
4-Nitroaniline	1.2	U	10	1.2	ug/L		10/29/19 09:30	10/29/19 23:21	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/29/19 09:30	10/29/19 23:21	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/29/19 09:30	10/29/19 23:21	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/29/19 09:30	10/29/19 23:21	1
Anthracene	0.63	U	10	0.63	ug/L		10/29/19 09:30	10/29/19 23:21	1
Carbazole	0.68	U	10	0.68	ug/L		10/29/19 09:30	10/29/19 23:21	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/29/19 09:30	10/29/19 23:21	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/29/19 09:30	10/29/19 23:21	1
Pyrene	1.6	U	10	1.6	ug/L		10/29/19 09:30	10/29/19 23:21	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/29/19 09:30	10/29/19 23:21	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/29/19 09:30	10/29/19 23:21	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/29/19 09:30	10/29/19 23:21	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/29/19 09:30	10/29/19 23:21	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/29/19 09:30	10/29/19 23:21	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/29/19 09:30	10/29/19 23:21	1
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		10/29/19 09:30	10/29/19 23:21	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/29/19 09:30	10/29/19 23:21	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/29/19 09:30	10/29/19 23:21	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/29/19 09:30	10/29/19 23:21	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/29/19 09:30	10/29/19 23:21	1
Caprolactam	0.68	U	10	0.68	ug/L		10/29/19 09:30	10/29/19 23:21	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/29/19 09:30	10/29/19 23:21	1
Bisphenol-A	9.9	U *	10	9.9	ug/L		10/29/19 09:30	10/29/19 23:21	1
N-Methylaniline	1.3	U	5.0	1.3	ug/L		10/29/19 09:30	10/29/19 23:21	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/29/19 09:30*	*10/29/19 23:21*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*96*		*51 - 108*	*10/29/19 09:30*	*10/29/19 23:21*	*1*
Phenol-d5 (Surr)	*32*		*14 - 39*	*10/29/19 09:30*	*10/29/19 23:21*	*1*
Terphenyl-d14 (Surr)	*71*		*40 - 148*	*10/29/19 09:30*	*10/29/19 23:21*	*1*
2,4,6-Tribromophenol (Surr)	*84*		*26 - 139*	*10/29/19 09:30*	*10/29/19 23:21*	*1*
2-Fluorophenol (Surr)	*47*		*25 - 58*	*10/29/19 09:30*	*10/29/19 23:21*	*1*
2-Fluorobiphenyl (Surr)	*79*		*45 - 107*	*10/29/19 09:30*	*10/29/19 23:21*	*1*

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-194826-2
SDG: 194826-2

Client Sample ID: DGC-5 (40)

Lab Sample ID: 460-194826-1

Date Collected: 10/24/19 10:30
Date Received: 10/25/19 10:09

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**61.2**		2.76	0.32	mg/L			10/28/19 18:23	23
Nitrate as N	0.056	~~U H~~ R	0.10	0.056	mg/L			10/28/19 17:38	1
Nitrite as N	0.076	~~U H~~ R	0.12	0.076	mg/L			10/28/19 17:38	1
Sulfate	**9.79**		0.60	0.35	mg/L			10/28/19 17:38	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**28600**		250	66.8	ug/L		10/31/19 05:12	10/31/19 10:33	5
Magnesium	**11600**		250	24.8	ug/L		10/31/19 05:12	10/31/19 10:33	5
Potassium	**3780**		250	73.5	ug/L		10/31/19 05:12	10/31/19 10:33	5
Calcium	**20000**		250	233	ug/L		10/31/19 05:12	10/31/19 10:33	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	**24600**		150	34.2	ug/L		10/30/19 12:27	10/30/19 19:43	1
Manganese, Dissolved	**1990**		15.0	0.99	ug/L		10/30/19 12:27	10/30/19 19:43	1
Cobalt, Dissolved	**31.6**	J	50.0	1.7	ug/L		10/30/19 12:27	10/30/19 19:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.54**		0.10	0.068	mg/L			10/29/19 10:31	1
Bicarbonate Alkalinity as CaCO3	**70.7**		5.0	5.0	mg/L			10/29/19 11:01	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/29/19 11:01	1
Alkalinity	**70.7**		5.0	5.0	mg/L			10/29/19 11:01	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/28/19 19:00	1

Client Sample ID: DGC-5 (50)

Lab Sample ID: 460-194826-2

Date Collected: 10/24/19 11:30
Date Received: 10/25/19 10:09

Matrix: Water

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**9.0**		0.40	0.33	ug/L			10/30/19 11:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*94*		*72 - 133*		*10/30/19 11:08*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/30/19 02:19	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/30/19 02:19	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/30/19 02:19	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/30/19 02:19	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/30/19 02:19	1
Acetone	4.4	U	5.0	4.4	ug/L			10/30/19 02:19	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/30/19 02:19	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/30/19 02:19	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/30/19 02:19	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/30/19 02:19	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/30/19 02:19	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/30/19 02:19	1

Client Sample ID: DGC-5 (50) Lab Sample ID: 460-194826-2

Date Collected: 10/24/19 11:30 **Matrix: Water**
Date Received: 10/25/19 10:09

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/30/19 02:19	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/30/19 02:19	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/30/19 02:19	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/30/19 02:19	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/30/19 02:19	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/30/19 02:19	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/30/19 02:19	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/30/19 02:19	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/30/19 02:19	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/30/19 02:19	1
Benzene	**0.23**	**J**	1.0	0.20	ug/L			10/30/19 02:19	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/30/19 02:19	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/30/19 02:19	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/30/19 02:19	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/30/19 02:19	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/30/19 02:19	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/30/19 02:19	1
Toluene	0.38	U	1.0	0.38	ug/L			10/30/19 02:19	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/30/19 02:19	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/30/19 02:19	1
Styrene	0.42	U	1.0	0.42	ug/L			10/30/19 02:19	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/30/19 02:19	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/30/19 02:19	1
MTBE	0.47	U	1.0	0.47	ug/L			10/30/19 02:19	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/30/19 02:19	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/30/19 02:19	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/30/19 02:19	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/30/19 02:19	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/30/19 02:19	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/30/19 02:19	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/30/19 02:19	1
Indane	0.35	U	1.0	0.35	ug/L			10/30/19 02:19	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/30/19 02:19	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/30/19 02:19	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/30/19 02:19*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*74 - 132*		*10/30/19 02:19*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/30/19 02:19*	*1*
4-Bromofluorobenzene	*97*		*77 - 124*		*10/30/19 02:19*	*1*
Dibromofluoromethane (Surr)	*99*		*72 - 131*		*10/30/19 02:19*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/29/19 09:30	10/30/19 04:26	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/29/19 09:30	10/30/19 04:26	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/29/19 09:30	10/30/19 04:26	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/29/19 09:30	10/30/19 04:26	1

Client Sample ID: DGC-5 (50) Lab Sample ID: 460-194826-2

Date Collected: 10/24/19 11:30 **Matrix: Water**
Date Received: 10/25/19 10:09

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.15	~~U *~~ UJ	0.20	0.15	ug/L		10/29/19 09:30	10/30/19 04:26	1
Bis(2-chloroethyl)ether	**0.81**		0.030	0.026	ug/L		10/29/19 09:30	10/30/19 04:26	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/29/19 09:30	10/29/19 23:42	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/29/19 09:30	10/29/19 23:42	1
2-Methylphenol	0.67	U	10	0.67	ug/L		10/29/19 09:30	10/29/19 23:42	1
4-Methylphenol	0.65	U	10	0.65	ug/L		10/29/19 09:30	10/29/19 23:42	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/29/19 09:30	10/29/19 23:42	1
2,4-Dimethylphenol	0.62	U	10	0.62	ug/L		10/29/19 09:30	10/29/19 23:42	1
2,4-Dichlorophenol	1.1	U	10	1.1	ug/L		10/29/19 09:30	10/29/19 23:42	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/29/19 09:30	10/29/19 23:42	1
2,4,6-Trichlorophenol	0.86	U	10	0.86	ug/L		10/29/19 09:30	10/29/19 23:42	1
2,4,5-Trichlorophenol	0.88	U	10	0.88	ug/L		10/29/19 09:30	10/29/19 23:42	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/29/19 09:30	10/29/19 23:42	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		10/29/19 09:30	10/29/19 23:42	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/29/19 09:30	10/29/19 23:42	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/29/19 09:30	10/29/19 23:42	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/29/19 09:30	10/29/19 23:42	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/29/19 09:30	10/29/19 23:42	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/29/19 09:30	10/29/19 23:42	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		10/29/19 09:30	10/29/19 23:42	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/29/19 09:30	10/29/19 23:42	1
Isophorone	0.80	U *	10	0.80	ug/L		10/29/19 09:30	10/29/19 23:42	1
Bis(2-chloroethoxy)methane	0.59	U *	10	0.59	ug/L		10/29/19 09:30	10/29/19 23:42	1
1,2,4-Trichlorobenzene	0.64	U	2.0	0.64	ug/L		10/29/19 09:30	10/29/19 23:42	1
Naphthalene	1.1	U	10	1.1	ug/L		10/29/19 09:30	10/29/19 23:42	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/29/19 09:30	10/29/19 23:42	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/29/19 09:30	10/29/19 23:42	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/29/19 09:30	10/29/19 23:42	1
Hexachlorocyclopentadiene	3.6	U	10	3.6	ug/L		10/29/19 09:30	10/29/19 23:42	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/29/19 09:30	10/29/19 23:42	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/29/19 09:30	10/29/19 23:42	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/29/19 09:30	10/29/19 23:42	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/29/19 09:30	10/29/19 23:42	1
2,6-Dinitrotoluene	0.83	U	2.0	0.83	ug/L		10/29/19 09:30	10/29/19 23:42	1
3-Nitroaniline	1.9	U	10	1.9	ug/L		10/29/19 09:30	10/29/19 23:42	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/29/19 09:30	10/29/19 23:42	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/29/19 09:30	10/29/19 23:42	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/29/19 09:30	10/29/19 23:42	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/29/19 09:30	10/29/19 23:42	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/29/19 09:30	10/29/19 23:42	1
Fluorene	0.91	U	10	0.91	ug/L		10/29/19 09:30	10/29/19 23:42	1
4-Nitroaniline	1.2	U	10	1.2	ug/L		10/29/19 09:30	10/29/19 23:42	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/29/19 09:30	10/29/19 23:42	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/29/19 09:30	10/29/19 23:42	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/29/19 09:30	10/29/19 23:42	1
Anthracene	0.63	U	10	0.63	ug/L		10/29/19 09:30	10/29/19 23:42	1
Carbazole	0.68	U	10	0.68	ug/L		10/29/19 09:30	10/29/19 23:42	1

Client Sample ID: DGC-5 (50) Lab Sample ID: 460-194826-2

Date Collected: 10/24/19 11:30 **Matrix: Water**
Date Received: 10/25/19 10:09

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/29/19 09:30	10/29/19 23:42	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/29/19 09:30	10/29/19 23:42	1
Pyrene	1.6	U	10	1.6	ug/L		10/29/19 09:30	10/29/19 23:42	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/29/19 09:30	10/29/19 23:42	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/29/19 09:30	10/29/19 23:42	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/29/19 09:30	10/29/19 23:42	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/29/19 09:30	10/29/19 23:42	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/29/19 09:30	10/29/19 23:42	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/29/19 09:30	10/29/19 23:42	1
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		10/29/19 09:30	10/29/19 23:42	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/29/19 09:30	10/29/19 23:42	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/29/19 09:30	10/29/19 23:42	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/29/19 09:30	10/29/19 23:42	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/29/19 09:30	10/29/19 23:42	1
Caprolactam	0.68	U	10	0.68	ug/L		10/29/19 09:30	10/29/19 23:42	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/29/19 09:30	10/29/19 23:42	1
Bisphenol-A	9.9	U *	10	9.9	ug/L		10/29/19 09:30	10/29/19 23:42	1
N-Methylaniline	1.3	U	5.0	1.3	ug/L		10/29/19 09:30	10/29/19 23:42	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/29/19 09:30*	*10/29/19 23:42*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*103*		*51 - 108*	*10/29/19 09:30*	*10/29/19 23:42*	*1*
Phenol-d5 (Surr)	*34*		*14 - 39*	*10/29/19 09:30*	*10/29/19 23:42*	*1*
Terphenyl-d14 (Surr)	*75*		*40 - 148*	*10/29/19 09:30*	*10/29/19 23:42*	*1*
2,4,6-Tribromophenol (Surr)	*93*		*26 - 139*	*10/29/19 09:30*	*10/29/19 23:42*	*1*
2-Fluorophenol (Surr)	*50*		*25 - 58*	*10/29/19 09:30*	*10/29/19 23:42*	*1*
2-Fluorobiphenyl (Surr)	*83*		*45 - 107*	*10/29/19 09:30*	*10/29/19 23:42*	*1*

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**34.3**	**J**	50.0	1.7	ug/L		10/30/19 12:27	10/30/19 19:47	1
Iron, Dissolved	**26900**		150	34.2	ug/L		10/30/19 12:27	10/30/19 19:47	1
Manganese, Dissolved	**2040**		15.0	0.99	ug/L		10/30/19 12:27	10/30/19 19:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.55**		0.10	0.068	mg/L			10/30/19 16:17	1

Client Sample ID: DGC-2S Lab Sample ID: 460-194921-1

Date Collected: 10/24/19 15:00 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**22.5**		0.96	0.11	mg/L			10/26/19 17:31	8
Nitrate as N	**0.29**		0.10	0.056	mg/L			10/26/19 12:47	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/26/19 12:47	1
Sulfate	**17.3**		0.60	0.35	mg/L			10/26/19 12:47	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-194826-2
SDG: 194826-2

Client Sample ID: B-4DR

Lab Sample ID: 460-194921-2

Date Collected: 10/24/19 10:00
Date Received: 10/25/19 20:00

Matrix: Water

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**77**		2.0	1.7	ug/L			10/27/19 07:08	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*86*		*72 - 133*		*10/27/19 07:08*	*5*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	2.0	U	5.0	2.0	ug/L			10/30/19 15:52	5
Bromomethane	2.8	U	5.0	2.8	ug/L			10/30/19 15:52	5
Vinyl chloride	0.86	U	5.0	0.86	ug/L			10/30/19 15:52	5
Chloroethane	1.6	U	5.0	1.6	ug/L			10/30/19 15:52	5
Methylene Chloride	1.6	U	5.0	1.6	ug/L			10/30/19 15:52	5
Acetone	**37**		25	22	ug/L			10/30/19 15:52	5
Carbon disulfide	4.1	U	5.0	4.1	ug/L			10/30/19 15:52	5
1,1-Dichloroethene	1.3	U	5.0	1.3	ug/L			10/30/19 15:52	5
1,1-Dichloroethane	1.3	U	5.0	1.3	ug/L			10/30/19 15:52	5
trans-1,2-Dichloroethene	1.2	U	5.0	1.2	ug/L			10/30/19 15:52	5
cis-1,2-Dichloroethene	1.1	U	5.0	1.1	ug/L			10/30/19 15:52	5
Chloroform	1.6	U	5.0	1.6	ug/L			10/30/19 15:52	5
1,2-Dichloroethane	**2.4**	**J**	5.0	2.2	ug/L			10/30/19 15:52	5
2-Butanone (MEK)	9.3	U	25	9.3	ug/L			10/30/19 15:52	5
1,1,1-Trichloroethane	1.2	U	5.0	1.2	ug/L			10/30/19 15:52	5
Carbon tetrachloride	1.0	U	5.0	1.0	ug/L			10/30/19 15:52	5
Bromodichloromethane	1.7	U	5.0	1.7	ug/L			10/30/19 15:52	5
1,2-Dichloropropane	1.8	U	5.0	1.8	ug/L			10/30/19 15:52	5
cis-1,3-Dichloropropene	1.1	U	5.0	1.1	ug/L			10/30/19 15:52	5
Trichloroethene	1.6	U	5.0	1.6	ug/L			10/30/19 15:52	5
Dibromochloromethane	1.4	U	5.0	1.4	ug/L			10/30/19 15:52	5
1,1,2-Trichloroethane	2.2	U	5.0	2.2	ug/L			10/30/19 15:52	5
Benzene	1.0	U	5.0	1.0	ug/L			10/30/19 15:52	5
trans-1,3-Dichloropropene	2.4	U	5.0	2.4	ug/L			10/30/19 15:52	5
Bromoform	2.7	U	5.0	2.7	ug/L			10/30/19 15:52	5
4-Methyl-2-pentanone	6.5	U	25	6.5	ug/L			10/30/19 15:52	5
2-Hexanone	5.7	U	25	5.7	ug/L			10/30/19 15:52	5
Tetrachloroethene	1.2	U	5.0	1.2	ug/L			10/30/19 15:52	5
1,1,2,2-Tetrachloroethane	1.8	U	5.0	1.8	ug/L			10/30/19 15:52	5
Toluene	**3.6**	**J**	5.0	1.9	ug/L			10/30/19 15:52	5
Chlorobenzene	**1400**		5.0	1.9	ug/L			10/30/19 15:52	5
Ethylbenzene	**12**		5.0	1.5	ug/L			10/30/19 15:52	5
Styrene	2.1	U	5.0	2.1	ug/L			10/30/19 15:52	5
Xylenes, Total	**120**		10	3.3	ug/L			10/30/19 15:52	5
Diethyl ether	1.1	U	5.0	1.1	ug/L			10/30/19 15:52	5
MTBE	2.3	U	5.0	2.3	ug/L			10/30/19 15:52	5
Tetrahydrofuran	5.2	U	10	5.2	ug/L			10/30/19 15:52	5
Cyclohexane	1.6	U	5.0	1.6	ug/L			10/30/19 15:52	5
1,2,4-Trimethylbenzene	**29**		5.0	1.9	ug/L			10/30/19 15:52	5
1,3,5-Trimethylbenzene	**120**		5.0	1.6	ug/L			10/30/19 15:52	5
Isopropylbenzene	**4.8**	**J**	5.0	1.7	ug/L			10/30/19 15:52	5
N-Propylbenzene	**2.2**	**J**	5.0	1.6	ug/L			10/30/19 15:52	5
Methylcyclohexane	1.3	U	5.0	1.3	ug/L			10/30/19 15:52	5

Client Sample ID: B-4DR Lab Sample ID: 460-194921-2

Date Collected: 10/24/19 10:00 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Indane	**69**		5.0	1.7	ug/L			10/30/19 15:52	5
Dichlorofluoromethane	**3.6**	**J**	5.0	1.7	ug/L			10/30/19 15:52	5
1,2,3-Trimethylbenzene	**120**		5.0	1.8	ug/L			10/30/19 15:52	5

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, 1-ethyl-4-methyl-	*38*	*J N*	*ug/L*		*10.37*	*622-96-8*		*10/30/19 15:52*	*5*
Benzene, 1-ethyl-2-methyl-	*140*	*J N*	*ug/L*		*10.58*	*611-14-3*		*10/30/19 15:52*	*5*
Acenaphthene	*43*	*J N*	*ug/L*		*10.83*	*83-32-9*		*10/30/19 15:52*	*5*
Benzene, 1,2-dichloro-	*46*	*J N*	*ug/L*		*11.23*	*95-50-1*		*10/30/19 15:52*	*5*
1,4-Benzenediol, diacetate	*2000*	*J N*	*ug/L*		*12.68*	*1205-91-0*		*10/30/19 15:52*	*5*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*74 - 132*		*10/30/19 15:52*	*5*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/30/19 15:52*	*5*
4-Bromofluorobenzene	*104*		*77 - 124*		*10/30/19 15:52*	*5*
Dibromofluoromethane (Surr)	*106*		*72 - 131*		*10/30/19 15:52*	*5*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	**2.1**	* J+	1.0	0.31	ug/L		10/26/19 09:25	10/28/19 08:02	20
Benzo[a]pyrene	**1.6**		1.0	0.43	ug/L		10/26/19 09:25	10/28/19 08:02	20
Benzo[b]fluoranthene	**1.4**	* J+	1.0	0.48	ug/L		10/26/19 09:25	10/28/19 08:02	20
Hexachlorobenzene	0.26	U	0.40	0.26	ug/L		10/26/19 09:25	10/28/19 08:02	20
Pentachlorophenol	3.1	U *	4.0	3.1	ug/L		10/26/19 09:25	10/28/19 08:02	20
Bis(2-chloroethyl)ether	**85**		0.60	0.52	ug/L		10/26/19 09:25	10/28/19 08:02	20

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/26/19 09:25	10/27/19 03:20	1
2-Chlorophenol	**0.97**	**J**	10	0.38	ug/L		10/26/19 09:25	10/27/19 03:20	1
2-Methylphenol	0.67	U	10	0.67	ug/L		10/26/19 09:25	10/27/19 03:20	1
4-Methylphenol	**1.3**	**J**	10	0.65	ug/L		10/26/19 09:25	10/27/19 03:20	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/26/19 09:25	10/27/19 03:20	1
2,4-Dimethylphenol	0.62	U	10	0.62	ug/L		10/26/19 09:25	10/27/19 03:20	1
2,4-Dichlorophenol	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 03:20	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/26/19 09:25	10/27/19 03:20	1
2,4,6-Trichlorophenol	0.86	U	10	0.86	ug/L		10/26/19 09:25	10/27/19 03:20	1
2,4,5-Trichlorophenol	0.88	U	10	0.88	ug/L		10/26/19 09:25	10/27/19 03:20	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/26/19 09:25	10/27/19 03:20	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		10/26/19 09:25	10/27/19 03:20	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/26/19 09:25	10/27/19 03:20	1
1,3-Dichlorobenzene	**8.7**	**J**	10	2.0	ug/L		10/26/19 09:25	10/27/19 03:20	1
1,4-Dichlorobenzene	**35**		10	1.3	ug/L		10/26/19 09:25	10/27/19 03:20	1
1,2-Dichlorobenzene	**29**		10	1.3	ug/L		10/26/19 09:25	10/27/19 03:20	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/26/19 09:25	10/27/19 03:20	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		10/26/19 09:25	10/27/19 03:20	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/26/19 09:25	10/27/19 03:20	1
Isophorone	0.80	U	10	0.80	ug/L		10/26/19 09:25	10/27/19 03:20	1
Bis(2-chloroethoxy)methane	0.59	U	10	0.59	ug/L		10/26/19 09:25	10/27/19 03:20	1
1,2,4-Trichlorobenzene	0.64	U	2.0	0.64	ug/L		10/26/19 09:25	10/27/19 03:20	1

Client Sample ID: B-4DR Lab Sample ID: 460-194921-2

Date Collected: 10/24/19 10:00 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**15**		10	1.1	ug/L		10/26/19 09:25	10/27/19 03:20	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/26/19 09:25	10/27/19 03:20	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/26/19 09:25	10/27/19 03:20	1
2-Methylnaphthalene	**1.5**	**J**	10	1.1	ug/L		10/26/19 09:25	10/27/19 03:20	1
Hexachlorocyclopentadiene	3.6	U	10	3.6	ug/L		10/26/19 09:25	10/27/19 03:20	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/26/19 09:25	10/27/19 03:20	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/26/19 09:25	10/27/19 03:20	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/26/19 09:25	10/27/19 03:20	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/26/19 09:25	10/27/19 03:20	1
2,6-Dinitrotoluene	0.83	U	2.0	0.83	ug/L		10/26/19 09:25	10/27/19 03:20	1
3-Nitroaniline	1.9	U	10	1.9	ug/L		10/26/19 09:25	10/27/19 03:20	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 03:20	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 03:20	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/26/19 09:25	10/27/19 03:20	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/26/19 09:25	10/27/19 03:20	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/26/19 09:25	10/27/19 03:20	1
Fluorene	0.91	U	10	0.91	ug/L		10/26/19 09:25	10/27/19 03:20	1
4-Nitroaniline	1.2	U	10	1.2	ug/L		10/26/19 09:25	10/27/19 03:20	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/26/19 09:25	10/27/19 03:20	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/26/19 09:25	10/27/19 03:20	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/26/19 09:25	10/27/19 03:20	1
Anthracene	0.63	U	10	0.63	ug/L		10/26/19 09:25	10/27/19 03:20	1
Carbazole	0.68	U	10	0.68	ug/L		10/26/19 09:25	10/27/19 03:20	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/26/19 09:25	10/27/19 03:20	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/26/19 09:25	10/27/19 03:20	1
Pyrene	1.6	U	10	1.6	ug/L		10/26/19 09:25	10/27/19 03:20	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/26/19 09:25	10/27/19 03:20	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/26/19 09:25	10/27/19 03:20	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/26/19 09:25	10/27/19 03:20	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/26/19 09:25	10/27/19 03:20	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/26/19 09:25	10/27/19 03:20	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/26/19 09:25	10/27/19 03:20	1
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		10/26/19 09:25	10/27/19 03:20	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/26/19 09:25	10/27/19 03:20	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/26/19 09:25	10/27/19 03:20	1
Diphenyl ether	**34**		10	1.2	ug/L		10/26/19 09:25	10/27/19 03:20	1
n,n'-Dimethylaniline	**3.9**		1.0	0.91	ug/L		10/26/19 09:25	10/27/19 03:20	1
Caprolactam	0.68	U	10	0.68	ug/L		10/26/19 09:25	10/27/19 03:20	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/26/19 09:25	10/27/19 03:20	1
Bisphenol-A	**100**		10	9.9	ug/L		10/26/19 09:25	10/27/19 03:20	1
N-Methylaniline	1.3	U	5.0	1.3	ug/L		10/26/19 09:25	10/27/19 03:20	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, 1,3-dimethyl-	*47*	*J N*	*ug/L*		*3.13*	*108-38-3*	*10/26/19 09:25*	*10/27/19 03:20*	*1*
Benzene, 1,2,3-trimethyl-	*75*	*J N*	*ug/L*		*3.79*	*526-73-8*	*10/26/19 09:25*	*10/27/19 03:20*	*1*
Benzene, 1-ethyl-2-methyl-	*72*	*J N*	*ug/L*		*3.87*	*611-14-3*	*10/26/19 09:25*	*10/27/19 03:20*	*1*
Benzene, 1,2,4-trimethyl-	*64*	*J N*	*ug/L*		*4.21*	*95-63-6*	*10/26/19 09:25*	*10/27/19 03:20*	*1*
Unknown	*30*	*J*	*ug/L*		*4.38*		*10/26/19 09:25*	*10/27/19 03:20*	*1*
2-Isopropoxyphenol	*33*	*J N*	*ug/L*		*5.24*	*4812-20-8*	*10/26/19 09:25*	*10/27/19 03:20*	*1*
Benzene, 1,3-dipropoxy-	*630*	*J N*	*ug/L*		*5.82*	*56106-37-7*	*10/26/19 09:25*	*10/27/19 03:20*	*1*

Client Sample ID: B-4DR — Lab Sample ID: 460-194921-2

Date Collected: 10/24/19 10:00 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	29	J	ug/L		5.98		10/26/19 09:25	10/27/19 03:20	1
1,3,5-Triazine-2,4,6(1H,3H,5H) -trione, 1,3,5-trimethyl-	150	J N	ug/L		6.40	827-16-7	10/26/19 09:25	10/27/19 03:20	1
Unknown	74	J	ug/L		6.47		10/26/19 09:25	10/27/19 03:20	1
Unknown	400	J	ug/L		6.83		10/26/19 09:25	10/27/19 03:20	1
Altretamine	100	J N	ug/L		7.91	645-05-6	10/26/19 09:25	10/27/19 03:20	1
Urea, N,N'-dimethyl-N,N'-diphenyl-	54	J N	ug/L		8.59	611-92-7	10/26/19 09:25	10/27/19 03:20	1
Unknown	26	J	ug/L		8.88		10/26/19 09:25	10/27/19 03:20	1
Unknown	35	J	ug/L		10.79		10/26/19 09:25	10/27/19 03:20	1
Norcannabinol-9-carboxylic acid, 11-	190	J N	ug/L		11.79	53989-32-5	10/26/19 09:25	10/27/19 03:20	1
Unknown	180	J	ug/L		11.96		10/26/19 09:25	10/27/19 03:20	1
Unknown	120	J	ug/L		12.14		10/26/19 09:25	10/27/19 03:20	1
Unknown	37	J	ug/L		13.36		10/26/19 09:25	10/27/19 03:20	1
Unknown	28	J	ug/L		13.58		10/26/19 09:25	10/27/19 03:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	82		51 - 108	10/26/19 09:25	10/27/19 03:20	1
Phenol-d5 (Surr)	31		14 - 39	10/26/19 09:25	10/27/19 03:20	1
Terphenyl-d14 (Surr)	72		40 - 148	10/26/19 09:25	10/27/19 03:20	1
2,4,6-Tribromophenol (Surr)	95		26 - 139	10/26/19 09:25	10/27/19 03:20	1
2-Fluorophenol (Surr)	46		25 - 58	10/26/19 09:25	10/27/19 03:20	1
2-Fluorobiphenyl (Surr)	88		45 - 107	10/26/19 09:25	10/27/19 03:20	1

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**44.8**	J	50.0	1.7	ug/L		10/30/19 09:19	10/30/19 23:50	1
Iron, Dissolved	**81900**		150	34.2	ug/L		10/30/19 09:19	10/30/19 23:50	1
Manganese, Dissolved	**5460**		15.0	0.99	ug/L		10/30/19 09:19	10/30/19 23:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**4.1**		0.10	0.068	mg/L			10/28/19 15:26	1

Client Sample ID: BG-1 — Lab Sample ID: 460-194921-3

Date Collected: 10/25/19 11:35 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**35**		0.40	0.33	ug/L			10/26/19 19:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	83		72 - 133		10/26/19 19:04	1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/30/19 02:15	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/30/19 02:15	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/30/19 02:15	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/30/19 02:15	1

Client Sample ID: BG-1 Lab Sample ID: 460-194921-3

Date Collected: 10/25/19 11:35 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/30/19 02:15	1
Acetone	4.4	U	5.0	4.4	ug/L			10/30/19 02:15	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/30/19 02:15	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/30/19 02:15	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/30/19 02:15	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/30/19 02:15	1
cis-1,2-Dichloroethene	**0.47**	**J**	1.0	0.22	ug/L			10/30/19 02:15	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/30/19 02:15	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/30/19 02:15	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/30/19 02:15	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/30/19 02:15	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/30/19 02:15	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/30/19 02:15	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/30/19 02:15	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/30/19 02:15	1
Trichloroethene	**1.1**		1.0	0.31	ug/L			10/30/19 02:15	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/30/19 02:15	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/30/19 02:15	1
Benzene	**4.2**		1.0	0.20	ug/L			10/30/19 02:15	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/30/19 02:15	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/30/19 02:15	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/30/19 02:15	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/30/19 02:15	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/30/19 02:15	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/30/19 02:15	1
Toluene	0.38	U	1.0	0.38	ug/L			10/30/19 02:15	1
Chlorobenzene	**0.99**	**J**	1.0	0.38	ug/L			10/30/19 02:15	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/30/19 02:15	1
Styrene	0.42	U	1.0	0.42	ug/L			10/30/19 02:15	1
Xylenes, Total	**6.8**		2.0	0.65	ug/L			10/30/19 02:15	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/30/19 02:15	1
MTBE	0.47	U	1.0	0.47	ug/L			10/30/19 02:15	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/30/19 02:15	1
Cyclohexane	**2.7**		1.0	0.32	ug/L			10/30/19 02:15	1
1,2,4-Trimethylbenzene	**8.0**		1.0	0.37	ug/L			10/30/19 02:15	1
1,3,5-Trimethylbenzene	**4.7**		1.0	0.33	ug/L			10/30/19 02:15	1
Isopropylbenzene	**4.1**		1.0	0.34	ug/L			10/30/19 02:15	1
N-Propylbenzene	**3.4**		1.0	0.32	ug/L			10/30/19 02:15	1
Methylcyclohexane	**4.3**		1.0	0.26	ug/L			10/30/19 02:15	1
Indane	**2.6**		1.0	0.35	ug/L			10/30/19 02:15	1
Dichlorofluoromethane	**0.75**	**J**	1.0	0.34	ug/L			10/30/19 02:15	1
1,2,3-Trimethylbenzene	**6.5**		1.0	0.36	ug/L			10/30/19 02:15	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/30/19 02:15*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*74 - 132*		*10/30/19 02:15*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/30/19 02:15*	*1*
4-Bromofluorobenzene	*102*		*77 - 124*		*10/30/19 02:15*	*1*

Client Sample ID: BG-1 Lab Sample ID: 460-194921-3

Date Collected: 10/25/19 11:35 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*113*		*72 - 131*		*10/30/19 02:15*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U *	0.050	0.016	ug/L		10/26/19 09:25	10/27/19 00:32	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/26/19 09:25	10/27/19 00:32	1
Benzo[b]fluoranthene	0.024	U *	0.050	0.024	ug/L		10/26/19 09:25	10/27/19 00:32	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/26/19 09:25	10/27/19 00:32	1
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/26/19 09:25	10/27/19 00:32	1
Bis(2-chloroethyl)ether	**4.3**		0.030	0.026	ug/L		10/26/19 09:25	10/27/19 00:32	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/26/19 09:25	10/27/19 03:40	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/26/19 09:25	10/27/19 03:40	1
2-Methylphenol	0.67	U	10	0.67	ug/L		10/26/19 09:25	10/27/19 03:40	1
4-Methylphenol	0.65	U	10	0.65	ug/L		10/26/19 09:25	10/27/19 03:40	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/26/19 09:25	10/27/19 03:40	1
2,4-Dimethylphenol	0.62	U	10	0.62	ug/L		10/26/19 09:25	10/27/19 03:40	1
2,4-Dichlorophenol	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 03:40	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/26/19 09:25	10/27/19 03:40	1
2,4,6-Trichlorophenol	0.86	U	10	0.86	ug/L		10/26/19 09:25	10/27/19 03:40	1
2,4,5-Trichlorophenol	0.88	U	10	0.88	ug/L		10/26/19 09:25	10/27/19 03:40	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/26/19 09:25	10/27/19 03:40	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		10/26/19 09:25	10/27/19 03:40	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/26/19 09:25	10/27/19 03:40	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/26/19 09:25	10/27/19 03:40	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/26/19 09:25	10/27/19 03:40	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/26/19 09:25	10/27/19 03:40	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/26/19 09:25	10/27/19 03:40	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		10/26/19 09:25	10/27/19 03:40	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/26/19 09:25	10/27/19 03:40	1
Isophorone	0.80	U	10	0.80	ug/L		10/26/19 09:25	10/27/19 03:40	1
Bis(2-chloroethoxy)methane	0.59	U	10	0.59	ug/L		10/26/19 09:25	10/27/19 03:40	1
1,2,4-Trichlorobenzene	0.64	U	2.0	0.64	ug/L		10/26/19 09:25	10/27/19 03:40	1
Naphthalene	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 03:40	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/26/19 09:25	10/27/19 03:40	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/26/19 09:25	10/27/19 03:40	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 03:40	1
Hexachlorocyclopentadiene	3.6	U	10	3.6	ug/L		10/26/19 09:25	10/27/19 03:40	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/26/19 09:25	10/27/19 03:40	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/26/19 09:25	10/27/19 03:40	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/26/19 09:25	10/27/19 03:40	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/26/19 09:25	10/27/19 03:40	1
2,6-Dinitrotoluene	0.83	U	2.0	0.83	ug/L		10/26/19 09:25	10/27/19 03:40	1
3-Nitroaniline	1.9	U	10	1.9	ug/L		10/26/19 09:25	10/27/19 03:40	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 03:40	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 03:40	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/26/19 09:25	10/27/19 03:40	1

Client Sample ID: BG-1 Lab Sample ID: 460-194921-3

Date Collected: 10/25/19 11:35 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/26/19 09:25	10/27/19 03:40	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/26/19 09:25	10/27/19 03:40	1
Fluorene	0.91	U	10	0.91	ug/L		10/26/19 09:25	10/27/19 03:40	1
4-Nitroaniline	1.2	U	10	1.2	ug/L		10/26/19 09:25	10/27/19 03:40	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/26/19 09:25	10/27/19 03:40	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/26/19 09:25	10/27/19 03:40	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/26/19 09:25	10/27/19 03:40	1
Anthracene	0.63	U	10	0.63	ug/L		10/26/19 09:25	10/27/19 03:40	1
Carbazole	0.68	U	10	0.68	ug/L		10/26/19 09:25	10/27/19 03:40	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/26/19 09:25	10/27/19 03:40	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/26/19 09:25	10/27/19 03:40	1
Pyrene	1.6	U	10	1.6	ug/L		10/26/19 09:25	10/27/19 03:40	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/26/19 09:25	10/27/19 03:40	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/26/19 09:25	10/27/19 03:40	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/26/19 09:25	10/27/19 03:40	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/26/19 09:25	10/27/19 03:40	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/26/19 09:25	10/27/19 03:40	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/26/19 09:25	10/27/19 03:40	1
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		10/26/19 09:25	10/27/19 03:40	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/26/19 09:25	10/27/19 03:40	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/26/19 09:25	10/27/19 03:40	1
Diphenyl ether	**1.3**	**J**	10	1.2	ug/L		10/26/19 09:25	10/27/19 03:40	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/26/19 09:25	10/27/19 03:40	1
Caprolactam	0.68	U	10	0.68	ug/L		10/26/19 09:25	10/27/19 03:40	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/26/19 09:25	10/27/19 03:40	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/26/19 09:25	10/27/19 03:40	1
N-Methylaniline	1.3	U	5.0	1.3	ug/L		10/26/19 09:25	10/27/19 03:40	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, 1,2,3-trimethyl-	*6.9*	*J N*	*ug/L*		*4.00*	*526-73-8*	*10/26/19 09:25*	*10/27/19 03:40*	*1*
Unknown	*9.8*	*J*	*ug/L*		*6.82*		*10/26/19 09:25*	*10/27/19 03:40*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*72*		*51 - 108*	*10/26/19 09:25*	*10/27/19 03:40*	*1*
Phenol-d5 (Surr)	*26*		*14 - 39*	*10/26/19 09:25*	*10/27/19 03:40*	*1*
Terphenyl-d14 (Surr)	*66*		*40 - 148*	*10/26/19 09:25*	*10/27/19 03:40*	*1*
2,4,6-Tribromophenol (Surr)	*76*		*26 - 139*	*10/26/19 09:25*	*10/27/19 03:40*	*1*
2-Fluorophenol (Surr)	*39*		*25 - 58*	*10/26/19 09:25*	*10/27/19 03:40*	*1*
2-Fluorobiphenyl (Surr)	*65*		*45 - 107*	*10/26/19 09:25*	*10/27/19 03:40*	*1*

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**37.6**	**J**	50.0	1.7	ug/L		10/30/19 09:19	10/30/19 23:54	1
Iron, Dissolved	**47100**		150	34.2	ug/L		10/30/19 09:19	10/30/19 23:54	1
Manganese, Dissolved	**5020**		15.0	0.99	ug/L		10/30/19 09:19	10/30/19 23:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.58**		0.10	0.068	mg/L			10/28/19 15:32	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-194826-2
SDG: 194826-2

Client Sample ID: C-4D

Lab Sample ID: 460-194921-4

Date Collected: 10/25/19 11:05
Date Received: 10/25/19 20:00

Matrix: Water

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**31**		2.0	1.7	ug/L			10/27/19 07:55	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*86*		*72 - 133*		*10/27/19 07:55*	*5*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/30/19 02:40	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/30/19 02:40	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/30/19 02:40	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/30/19 02:40	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/30/19 02:40	1
Acetone	4.4	U	5.0	4.4	ug/L			10/30/19 02:40	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/30/19 02:40	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/30/19 02:40	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/30/19 02:40	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/30/19 02:40	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/30/19 02:40	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/30/19 02:40	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/30/19 02:40	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/30/19 02:40	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/30/19 02:40	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/30/19 02:40	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/30/19 02:40	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/30/19 02:40	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/30/19 02:40	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/30/19 02:40	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/30/19 02:40	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/30/19 02:40	1
Benzene	**7.1**		1.0	0.20	ug/L			10/30/19 02:40	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/30/19 02:40	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/30/19 02:40	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/30/19 02:40	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/30/19 02:40	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/30/19 02:40	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/30/19 02:40	1
Toluene	**1.7**		1.0	0.38	ug/L			10/30/19 02:40	1
Chlorobenzene	**11**		1.0	0.38	ug/L			10/30/19 02:40	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/30/19 02:40	1
Styrene	0.42	U	1.0	0.42	ug/L			10/30/19 02:40	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/30/19 02:40	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/30/19 02:40	1
MTBE	0.47	U	1.0	0.47	ug/L			10/30/19 02:40	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/30/19 02:40	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/30/19 02:40	1
1,2,4-Trimethylbenzene	**0.37**	**J**	1.0	0.37	ug/L			10/30/19 02:40	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/30/19 02:40	1
Isopropylbenzene	**18**		1.0	0.34	ug/L			10/30/19 02:40	1
N-Propylbenzene	**1.4**		1.0	0.32	ug/L			10/30/19 02:40	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/30/19 02:40	1

Client Sample ID: C-4D Lab Sample ID: 460-194921-4

Date Collected: 10/25/19 11:05 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Indane	**0.87**	**J**	1.0	0.35	ug/L			10/30/19 02:40	1
Dichlorofluoromethane	**1.0**		1.0	0.34	ug/L			10/30/19 02:40	1
1,2,3-Trimethylbenzene	**2.1**		1.0	0.36	ug/L			10/30/19 02:40	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Decane, 3,3,6-trimethyl-	*7.6*	*J N*	*ug/L*		*4.53*	*62338-14-1*		*10/30/19 02:40*	*1*
Cyclopentane, 1,1-dimethyl-	*12*	*J N*	*ug/L*		*4.93*	*1638-26-2*		*10/30/19 02:40*	*1*
Hexane, 2,3-dimethyl-	*13*	*J N*	*ug/L*		*5.06*	*584-94-1*		*10/30/19 02:40*	*1*
Cyclopentane, 1,1,3-trimethyl-	*10*	*J N*	*ug/L*		*5.82*	*4516-69-2*		*10/30/19 02:40*	*1*
Unknown	*6.6*	*J*	*ug/L*		*6.13*			*10/30/19 02:40*	*1*
Benzene, 1,2-dichloro-	*5.5*	*J N*	*ug/L*		*11.23*	*95-50-1*		*10/30/19 02:40*	*1*
Phenol, 4-(hexyloxy)-	*74*	*J N*	*ug/L*		*12.68*	*18979-55-0*		*10/30/19 02:40*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*74 - 132*		*10/30/19 02:40*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*10/30/19 02:40*	*1*
4-Bromofluorobenzene	*105*		*77 - 124*		*10/30/19 02:40*	*1*
Dibromofluoromethane (Surr)	*108*		*72 - 131*		*10/30/19 02:40*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	**1.1**	± J+	0.50	0.16	ug/L		10/26/19 09:25	10/28/19 08:23	10
Benzo[a]pyrene	**0.78**		0.50	0.22	ug/L		10/26/19 09:25	10/28/19 08:23	10
Benzo[b]fluoranthene	**0.60**	± J+	0.50	0.24	ug/L		10/26/19 09:25	10/28/19 08:23	10
Hexachlorobenzene	0.13	U	0.20	0.13	ug/L		10/26/19 09:25	10/28/19 08:23	10
Pentachlorophenol	1.5	U ±	2.0	1.5	ug/L		10/26/19 09:25	10/28/19 08:23	10
Bis(2-chloroethyl)ether	**59**		0.30	0.26	ug/L		10/26/19 09:25	10/28/19 08:23	10

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/26/19 09:25	10/27/19 04:01	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/26/19 09:25	10/27/19 04:01	1
2-Methylphenol	0.67	U	10	0.67	ug/L		10/26/19 09:25	10/27/19 04:01	1
4-Methylphenol	0.65	U	10	0.65	ug/L		10/26/19 09:25	10/27/19 04:01	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/26/19 09:25	10/27/19 04:01	1
2,4-Dimethylphenol	0.62	U	10	0.62	ug/L		10/26/19 09:25	10/27/19 04:01	1
2,4-Dichlorophenol	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 04:01	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/26/19 09:25	10/27/19 04:01	1
2,4,6-Trichlorophenol	0.86	U	10	0.86	ug/L		10/26/19 09:25	10/27/19 04:01	1
2,4,5-Trichlorophenol	0.88	U	10	0.88	ug/L		10/26/19 09:25	10/27/19 04:01	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/26/19 09:25	10/27/19 04:01	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		10/26/19 09:25	10/27/19 04:01	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/26/19 09:25	10/27/19 04:01	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/26/19 09:25	10/27/19 04:01	1
1,4-Dichlorobenzene	**4.5**	**J**	10	1.3	ug/L		10/26/19 09:25	10/27/19 04:01	1
1,2-Dichlorobenzene	**2.9**	**J**	10	1.3	ug/L		10/26/19 09:25	10/27/19 04:01	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/26/19 09:25	10/27/19 04:01	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		10/26/19 09:25	10/27/19 04:01	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/26/19 09:25	10/27/19 04:01	1
Isophorone	0.80	U	10	0.80	ug/L		10/26/19 09:25	10/27/19 04:01	1

Client Sample ID: C-4D Lab Sample ID: 460-194921-4

Date Collected: 10/25/19 11:05 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	0.59	U	10	0.59	ug/L		10/26/19 09:25	10/27/19 04:01	1
1,2,4-Trichlorobenzene	0.64	U	2.0	0.64	ug/L		10/26/19 09:25	10/27/19 04:01	1
Naphthalene	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 04:01	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/26/19 09:25	10/27/19 04:01	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/26/19 09:25	10/27/19 04:01	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 04:01	1
Hexachlorocyclopentadiene	3.6	U	10	3.6	ug/L		10/26/19 09:25	10/27/19 04:01	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/26/19 09:25	10/27/19 04:01	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/26/19 09:25	10/27/19 04:01	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/26/19 09:25	10/27/19 04:01	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/26/19 09:25	10/27/19 04:01	1
2,6-Dinitrotoluene	0.83	U	2.0	0.83	ug/L		10/26/19 09:25	10/27/19 04:01	1
3-Nitroaniline	1.9	U	10	1.9	ug/L		10/26/19 09:25	10/27/19 04:01	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 04:01	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 04:01	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/26/19 09:25	10/27/19 04:01	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/26/19 09:25	10/27/19 04:01	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/26/19 09:25	10/27/19 04:01	1
Fluorene	0.91	U	10	0.91	ug/L		10/26/19 09:25	10/27/19 04:01	1
4-Nitroaniline	1.2	U	10	1.2	ug/L		10/26/19 09:25	10/27/19 04:01	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/26/19 09:25	10/27/19 04:01	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/26/19 09:25	10/27/19 04:01	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/26/19 09:25	10/27/19 04:01	1
Anthracene	0.63	U	10	0.63	ug/L		10/26/19 09:25	10/27/19 04:01	1
Carbazole	0.68	U	10	0.68	ug/L		10/26/19 09:25	10/27/19 04:01	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/26/19 09:25	10/27/19 04:01	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/26/19 09:25	10/27/19 04:01	1
Pyrene	1.6	U	10	1.6	ug/L		10/26/19 09:25	10/27/19 04:01	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/26/19 09:25	10/27/19 04:01	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/26/19 09:25	10/27/19 04:01	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/26/19 09:25	10/27/19 04:01	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/26/19 09:25	10/27/19 04:01	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/26/19 09:25	10/27/19 04:01	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/26/19 09:25	10/27/19 04:01	1
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		10/26/19 09:25	10/27/19 04:01	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/26/19 09:25	10/27/19 04:01	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/26/19 09:25	10/27/19 04:01	1
Diphenyl ether	**9.5**	**J**	10	1.2	ug/L		10/26/19 09:25	10/27/19 04:01	1
n,n'-Dimethylaniline	**1.2**		1.0	0.91	ug/L		10/26/19 09:25	10/27/19 04:01	1
Caprolactam	0.68	U	10	0.68	ug/L		10/26/19 09:25	10/27/19 04:01	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/26/19 09:25	10/27/19 04:01	1
Bisphenol-A	**46**		10	9.9	ug/L		10/26/19 09:25	10/27/19 04:01	1
N-Methylaniline	**2.0**	**J**	5.0	1.3	ug/L		10/26/19 09:25	10/27/19 04:01	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, (1-methylethyl)-	*14*	*J N*	*ug/L*		*3.40*	*98-82-8*	*10/26/19 09:25*	*10/27/19 04:01*	*1*
1,4-Benzenediol, diacetate	*81*	*J N*	*ug/L*		*5.81*	*1205-91-0*	*10/26/19 09:25*	*10/27/19 04:01*	*1*
Unknown	*12*	*J*	*ug/L*		*5.98*		*10/26/19 09:25*	*10/27/19 04:01*	*1*
Unknown	*78*	*J*	*ug/L*		*6.82*		*10/26/19 09:25*	*10/27/19 04:01*	*1*
Acetamide, N-methyl-N-phenyl-	*7.3*	*J N*	*ug/L*		*7.11*	*579-10-2*	*10/26/19 09:25*	*10/27/19 04:01*	*1*

Client Sample ID: C-4D — Lab Sample ID: 460-194921-4

Date Collected: 10/25/19 11:05 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	15	J	ug/L		7.91		10/26/19 09:25	10/27/19 04:01	1
Unknown	7.3	J	ug/L		10.78		10/26/19 09:25	10/27/19 04:01	1
Unknown	9.3	J	ug/L		10.93		10/26/19 09:25	10/27/19 04:01	1
Unknown	6.6	J	ug/L		11.30		10/26/19 09:25	10/27/19 04:01	1
Norcannabinol-9-carboxylic acid, 11-	18	J N	ug/L		11.78	53989-32-5	10/26/19 09:25	10/27/19 04:01	1
Unknown	26	J	ug/L		11.95		10/26/19 09:25	10/27/19 04:01	1
Unknown	21	J	ug/L		12.13		10/26/19 09:25	10/27/19 04:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	95		51 - 108	10/26/19 09:25	10/27/19 04:01	1
Phenol-d5 (Surr)	35		14 - 39	10/26/19 09:25	10/27/19 04:01	1
Terphenyl-d14 (Surr)	91		40 - 148	10/26/19 09:25	10/27/19 04:01	1
2,4,6-Tribromophenol (Surr)	110		26 - 139	10/26/19 09:25	10/27/19 04:01	1
2-Fluorophenol (Surr)	53		25 - 58	10/26/19 09:25	10/27/19 04:01	1
2-Fluorobiphenyl (Surr)	89		45 - 107	10/26/19 09:25	10/27/19 04:01	1

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**14.8**	**J**	50.0	1.7	ug/L		10/30/19 09:19	10/30/19 23:58	1
Iron, Dissolved	**29700**		150	34.2	ug/L		10/30/19 09:19	10/30/19 23:58	1
Manganese, Dissolved	**1560**		15.0	0.99	ug/L		10/30/19 09:19	10/30/19 23:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**2.2**		0.10	0.068	mg/L			10/28/19 15:34	1

Client Sample ID: C-18D — Lab Sample ID: 460-194921-5

Date Collected: 10/25/19 10:20 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**130**		2.0	1.7	ug/L			10/31/19 08:35	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	91		72 - 133		10/31/19 08:35	5

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	2.0	U	5.0	2.0	ug/L			10/31/19 00:16	5
Bromomethane	2.8	U	5.0	2.8	ug/L			10/31/19 00:16	5
Vinyl chloride	0.86	U	5.0	0.86	ug/L			10/31/19 00:16	5
Chloroethane	1.6	U	5.0	1.6	ug/L			10/31/19 00:16	5
Methylene Chloride	1.6	U	5.0	1.6	ug/L			10/31/19 00:16	5
Acetone	22	U	25	22	ug/L			10/31/19 00:16	5
Carbon disulfide	4.1	U	5.0	4.1	ug/L			10/31/19 00:16	5
1,1-Dichloroethene	1.3	U	5.0	1.3	ug/L			10/31/19 00:16	5
1,1-Dichloroethane	1.3	U	5.0	1.3	ug/L			10/31/19 00:16	5
trans-1,2-Dichloroethene	1.2	U	5.0	1.2	ug/L			10/31/19 00:16	5
cis-1,2-Dichloroethene	**14**		5.0	1.1	ug/L			10/31/19 00:16	5

Client Sample ID: C-18D Lab Sample ID: 460-194921-5

Date Collected: 10/25/19 10:20 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	1.6	U	5.0	1.6	ug/L			10/31/19 00:16	5
1,2-Dichloroethane	2.2	U	5.0	2.2	ug/L			10/31/19 00:16	5
2-Butanone (MEK)	9.3	U	25	9.3	ug/L			10/31/19 00:16	5
1,1,1-Trichloroethane	1.2	U	5.0	1.2	ug/L			10/31/19 00:16	5
Carbon tetrachloride	1.0	U	5.0	1.0	ug/L			10/31/19 00:16	5
Bromodichloromethane	1.7	U	5.0	1.7	ug/L			10/31/19 00:16	5
1,2-Dichloropropane	1.8	U	5.0	1.8	ug/L			10/31/19 00:16	5
cis-1,3-Dichloropropene	1.1	U	5.0	1.1	ug/L			10/31/19 00:16	5
Trichloroethene	1.6	U	5.0	1.6	ug/L			10/31/19 00:16	5
Dibromochloromethane	1.4	U	5.0	1.4	ug/L			10/31/19 00:16	5
1,1,2-Trichloroethane	2.2	U	5.0	2.2	ug/L			10/31/19 00:16	5
Benzene	**150**		5.0	1.0	ug/L			10/31/19 00:16	5
trans-1,3-Dichloropropene	2.4	U	5.0	2.4	ug/L			10/31/19 00:16	5
Bromoform	2.7	U	5.0	2.7	ug/L			10/31/19 00:16	5
4-Methyl-2-pentanone	6.5	U	25	6.5	ug/L			10/31/19 00:16	5
2-Hexanone	5.7	U	25	5.7	ug/L			10/31/19 00:16	5
Tetrachloroethene	1.2	U	5.0	1.2	ug/L			10/31/19 00:16	5
1,1,2,2-Tetrachloroethane	1.8	U	5.0	1.8	ug/L			10/31/19 00:16	5
Toluene	**1100**		5.0	1.9	ug/L			10/31/19 00:16	5
Chlorobenzene	**21**		5.0	1.9	ug/L			10/31/19 00:16	5
Ethylbenzene	**67**		5.0	1.5	ug/L			10/31/19 00:16	5
Styrene	2.1	U	5.0	2.1	ug/L			10/31/19 00:16	5
Xylenes, Total	**230**		10	3.3	ug/L			10/31/19 00:16	5
Diethyl ether	1.1	U	5.0	1.1	ug/L			10/31/19 00:16	5
MTBE	2.3	U	5.0	2.3	ug/L			10/31/19 00:16	5
Tetrahydrofuran	**7.8**	**J**	10	5.2	ug/L			10/31/19 00:16	5
Cyclohexane	1.6	U	5.0	1.6	ug/L			10/31/19 00:16	5
1,2,4-Trimethylbenzene	**32**		5.0	1.9	ug/L			10/31/19 00:16	5
1,3,5-Trimethylbenzene	**9.1**		5.0	1.6	ug/L			10/31/19 00:16	5
Isopropylbenzene	**3.2**	**J**	5.0	1.7	ug/L			10/31/19 00:16	5
N-Propylbenzene	**5.8**		5.0	1.6	ug/L			10/31/19 00:16	5
Methylcyclohexane	**2.9**	**J**	5.0	1.3	ug/L			10/31/19 00:16	5
Indane	**18**		5.0	1.7	ug/L			10/31/19 00:16	5
Dichlorofluoromethane	1.7	U	5.0	1.7	ug/L			10/31/19 00:16	5
1,2,3-Trimethylbenzene	**10**		5.0	1.8	ug/L			10/31/19 00:16	5

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, 1-ethyl-3-methyl-	*40*	*J N*	*ug/L*		*10.35*	*620-14-4*		*10/31/19 00:16*	*5*
Acenaphthene	*25*	*J N*	*ug/L*		*10.82*	*83-32-9*		*10/31/19 00:16*	*5*
Naphthalene	*160*	*J N*	*ug/L*		*12.37*	*91-20-3*		*10/31/19 00:16*	*5*
Naphthalene, 1-methyl-	*170*	*J N*	*ug/L*		*13.32*	*90-12-0*		*10/31/19 00:16*	*5*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*74 - 132*		*10/31/19 00:16*	*5*
Toluene-d8 (Surr)	*101*		*80 - 120*		*10/31/19 00:16*	*5*
4-Bromofluorobenzene	*103*		*77 - 124*		*10/31/19 00:16*	*5*
Dibromofluoromethane (Surr)	*104*		*72 - 131*		*10/31/19 00:16*	*5*

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-194826-2
SDG: 194826-2

Client Sample ID: C-18D

Lab Sample ID: 460-194921-5

Date Collected: 10/25/19 10:20
Date Received: 10/25/19 20:00

Matrix: Water

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	**0.48**	~~*~~ J+	0.25	0.078	ug/L		10/26/19 09:25	10/28/19 08:44	5
Benzo[a]pyrene	**0.35**		0.25	0.11	ug/L		10/26/19 09:25	10/28/19 08:44	5
Benzo[b]fluoranthene	**0.27**	~~*~~ J+	0.25	0.12	ug/L		10/26/19 09:25	10/28/19 08:44	5
Hexachlorobenzene	0.066	U	0.10	0.066	ug/L		10/26/19 09:25	10/28/19 08:44	5
Pentachlorophenol	0.77	~~U*~~	1.0	0.77	ug/L		10/26/19 09:25	10/28/19 08:44	5
Bis(2-chloroethyl)ether	**19**		0.15	0.13	ug/L		10/26/19 09:25	10/28/19 08:44	5

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	**1.7**	**J**	10	0.29	ug/L		10/26/19 09:25	10/27/19 04:22	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/26/19 09:25	10/27/19 04:22	1
2-Methylphenol	**3.3**	**J**	10	0.67	ug/L		10/26/19 09:25	10/27/19 04:22	1
4-Methylphenol	**5.9**	**J**	10	0.65	ug/L		10/26/19 09:25	10/27/19 04:22	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/26/19 09:25	10/27/19 04:22	1
2,4-Dimethylphenol	**1.4**	**J**	10	0.62	ug/L		10/26/19 09:25	10/27/19 04:22	1
2,4-Dichlorophenol	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 04:22	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/26/19 09:25	10/27/19 04:22	1
2,4,6-Trichlorophenol	0.86	U	10	0.86	ug/L		10/26/19 09:25	10/27/19 04:22	1
2,4,5-Trichlorophenol	0.88	U	10	0.88	ug/L		10/26/19 09:25	10/27/19 04:22	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/26/19 09:25	10/27/19 04:22	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		10/26/19 09:25	10/27/19 04:22	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/26/19 09:25	10/27/19 04:22	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/26/19 09:25	10/27/19 04:22	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/26/19 09:25	10/27/19 04:22	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/26/19 09:25	10/27/19 04:22	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/26/19 09:25	10/27/19 04:22	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		10/26/19 09:25	10/27/19 04:22	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/26/19 09:25	10/27/19 04:22	1
Isophorone	0.80	U	10	0.80	ug/L		10/26/19 09:25	10/27/19 04:22	1
Bis(2-chloroethoxy)methane	0.59	U	10	0.59	ug/L		10/26/19 09:25	10/27/19 04:22	1
1,2,4-Trichlorobenzene	0.64	U	2.0	0.64	ug/L		10/26/19 09:25	10/27/19 04:22	1
Naphthalene	**1.8**	**J**	10	1.1	ug/L		10/26/19 09:25	10/27/19 04:22	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/26/19 09:25	10/27/19 04:22	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/26/19 09:25	10/27/19 04:22	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 04:22	1
Hexachlorocyclopentadiene	3.6	U	10	3.6	ug/L		10/26/19 09:25	10/27/19 04:22	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/26/19 09:25	10/27/19 04:22	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/26/19 09:25	10/27/19 04:22	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/26/19 09:25	10/27/19 04:22	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/26/19 09:25	10/27/19 04:22	1
2,6-Dinitrotoluene	0.83	U	2.0	0.83	ug/L		10/26/19 09:25	10/27/19 04:22	1
3-Nitroaniline	1.9	U	10	1.9	ug/L		10/26/19 09:25	10/27/19 04:22	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 04:22	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 04:22	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/26/19 09:25	10/27/19 04:22	1
Diethyl phthalate	**4.3**	**J**	10	0.98	ug/L		10/26/19 09:25	10/27/19 04:22	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/26/19 09:25	10/27/19 04:22	1
Fluorene	0.91	U	10	0.91	ug/L		10/26/19 09:25	10/27/19 04:22	1
4-Nitroaniline	1.2	U	10	1.2	ug/L		10/26/19 09:25	10/27/19 04:22	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/26/19 09:25	10/27/19 04:22	1

Client Sample ID: C-18D Lab Sample ID: 460-194921-5

Date Collected: 10/25/19 10:20 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/26/19 09:25	10/27/19 04:22	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/26/19 09:25	10/27/19 04:22	1
Anthracene	0.63	U	10	0.63	ug/L		10/26/19 09:25	10/27/19 04:22	1
Carbazole	0.68	U	10	0.68	ug/L		10/26/19 09:25	10/27/19 04:22	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/26/19 09:25	10/27/19 04:22	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/26/19 09:25	10/27/19 04:22	1
Pyrene	1.6	U	10	1.6	ug/L		10/26/19 09:25	10/27/19 04:22	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/26/19 09:25	10/27/19 04:22	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/26/19 09:25	10/27/19 04:22	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/26/19 09:25	10/27/19 04:22	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/26/19 09:25	10/27/19 04:22	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/26/19 09:25	10/27/19 04:22	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/26/19 09:25	10/27/19 04:22	1
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		10/26/19 09:25	10/27/19 04:22	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/26/19 09:25	10/27/19 04:22	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/26/19 09:25	10/27/19 04:22	1
Diphenyl ether	**9.1**	**J**	10	1.2	ug/L		10/26/19 09:25	10/27/19 04:22	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/26/19 09:25	10/27/19 04:22	1
Caprolactam	0.68	U	10	0.68	ug/L		10/26/19 09:25	10/27/19 04:22	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/26/19 09:25	10/27/19 04:22	1
Bisphenol-A	**100**		10	9.9	ug/L		10/26/19 09:25	10/27/19 04:22	1
N-Methylaniline	1.3	U	5.0	1.3	ug/L		10/26/19 09:25	10/27/19 04:22	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, propyl-	*7.0*	*J N*	*ug/L*		*3.66*	*103-65-1*	*10/26/19 09:25*	*10/27/19 04:22*	*1*
Benzene, 1-ethyl-3-methyl-	*24*	*J N*	*ug/L*		*3.72*	*620-14-4*	*10/26/19 09:25*	*10/27/19 04:22*	*1*
Benzene, 1-ethyl-2-methyl-	*16*	*J N*	*ug/L*		*3.75*	*611-14-3*	*10/26/19 09:25*	*10/27/19 04:22*	*1*
Benzene, 1,2,4-trimethyl-	*12*	*J N*	*ug/L*		*3.79*	*95-63-6*	*10/26/19 09:25*	*10/27/19 04:22*	*1*
Benzene, 1-ethyl-4-methyl-	*10*	*J N*	*ug/L*		*3.87*	*622-96-8*	*10/26/19 09:25*	*10/27/19 04:22*	*1*
Benzene, 1,3,5-trimethyl-	*38*	*J N*	*ug/L*		*4.00*	*108-67-8*	*10/26/19 09:25*	*10/27/19 04:22*	*1*
Benzene, 1,2,3-trimethyl-	*15*	*J N*	*ug/L*		*4.22*	*526-73-8*	*10/26/19 09:25*	*10/27/19 04:22*	*1*
Indane	*20*	*J N*	*ug/L*		*4.33*	*496-11-7*	*10/26/19 09:25*	*10/27/19 04:22*	*1*
Unknown	*7.0*	*J*	*ug/L*		*4.58*		*10/26/19 09:25*	*10/27/19 04:22*	*1*
Hexanoic acid, 2-ethyl-	*7.5*	*J N*	*ug/L*		*4.83*	*149-57-5*	*10/26/19 09:25*	*10/27/19 04:22*	*1*
Unknown	*12*	*J*	*ug/L*		*4.87*		*10/26/19 09:25*	*10/27/19 04:22*	*1*
Unknown	*7.5*	*J*	*ug/L*		*4.93*		*10/26/19 09:25*	*10/27/19 04:22*	*1*
1,4-Benzenediol, diacetate	*8.2*	*J N*	*ug/L*		*5.81*	*1205-91-0*	*10/26/19 09:25*	*10/27/19 04:22*	*1*
Unknown	*7.1*	*J*	*ug/L*		*5.98*		*10/26/19 09:25*	*10/27/19 04:22*	*1*
Unknown	*64*	*J*	*ug/L*		*6.82*		*10/26/19 09:25*	*10/27/19 04:22*	*1*
Unknown	*9.6*	*J*	*ug/L*		*10.93*		*10/26/19 09:25*	*10/27/19 04:22*	*1*
Unknown	*7.1*	*J*	*ug/L*		*11.32*		*10/26/19 09:25*	*10/27/19 04:22*	*1*
Norcannabinol-9-carboxylic acid, 11-	*20*	*J N*	*ug/L*		*11.78*	*53989-32-5*	*10/26/19 09:25*	*10/27/19 04:22*	*1*
Unknown	*18*	*J*	*ug/L*		*11.95*		*10/26/19 09:25*	*10/27/19 04:22*	*1*
Unknown	*29*	*J*	*ug/L*		*12.12*		*10/26/19 09:25*	*10/27/19 04:22*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*102*		*51 - 108*	*10/26/19 09:25*	*10/27/19 04:22*	*1*
Phenol-d5 (Surr)	*34*		*14 - 39*	*10/26/19 09:25*	*10/27/19 04:22*	*1*
Terphenyl-d14 (Surr)	*93*		*40 - 148*	*10/26/19 09:25*	*10/27/19 04:22*	*1*

Client Sample ID: C-18D — Lab Sample ID: 460-194921-5

Date Collected: 10/25/19 10:20 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*111*		*26 - 139*	*10/26/19 09:25*	*10/27/19 04:22*	*1*
2-Fluorophenol (Surr)	*52*		*25 - 58*	*10/26/19 09:25*	*10/27/19 04:22*	*1*
2-Fluorobiphenyl (Surr)	*91*		*45 - 107*	*10/26/19 09:25*	*10/27/19 04:22*	*1*

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**44.3**	**J**	50.0	1.7	ug/L		10/30/19 09:21	10/31/19 00:02	1
Iron, Dissolved	**37300**		150	34.2	ug/L		10/30/19 09:21	10/31/19 00:02	1
Manganese, Dissolved	**3680**		15.0	0.99	ug/L		10/30/19 09:21	10/31/19 00:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**2.0**		0.10	0.068	mg/L			10/28/19 15:45	1

Client Sample ID: C-19D — Lab Sample ID: 460-194921-6

Date Collected: 10/25/19 10:35 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	**0.40**	**J**	1.0	0.40	ug/L			10/30/19 03:04	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/30/19 03:04	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/30/19 03:04	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/30/19 03:04	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/30/19 03:04	1
Acetone	4.4	U	5.0	4.4	ug/L			10/30/19 03:04	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/30/19 03:04	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/30/19 03:04	1
1,1-Dichloroethane	**0.92**	**J**	1.0	0.26	ug/L			10/30/19 03:04	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/30/19 03:04	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/30/19 03:04	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/30/19 03:04	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/30/19 03:04	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/30/19 03:04	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/30/19 03:04	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/30/19 03:04	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/30/19 03:04	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/30/19 03:04	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/30/19 03:04	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/30/19 03:04	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/30/19 03:04	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/30/19 03:04	1
Benzene	**11**		1.0	0.20	ug/L			10/30/19 03:04	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/30/19 03:04	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/30/19 03:04	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/30/19 03:04	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/30/19 03:04	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/30/19 03:04	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/30/19 03:04	1
Toluene	**0.64**	**J**	1.0	0.38	ug/L			10/30/19 03:04	1

Client Sample ID: C-19D Lab Sample ID: 460-194921-6

Date Collected: 10/25/19 10:35 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	**5.9**		1.0	0.38	ug/L			10/30/19 03:04	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/30/19 03:04	1
Styrene	0.42	U	1.0	0.42	ug/L			10/30/19 03:04	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/30/19 03:04	1
Diethyl ether	**2.9**		1.0	0.21	ug/L			10/30/19 03:04	1
MTBE	0.47	U	1.0	0.47	ug/L			10/30/19 03:04	1
Tetrahydrofuran	**3.7**		2.0	1.0	ug/L			10/30/19 03:04	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/30/19 03:04	1
1,4-Dioxane	**190**		50	28	ug/L			10/30/19 03:04	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/30/19 03:04	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/30/19 03:04	1
Isopropylbenzene	**0.45**	**J**	1.0	0.34	ug/L			10/30/19 03:04	1
N-Propylbenzene	**0.32**	**J**	1.0	0.32	ug/L			10/30/19 03:04	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/30/19 03:04	1
Indane	**1.1**		1.0	0.35	ug/L			10/30/19 03:04	1
Dichlorofluoromethane	**1.1**		1.0	0.34	ug/L			10/30/19 03:04	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/30/19 03:04	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Benzenediol, diacetate	*55*	*~~J N~~*	*ug/L*		*12.68*	*1205-91-0*		*10/30/19 03:04*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*74 - 132*		*10/30/19 03:04*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/30/19 03:04*	*1*
4-Bromofluorobenzene	*100*		*77 - 124*		*10/30/19 03:04*	*1*
Dibromofluoromethane (Surr)	*109*		*72 - 131*		*10/30/19 03:04*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	**0.50**	* J+	0.25	0.078	ug/L		10/26/19 09:25	10/28/19 09:06	5
Benzo[a]pyrene	**0.37**		0.25	0.11	ug/L		10/26/19 09:25	10/28/19 09:06	5
Benzo[b]fluoranthene	**0.28**	* J+	0.25	0.12	ug/L		10/26/19 09:25	10/28/19 09:06	5
Hexachlorobenzene	0.066	U	0.10	0.066	ug/L		10/26/19 09:25	10/28/19 09:06	5
Pentachlorophenol	0.77	U *	1.0	0.77	ug/L		10/26/19 09:25	10/28/19 09:06	5
Bis(2-chloroethyl)ether	**17**		0.15	0.13	ug/L		10/26/19 09:25	10/28/19 09:06	5

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/26/19 09:25	10/27/19 04:43	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/26/19 09:25	10/27/19 04:43	1
2-Methylphenol	0.67	U	10	0.67	ug/L		10/26/19 09:25	10/27/19 04:43	1
4-Methylphenol	0.65	U	10	0.65	ug/L		10/26/19 09:25	10/27/19 04:43	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/26/19 09:25	10/27/19 04:43	1
2,4-Dimethylphenol	0.62	U	10	0.62	ug/L		10/26/19 09:25	10/27/19 04:43	1
2,4-Dichlorophenol	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 04:43	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/26/19 09:25	10/27/19 04:43	1
2,4,6-Trichlorophenol	0.86	U	10	0.86	ug/L		10/26/19 09:25	10/27/19 04:43	1
2,4,5-Trichlorophenol	0.88	U	10	0.88	ug/L		10/26/19 09:25	10/27/19 04:43	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/26/19 09:25	10/27/19 04:43	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		10/26/19 09:25	10/27/19 04:43	1

Client Sample ID: C-19D Lab Sample ID: 460-194921-6

Date Collected: 10/25/19 10:35 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/26/19 09:25	10/27/19 04:43	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/26/19 09:25	10/27/19 04:43	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/26/19 09:25	10/27/19 04:43	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/26/19 09:25	10/27/19 04:43	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/26/19 09:25	10/27/19 04:43	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		10/26/19 09:25	10/27/19 04:43	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/26/19 09:25	10/27/19 04:43	1
Isophorone	0.80	U	10	0.80	ug/L		10/26/19 09:25	10/27/19 04:43	1
Bis(2-chloroethoxy)methane	0.59	U	10	0.59	ug/L		10/26/19 09:25	10/27/19 04:43	1
1,2,4-Trichlorobenzene	0.64	U	2.0	0.64	ug/L		10/26/19 09:25	10/27/19 04:43	1
Naphthalene	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 04:43	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/26/19 09:25	10/27/19 04:43	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/26/19 09:25	10/27/19 04:43	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 04:43	1
Hexachlorocyclopentadiene	3.6	U	10	3.6	ug/L		10/26/19 09:25	10/27/19 04:43	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/26/19 09:25	10/27/19 04:43	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/26/19 09:25	10/27/19 04:43	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/26/19 09:25	10/27/19 04:43	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/26/19 09:25	10/27/19 04:43	1
2,6-Dinitrotoluene	0.83	U	2.0	0.83	ug/L		10/26/19 09:25	10/27/19 04:43	1
3-Nitroaniline	1.9	U	10	1.9	ug/L		10/26/19 09:25	10/27/19 04:43	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 04:43	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 04:43	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/26/19 09:25	10/27/19 04:43	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/26/19 09:25	10/27/19 04:43	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/26/19 09:25	10/27/19 04:43	1
Fluorene	0.91	U	10	0.91	ug/L		10/26/19 09:25	10/27/19 04:43	1
4-Nitroaniline	1.2	U	10	1.2	ug/L		10/26/19 09:25	10/27/19 04:43	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/26/19 09:25	10/27/19 04:43	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/26/19 09:25	10/27/19 04:43	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/26/19 09:25	10/27/19 04:43	1
Anthracene	0.63	U	10	0.63	ug/L		10/26/19 09:25	10/27/19 04:43	1
Carbazole	0.68	U	10	0.68	ug/L		10/26/19 09:25	10/27/19 04:43	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/26/19 09:25	10/27/19 04:43	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/26/19 09:25	10/27/19 04:43	1
Pyrene	1.6	U	10	1.6	ug/L		10/26/19 09:25	10/27/19 04:43	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/26/19 09:25	10/27/19 04:43	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/26/19 09:25	10/27/19 04:43	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/26/19 09:25	10/27/19 04:43	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/26/19 09:25	10/27/19 04:43	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/26/19 09:25	10/27/19 04:43	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/26/19 09:25	10/27/19 04:43	1
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		10/26/19 09:25	10/27/19 04:43	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/26/19 09:25	10/27/19 04:43	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/26/19 09:25	10/27/19 04:43	1
Diphenyl ether	**2.3**	**J**	10	1.2	ug/L		10/26/19 09:25	10/27/19 04:43	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/26/19 09:25	10/27/19 04:43	1
Caprolactam	0.68	U	10	0.68	ug/L		10/26/19 09:25	10/27/19 04:43	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/26/19 09:25	10/27/19 04:43	1

Client Sample ID: C-19D — Lab Sample ID: 460-194921-6

Date Collected: 10/25/19 10:35 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bisphenol-A	**42**		10	9.9	ug/L		10/26/19 09:25	10/27/19 04:43	1
N-Methylaniline	1.3	U	5.0	1.3	ug/L		10/26/19 09:25	10/27/19 04:43	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*59*	*J*	*ug/L*		*6.82*		*10/26/19 09:25*	*10/27/19 04:43*	*1*
Oxirane, 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymeth	*7.9*	*J N*	*ug/L*		*11.78*	*1675-54-3*	*10/26/19 09:25*	*10/27/19 04:43*	*1*
Unknown	*6.7*	*J*	*ug/L*		*11.95*		*10/26/19 09:25*	*10/27/19 04:43*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*87*		*51 - 108*	*10/26/19 09:25*	*10/27/19 04:43*	*1*
Phenol-d5 (Surr)	*30*		*14 - 39*	*10/26/19 09:25*	*10/27/19 04:43*	*1*
Terphenyl-d14 (Surr)	*79*		*40 - 148*	*10/26/19 09:25*	*10/27/19 04:43*	*1*
2,4,6-Tribromophenol (Surr)	*94*		*26 - 139*	*10/26/19 09:25*	*10/27/19 04:43*	*1*
2-Fluorophenol (Surr)	*46*		*25 - 58*	*10/26/19 09:25*	*10/27/19 04:43*	*1*
2-Fluorobiphenyl (Surr)	*80*		*45 - 107*	*10/26/19 09:25*	*10/27/19 04:43*	*1*

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**83.3**		50.0	1.7	ug/L		10/30/19 09:21	10/31/19 00:06	1
Iron, Dissolved	**33100**		150	34.2	ug/L		10/30/19 09:21	10/31/19 00:06	1
Manganese, Dissolved	**6610**		15.0	0.99	ug/L		10/30/19 09:21	10/31/19 00:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**1.1**		0.10	0.068	mg/L			10/28/19 15:46	1

Client Sample ID: C-20D — Lab Sample ID: 460-194921-7

Date Collected: 10/25/19 11:50 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/30/19 09:52	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/30/19 09:52	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/30/19 09:52	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/30/19 09:52	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/30/19 09:52	1
Acetone	4.4	U	5.0	4.4	ug/L			10/30/19 09:52	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/30/19 09:52	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/30/19 09:52	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/30/19 09:52	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/30/19 09:52	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/30/19 09:52	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/30/19 09:52	1
1,2-Dichloroethane	**0.87**	**J**	1.0	0.43	ug/L			10/30/19 09:52	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/30/19 09:52	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/30/19 09:52	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/30/19 09:52	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/30/19 09:52	1

Client Sample ID: C-20D Lab Sample ID: 460-194921-7

Date Collected: 10/25/19 11:50 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/30/19 09:52	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/30/19 09:52	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/30/19 09:52	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/30/19 09:52	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/30/19 09:52	1
Benzene	**2.2**		1.0	0.20	ug/L			10/30/19 09:52	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/30/19 09:52	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/30/19 09:52	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/30/19 09:52	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/30/19 09:52	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/30/19 09:52	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/30/19 09:52	1
Toluene	0.38	U	1.0	0.38	ug/L			10/30/19 09:52	1
Chlorobenzene	**2.1**		1.0	0.38	ug/L			10/30/19 09:52	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/30/19 09:52	1
Styrene	0.42	U	1.0	0.42	ug/L			10/30/19 09:52	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/30/19 09:52	1
Diethyl ether	**1.6**		1.0	0.21	ug/L			10/30/19 09:52	1
MTBE	0.47	U	1.0	0.47	ug/L			10/30/19 09:52	1
Tetrahydrofuran	**1.7**	**J**	2.0	1.0	ug/L			10/30/19 09:52	1
Cyclohexane	**0.72**	**J**	1.0	0.32	ug/L			10/30/19 09:52	1
1,4-Dioxane	**140**		50	28	ug/L			10/30/19 09:52	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/30/19 09:52	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/30/19 09:52	1
Isopropylbenzene	**1.7**		1.0	0.34	ug/L			10/30/19 09:52	1
N-Propylbenzene	**1.7**		1.0	0.32	ug/L			10/30/19 09:52	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/30/19 09:52	1
Indane	**4.1**		1.0	0.35	ug/L			10/30/19 09:52	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/30/19 09:52	1
1,2,3-Trimethylbenzene	**2.2**		1.0	0.36	ug/L			10/30/19 09:52	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/30/19 09:52*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*74 - 132*		*10/30/19 09:52*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/30/19 09:52*	*1*
4-Bromofluorobenzene	*101*		*77 - 124*		*10/30/19 09:52*	*1*
Dibromofluoromethane (Surr)	*110*		*72 - 131*		*10/30/19 09:52*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U *	0.050	0.016	ug/L		10/26/19 09:25	10/27/19 05:29	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/26/19 09:25	10/27/19 05:29	1
Benzo[b]fluoranthene	0.024	U *	0.050	0.024	ug/L		10/26/19 09:25	10/27/19 05:29	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/26/19 09:25	10/27/19 05:29	1
Pentachlorophenol	0.15	~~U *~~ UJ	0.20	0.15	ug/L		10/26/19 09:25	10/27/19 05:29	1
Bis(2-chloroethyl)ether	**5.1**		0.030	0.026	ug/L		10/26/19 09:25	10/27/19 05:29	1

Client Sample ID: C-20D Lab Sample ID: 460-194921-7

Date Collected: 10/25/19 11:50 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/26/19 09:25	10/27/19 05:04	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/26/19 09:25	10/27/19 05:04	1
2-Methylphenol	0.67	U	10	0.67	ug/L		10/26/19 09:25	10/27/19 05:04	1
4-Methylphenol	0.65	U	10	0.65	ug/L		10/26/19 09:25	10/27/19 05:04	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/26/19 09:25	10/27/19 05:04	1
2,4-Dimethylphenol	0.62	U	10	0.62	ug/L		10/26/19 09:25	10/27/19 05:04	1
2,4-Dichlorophenol	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 05:04	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/26/19 09:25	10/27/19 05:04	1
2,4,6-Trichlorophenol	0.86	U	10	0.86	ug/L		10/26/19 09:25	10/27/19 05:04	1
2,4,5-Trichlorophenol	0.88	U	10	0.88	ug/L		10/26/19 09:25	10/27/19 05:04	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/26/19 09:25	10/27/19 05:04	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		10/26/19 09:25	10/27/19 05:04	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/26/19 09:25	10/27/19 05:04	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/26/19 09:25	10/27/19 05:04	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/26/19 09:25	10/27/19 05:04	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/26/19 09:25	10/27/19 05:04	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/26/19 09:25	10/27/19 05:04	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		10/26/19 09:25	10/27/19 05:04	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/26/19 09:25	10/27/19 05:04	1
Isophorone	0.80	U	10	0.80	ug/L		10/26/19 09:25	10/27/19 05:04	1
Bis(2-chloroethoxy)methane	0.59	U	10	0.59	ug/L		10/26/19 09:25	10/27/19 05:04	1
1,2,4-Trichlorobenzene	0.64	U	2.0	0.64	ug/L		10/26/19 09:25	10/27/19 05:04	1
Naphthalene	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 05:04	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/26/19 09:25	10/27/19 05:04	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/26/19 09:25	10/27/19 05:04	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 05:04	1
Hexachlorocyclopentadiene	3.6	U	10	3.6	ug/L		10/26/19 09:25	10/27/19 05:04	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/26/19 09:25	10/27/19 05:04	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/26/19 09:25	10/27/19 05:04	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/26/19 09:25	10/27/19 05:04	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/26/19 09:25	10/27/19 05:04	1
2,6-Dinitrotoluene	0.83	U	2.0	0.83	ug/L		10/26/19 09:25	10/27/19 05:04	1
3-Nitroaniline	1.9	U	10	1.9	ug/L		10/26/19 09:25	10/27/19 05:04	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 05:04	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 05:04	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/26/19 09:25	10/27/19 05:04	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/26/19 09:25	10/27/19 05:04	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/26/19 09:25	10/27/19 05:04	1
Fluorene	0.91	U	10	0.91	ug/L		10/26/19 09:25	10/27/19 05:04	1
4-Nitroaniline	1.2	U	10	1.2	ug/L		10/26/19 09:25	10/27/19 05:04	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/26/19 09:25	10/27/19 05:04	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/26/19 09:25	10/27/19 05:04	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/26/19 09:25	10/27/19 05:04	1
Anthracene	0.63	U	10	0.63	ug/L		10/26/19 09:25	10/27/19 05:04	1
Carbazole	0.68	U	10	0.68	ug/L		10/26/19 09:25	10/27/19 05:04	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/26/19 09:25	10/27/19 05:04	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/26/19 09:25	10/27/19 05:04	1
Pyrene	1.6	U	10	1.6	ug/L		10/26/19 09:25	10/27/19 05:04	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/26/19 09:25	10/27/19 05:04	1

Client Sample ID: C-20D — Lab Sample ID: 460-194921-7

Date Collected: 10/25/19 11:50 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/26/19 09:25	10/27/19 05:04	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/26/19 09:25	10/27/19 05:04	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/26/19 09:25	10/27/19 05:04	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/26/19 09:25	10/27/19 05:04	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/26/19 09:25	10/27/19 05:04	1
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		10/26/19 09:25	10/27/19 05:04	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/26/19 09:25	10/27/19 05:04	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/26/19 09:25	10/27/19 05:04	1
Diphenyl ether	**1.5**	**J**	10	1.2	ug/L		10/26/19 09:25	10/27/19 05:04	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/26/19 09:25	10/27/19 05:04	1
Caprolactam	0.68	U	10	0.68	ug/L		10/26/19 09:25	10/27/19 05:04	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/26/19 09:25	10/27/19 05:04	1
Bisphenol-A	**17**		10	9.9	ug/L		10/26/19 09:25	10/27/19 05:04	1
N-Methylaniline	1.3	U	5.0	1.3	ug/L		10/26/19 09:25	10/27/19 05:04	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*31*	*J*	*ug/L*		*6.82*		*10/26/19 09:25*	*10/27/19 05:04*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*89*		*51 - 108*	*10/26/19 09:25*	*10/27/19 05:04*	*1*
Phenol-d5 (Surr)	*31*		*14 - 39*	*10/26/19 09:25*	*10/27/19 05:04*	*1*
Terphenyl-d14 (Surr)	*85*		*40 - 148*	*10/26/19 09:25*	*10/27/19 05:04*	*1*
2,4,6-Tribromophenol (Surr)	*93*		*26 - 139*	*10/26/19 09:25*	*10/27/19 05:04*	*1*
2-Fluorophenol (Surr)	*48*		*25 - 58*	*10/26/19 09:25*	*10/27/19 05:04*	*1*
2-Fluorobiphenyl (Surr)	*81*		*45 - 107*	*10/26/19 09:25*	*10/27/19 05:04*	*1*

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**45.8**	**J**	50.0	1.7	ug/L		10/30/19 09:21	10/31/19 00:17	1
Iron, Dissolved	**25900**		150	34.2	ug/L		10/30/19 09:21	10/31/19 00:17	1
Manganese, Dissolved	**8000**		15.0	0.99	ug/L		10/30/19 09:21	10/31/19 00:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.54**		0.10	0.068	mg/L			10/28/19 15:48	1

Client Sample ID: C-30 — Lab Sample ID: 460-194921-8

Date Collected: 10/25/19 10:55 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**68**		0.80	0.67	ug/L			10/27/19 08:41	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*87*		*72 - 133*		*10/27/19 08:41*	*2*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.80	U	2.0	0.80	ug/L			10/30/19 23:04	2
Bromomethane	1.1	U	2.0	1.1	ug/L			10/30/19 23:04	2

Client Sample ID: C-30 Lab Sample ID: 460-194921-8

Date Collected: 10/25/19 10:55 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.34	U	2.0	0.34	ug/L			10/30/19 23:04	2
Chloroethane	0.64	U	2.0	0.64	ug/L			10/30/19 23:04	2
Methylene Chloride	0.63	U	2.0	0.63	ug/L			10/30/19 23:04	2
Acetone	8.8	U	10	8.8	ug/L			10/30/19 23:04	2
Carbon disulfide	1.6	U	2.0	1.6	ug/L			10/30/19 23:04	2
1,1-Dichloroethene	0.53	U	2.0	0.53	ug/L			10/30/19 23:04	2
1,1-Dichloroethane	**0.92**	**J**	2.0	0.53	ug/L			10/30/19 23:04	2
trans-1,2-Dichloroethene	0.47	U	2.0	0.47	ug/L			10/30/19 23:04	2
cis-1,2-Dichloroethene	**22**		2.0	0.44	ug/L			10/30/19 23:04	2
Chloroform	0.65	U	2.0	0.65	ug/L			10/30/19 23:04	2
1,2-Dichloroethane	**2.7**		2.0	0.86	ug/L			10/30/19 23:04	2
2-Butanone (MEK)	3.7	U	10	3.7	ug/L			10/30/19 23:04	2
1,1,1-Trichloroethane	0.48	U	2.0	0.48	ug/L			10/30/19 23:04	2
Carbon tetrachloride	0.42	U	2.0	0.42	ug/L			10/30/19 23:04	2
Bromodichloromethane	0.69	U	2.0	0.69	ug/L			10/30/19 23:04	2
1,2-Dichloropropane	0.71	U	2.0	0.71	ug/L			10/30/19 23:04	2
cis-1,3-Dichloropropene	0.44	U	2.0	0.44	ug/L			10/30/19 23:04	2
Trichloroethene	0.63	U	2.0	0.63	ug/L			10/30/19 23:04	2
Dibromochloromethane	0.56	U	2.0	0.56	ug/L			10/30/19 23:04	2
1,1,2-Trichloroethane	0.87	U	2.0	0.87	ug/L			10/30/19 23:04	2
Benzene	**83**		2.0	0.41	ug/L			10/30/19 23:04	2
trans-1,3-Dichloropropene	0.97	U	2.0	0.97	ug/L			10/30/19 23:04	2
Bromoform	1.1	U	2.0	1.1	ug/L			10/30/19 23:04	2
4-Methyl-2-pentanone	2.6	U	10	2.6	ug/L			10/30/19 23:04	2
2-Hexanone	2.3	U	10	2.3	ug/L			10/30/19 23:04	2
Tetrachloroethene	0.50	U	2.0	0.50	ug/L			10/30/19 23:04	2
1,1,2,2-Tetrachloroethane	0.73	U	2.0	0.73	ug/L			10/30/19 23:04	2
Toluene	**440**		2.0	0.76	ug/L			10/30/19 23:04	2
Chlorobenzene	**14**		2.0	0.75	ug/L			10/30/19 23:04	2
Ethylbenzene	**27**		2.0	0.60	ug/L			10/30/19 23:04	2
Styrene	0.83	U	2.0	0.83	ug/L			10/30/19 23:04	2
Xylenes, Total	**130**		4.0	1.3	ug/L			10/30/19 23:04	2
Diethyl ether	**0.88**	**J**	2.0	0.42	ug/L			10/30/19 23:04	2
MTBE	0.93	U	2.0	0.93	ug/L			10/30/19 23:04	2
Tetrahydrofuran	2.1	U	4.0	2.1	ug/L			10/30/19 23:04	2
Cyclohexane	**1.4**	**J**	2.0	0.64	ug/L			10/30/19 23:04	2
1,2,4-Trimethylbenzene	**23**		2.0	0.75	ug/L			10/30/19 23:04	2
1,3,5-Trimethylbenzene	**7.1**		2.0	0.65	ug/L			10/30/19 23:04	2
Isopropylbenzene	**1.7**	**J**	2.0	0.67	ug/L			10/30/19 23:04	2
N-Propylbenzene	**2.9**		2.0	0.64	ug/L			10/30/19 23:04	2
Methylcyclohexane	**2.1**		2.0	0.52	ug/L			10/30/19 23:04	2
Indane	**6.6**		2.0	0.69	ug/L			10/30/19 23:04	2
Dichlorofluoromethane	0.68	U	2.0	0.68	ug/L			10/30/19 23:04	2
1,2,3-Trimethylbenzene	**9.0**		2.0	0.72	ug/L			10/30/19 23:04	2

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, 1-ethyl-3-methyl-	*27*	*J N*	*ug/L*		*10.35*	*620-14-4*		*10/30/19 23:04*	*2*
Benzene, 1-ethyl-2-methyl-	*11*	*J N*	*ug/L*		*10.58*	*611-14-3*		*10/30/19 23:04*	*2*
Acenaphthene	*16*	*J N*	*ug/L*		*10.82*	*83-32-9*		*10/30/19 23:04*	*2*

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-194826-2
SDG: 194826-2

Client Sample ID: C-30

Lab Sample ID: 460-194921-8

Date Collected: 10/25/19 10:55
Date Received: 10/25/19 20:00

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*74 - 132*		*10/30/19 23:04*	*2*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/30/19 23:04*	*2*
4-Bromofluorobenzene	*102*		*77 - 124*		*10/30/19 23:04*	*2*
Dibromofluoromethane (Surr)	*106*		*72 - 131*		*10/30/19 23:04*	*2*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U *	0.050	0.016	ug/L		10/26/19 09:25	10/27/19 05:50	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/26/19 09:25	10/27/19 05:50	1
Benzo[b]fluoranthene	0.024	U *	0.050	0.024	ug/L		10/26/19 09:25	10/27/19 05:50	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/26/19 09:25	10/27/19 05:50	1
Pentachlorophenol	0.15	~~U *~~ UJ	0.20	0.15	ug/L		10/26/19 09:25	10/27/19 05:50	1
Bis(2-chloroethyl)ether	**2.2**		0.030	0.026	ug/L		10/26/19 09:25	10/27/19 05:50	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	**0.68**	**J**	10	0.29	ug/L		10/26/19 09:25	10/27/19 05:25	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/26/19 09:25	10/27/19 05:25	1
2-Methylphenol	**4.1**	**J**	10	0.67	ug/L		10/26/19 09:25	10/27/19 05:25	1
4-Methylphenol	**2.5**	**J**	10	0.65	ug/L		10/26/19 09:25	10/27/19 05:25	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/26/19 09:25	10/27/19 05:25	1
2,4-Dimethylphenol	0.62	U	10	0.62	ug/L		10/26/19 09:25	10/27/19 05:25	1
2,4-Dichlorophenol	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 05:25	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/26/19 09:25	10/27/19 05:25	1
2,4,6-Trichlorophenol	0.86	U	10	0.86	ug/L		10/26/19 09:25	10/27/19 05:25	1
2,4,5-Trichlorophenol	0.88	U	10	0.88	ug/L		10/26/19 09:25	10/27/19 05:25	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/26/19 09:25	10/27/19 05:25	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		10/26/19 09:25	10/27/19 05:25	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/26/19 09:25	10/27/19 05:25	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/26/19 09:25	10/27/19 05:25	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/26/19 09:25	10/27/19 05:25	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/26/19 09:25	10/27/19 05:25	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/26/19 09:25	10/27/19 05:25	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		10/26/19 09:25	10/27/19 05:25	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/26/19 09:25	10/27/19 05:25	1
Isophorone	0.80	U	10	0.80	ug/L		10/26/19 09:25	10/27/19 05:25	1
Bis(2-chloroethoxy)methane	0.59	U	10	0.59	ug/L		10/26/19 09:25	10/27/19 05:25	1
1,2,4-Trichlorobenzene	0.64	U	2.0	0.64	ug/L		10/26/19 09:25	10/27/19 05:25	1
Naphthalene	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 05:25	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/26/19 09:25	10/27/19 05:25	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/26/19 09:25	10/27/19 05:25	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 05:25	1
Hexachlorocyclopentadiene	3.6	U	10	3.6	ug/L		10/26/19 09:25	10/27/19 05:25	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/26/19 09:25	10/27/19 05:25	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/26/19 09:25	10/27/19 05:25	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/26/19 09:25	10/27/19 05:25	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/26/19 09:25	10/27/19 05:25	1
2,6-Dinitrotoluene	0.83	U	2.0	0.83	ug/L		10/26/19 09:25	10/27/19 05:25	1
3-Nitroaniline	1.9	U	10	1.9	ug/L		10/26/19 09:25	10/27/19 05:25	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 05:25	1

Client Sample ID: C-30 Lab Sample ID: 460-194921-8

Date Collected: 10/25/19 10:55 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 05:25	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/26/19 09:25	10/27/19 05:25	1
Diethyl phthalate	**1.6**	**J**	10	0.98	ug/L		10/26/19 09:25	10/27/19 05:25	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/26/19 09:25	10/27/19 05:25	1
Fluorene	0.91	U	10	0.91	ug/L		10/26/19 09:25	10/27/19 05:25	1
4-Nitroaniline	1.2	U	10	1.2	ug/L		10/26/19 09:25	10/27/19 05:25	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/26/19 09:25	10/27/19 05:25	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/26/19 09:25	10/27/19 05:25	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/26/19 09:25	10/27/19 05:25	1
Anthracene	0.63	U	10	0.63	ug/L		10/26/19 09:25	10/27/19 05:25	1
Carbazole	0.68	U	10	0.68	ug/L		10/26/19 09:25	10/27/19 05:25	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/26/19 09:25	10/27/19 05:25	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/26/19 09:25	10/27/19 05:25	1
Pyrene	1.6	U	10	1.6	ug/L		10/26/19 09:25	10/27/19 05:25	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/26/19 09:25	10/27/19 05:25	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/26/19 09:25	10/27/19 05:25	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/26/19 09:25	10/27/19 05:25	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/26/19 09:25	10/27/19 05:25	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/26/19 09:25	10/27/19 05:25	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/26/19 09:25	10/27/19 05:25	1
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		10/26/19 09:25	10/27/19 05:25	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/26/19 09:25	10/27/19 05:25	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/26/19 09:25	10/27/19 05:25	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/26/19 09:25	10/27/19 05:25	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/26/19 09:25	10/27/19 05:25	1
Caprolactam	0.68	U	10	0.68	ug/L		10/26/19 09:25	10/27/19 05:25	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/26/19 09:25	10/27/19 05:25	1
Bisphenol-A	**18**		10	9.9	ug/L		10/26/19 09:25	10/27/19 05:25	1
N-Methylaniline	1.3	U	5.0	1.3	ug/L		10/26/19 09:25	10/27/19 05:25	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, 1-ethyl-3-methyl-	*12*	*J N*	*ug/L*		*3.72*	*620-14-4*	*10/26/19 09:25*	*10/27/19 05:25*	*1*
Benzene, 1,2,4-trimethyl-	*7.2*	*J N*	*ug/L*		*3.79*	*95-63-6*	*10/26/19 09:25*	*10/27/19 05:25*	*1*
Benzene, 1-ethyl-2-methyl-	*6.8*	*J N*	*ug/L*		*3.87*	*611-14-3*	*10/26/19 09:25*	*10/27/19 05:25*	*1*
Benzene, 1,3,5-trimethyl-	*17*	*J N*	*ug/L*		*4.00*	*108-67-8*	*10/26/19 09:25*	*10/27/19 05:25*	*1*
Benzene, 1,2,3-trimethyl-	*8.9*	*J N*	*ug/L*		*4.21*	*526-73-8*	*10/26/19 09:25*	*10/27/19 05:25*	*1*
Unknown	*6.9*	*J*	*ug/L*		*6.82*		*10/26/19 09:25*	*10/27/19 05:25*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*90*		*51 - 108*	*10/26/19 09:25*	*10/27/19 05:25*	*1*
Phenol-d5 (Surr)	*33*		*14 - 39*	*10/26/19 09:25*	*10/27/19 05:25*	*1*
Terphenyl-d14 (Surr)	*87*		*40 - 148*	*10/26/19 09:25*	*10/27/19 05:25*	*1*
2,4,6-Tribromophenol (Surr)	*94*		*26 - 139*	*10/26/19 09:25*	*10/27/19 05:25*	*1*
2-Fluorophenol (Surr)	*49*		*25 - 58*	*10/26/19 09:25*	*10/27/19 05:25*	*1*
2-Fluorobiphenyl (Surr)	*84*		*45 - 107*	*10/26/19 09:25*	*10/27/19 05:25*	*1*

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**97.0**		50.0	1.7	ug/L		10/30/19 12:27	10/30/19 19:50	1
Iron, Dissolved	**25600**		150	34.2	ug/L		10/30/19 12:27	10/30/19 19:50	1

Client Sample ID: C-30 Lab Sample ID: 460-194921-8

Date Collected: 10/25/19 10:55 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 6010D - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese, Dissolved	**3880**		15.0	0.99	ug/L		10/30/19 12:27	10/30/19 19:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.94**		0.10	0.068	mg/L			10/28/19 15:50	1

Client Sample ID: DDA-18-TZ Lab Sample ID: 460-194921-9

Date Collected: 10/25/19 13:50 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**1.9**		0.40	0.33	ug/L			10/27/19 05:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*93*		*72 - 133*		*10/27/19 05:34*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/30/19 13:03	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/30/19 13:03	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/30/19 13:03	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/30/19 13:03	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/30/19 13:03	1
Acetone	4.4	U	5.0	4.4	ug/L			10/30/19 13:03	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/30/19 13:03	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/30/19 13:03	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/30/19 13:03	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/30/19 13:03	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/30/19 13:03	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/30/19 13:03	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/30/19 13:03	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/30/19 13:03	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/30/19 13:03	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/30/19 13:03	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/30/19 13:03	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/30/19 13:03	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/30/19 13:03	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/30/19 13:03	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/30/19 13:03	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/30/19 13:03	1
Benzene	0.20	U	1.0	0.20	ug/L			10/30/19 13:03	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/30/19 13:03	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/30/19 13:03	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/30/19 13:03	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/30/19 13:03	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/30/19 13:03	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/30/19 13:03	1
Toluene	0.38	U	1.0	0.38	ug/L			10/30/19 13:03	1
Chlorobenzene	**1.1**		1.0	0.38	ug/L			10/30/19 13:03	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/30/19 13:03	1

Client Sample ID: DDA-18-TZ Lab Sample ID: 460-194921-9

Date Collected: 10/25/19 13:50 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	0.42	U	1.0	0.42	ug/L			10/30/19 13:03	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/30/19 13:03	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/30/19 13:03	1
MTBE	0.47	U	1.0	0.47	ug/L			10/30/19 13:03	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/30/19 13:03	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/30/19 13:03	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/30/19 13:03	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/30/19 13:03	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/30/19 13:03	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/30/19 13:03	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/30/19 13:03	1
Indane	0.35	U	1.0	0.35	ug/L			10/30/19 13:03	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/30/19 13:03	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/30/19 13:03	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/30/19 13:03*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*74 - 132*		*10/30/19 13:03*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*10/30/19 13:03*	*1*
4-Bromofluorobenzene	*102*		*77 - 124*		*10/30/19 13:03*	*1*
Dibromofluoromethane (Surr)	*109*		*72 - 131*		*10/30/19 13:03*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U *	0.050	0.016	ug/L		10/26/19 09:25	10/27/19 06:11	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/26/19 09:25	10/27/19 06:11	1
Benzo[b]fluoranthene	0.024	U *	0.050	0.024	ug/L		10/26/19 09:25	10/27/19 06:11	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/26/19 09:25	10/27/19 06:11	1
Pentachlorophenol	0.15	~~U *~~ UJ	0.20	0.15	ug/L		10/26/19 09:25	10/27/19 06:11	1
Bis(2-chloroethyl)ether	0.026	U	0.030	0.026	ug/L		10/26/19 09:25	10/27/19 06:11	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/26/19 09:25	10/27/19 05:46	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/26/19 09:25	10/27/19 05:46	1
2-Methylphenol	0.67	U	10	0.67	ug/L		10/26/19 09:25	10/27/19 05:46	1
4-Methylphenol	0.65	U	10	0.65	ug/L		10/26/19 09:25	10/27/19 05:46	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/26/19 09:25	10/27/19 05:46	1
2,4-Dimethylphenol	0.62	U	10	0.62	ug/L		10/26/19 09:25	10/27/19 05:46	1
2,4-Dichlorophenol	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 05:46	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/26/19 09:25	10/27/19 05:46	1
2,4,6-Trichlorophenol	0.86	U	10	0.86	ug/L		10/26/19 09:25	10/27/19 05:46	1
2,4,5-Trichlorophenol	0.88	U	10	0.88	ug/L		10/26/19 09:25	10/27/19 05:46	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/26/19 09:25	10/27/19 05:46	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		10/26/19 09:25	10/27/19 05:46	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/26/19 09:25	10/27/19 05:46	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/26/19 09:25	10/27/19 05:46	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/26/19 09:25	10/27/19 05:46	1

Client Sample ID: DDA-18-TZ Lab Sample ID: 460-194921-9

Date Collected: 10/25/19 13:50 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/26/19 09:25	10/27/19 05:46	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/26/19 09:25	10/27/19 05:46	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		10/26/19 09:25	10/27/19 05:46	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/26/19 09:25	10/27/19 05:46	1
Isophorone	0.80	U	10	0.80	ug/L		10/26/19 09:25	10/27/19 05:46	1
Bis(2-chloroethoxy)methane	0.59	U	10	0.59	ug/L		10/26/19 09:25	10/27/19 05:46	1
1,2,4-Trichlorobenzene	0.64	U	2.0	0.64	ug/L		10/26/19 09:25	10/27/19 05:46	1
Naphthalene	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 05:46	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/26/19 09:25	10/27/19 05:46	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/26/19 09:25	10/27/19 05:46	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 05:46	1
Hexachlorocyclopentadiene	3.6	U	10	3.6	ug/L		10/26/19 09:25	10/27/19 05:46	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/26/19 09:25	10/27/19 05:46	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/26/19 09:25	10/27/19 05:46	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/26/19 09:25	10/27/19 05:46	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/26/19 09:25	10/27/19 05:46	1
2,6-Dinitrotoluene	0.83	U	2.0	0.83	ug/L		10/26/19 09:25	10/27/19 05:46	1
3-Nitroaniline	1.9	U	10	1.9	ug/L		10/26/19 09:25	10/27/19 05:46	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 05:46	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 05:46	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/26/19 09:25	10/27/19 05:46	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/26/19 09:25	10/27/19 05:46	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/26/19 09:25	10/27/19 05:46	1
Fluorene	0.91	U	10	0.91	ug/L		10/26/19 09:25	10/27/19 05:46	1
4-Nitroaniline	1.2	U	10	1.2	ug/L		10/26/19 09:25	10/27/19 05:46	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/26/19 09:25	10/27/19 05:46	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/26/19 09:25	10/27/19 05:46	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/26/19 09:25	10/27/19 05:46	1
Anthracene	0.63	U	10	0.63	ug/L		10/26/19 09:25	10/27/19 05:46	1
Carbazole	0.68	U	10	0.68	ug/L		10/26/19 09:25	10/27/19 05:46	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/26/19 09:25	10/27/19 05:46	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/26/19 09:25	10/27/19 05:46	1
Pyrene	1.6	U	10	1.6	ug/L		10/26/19 09:25	10/27/19 05:46	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/26/19 09:25	10/27/19 05:46	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/26/19 09:25	10/27/19 05:46	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/26/19 09:25	10/27/19 05:46	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/26/19 09:25	10/27/19 05:46	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/26/19 09:25	10/27/19 05:46	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/26/19 09:25	10/27/19 05:46	1
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		10/26/19 09:25	10/27/19 05:46	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/26/19 09:25	10/27/19 05:46	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/26/19 09:25	10/27/19 05:46	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/26/19 09:25	10/27/19 05:46	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/26/19 09:25	10/27/19 05:46	1
Caprolactam	0.68	U	10	0.68	ug/L		10/26/19 09:25	10/27/19 05:46	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/26/19 09:25	10/27/19 05:46	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/26/19 09:25	10/27/19 05:46	1
N-Methylaniline	1.3	U	5.0	1.3	ug/L		10/26/19 09:25	10/27/19 05:46	1

Client Sample ID: DDA-18-TZ — Lab Sample ID: 460-194921-9

Date Collected: 10/25/19 13:50 **Matrix: Water**
Date Received: 10/25/19 20:00

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L				10/26/19 09:25	10/27/19 05:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	92		51 - 108	10/26/19 09:25	10/27/19 05:46	1
Phenol-d5 (Surr)	34		14 - 39	10/26/19 09:25	10/27/19 05:46	1
Terphenyl-d14 (Surr)	92		40 - 148	10/26/19 09:25	10/27/19 05:46	1
2,4,6-Tribromophenol (Surr)	97		26 - 139	10/26/19 09:25	10/27/19 05:46	1
2-Fluorophenol (Surr)	51		25 - 58	10/26/19 09:25	10/27/19 05:46	1
2-Fluorobiphenyl (Surr)	86		45 - 107	10/26/19 09:25	10/27/19 05:46	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**66.8**		3.12	0.36	mg/L			10/26/19 18:01	26
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/26/19 13:17	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/26/19 13:17	1
Sulfate	**17.5**		0.60	0.35	mg/L			10/26/19 13:17	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**53800**		250	66.8	ug/L		10/30/19 03:58	10/30/19 14:08	5
Magnesium	**30000**		250	24.8	ug/L		10/30/19 03:58	10/30/19 14:08	5
Potassium	**4350**		250	73.5	ug/L		10/30/19 03:58	10/30/19 14:08	5
Calcium	**17900**		250	233	ug/L		10/30/19 03:58	10/30/19 14:08	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**429**		50.0	1.7	ug/L		10/30/19 09:21	10/31/19 00:21	1
Iron, Dissolved	**8460**		150	34.2	ug/L		10/30/19 09:21	10/31/19 00:21	1
Manganese, Dissolved	**37500**		45.0	3.0	ug/L		10/30/19 09:21	10/31/19 11:19	3

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.54**		0.10	0.068	mg/L			10/28/19 15:51	1
Bicarbonate Alkalinity as CaCO3	**228**		5.0	5.0	mg/L			10/29/19 13:50	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/29/19 13:50	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/28/19 19:00	1

Client Sample ID: DDA-18-US — Lab Sample ID: 460-194921-10

Date Collected: 10/25/19 14:00 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**2.4**		0.40	0.33	ug/L			10/26/19 16:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	100		72 - 133		10/26/19 16:21	1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/29/19 23:27	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/29/19 23:27	1

Client Sample ID: DDA-18-US Lab Sample ID: 460-194921-10

Date Collected: 10/25/19 14:00 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/29/19 23:27	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/29/19 23:27	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/29/19 23:27	1
Acetone	4.4	U	5.0	4.4	ug/L			10/29/19 23:27	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/29/19 23:27	1
1,1-Dichloroethene	0.26	U ~~F1~~	1.0	0.26	ug/L			10/29/19 23:27	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/29/19 23:27	1
trans-1,2-Dichloroethene	0.24	U ~~F1~~	1.0	0.24	ug/L			10/29/19 23:27	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/29/19 23:27	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/29/19 23:27	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/29/19 23:27	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/29/19 23:27	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/29/19 23:27	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/29/19 23:27	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/29/19 23:27	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/29/19 23:27	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/29/19 23:27	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/29/19 23:27	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/29/19 23:27	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/29/19 23:27	1
Benzene	**1.8**		1.0	0.20	ug/L			10/29/19 23:27	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/29/19 23:27	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/29/19 23:27	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/29/19 23:27	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/29/19 23:27	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/29/19 23:27	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/29/19 23:27	1
Toluene	0.38	U	1.0	0.38	ug/L			10/29/19 23:27	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/29/19 23:27	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/29/19 23:27	1
Styrene	0.42	U	1.0	0.42	ug/L			10/29/19 23:27	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/29/19 23:27	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/29/19 23:27	1
MTBE	0.47	U	1.0	0.47	ug/L			10/29/19 23:27	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/29/19 23:27	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/29/19 23:27	1
1,2,4-Trimethylbenzene	0.37	~~U F1~~ UJ	1.0	0.37	ug/L			10/29/19 23:27	1
1,3,5-Trimethylbenzene	0.33	~~U F1~~ UJ	1.0	0.33	ug/L			10/29/19 23:27	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/29/19 23:27	1
N-Propylbenzene	0.32	~~U F1~~ UJ	1.0	0.32	ug/L			10/29/19 23:27	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/29/19 23:27	1
Indane	0.35	~~U F1~~ UJ	1.0	0.35	ug/L			10/29/19 23:27	1
Dichlorofluoromethane	0.34	U ~~F2 F1~~	1.0	0.34	ug/L			10/29/19 23:27	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/29/19 23:27	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/29/19 23:27*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*74 - 132*		*10/29/19 23:27*	*1*

Client Sample ID: DDA-18-US Lab Sample ID: 460-194921-10

Date Collected: 10/25/19 14:00 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/29/19 23:27*	*1*
4-Bromofluorobenzene	*100*		*77 - 124*		*10/29/19 23:27*	*1*
Dibromofluoromethane (Surr)	*109*		*72 - 131*		*10/29/19 23:27*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U ~~*~~	0.050	0.016	ug/L		10/26/19 09:25	10/26/19 23:51	1
Benzo[a]pyrene	0.022	~~U~~ UJ	0.050	0.022	ug/L		10/26/19 09:25	10/26/19 23:51	1
Benzo[b]fluoranthene	0.024	U ~~*~~	0.050	0.024	ug/L		10/26/19 09:25	10/26/19 23:51	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/26/19 09:25	10/26/19 23:51	1
Pentachlorophenol	0.15	U ~~*~~	0.20	0.15	ug/L		10/26/19 09:25	10/26/19 23:51	1
Bis(2-chloroethyl)ether	**0.40**		0.030	0.026	ug/L		10/26/19 09:25	10/26/19 23:51	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/26/19 09:25	10/27/19 02:59	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/26/19 09:25	10/27/19 02:59	1
2-Methylphenol	0.67	U	10	0.67	ug/L		10/26/19 09:25	10/27/19 02:59	1
4-Methylphenol	0.65	U	10	0.65	ug/L		10/26/19 09:25	10/27/19 02:59	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/26/19 09:25	10/27/19 02:59	1
2,4-Dimethylphenol	0.62	U	10	0.62	ug/L		10/26/19 09:25	10/27/19 02:59	1
2,4-Dichlorophenol	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 02:59	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/26/19 09:25	10/27/19 02:59	1
2,4,6-Trichlorophenol	0.86	U ~~F2~~	10	0.86	ug/L		10/26/19 09:25	10/27/19 02:59	1
2,4,5-Trichlorophenol	0.88	U	10	0.88	ug/L		10/26/19 09:25	10/27/19 02:59	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/26/19 09:25	10/27/19 02:59	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		10/26/19 09:25	10/27/19 02:59	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/26/19 09:25	10/27/19 02:59	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/26/19 09:25	10/27/19 02:59	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/26/19 09:25	10/27/19 02:59	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/26/19 09:25	10/27/19 02:59	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/26/19 09:25	10/27/19 02:59	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		10/26/19 09:25	10/27/19 02:59	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/26/19 09:25	10/27/19 02:59	1
Isophorone	0.80	U	10	0.80	ug/L		10/26/19 09:25	10/27/19 02:59	1
Bis(2-chloroethoxy)methane	0.59	U	10	0.59	ug/L		10/26/19 09:25	10/27/19 02:59	1
1,2,4-Trichlorobenzene	0.64	U	2.0	0.64	ug/L		10/26/19 09:25	10/27/19 02:59	1
Naphthalene	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 02:59	1
4-Chloroaniline	1.9	U ~~F2~~	10	1.9	ug/L		10/26/19 09:25	10/27/19 02:59	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/26/19 09:25	10/27/19 02:59	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 02:59	1
Hexachlorocyclopentadiene	3.6	U ~~F2~~	10	3.6	ug/L		10/26/19 09:25	10/27/19 02:59	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/26/19 09:25	10/27/19 02:59	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/26/19 09:25	10/27/19 02:59	1
Dimethyl phthalate	0.77	U ~~F2~~	10	0.77	ug/L		10/26/19 09:25	10/27/19 02:59	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/26/19 09:25	10/27/19 02:59	1
2,6-Dinitrotoluene	0.83	U	2.0	0.83	ug/L		10/26/19 09:25	10/27/19 02:59	1
3-Nitroaniline	1.9	~~U F1 F2~~ UJ	10	1.9	ug/L		10/26/19 09:25	10/27/19 02:59	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 02:59	1

Client Sample ID: DDA-18-US Lab Sample ID: 460-194921-10

Date Collected: 10/25/19 14:00 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 02:59	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/26/19 09:25	10/27/19 02:59	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/26/19 09:25	10/27/19 02:59	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/26/19 09:25	10/27/19 02:59	1
Fluorene	0.91	U ~~F2~~	10	0.91	ug/L		10/26/19 09:25	10/27/19 02:59	1
4-Nitroaniline	1.2	U ~~F2~~	10	1.2	ug/L		10/26/19 09:25	10/27/19 02:59	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/26/19 09:25	10/27/19 02:59	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/26/19 09:25	10/27/19 02:59	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/26/19 09:25	10/27/19 02:59	1
Anthracene	0.63	U	10	0.63	ug/L		10/26/19 09:25	10/27/19 02:59	1
Carbazole	0.68	U	10	0.68	ug/L		10/26/19 09:25	10/27/19 02:59	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/26/19 09:25	10/27/19 02:59	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/26/19 09:25	10/27/19 02:59	1
Pyrene	1.6	U	10	1.6	ug/L		10/26/19 09:25	10/27/19 02:59	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/26/19 09:25	10/27/19 02:59	1
3,3'-Dichlorobenzidine	1.4	~~U F1 F2~~ UJ	10	1.4	ug/L		10/26/19 09:25	10/27/19 02:59	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/26/19 09:25	10/27/19 02:59	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/26/19 09:25	10/27/19 02:59	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/26/19 09:25	10/27/19 02:59	1
Benzo[k]fluoranthene	0.67	U ~~F2~~	1.0	0.67	ug/L		10/26/19 09:25	10/27/19 02:59	1
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		10/26/19 09:25	10/27/19 02:59	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/26/19 09:25	10/27/19 02:59	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/26/19 09:25	10/27/19 02:59	1
Diphenyl ether	1.2	U ~~F2~~	10	1.2	ug/L		10/26/19 09:25	10/27/19 02:59	1
n,n'-Dimethylaniline	0.91	U ~~F2~~	1.0	0.91	ug/L		10/26/19 09:25	10/27/19 02:59	1
Caprolactam	0.68	U ~~F2~~	10	0.68	ug/L		10/26/19 09:25	10/27/19 02:59	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/26/19 09:25	10/27/19 02:59	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/26/19 09:25	10/27/19 02:59	1
N-Methylaniline	1.3	~~U F1 F2~~ UJ	5.0	1.3	ug/L		10/26/19 09:25	10/27/19 02:59	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/26/19 09:25*	*10/27/19 02:59*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*90*		*51 - 108*	*10/26/19 09:25*	*10/27/19 02:59*	*1*
Phenol-d5 (Surr)	*36*		*14 - 39*	*10/26/19 09:25*	*10/27/19 02:59*	*1*
Terphenyl-d14 (Surr)	*85*		*40 - 148*	*10/26/19 09:25*	*10/27/19 02:59*	*1*
2,4,6-Tribromophenol (Surr)	*94*		*26 - 139*	*10/26/19 09:25*	*10/27/19 02:59*	*1*
2-Fluorophenol (Surr)	*52*		*25 - 58*	*10/26/19 09:25*	*10/27/19 02:59*	*1*
2-Fluorobiphenyl (Surr)	*86*		*45 - 107*	*10/26/19 09:25*	*10/27/19 02:59*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**30.2**	~~F1~~ J-	1.32	0.15	mg/L			10/26/19 18:15	11
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/26/19 13:32	1
Nitrite as N	0.076	~~U F1~~ UJ	0.12	0.076	mg/L			10/26/19 13:32	1
Sulfate	**19.5**	~~F1~~ J-	6.60	3.81	mg/L			10/26/19 18:15	11

Client Sample ID: DDA-18-US — Lab Sample ID: 460-194921-10

Date Collected: 10/25/19 14:00 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**17400**		250	66.8	ug/L		10/30/19 03:58	10/30/19 11:51	5
Magnesium	**6970**		250	24.8	ug/L		10/30/19 03:58	10/30/19 11:51	5
Potassium	**2860**		250	73.5	ug/L		10/30/19 03:58	10/30/19 11:51	5
Calcium	**13100**		250	233	ug/L		10/30/19 03:58	10/30/19 11:51	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**1.7**	J	50.0	1.7	ug/L		10/30/19 12:27	10/30/19 19:19	1
Iron, Dissolved	**37800**		150	34.2	ug/L		10/30/19 12:27	10/30/19 19:19	1
Manganese, Dissolved	**783**		15.0	0.99	ug/L		10/30/19 12:27	10/30/19 19:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.30**		0.10	0.068	mg/L			10/28/19 15:28	1
Bicarbonate Alkalinity as CaCO3	**46.5**		5.0	5.0	mg/L			10/29/19 11:56	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/29/19 11:56	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/28/19 19:00	1

Client Sample ID: FDGW_102519 — Lab Sample ID: 460-194921-11

Date Collected: 10/25/19 00:00 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**1.8**		0.40	0.33	ug/L			10/27/19 05:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*91*		*72 - 133*		*10/27/19 05:58*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/30/19 22:41	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/30/19 22:41	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/30/19 22:41	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/30/19 22:41	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/30/19 22:41	1
Acetone	4.4	U	5.0	4.4	ug/L			10/30/19 22:41	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/30/19 22:41	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/30/19 22:41	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/30/19 22:41	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/30/19 22:41	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/30/19 22:41	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/30/19 22:41	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/30/19 22:41	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/30/19 22:41	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/30/19 22:41	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/30/19 22:41	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/30/19 22:41	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/30/19 22:41	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/30/19 22:41	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/30/19 22:41	1

Client Sample ID: FDGW_102519 Lab Sample ID: 460-194921-11

Date Collected: 10/25/19 00:00 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/30/19 22:41	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/30/19 22:41	1
Benzene	0.20	U	1.0	0.20	ug/L			10/30/19 22:41	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/30/19 22:41	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/30/19 22:41	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/30/19 22:41	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/30/19 22:41	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/30/19 22:41	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/30/19 22:41	1
Toluene	0.38	U	1.0	0.38	ug/L			10/30/19 22:41	1
Chlorobenzene	**1.1**		1.0	0.38	ug/L			10/30/19 22:41	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/30/19 22:41	1
Styrene	0.42	U	1.0	0.42	ug/L			10/30/19 22:41	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/30/19 22:41	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/30/19 22:41	1
MTBE	0.47	U	1.0	0.47	ug/L			10/30/19 22:41	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/30/19 22:41	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/30/19 22:41	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/30/19 22:41	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/30/19 22:41	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/30/19 22:41	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/30/19 22:41	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/30/19 22:41	1
Indane	0.35	U	1.0	0.35	ug/L			10/30/19 22:41	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/30/19 22:41	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/30/19 22:41	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/30/19 22:41*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*74 - 132*		*10/30/19 22:41*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*10/30/19 22:41*	*1*
4-Bromofluorobenzene	*102*		*77 - 124*		*10/30/19 22:41*	*1*
Dibromofluoromethane (Surr)	*109*		*72 - 131*		*10/30/19 22:41*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U *	0.050	0.016	ug/L		10/26/19 09:25	10/27/19 06:33	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/26/19 09:25	10/27/19 06:33	1
Benzo[b]fluoranthene	0.024	U *	0.050	0.024	ug/L		10/26/19 09:25	10/27/19 06:33	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/26/19 09:25	10/27/19 06:33	1
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/26/19 09:25	10/27/19 06:33	1
Bis(2-chloroethyl)ether	0.026	U	0.030	0.026	ug/L		10/26/19 09:25	10/27/19 06:33	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/26/19 09:25	10/27/19 06:07	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/26/19 09:25	10/27/19 06:07	1
2-Methylphenol	0.67	U	10	0.67	ug/L		10/26/19 09:25	10/27/19 06:07	1

Client Sample ID: FDGW_102519 Lab Sample ID: 460-194921-11

Date Collected: 10/25/19 00:00 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methylphenol	0.65	U	10	0.65	ug/L		10/26/19 09:25	10/27/19 06:07	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/26/19 09:25	10/27/19 06:07	1
2,4-Dimethylphenol	0.62	U	10	0.62	ug/L		10/26/19 09:25	10/27/19 06:07	1
2,4-Dichlorophenol	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 06:07	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/26/19 09:25	10/27/19 06:07	1
2,4,6-Trichlorophenol	0.86	U	10	0.86	ug/L		10/26/19 09:25	10/27/19 06:07	1
2,4,5-Trichlorophenol	0.88	U	10	0.88	ug/L		10/26/19 09:25	10/27/19 06:07	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/26/19 09:25	10/27/19 06:07	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		10/26/19 09:25	10/27/19 06:07	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/26/19 09:25	10/27/19 06:07	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/26/19 09:25	10/27/19 06:07	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/26/19 09:25	10/27/19 06:07	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/26/19 09:25	10/27/19 06:07	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/26/19 09:25	10/27/19 06:07	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		10/26/19 09:25	10/27/19 06:07	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/26/19 09:25	10/27/19 06:07	1
Isophorone	0.80	U	10	0.80	ug/L		10/26/19 09:25	10/27/19 06:07	1
Bis(2-chloroethoxy)methane	0.59	U	10	0.59	ug/L		10/26/19 09:25	10/27/19 06:07	1
1,2,4-Trichlorobenzene	0.64	U	2.0	0.64	ug/L		10/26/19 09:25	10/27/19 06:07	1
Naphthalene	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 06:07	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/26/19 09:25	10/27/19 06:07	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/26/19 09:25	10/27/19 06:07	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 06:07	1
Hexachlorocyclopentadiene	3.6	U	10	3.6	ug/L		10/26/19 09:25	10/27/19 06:07	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/26/19 09:25	10/27/19 06:07	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/26/19 09:25	10/27/19 06:07	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/26/19 09:25	10/27/19 06:07	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/26/19 09:25	10/27/19 06:07	1
2,6-Dinitrotoluene	0.83	U	2.0	0.83	ug/L		10/26/19 09:25	10/27/19 06:07	1
3-Nitroaniline	1.9	U	10	1.9	ug/L		10/26/19 09:25	10/27/19 06:07	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 06:07	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 06:07	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/26/19 09:25	10/27/19 06:07	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/26/19 09:25	10/27/19 06:07	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/26/19 09:25	10/27/19 06:07	1
Fluorene	0.91	U	10	0.91	ug/L		10/26/19 09:25	10/27/19 06:07	1
4-Nitroaniline	1.2	U	10	1.2	ug/L		10/26/19 09:25	10/27/19 06:07	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/26/19 09:25	10/27/19 06:07	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/26/19 09:25	10/27/19 06:07	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/26/19 09:25	10/27/19 06:07	1
Anthracene	0.63	U	10	0.63	ug/L		10/26/19 09:25	10/27/19 06:07	1
Carbazole	0.68	U	10	0.68	ug/L		10/26/19 09:25	10/27/19 06:07	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/26/19 09:25	10/27/19 06:07	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/26/19 09:25	10/27/19 06:07	1
Pyrene	1.6	U	10	1.6	ug/L		10/26/19 09:25	10/27/19 06:07	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/26/19 09:25	10/27/19 06:07	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/26/19 09:25	10/27/19 06:07	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/26/19 09:25	10/27/19 06:07	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/26/19 09:25	10/27/19 06:07	1

Client Sample ID: FDGW_102519 Lab Sample ID: 460-194921-11

Date Collected: 10/25/19 00:00 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/26/19 09:25	10/27/19 06:07	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/26/19 09:25	10/27/19 06:07	1
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		10/26/19 09:25	10/27/19 06:07	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/26/19 09:25	10/27/19 06:07	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/26/19 09:25	10/27/19 06:07	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/26/19 09:25	10/27/19 06:07	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/26/19 09:25	10/27/19 06:07	1
Caprolactam	0.68	U	10	0.68	ug/L		10/26/19 09:25	10/27/19 06:07	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/26/19 09:25	10/27/19 06:07	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/26/19 09:25	10/27/19 06:07	1
N-Methylaniline	1.3	U	5.0	1.3	ug/L		10/26/19 09:25	10/27/19 06:07	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/26/19 09:25*	*10/27/19 06:07*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*99*		*51 - 108*	*10/26/19 09:25*	*10/27/19 06:07*	*1*
Phenol-d5 (Surr)	*35*		*14 - 39*	*10/26/19 09:25*	*10/27/19 06:07*	*1*
Terphenyl-d14 (Surr)	*93*		*40 - 148*	*10/26/19 09:25*	*10/27/19 06:07*	*1*
2,4,6-Tribromophenol (Surr)	*101*		*26 - 139*	*10/26/19 09:25*	*10/27/19 06:07*	*1*
2-Fluorophenol (Surr)	*54*		*25 - 58*	*10/26/19 09:25*	*10/27/19 06:07*	*1*
2-Fluorobiphenyl (Surr)	*92*		*45 - 107*	*10/26/19 09:25*	*10/27/19 06:07*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**68.9**		3.12	0.36	mg/L			10/26/19 17:46	26
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/26/19 13:02	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/26/19 13:02	1
Sulfate	**17.6**		0.60	0.35	mg/L			10/26/19 13:02	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**51300**		250	66.8	ug/L		10/30/19 03:58	10/30/19 14:10	5
Magnesium	**28400**		250	24.8	ug/L		10/30/19 03:58	10/30/19 14:10	5
Potassium	**4490**		250	73.5	ug/L		10/30/19 03:58	10/30/19 14:10	5
Calcium	**18800**		250	233	ug/L		10/30/19 03:58	10/30/19 14:10	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**459**		50.0	1.7	ug/L		10/30/19 12:27	10/30/19 19:54	1
Iron, Dissolved	**8970**		150	34.2	ug/L		10/30/19 12:27	10/30/19 19:54	1
Manganese, Dissolved	**38200**		45.0	3.0	ug/L		10/30/19 12:27	10/31/19 07:05	3

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.52**		0.10	0.068	mg/L			10/28/19 15:53	1
Bicarbonate Alkalinity as CaCO3	**223**		5.0	5.0	mg/L			10/29/19 13:59	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/29/19 13:59	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/28/19 19:00	1

Client Sample ID: RBGW_102519 Lab Sample ID: 460-194921-12

Date Collected: 10/25/19 15:00 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.33	U	0.40	0.33	ug/L			10/26/19 15:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*72 - 133*		*10/26/19 15:11*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/30/19 12:40	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/30/19 12:40	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/30/19 12:40	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/30/19 12:40	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/30/19 12:40	1
Acetone	**6.4**		5.0	4.4	ug/L			10/30/19 12:40	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/30/19 12:40	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/30/19 12:40	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/30/19 12:40	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/30/19 12:40	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/30/19 12:40	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/30/19 12:40	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/30/19 12:40	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/30/19 12:40	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/30/19 12:40	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/30/19 12:40	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/30/19 12:40	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/30/19 12:40	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/30/19 12:40	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/30/19 12:40	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/30/19 12:40	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/30/19 12:40	1
Benzene	0.20	U	1.0	0.20	ug/L			10/30/19 12:40	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/30/19 12:40	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/30/19 12:40	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/30/19 12:40	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/30/19 12:40	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/30/19 12:40	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/30/19 12:40	1
Toluene	0.38	U	1.0	0.38	ug/L			10/30/19 12:40	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/30/19 12:40	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/30/19 12:40	1
Styrene	0.42	U	1.0	0.42	ug/L			10/30/19 12:40	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/30/19 12:40	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/30/19 12:40	1
MTBE	0.47	U	1.0	0.47	ug/L			10/30/19 12:40	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/30/19 12:40	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/30/19 12:40	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/30/19 12:40	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/30/19 12:40	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/30/19 12:40	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/30/19 12:40	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/30/19 12:40	1

Client Sample ID: RBGW_102519 Lab Sample ID: 460-194921-12

Date Collected: 10/25/19 15:00 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Indane	0.35	U	1.0	0.35	ug/L			10/30/19 12:40	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/30/19 12:40	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/30/19 12:40	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/30/19 12:40*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*74 - 132*		*10/30/19 12:40*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*10/30/19 12:40*	*1*
4-Bromofluorobenzene	*102*		*77 - 124*		*10/30/19 12:40*	*1*
Dibromofluoromethane (Surr)	*109*		*72 - 131*		*10/30/19 12:40*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U *	0.050	0.016	ug/L		10/26/19 09:25	10/27/19 06:54	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/26/19 09:25	10/27/19 06:54	1
Benzo[b]fluoranthene	0.024	U *	0.050	0.024	ug/L		10/26/19 09:25	10/27/19 06:54	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/26/19 09:25	10/27/19 06:54	1
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/26/19 09:25	10/27/19 06:54	1
Bis(2-chloroethyl)ether	0.026	U	0.030	0.026	ug/L		10/26/19 09:25	10/27/19 06:54	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/26/19 09:25	10/27/19 06:28	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/26/19 09:25	10/27/19 06:28	1
2-Methylphenol	0.67	U	10	0.67	ug/L		10/26/19 09:25	10/27/19 06:28	1
4-Methylphenol	0.65	U	10	0.65	ug/L		10/26/19 09:25	10/27/19 06:28	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/26/19 09:25	10/27/19 06:28	1
2,4-Dimethylphenol	0.62	U	10	0.62	ug/L		10/26/19 09:25	10/27/19 06:28	1
2,4-Dichlorophenol	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 06:28	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/26/19 09:25	10/27/19 06:28	1
2,4,6-Trichlorophenol	0.86	U	10	0.86	ug/L		10/26/19 09:25	10/27/19 06:28	1
2,4,5-Trichlorophenol	0.88	U	10	0.88	ug/L		10/26/19 09:25	10/27/19 06:28	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/26/19 09:25	10/27/19 06:28	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		10/26/19 09:25	10/27/19 06:28	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/26/19 09:25	10/27/19 06:28	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/26/19 09:25	10/27/19 06:28	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/26/19 09:25	10/27/19 06:28	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/26/19 09:25	10/27/19 06:28	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/26/19 09:25	10/27/19 06:28	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		10/26/19 09:25	10/27/19 06:28	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/26/19 09:25	10/27/19 06:28	1
Isophorone	0.80	U	10	0.80	ug/L		10/26/19 09:25	10/27/19 06:28	1
Bis(2-chloroethoxy)methane	0.59	U	10	0.59	ug/L		10/26/19 09:25	10/27/19 06:28	1
1,2,4-Trichlorobenzene	0.64	U	2.0	0.64	ug/L		10/26/19 09:25	10/27/19 06:28	1
Naphthalene	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 06:28	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/26/19 09:25	10/27/19 06:28	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/26/19 09:25	10/27/19 06:28	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 06:28	1

Client Sample ID: RBGW_102519 Lab Sample ID: 460-194921-12

Date Collected: 10/25/19 15:00 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorocyclopentadiene	3.6	U	10	3.6	ug/L		10/26/19 09:25	10/27/19 06:28	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/26/19 09:25	10/27/19 06:28	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/26/19 09:25	10/27/19 06:28	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/26/19 09:25	10/27/19 06:28	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/26/19 09:25	10/27/19 06:28	1
2,6-Dinitrotoluene	0.83	U	2.0	0.83	ug/L		10/26/19 09:25	10/27/19 06:28	1
3-Nitroaniline	1.9	U	10	1.9	ug/L		10/26/19 09:25	10/27/19 06:28	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 06:28	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/26/19 09:25	10/27/19 06:28	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/26/19 09:25	10/27/19 06:28	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/26/19 09:25	10/27/19 06:28	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/26/19 09:25	10/27/19 06:28	1
Fluorene	0.91	U	10	0.91	ug/L		10/26/19 09:25	10/27/19 06:28	1
4-Nitroaniline	1.2	U	10	1.2	ug/L		10/26/19 09:25	10/27/19 06:28	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/26/19 09:25	10/27/19 06:28	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/26/19 09:25	10/27/19 06:28	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/26/19 09:25	10/27/19 06:28	1
Anthracene	0.63	U	10	0.63	ug/L		10/26/19 09:25	10/27/19 06:28	1
Carbazole	0.68	U	10	0.68	ug/L		10/26/19 09:25	10/27/19 06:28	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/26/19 09:25	10/27/19 06:28	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/26/19 09:25	10/27/19 06:28	1
Pyrene	1.6	U	10	1.6	ug/L		10/26/19 09:25	10/27/19 06:28	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/26/19 09:25	10/27/19 06:28	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/26/19 09:25	10/27/19 06:28	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/26/19 09:25	10/27/19 06:28	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/26/19 09:25	10/27/19 06:28	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/26/19 09:25	10/27/19 06:28	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/26/19 09:25	10/27/19 06:28	1
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		10/26/19 09:25	10/27/19 06:28	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/26/19 09:25	10/27/19 06:28	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/26/19 09:25	10/27/19 06:28	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/26/19 09:25	10/27/19 06:28	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/26/19 09:25	10/27/19 06:28	1
Caprolactam	0.68	U	10	0.68	ug/L		10/26/19 09:25	10/27/19 06:28	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/26/19 09:25	10/27/19 06:28	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/26/19 09:25	10/27/19 06:28	1
N-Methylaniline	1.3	U	5.0	1.3	ug/L		10/26/19 09:25	10/27/19 06:28	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/26/19 09:25*	*10/27/19 06:28*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*89*		*51 - 108*	*10/26/19 09:25*	*10/27/19 06:28*	*1*
Phenol-d5 (Surr)	*32*		*14 - 39*	*10/26/19 09:25*	*10/27/19 06:28*	*1*
Terphenyl-d14 (Surr)	*84*		*40 - 148*	*10/26/19 09:25*	*10/27/19 06:28*	*1*
2,4,6-Tribromophenol (Surr)	*98*		*26 - 139*	*10/26/19 09:25*	*10/27/19 06:28*	*1*
2-Fluorophenol (Surr)	*49*		*25 - 58*	*10/26/19 09:25*	*10/27/19 06:28*	*1*
2-Fluorobiphenyl (Surr)	*82*		*45 - 107*	*10/26/19 09:25*	*10/27/19 06:28*	*1*

Client Sample ID: RBGW_102519 Lab Sample ID: 460-194921-12

Date Collected: 10/25/19 15:00 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.014	U	0.12	0.014	mg/L			10/26/19 14:31	1
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/26/19 14:31	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/26/19 14:31	1
Sulfate	0.35	U	0.60	0.35	mg/L			10/26/19 14:31	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	66.8	U	250	66.8	ug/L		10/30/19 03:58	10/30/19 13:09	5
Magnesium	24.8	U	250	24.8	ug/L		10/30/19 03:58	10/30/19 13:09	5
Potassium	73.5	U	250	73.5	ug/L		10/30/19 03:58	10/30/19 13:09	5
Calcium	233	U	250	233	ug/L		10/30/19 03:58	10/30/19 13:09	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	1.7	U	50.0	1.7	ug/L		10/30/19 12:27	10/30/19 19:58	1
Iron, Dissolved	34.2	U	150	34.2	ug/L		10/30/19 12:27	10/30/19 19:58	1
Manganese, Dissolved	0.99	U	15.0	0.99	ug/L		10/30/19 12:27	10/30/19 19:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.068	U	0.10	0.068	mg/L			10/28/19 15:54	1
Bicarbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/29/19 14:04	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/29/19 14:04	1
Sulfide	0.58	U	1.0	0.58	mg/L			10/28/19 19:00	1

Client Sample ID: TBGW_102519-A Lab Sample ID: 460-194921-13

Date Collected: 10/25/19 00:00 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.33	U	0.40	0.33	ug/L			10/26/19 15:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*98*		*72 - 133*		*10/26/19 15:34*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/29/19 21:51	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/29/19 21:51	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/29/19 21:51	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/29/19 21:51	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/29/19 21:51	1
Acetone	**8.3**		5.0	4.4	ug/L			10/29/19 21:51	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/29/19 21:51	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/29/19 21:51	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/29/19 21:51	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/29/19 21:51	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/29/19 21:51	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/29/19 21:51	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/29/19 21:51	1

Client Sample ID: TBGW_102519-A Lab Sample ID: 460-194921-13

Date Collected: 10/25/19 00:00 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/29/19 21:51	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/29/19 21:51	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/29/19 21:51	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/29/19 21:51	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/29/19 21:51	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/29/19 21:51	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/29/19 21:51	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/29/19 21:51	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/29/19 21:51	1
Benzene	0.20	U	1.0	0.20	ug/L			10/29/19 21:51	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/29/19 21:51	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/29/19 21:51	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/29/19 21:51	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/29/19 21:51	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/29/19 21:51	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/29/19 21:51	1
Toluene	0.38	U	1.0	0.38	ug/L			10/29/19 21:51	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/29/19 21:51	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/29/19 21:51	1
Styrene	0.42	U	1.0	0.42	ug/L			10/29/19 21:51	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/29/19 21:51	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/29/19 21:51	1
MTBE	0.47	U	1.0	0.47	ug/L			10/29/19 21:51	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/29/19 21:51	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/29/19 21:51	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/29/19 21:51	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/29/19 21:51	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/29/19 21:51	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/29/19 21:51	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/29/19 21:51	1
Indane	0.35	U	1.0	0.35	ug/L			10/29/19 21:51	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/29/19 21:51	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/29/19 21:51	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/29/19 21:51*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*74 - 132*		*10/29/19 21:51*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/29/19 21:51*	*1*
4-Bromofluorobenzene	*99*		*77 - 124*		*10/29/19 21:51*	*1*
Dibromofluoromethane (Surr)	*109*		*72 - 131*		*10/29/19 21:51*	*1*

Client Sample ID: C-2D Lab Sample ID: 460-194926-1

Date Collected: 10/25/19 08:40 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**18**	J-	0.40	0.33	ug/L			10/27/19 05:11	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-194826-2
SDG: 194826-2

Client Sample ID: C-2D

Lab Sample ID: 460-194926-1

Date Collected: 10/25/19 08:40
Date Received: 10/25/19 20:00

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*67*	*X*	*72 - 133*		*10/27/19 05:11*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/31/19 01:14	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/31/19 01:14	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/31/19 01:14	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/31/19 01:14	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/31/19 01:14	1
Acetone	4.4	U	5.0	4.4	ug/L			10/31/19 01:14	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/31/19 01:14	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/31/19 01:14	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/31/19 01:14	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/31/19 01:14	1
cis-1,2-Dichloroethene	**0.29**	**J**	1.0	0.22	ug/L			10/31/19 01:14	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/31/19 01:14	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/31/19 01:14	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/31/19 01:14	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/31/19 01:14	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/31/19 01:14	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/31/19 01:14	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/31/19 01:14	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/31/19 01:14	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/31/19 01:14	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/31/19 01:14	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/31/19 01:14	1
Benzene	**22**		1.0	0.20	ug/L			10/31/19 01:14	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/31/19 01:14	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/31/19 01:14	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/31/19 01:14	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/31/19 01:14	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/31/19 01:14	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/31/19 01:14	1
Toluene	**0.59**	**J**	1.0	0.38	ug/L			10/31/19 01:14	1
Chlorobenzene	**18**		1.0	0.38	ug/L			10/31/19 01:14	1
Ethylbenzene	**0.36**	**J**	1.0	0.30	ug/L			10/31/19 01:14	1
Styrene	0.42	U	1.0	0.42	ug/L			10/31/19 01:14	1
Xylenes, Total	**130**		2.0	0.65	ug/L			10/31/19 01:14	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/31/19 01:14	1
MTBE	0.47	U	1.0	0.47	ug/L			10/31/19 01:14	1
Tetrahydrofuran	**3.0**		2.0	1.0	ug/L			10/31/19 01:14	1
Cyclohexane	**5.4**		1.0	0.32	ug/L			10/31/19 01:14	1
1,2,4-Trimethylbenzene	**70**		1.0	0.37	ug/L			10/31/19 01:14	1
1,3,5-Trimethylbenzene	**32**		1.0	0.33	ug/L			10/31/19 01:14	1
Isopropylbenzene	**13**		1.0	0.34	ug/L			10/31/19 01:14	1
N-Propylbenzene	**15**		1.0	0.32	ug/L			10/31/19 01:14	1
Methylcyclohexane	**7.4**		1.0	0.26	ug/L			10/31/19 01:14	1
Indane	**73**		1.0	0.35	ug/L			10/31/19 01:14	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/31/19 01:14	1
1,2,3-Trimethylbenzene	**29**		1.0	0.36	ug/L			10/31/19 01:14	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-194826-2
SDG: 194826-2

Client Sample ID: C-2D

Lab Sample ID: 460-194926-1

Date Collected: 10/25/19 08:40
Date Received: 10/25/19 20:00

Matrix: Water

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, 1-ethyl-3-methyl-	*24*	~~*J N*~~	*ug/L*		*9.25*	*620-14-4*		*10/31/19 01:14*	*1*
Benzene, 1-ethyl-2-methyl-	*22*	~~*J N*~~	*ug/L*		*9.69*	*611-14-3*		*10/31/19 01:14*	*1*
2-Heptanone, 4,6-dimethyl-	*9.7*	~~*J N*~~	*ug/L*		*10.26*	*19549-80-5*		*10/31/19 01:14*	*1*
Benzene, 1-ethyl-2,3-dimethyl-	*5.7*	~~*J N*~~	*ug/L*		*11.74*	*933-98-2*		*10/31/19 01:14*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*74 - 132*		*10/31/19 01:14*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*		*10/31/19 01:14*	*1*
4-Bromofluorobenzene	*94*		*77 - 124*		*10/31/19 01:14*	*1*
Dibromofluoromethane (Surr)	*98*		*72 - 131*		*10/31/19 01:14*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/26/19 09:05	10/27/19 02:39	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/26/19 09:05	10/27/19 02:39	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/26/19 09:05	10/27/19 02:39	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/26/19 09:05	10/27/19 02:39	1
Pentachlorophenol	0.15	~~U *~~ UJ	0.20	0.15	ug/L		10/26/19 09:05	10/27/19 02:39	1
Bis(2-chloroethyl)ether	**1.2**		0.030	0.026	ug/L		10/26/19 09:05	10/27/19 02:39	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/26/19 09:05	10/27/19 07:03	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/26/19 09:05	10/27/19 07:03	1
2-Methylphenol	0.67	U	10	0.67	ug/L		10/26/19 09:05	10/27/19 07:03	1
4-Methylphenol	0.65	U	10	0.65	ug/L		10/26/19 09:05	10/27/19 07:03	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/26/19 09:05	10/27/19 07:03	1
2,4-Dimethylphenol	0.62	U	10	0.62	ug/L		10/26/19 09:05	10/27/19 07:03	1
2,4-Dichlorophenol	1.1	U	10	1.1	ug/L		10/26/19 09:05	10/27/19 07:03	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/26/19 09:05	10/27/19 07:03	1
2,4,6-Trichlorophenol	0.86	U	10	0.86	ug/L		10/26/19 09:05	10/27/19 07:03	1
2,4,5-Trichlorophenol	0.88	U	10	0.88	ug/L		10/26/19 09:05	10/27/19 07:03	1
2,4-Dinitrophenol	14	U *	20	14	ug/L		10/26/19 09:05	10/27/19 07:03	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		10/26/19 09:05	10/27/19 07:03	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/26/19 09:05	10/27/19 07:03	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/26/19 09:05	10/27/19 07:03	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/26/19 09:05	10/27/19 07:03	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/26/19 09:05	10/27/19 07:03	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/26/19 09:05	10/27/19 07:03	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		10/26/19 09:05	10/27/19 07:03	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/26/19 09:05	10/27/19 07:03	1
Isophorone	0.80	U	10	0.80	ug/L		10/26/19 09:05	10/27/19 07:03	1
Bis(2-chloroethoxy)methane	0.59	U	10	0.59	ug/L		10/26/19 09:05	10/27/19 07:03	1
1,2,4-Trichlorobenzene	0.64	U	2.0	0.64	ug/L		10/26/19 09:05	10/27/19 07:03	1
Naphthalene	**4.6**	**J**	10	1.1	ug/L		10/26/19 09:05	10/27/19 07:03	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/26/19 09:05	10/27/19 07:03	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/26/19 09:05	10/27/19 07:03	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/26/19 09:05	10/27/19 07:03	1
Hexachlorocyclopentadiene	3.6	U	10	3.6	ug/L		10/26/19 09:05	10/27/19 07:03	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/26/19 09:05	10/27/19 07:03	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/26/19 09:05	10/27/19 07:03	1

Client Sample ID: C-2D Lab Sample ID: 460-194926-1

Date Collected: 10/25/19 08:40 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/26/19 09:05	10/27/19 07:03	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/26/19 09:05	10/27/19 07:03	1
2,6-Dinitrotoluene	0.83	U	2.0	0.83	ug/L		10/26/19 09:05	10/27/19 07:03	1
3-Nitroaniline	1.9	U	10	1.9	ug/L		10/26/19 09:05	10/27/19 07:03	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/26/19 09:05	10/27/19 07:03	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/26/19 09:05	10/27/19 07:03	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/26/19 09:05	10/27/19 07:03	1
Diethyl phthalate	**1.1**	**J**	10	0.98	ug/L		10/26/19 09:05	10/27/19 07:03	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/26/19 09:05	10/27/19 07:03	1
Fluorene	0.91	U	10	0.91	ug/L		10/26/19 09:05	10/27/19 07:03	1
4-Nitroaniline	1.2	U	10	1.2	ug/L		10/26/19 09:05	10/27/19 07:03	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/26/19 09:05	10/27/19 07:03	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/26/19 09:05	10/27/19 07:03	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/26/19 09:05	10/27/19 07:03	1
Anthracene	0.63	U	10	0.63	ug/L		10/26/19 09:05	10/27/19 07:03	1
Carbazole	0.68	U	10	0.68	ug/L		10/26/19 09:05	10/27/19 07:03	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/26/19 09:05	10/27/19 07:03	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/26/19 09:05	10/27/19 07:03	1
Pyrene	1.6	U	10	1.6	ug/L		10/26/19 09:05	10/27/19 07:03	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/26/19 09:05	10/27/19 07:03	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/26/19 09:05	10/27/19 07:03	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/26/19 09:05	10/27/19 07:03	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/26/19 09:05	10/27/19 07:03	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/26/19 09:05	10/27/19 07:03	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/26/19 09:05	10/27/19 07:03	1
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		10/26/19 09:05	10/27/19 07:03	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/26/19 09:05	10/27/19 07:03	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/26/19 09:05	10/27/19 07:03	1
Diphenyl ether	**14**		10	1.2	ug/L		10/26/19 09:05	10/27/19 07:03	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/26/19 09:05	10/27/19 07:03	1
Caprolactam	0.68	U *	10	0.68	ug/L		10/26/19 09:05	10/27/19 07:03	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/26/19 09:05	10/27/19 07:03	1
Bisphenol-A	**38**		10	9.9	ug/L		10/26/19 09:05	10/27/19 07:03	1
N-Methylaniline	1.3	U	5.0	1.3	ug/L		10/26/19 09:05	10/27/19 07:03	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*7.1*	*J*	*ug/L*		*2.95*		*10/26/19 09:05*	*10/27/19 07:03*	*1*
Benzene, (1-methylethyl)-	*9.5*	*J N*	*ug/L*		*3.73*	*98-82-8*	*10/26/19 09:05*	*10/27/19 07:03*	*1*
Benzene, propyl-	*11*	*J N*	*ug/L*		*3.99*	*103-65-1*	*10/26/19 09:05*	*10/27/19 07:03*	*1*
Benzene, 1-ethyl-2-methyl-	*16*	*J N*	*ug/L*		*4.04*	*611-14-3*	*10/26/19 09:05*	*10/27/19 07:03*	*1*
Benzene, 1-ethyl-3-methyl-	*15*	*J N*	*ug/L*		*4.19*	*620-14-4*	*10/26/19 09:05*	*10/27/19 07:03*	*1*
2-Heptanone, 4,6-dimethyl-	*8.7*	*J N*	*ug/L*		*4.22*	*19549-80-5*	*10/26/19 09:05*	*10/27/19 07:03*	*1*
Benzene, 1,2,3-trimethyl-	*50*	*J N*	*ug/L*		*4.32*	*526-73-8*	*10/26/19 09:05*	*10/27/19 07:03*	*1*
Benzene, 1,3,5-trimethyl-	*24*	*J N*	*ug/L*		*4.53*	*108-67-8*	*10/26/19 09:05*	*10/27/19 07:03*	*1*
Indane	*60*	*J N*	*ug/L*		*4.65*	*496-11-7*	*10/26/19 09:05*	*10/27/19 07:03*	*1*
Unknown	*17*	*J*	*ug/L*		*7.11*		*10/26/19 09:05*	*10/27/19 07:03*	*1*
Unknown	*18*	*J*	*ug/L*		*12.53*		*10/26/19 09:05*	*10/27/19 07:03*	*1*
Unknown	*12*	*J*	*ug/L*		*14.14*		*10/26/19 09:05*	*10/27/19 07:03*	*1*

Client Sample ID: C-2D — Lab Sample ID: 460-194926-1

Date Collected: 10/25/19 08:40 **Matrix: Water**
Date Received: 10/25/19 20:00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*86*		*51 - 108*	*10/26/19 09:05*	*10/27/19 07:03*	*1*
Phenol-d5 (Surr)	*30*		*14 - 39*	*10/26/19 09:05*	*10/27/19 07:03*	*1*
Terphenyl-d14 (Surr)	*86*		*40 - 148*	*10/26/19 09:05*	*10/27/19 07:03*	*1*
2,4,6-Tribromophenol (Surr)	*112*		*26 - 139*	*10/26/19 09:05*	*10/27/19 07:03*	*1*
2-Fluorophenol (Surr)	*44*		*25 - 58*	*10/26/19 09:05*	*10/27/19 07:03*	*1*
2-Fluorobiphenyl (Surr)	*81*		*45 - 107*	*10/26/19 09:05*	*10/27/19 07:03*	*1*

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**11.4**	**J**	50.0	1.7	ug/L		10/30/19 12:27	10/30/19 20:03	1
Iron, Dissolved	**31100**		150	34.2	ug/L		10/30/19 12:27	10/30/19 20:03	1
Manganese, Dissolved	**2170**		15.0	0.99	ug/L		10/30/19 12:27	10/30/19 20:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.95**		0.10	0.068	mg/L			10/28/19 15:24	1

Client Sample ID: TBGW_102519-B — Lab Sample ID: 460-194926-2

Date Collected: 10/25/19 00:00 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.33	U	0.40	0.33	ug/L			10/26/19 15:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*101*		*72 - 133*		*10/26/19 15:57*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/30/19 23:38	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/30/19 23:38	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/30/19 23:38	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/30/19 23:38	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/30/19 23:38	1
Acetone	**7.7**		5.0	4.4	ug/L			10/30/19 23:38	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/30/19 23:38	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/30/19 23:38	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/30/19 23:38	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/30/19 23:38	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/30/19 23:38	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/30/19 23:38	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/30/19 23:38	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/30/19 23:38	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/30/19 23:38	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/30/19 23:38	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/30/19 23:38	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/30/19 23:38	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/30/19 23:38	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/30/19 23:38	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/30/19 23:38	1

Client Sample ID: TBGW_102519-B Lab Sample ID: 460-194926-2

Date Collected: 10/25/19 00:00 **Matrix: Water**
Date Received: 10/25/19 20:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/30/19 23:38	1
Benzene	0.20	U	1.0	0.20	ug/L			10/30/19 23:38	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/30/19 23:38	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/30/19 23:38	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/30/19 23:38	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/30/19 23:38	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/30/19 23:38	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/30/19 23:38	1
Toluene	0.38	U	1.0	0.38	ug/L			10/30/19 23:38	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/30/19 23:38	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/30/19 23:38	1
Styrene	0.42	U	1.0	0.42	ug/L			10/30/19 23:38	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/30/19 23:38	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/30/19 23:38	1
MTBE	0.47	U	1.0	0.47	ug/L			10/30/19 23:38	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/30/19 23:38	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/30/19 23:38	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/30/19 23:38	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/30/19 23:38	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/30/19 23:38	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/30/19 23:38	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/30/19 23:38	1
Indane	0.35	U	1.0	0.35	ug/L			10/30/19 23:38	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/30/19 23:38	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/30/19 23:38	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/30/19 23:38*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*74 - 132*		*10/30/19 23:38*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/30/19 23:38*	*1*
4-Bromofluorobenzene	*96*		*77 - 124*		*10/30/19 23:38*	*1*
Dibromofluoromethane (Surr)	*98*		*72 - 131*		*10/30/19 23:38*	*1*

Client Sample Results

Client: Golder Associates Inc. Job ID: 460-195120-1
Project/Site: DS&G Semi-Annual Groundwater

Client Sample ID: DDA-01 Lab Sample ID: 460-195120-1

Date Collected: 10/28/19 13:35 Matrix: Water
Date Received: 10/28/19 20:20

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/29/19 14:08	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/29/19 14:08	1
Sulfate	**20.2**		0.60	0.35	mg/L			10/29/19 14:08	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**39.1**	D	1.80	0.21	mg/L			10/29/19 15:53	15

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**19500**		250	66.8	ug/L		10/31/19 21:00	11/01/19 16:22	5
Magnesium	**5630**		250	24.8	ug/L		10/31/19 21:00	11/01/19 16:22	5
Potassium	**2490**		250	73.5	ug/L		10/31/19 21:00	11/01/19 16:22	5
Calcium	**14400**		250	233	ug/L		10/31/19 21:00	11/01/19 16:22	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.15**		0.10	0.034	mg/L			10/31/19 12:21	1
Bicarbonate Alkalinity as CaCO3	**54.8**		5.0	5.0	mg/L			10/30/19 19:48	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/30/19 19:48	1
Sulfide	0.58	U	1.0	0.58	mg/L			11/01/19 13:00	1

Client Sample ID: DDA-05 Lab Sample ID: 460-195120-2

Date Collected: 10/28/19 10:35 Matrix: Water
Date Received: 10/28/19 20:20

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/29/19 14:23	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/29/19 14:23	1
Sulfate	**12.2**		0.60	0.35	mg/L			10/29/19 14:23	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**24.6**	D	1.08	0.13	mg/L			10/29/19 16:07	9

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**19000**		250	66.8	ug/L		10/31/19 21:00	11/01/19 16:24	5
Magnesium	**7300**		250	24.8	ug/L		10/31/19 21:00	11/01/19 16:24	5
Potassium	**2410**		250	73.5	ug/L		10/31/19 21:00	11/01/19 16:24	5
Calcium	**10500**		250	233	ug/L		10/31/19 21:00	11/01/19 16:24	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**4.5**		0.10	0.034	mg/L			10/31/19 11:34	1
Bicarbonate Alkalinity as CaCO3	**90.6**		5.0	5.0	mg/L			10/30/19 19:55	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/30/19 19:55	1
Sulfide	0.58	U	1.0	0.58	mg/L			11/01/19 13:00	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-195120-1

Client Sample ID: MHW-1D

Lab Sample ID: 460-195120-3

Date Collected: 10/28/19 10:30
Date Received: 10/28/19 20:20

Matrix: Water

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**8.1**		0.40	0.33	ug/L			10/31/19 06:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*72 - 133*		*10/31/19 06:29*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/31/19 23:19	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/31/19 23:19	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/31/19 23:19	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/31/19 23:19	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/31/19 23:19	1
Acetone	4.4	U	5.0	4.4	ug/L			10/31/19 23:19	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/31/19 23:19	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/31/19 23:19	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/31/19 23:19	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/31/19 23:19	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/31/19 23:19	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/31/19 23:19	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/31/19 23:19	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/31/19 23:19	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/31/19 23:19	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/31/19 23:19	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/31/19 23:19	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/31/19 23:19	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/31/19 23:19	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/31/19 23:19	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/31/19 23:19	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/31/19 23:19	1
Benzene	0.20	U	1.0	0.20	ug/L			10/31/19 23:19	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/31/19 23:19	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/31/19 23:19	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/31/19 23:19	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/31/19 23:19	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/31/19 23:19	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/31/19 23:19	1
Toluene	0.38	U	1.0	0.38	ug/L			10/31/19 23:19	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/31/19 23:19	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/31/19 23:19	1
Styrene	0.42	U	1.0	0.42	ug/L			10/31/19 23:19	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/31/19 23:19	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/31/19 23:19	1
MTBE	0.47	U	1.0	0.47	ug/L			10/31/19 23:19	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/31/19 23:19	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/31/19 23:19	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/31/19 23:19	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/31/19 23:19	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/31/19 23:19	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/31/19 23:19	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/31/19 23:19	1

Client Sample ID: MHW-1D — Lab Sample ID: 460-195120-3

Date Collected: 10/28/19 10:30 **Matrix: Water**
Date Received: 10/28/19 20:20

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Indane	0.35	U	1.0	0.35	ug/L			10/31/19 23:19	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/31/19 23:19	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/31/19 23:19	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/31/19 23:19*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*74 - 132*		*10/31/19 23:19*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*10/31/19 23:19*	*1*
4-Bromofluorobenzene	*103*		*77 - 124*		*10/31/19 23:19*	*1*
Dibromofluoromethane (Surr)	*110*		*72 - 131*		*10/31/19 23:19*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/30/19 09:28	10/31/19 02:03	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/30/19 09:28	10/31/19 02:03	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/30/19 09:28	10/31/19 02:03	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/30/19 09:28	10/31/19 02:03	1
Pentachlorophenol	0.15	U	0.20	0.15	ug/L		10/30/19 09:28	10/31/19 02:03	1
Bis(2-chloroethyl)ether	**0.13**		0.030	0.026	ug/L		10/30/19 09:28	10/31/19 02:03	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/30/19 09:28	10/30/19 23:09	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/30/19 09:28	10/30/19 23:09	1
2-Methylphenol	0.67	U	10	0.67	ug/L		10/30/19 09:28	10/30/19 23:09	1
4-Methylphenol	0.65	U	10	0.65	ug/L		10/30/19 09:28	10/30/19 23:09	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/30/19 09:28	10/30/19 23:09	1
2,4-Dimethylphenol	0.62	U	10	0.62	ug/L		10/30/19 09:28	10/30/19 23:09	1
2,4-Dichlorophenol	1.1	U	10	1.1	ug/L		10/30/19 09:28	10/30/19 23:09	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/30/19 09:28	10/30/19 23:09	1
2,4,6-Trichlorophenol	0.86	U	10	0.86	ug/L		10/30/19 09:28	10/30/19 23:09	1
2,4,5-Trichlorophenol	0.88	U	10	0.88	ug/L		10/30/19 09:28	10/30/19 23:09	1
2,4-Dinitrophenol	14	U	20	14	ug/L		10/30/19 09:28	10/30/19 23:09	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		10/30/19 09:28	10/30/19 23:09	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/30/19 09:28	10/30/19 23:09	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/30/19 09:28	10/30/19 23:09	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/30/19 09:28	10/30/19 23:09	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/30/19 09:28	10/30/19 23:09	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/30/19 09:28	10/30/19 23:09	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		10/30/19 09:28	10/30/19 23:09	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/30/19 09:28	10/30/19 23:09	1
Isophorone	0.80	U	10	0.80	ug/L		10/30/19 09:28	10/30/19 23:09	1
Bis(2-chloroethoxy)methane	0.59	U	10	0.59	ug/L		10/30/19 09:28	10/30/19 23:09	1
1,2,4-Trichlorobenzene	0.64	U	2.0	0.64	ug/L		10/30/19 09:28	10/30/19 23:09	1
Naphthalene	1.1	U	10	1.1	ug/L		10/30/19 09:28	10/30/19 23:09	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/30/19 09:28	10/30/19 23:09	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/30/19 09:28	10/30/19 23:09	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/30/19 09:28	10/30/19 23:09	1

Client Sample ID: MHW-1D — Lab Sample ID: 460-195120-3

Date Collected: 10/28/19 10:30 **Matrix: Water**
Date Received: 10/28/19 20:20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorocyclopentadiene	3.6	U	10	3.6	ug/L		10/30/19 09:28	10/30/19 23:09	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/30/19 09:28	10/30/19 23:09	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/30/19 09:28	10/30/19 23:09	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/30/19 09:28	10/30/19 23:09	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/30/19 09:28	10/30/19 23:09	1
2,6-Dinitrotoluene	0.83	U	2.0	0.83	ug/L		10/30/19 09:28	10/30/19 23:09	1
3-Nitroaniline	1.9	U	10	1.9	ug/L		10/30/19 09:28	10/30/19 23:09	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/30/19 09:28	10/30/19 23:09	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/30/19 09:28	10/30/19 23:09	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/30/19 09:28	10/30/19 23:09	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/30/19 09:28	10/30/19 23:09	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/30/19 09:28	10/30/19 23:09	1
Fluorene	0.91	U	10	0.91	ug/L		10/30/19 09:28	10/30/19 23:09	1
4-Nitroaniline	1.2	U	10	1.2	ug/L		10/30/19 09:28	10/30/19 23:09	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/30/19 09:28	10/30/19 23:09	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/30/19 09:28	10/30/19 23:09	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/30/19 09:28	10/30/19 23:09	1
Anthracene	0.63	U	10	0.63	ug/L		10/30/19 09:28	10/30/19 23:09	1
Carbazole	0.68	U	10	0.68	ug/L		10/30/19 09:28	10/30/19 23:09	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/30/19 09:28	10/30/19 23:09	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/30/19 09:28	10/30/19 23:09	1
Pyrene	1.6	U	10	1.6	ug/L		10/30/19 09:28	10/30/19 23:09	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/30/19 09:28	10/30/19 23:09	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/30/19 09:28	10/30/19 23:09	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/30/19 09:28	10/30/19 23:09	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/30/19 09:28	10/30/19 23:09	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/30/19 09:28	10/30/19 23:09	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/30/19 09:28	10/30/19 23:09	1
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		10/30/19 09:28	10/30/19 23:09	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/30/19 09:28	10/30/19 23:09	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/30/19 09:28	10/30/19 23:09	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/30/19 09:28	10/30/19 23:09	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/30/19 09:28	10/30/19 23:09	1
Caprolactam	0.68	U	10	0.68	ug/L		10/30/19 09:28	10/30/19 23:09	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/30/19 09:28	10/30/19 23:09	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/30/19 09:28	10/30/19 23:09	1
N-Methylaniline	1.3	U	5.0	1.3	ug/L		10/30/19 09:28	10/30/19 23:09	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/30/19 09:28*	*10/30/19 23:09*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*98*		*51 - 108*	*10/30/19 09:28*	*10/30/19 23:09*	*1*
Phenol-d5 (Surr)	*37*		*14 - 39*	*10/30/19 09:28*	*10/30/19 23:09*	*1*
Terphenyl-d14 (Surr)	*101*		*40 - 148*	*10/30/19 09:28*	*10/30/19 23:09*	*1*
2,4,6-Tribromophenol (Surr)	*98*		*26 - 139*	*10/30/19 09:28*	*10/30/19 23:09*	*1*
2-Fluorophenol (Surr)	*54*		*25 - 58*	*10/30/19 09:28*	*10/30/19 23:09*	*1*
2-Fluorobiphenyl (Surr)	*92*		*45 - 107*	*10/30/19 09:28*	*10/30/19 23:09*	*1*

Client Sample ID: MHW-1D — Lab Sample ID: 460-195120-3

Date Collected: 10/28/19 10:30 **Matrix: Water**
Date Received: 10/28/19 20:20

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/29/19 14:38	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/29/19 14:38	1
Sulfate	**19.1**		0.60	0.35	mg/L			10/29/19 14:38	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**36.5**	D	1.68	0.20	mg/L			10/29/19 16:52	14

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**4860**		50.0	13.4	ug/L		10/31/19 21:00	11/01/19 16:27	1
Magnesium	**1390**		50.0	5.0	ug/L		10/31/19 21:00	11/01/19 16:27	1
Potassium	**671**		50.0	14.7	ug/L		10/31/19 21:00	11/01/19 16:27	1
Calcium	**2710**		50.0	46.6	ug/L		10/31/19 21:00	11/01/19 16:27	1

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**79.4**		50.0	1.7	ug/L		11/01/19 09:25	11/01/19 20:24	1
Iron, Dissolved	**20100**		150	34.2	ug/L		11/01/19 09:25	11/01/19 20:24	1
Manganese, Dissolved	**3210**		15.0	0.99	ug/L		11/01/19 09:25	11/01/19 20:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.21**		0.10	0.034	mg/L			10/31/19 12:12	1
Bicarbonate Alkalinity as CaCO3	**74.4**		5.0	5.0	mg/L			10/30/19 20:03	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			10/30/19 20:03	1
Sulfide	0.58	U	1.0	0.58	mg/L			11/01/19 13:00	1

Client Sample ID: TBGW_102819 — Lab Sample ID: 460-195120-4

Date Collected: 10/28/19 00:00 **Matrix: Water**
Date Received: 10/28/19 20:20

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.33	U	0.40	0.33	ug/L			10/31/19 02:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*72 - 133*		*10/31/19 02:41*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			10/31/19 22:07	1
Bromomethane	0.55	U	1.0	0.55	ug/L			10/31/19 22:07	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			10/31/19 22:07	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/31/19 22:07	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/31/19 22:07	1
Acetone	**8.6**		5.0	4.4	ug/L			10/31/19 22:07	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			10/31/19 22:07	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			10/31/19 22:07	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/31/19 22:07	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/31/19 22:07	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-195120-1

Client Sample ID: TBGW_102819

Lab Sample ID: 460-195120-4

Date Collected: 10/28/19 00:00
Date Received: 10/28/19 20:20

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			10/31/19 22:07	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/31/19 22:07	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			10/31/19 22:07	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			10/31/19 22:07	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/31/19 22:07	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/31/19 22:07	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/31/19 22:07	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/31/19 22:07	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/31/19 22:07	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/31/19 22:07	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			10/31/19 22:07	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			10/31/19 22:07	1
Benzene	0.20	U	1.0	0.20	ug/L			10/31/19 22:07	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			10/31/19 22:07	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/31/19 22:07	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			10/31/19 22:07	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			10/31/19 22:07	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/31/19 22:07	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/31/19 22:07	1
Toluene	0.38	U	1.0	0.38	ug/L			10/31/19 22:07	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/31/19 22:07	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/31/19 22:07	1
Styrene	0.42	U	1.0	0.42	ug/L			10/31/19 22:07	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			10/31/19 22:07	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			10/31/19 22:07	1
MTBE	0.47	U	1.0	0.47	ug/L			10/31/19 22:07	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			10/31/19 22:07	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			10/31/19 22:07	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			10/31/19 22:07	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			10/31/19 22:07	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			10/31/19 22:07	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			10/31/19 22:07	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			10/31/19 22:07	1
Indane	0.35	U	1.0	0.35	ug/L			10/31/19 22:07	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			10/31/19 22:07	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			10/31/19 22:07	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*10/31/19 22:07*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*74 - 132*		*10/31/19 22:07*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/31/19 22:07*	*1*
4-Bromofluorobenzene	*102*		*77 - 124*		*10/31/19 22:07*	*1*
Dibromofluoromethane (Surr)	*108*		*72 - 131*		*10/31/19 22:07*	*1*

Client Sample Results

Client: Golder Associates Inc. Job ID: 460-195120-1
Project/Site: DS&G Semi-Annual Groundwater

Client Sample ID: DDA-20-US Lab Sample ID: 460-195187-1

Date Collected: 10/29/19 14:20 **Matrix: Water**
Date Received: 10/29/19 20:35

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**5.8**		0.40	0.33	ug/L			11/01/19 09:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*89*		*72 - 133*		*11/01/19 09:10*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			11/02/19 08:47	1
Bromomethane	0.55	U	1.0	0.55	ug/L			11/02/19 08:47	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			11/02/19 08:47	1
Chloroethane	0.32	U	1.0	0.32	ug/L			11/02/19 08:47	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			11/02/19 08:47	1
Acetone	4.4	U	5.0	4.4	ug/L			11/02/19 08:47	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			11/02/19 08:47	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			11/02/19 08:47	1
1,1-Dichloroethane	0.26	U ~~F1~~	1.0	0.26	ug/L			11/02/19 08:47	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			11/02/19 08:47	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			11/02/19 08:47	1
Chloroform	0.33	U	1.0	0.33	ug/L			11/02/19 08:47	1
1,2-Dichloroethane	**1.4**		1.0	0.43	ug/L			11/02/19 08:47	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			11/02/19 08:47	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			11/02/19 08:47	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			11/02/19 08:47	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			11/02/19 08:47	1
1,2-Dichloropropane	0.35	U ~~F1~~	1.0	0.35	ug/L			11/02/19 08:47	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			11/02/19 08:47	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			11/02/19 08:47	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			11/02/19 08:47	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			11/02/19 08:47	1
Benzene	**0.63**	**J ~~F1~~**	1.0	0.20	ug/L			11/02/19 08:47	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			11/02/19 08:47	1
Bromoform	0.54	U	1.0	0.54	ug/L			11/02/19 08:47	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			11/02/19 08:47	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			11/02/19 08:47	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			11/02/19 08:47	1
1,1,2,2-Tetrachloroethane	0.37	U ~~F1~~	1.0	0.37	ug/L			11/02/19 08:47	1
Toluene	0.38	U	1.0	0.38	ug/L			11/02/19 08:47	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			11/02/19 08:47	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			11/02/19 08:47	1
Styrene	0.42	U	1.0	0.42	ug/L			11/02/19 08:47	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			11/02/19 08:47	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			11/02/19 08:47	1
MTBE	**0.85**	**J**	1.0	0.47	ug/L			11/02/19 08:47	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			11/02/19 08:47	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			11/02/19 08:47	1
1,2,4-Trimethylbenzene	**0.52**	**J**	1.0	0.37	ug/L			11/02/19 08:47	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			11/02/19 08:47	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			11/02/19 08:47	1
N-Propylbenzene	0.32	U ~~F1~~	1.0	0.32	ug/L			11/02/19 08:47	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			11/02/19 08:47	1

Client Sample ID: DDA-20-US Lab Sample ID: 460-195187-1

Date Collected: 10/29/19 14:20 **Matrix: Water**
Date Received: 10/29/19 20:35

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Indane	0.35	U	1.0	0.35	ug/L			11/02/19 08:47	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			11/02/19 08:47	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			11/02/19 08:47	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*11/02/19 08:47*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*74 - 132*		*11/02/19 08:47*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/02/19 08:47*	*1*
4-Bromofluorobenzene	*96*		*77 - 124*		*11/02/19 08:47*	*1*
Dibromofluoromethane (Surr)	*97*		*72 - 131*		*11/02/19 08:47*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	~~U~~ UJ	0.050	0.016	ug/L		10/31/19 09:32	10/31/19 23:26	1
Benzo[a]pyrene	0.022	~~U~~ UJ	0.050	0.022	ug/L		10/31/19 09:32	10/31/19 23:26	1
Benzo[b]fluoranthene	0.024	~~U~~ UJ	0.050	0.024	ug/L		10/31/19 09:32	10/31/19 23:26	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/31/19 09:32	10/31/19 23:26	1
Pentachlorophenol	0.15	~~U~~ * UJ	0.20	0.15	ug/L		10/31/19 09:32	10/31/19 23:26	1
Bis(2-chloroethyl)ether	**0.83**	UJ	0.030	0.026	ug/L		10/31/19 09:32	10/31/19 23:26	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	~~U F1 F2~~ R	10	0.29	ug/L		10/31/19 09:32	10/31/19 22:05	1
2-Chlorophenol	0.38	~~U F1 F2~~ UJ	10	0.38	ug/L		10/31/19 09:32	10/31/19 22:05	1
2-Methylphenol	0.67	~~U F1 F2~~ UJ	10	0.67	ug/L		10/31/19 09:32	10/31/19 22:05	1
4-Methylphenol	0.65	~~U F1 F2~~ UJ	10	0.65	ug/L		10/31/19 09:32	10/31/19 22:05	1
2-Nitrophenol	0.75	~~U F1 F2~~ UJ	10	0.75	ug/L		10/31/19 09:32	10/31/19 22:05	1
2,4-Dimethylphenol	0.62	~~U F1 F2~~ UJ	10	0.62	ug/L		10/31/19 09:32	10/31/19 22:05	1
2,4-Dichlorophenol	1.1	U ~~F1 F2~~	10	1.1	ug/L		10/31/19 09:32	10/31/19 22:05	1
4-Chloro-3-methylphenol	0.58	~~U F1 F2~~ UJ	10	0.58	ug/L		10/31/19 09:32	10/31/19 22:05	1
2,4,6-Trichlorophenol	0.86	~~U F1 F2~~ UJ	10	0.86	ug/L		10/31/19 09:32	10/31/19 22:05	1
2,4,5-Trichlorophenol	0.88	~~U F1 F2~~ UJ	10	0.88	ug/L		10/31/19 09:32	10/31/19 22:05	1
2,4-Dinitrophenol	14	~~U * F1~~ R	20	14	ug/L		10/31/19 09:32	10/31/19 22:05	1
4-Nitrophenol	4.0	~~U F1 F2~~ R	20	4.0	ug/L		10/31/19 09:32	10/31/19 22:05	1
4,6-Dinitro-2-methylphenol	13	~~U F1 F2~~ UJ	20	13	ug/L		10/31/19 09:32	10/31/19 22:05	1
1,3-Dichlorobenzene	2.0	U ~~F2~~	10	2.0	ug/L		10/31/19 09:32	10/31/19 22:05	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/31/19 09:32	10/31/19 22:05	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/31/19 09:32	10/31/19 22:05	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/31/19 09:32	10/31/19 22:05	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		10/31/19 09:32	10/31/19 22:05	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/31/19 09:32	10/31/19 22:05	1
Isophorone	0.80	U	10	0.80	ug/L		10/31/19 09:32	10/31/19 22:05	1
Bis(2-chloroethoxy)methane	0.59	~~U F1~~ UJ	10	0.59	ug/L		10/31/19 09:32	10/31/19 22:05	1
1,2,4-Trichlorobenzene	0.64	U	2.0	0.64	ug/L		10/31/19 09:32	10/31/19 22:05	1
Naphthalene	1.1	U	10	1.1	ug/L		10/31/19 09:32	10/31/19 22:05	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/31/19 09:32	10/31/19 22:05	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/31/19 09:32	10/31/19 22:05	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/31/19 09:32	10/31/19 22:05	1

Client Sample ID: DDA-20-US Lab Sample ID: 460-195187-1

Date Collected: 10/29/19 14:20 **Matrix: Water**
Date Received: 10/29/19 20:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorocyclopentadiene	3.6	U ~~F2~~	10	3.6	ug/L		10/31/19 09:32	10/31/19 22:05	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/31/19 09:32	10/31/19 22:05	1
2-Nitroaniline	0.47	U ~~F2~~	10	0.47	ug/L		10/31/19 09:32	10/31/19 22:05	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/31/19 09:32	10/31/19 22:05	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/31/19 09:32	10/31/19 22:05	1
2,6-Dinitrotoluene	0.83	U	2.0	0.83	ug/L		10/31/19 09:32	10/31/19 22:05	1
3-Nitroaniline	1.9	U	10	1.9	ug/L		10/31/19 09:32	10/31/19 22:05	1
Acenaphthene	1.1	U ~~F2~~	10	1.1	ug/L		10/31/19 09:32	10/31/19 22:05	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/31/19 09:32	10/31/19 22:05	1
2,4-Dinitrotoluene	1.0	U ~~F2~~	2.0	1.0	ug/L		10/31/19 09:32	10/31/19 22:05	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/31/19 09:32	10/31/19 22:05	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/31/19 09:32	10/31/19 22:05	1
Fluorene	0.91	U	10	0.91	ug/L		10/31/19 09:32	10/31/19 22:05	1
4-Nitroaniline	1.2	U	10	1.2	ug/L		10/31/19 09:32	10/31/19 22:05	1
N-Nitrosodiphenylamine	0.89	~~U F1~~ UJ	10	0.89	ug/L		10/31/19 09:32	10/31/19 22:05	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/31/19 09:32	10/31/19 22:05	1
Phenanthrene	0.58	~~U F1~~ UJ	10	0.58	ug/L		10/31/19 09:32	10/31/19 22:05	1
Anthracene	0.63	~~U F1~~ UJ	10	0.63	ug/L		10/31/19 09:32	10/31/19 22:05	1
Carbazole	0.68	U	10	0.68	ug/L		10/31/19 09:32	10/31/19 22:05	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/31/19 09:32	10/31/19 22:05	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/31/19 09:32	10/31/19 22:05	1
Pyrene	1.6	U	10	1.6	ug/L		10/31/19 09:32	10/31/19 22:05	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/31/19 09:32	10/31/19 22:05	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/31/19 09:32	10/31/19 22:05	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/31/19 09:32	10/31/19 22:05	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/31/19 09:32	10/31/19 22:05	1
Di-n-octyl phthalate	4.8	~~U F1~~ UJ	10	4.8	ug/L		10/31/19 09:32	10/31/19 22:05	1
Benzo[k]fluoranthene	0.67	~~U F1~~ UJ	1.0	0.67	ug/L		10/31/19 09:32	10/31/19 22:05	1
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		10/31/19 09:32	10/31/19 22:05	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/31/19 09:32	10/31/19 22:05	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/31/19 09:32	10/31/19 22:05	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/31/19 09:32	10/31/19 22:05	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/31/19 09:32	10/31/19 22:05	1
Caprolactam	0.68	U	10	0.68	ug/L		10/31/19 09:32	10/31/19 22:05	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/31/19 09:32	10/31/19 22:05	1
Bisphenol-A	9.9	~~U F1~~ R	10	9.9	ug/L		10/31/19 09:32	10/31/19 22:05	1
N-Methylaniline	1.3	~~U F1~~ UJ	5.0	1.3	ug/L		10/31/19 09:32	10/31/19 22:05	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/31/19 09:32*	*10/31/19 22:05*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*82*		*51 - 108*	*10/31/19 09:32*	*10/31/19 22:05*	*1*
Phenol-d5 (Surr)	*26*		*14 - 39*	*10/31/19 09:32*	*10/31/19 22:05*	*1*
Terphenyl-d14 (Surr)	*53*		*40 - 148*	*10/31/19 09:32*	*10/31/19 22:05*	*1*
2,4,6-Tribromophenol (Surr)	*85*		*26 - 139*	*10/31/19 09:32*	*10/31/19 22:05*	*1*
2-Fluorophenol (Surr)	*41*		*25 - 58*	*10/31/19 09:32*	*10/31/19 22:05*	*1*
2-Fluorobiphenyl (Surr)	*74*		*45 - 107*	*10/31/19 09:32*	*10/31/19 22:05*	*1*

Client Sample Results

Client: Golder Associates Inc. Job ID: 460-195120-1
Project/Site: DS&G Semi-Annual Groundwater

Client Sample ID: DDA-20-US — Lab Sample ID: 460-195187-1

Date Collected: 10/29/19 14:20 Matrix: Water
Date Received: 10/29/19 20:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**63.9**	~~F1~~ R	3.00	0.35	mg/L			10/31/19 05:22	25
Nitrate as N	**0.37**		0.10	0.056	mg/L			10/30/19 18:21	1
Nitrite as N	0.076	~~U F1~~ UJ	0.12	0.076	mg/L			10/30/19 18:21	1
Sulfate	**17.8**	~~F1~~ J-	0.60	0.35	mg/L			10/30/19 18:21	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**24200**		250	66.8	ug/L		10/31/19 21:00	11/01/19 15:34	5
Magnesium	**6440**		250	24.8	ug/L		10/31/19 21:00	11/01/19 15:34	5
Potassium	**1940**		250	73.5	ug/L		10/31/19 21:00	11/01/19 15:34	5
Calcium	**17100**		250	233	ug/L		10/31/19 21:00	11/01/19 15:34	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**17.3**	**J**	50.0	1.7	ug/L		11/01/19 09:25	11/01/19 20:08	1
Iron, Dissolved	**7810**		150	34.2	ug/L		11/01/19 09:25	11/01/19 20:08	1
Manganese, Dissolved	**309**		15.0	0.99	ug/L		11/01/19 09:25	11/01/19 20:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.068	U	0.10	0.068	mg/L			11/01/19 10:49	1
Bicarbonate Alkalinity as CaCO3	**25.2**		5.0	5.0	mg/L			11/01/19 12:24	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			11/01/19 12:24	1
Sulfide	0.58	U	1.0	0.58	mg/L			11/01/19 13:00	1

Client Sample ID: DDA-20-TZ — Lab Sample ID: 460-195187-2

Date Collected: 10/29/19 14:50 Matrix: Water
Date Received: 10/29/19 20:35

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**50**		0.40	0.33	ug/L			10/31/19 22:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*72 - 133*		*10/31/19 22:35*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			11/02/19 09:05	1
Bromomethane	0.55	U	1.0	0.55	ug/L			11/02/19 09:05	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			11/02/19 09:05	1
Chloroethane	0.32	U	1.0	0.32	ug/L			11/02/19 09:05	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			11/02/19 09:05	1
Acetone	4.4	U	5.0	4.4	ug/L			11/02/19 09:05	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			11/02/19 09:05	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			11/02/19 09:05	1
1,1-Dichloroethane	**0.29**	**J**	1.0	0.26	ug/L			11/02/19 09:05	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			11/02/19 09:05	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			11/02/19 09:05	1
Chloroform	0.33	U	1.0	0.33	ug/L			11/02/19 09:05	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			11/02/19 09:05	1

Client Sample ID: DDA-20-TZ Lab Sample ID: 460-195187-2

Date Collected: 10/29/19 14:50 **Matrix: Water**
Date Received: 10/29/19 20:35

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			11/02/19 09:05	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			11/02/19 09:05	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			11/02/19 09:05	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			11/02/19 09:05	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			11/02/19 09:05	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			11/02/19 09:05	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			11/02/19 09:05	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			11/02/19 09:05	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			11/02/19 09:05	1
Benzene	**30**		1.0	0.20	ug/L			11/02/19 09:05	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			11/02/19 09:05	1
Bromoform	0.54	U	1.0	0.54	ug/L			11/02/19 09:05	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			11/02/19 09:05	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			11/02/19 09:05	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			11/02/19 09:05	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			11/02/19 09:05	1
Toluene	**0.55**	**J**	1.0	0.38	ug/L			11/02/19 09:05	1
Chlorobenzene	**0.58**	**J**	1.0	0.38	ug/L			11/02/19 09:05	1
Ethylbenzene	**17**		1.0	0.30	ug/L			11/02/19 09:05	1
Styrene	0.42	U	1.0	0.42	ug/L			11/02/19 09:05	1
Xylenes, Total	**30**		2.0	0.65	ug/L			11/02/19 09:05	1
Diethyl ether	**0.76**	**J**	1.0	0.21	ug/L			11/02/19 09:05	1
MTBE	0.47	U	1.0	0.47	ug/L			11/02/19 09:05	1
Tetrahydrofuran	**15**		2.0	1.0	ug/L			11/02/19 09:05	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			11/02/19 09:05	1
1,2,4-Trimethylbenzene	**21**		1.0	0.37	ug/L			11/02/19 09:05	1
1,3,5-Trimethylbenzene	**2.0**		1.0	0.33	ug/L			11/02/19 09:05	1
Isopropylbenzene	**4.5**		1.0	0.34	ug/L			11/02/19 09:05	1
N-Propylbenzene	**4.5**		1.0	0.32	ug/L			11/02/19 09:05	1
Methylcyclohexane	**2.8**		1.0	0.26	ug/L			11/02/19 09:05	1
Indane	**4.6**		1.0	0.35	ug/L			11/02/19 09:05	1
Dichlorofluoromethane	**3.7**		1.0	0.34	ug/L			11/02/19 09:05	1
1,2,3-Trimethylbenzene	**2.7**		1.0	0.36	ug/L			11/02/19 09:05	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, 1-ethyl-4-methyl-	*6.0*	*J N*	*ug/L*		*10.09*	*622-96-8*		*11/02/19 09:05*	*1*
Benzene, 1-ethyl-2-methyl-	*5.3*	*J N*	*ug/L*		*10.37*	*611-14-3*		*11/02/19 09:05*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*74 - 132*		*11/02/19 09:05*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/02/19 09:05*	*1*
4-Bromofluorobenzene	*97*		*77 - 124*		*11/02/19 09:05*	*1*
Dibromofluoromethane (Surr)	*96*		*72 - 131*		*11/02/19 09:05*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/31/19 09:32	10/31/19 23:47	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/31/19 09:32	10/31/19 23:47	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/31/19 09:32	10/31/19 23:47	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/31/19 09:32	10/31/19 23:47	1

Client Sample ID: DDA-20-TZ Lab Sample ID: 460-195187-2

Date Collected: 10/29/19 14:50 **Matrix: Water**
Date Received: 10/29/19 20:35

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/31/19 09:32	10/31/19 23:47	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/31/19 09:32	11/01/19 00:10	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/31/19 09:32	11/01/19 00:10	1
2-Methylphenol	0.67	U	10	0.67	ug/L		10/31/19 09:32	11/01/19 00:10	1
4-Methylphenol	0.65	U	10	0.65	ug/L		10/31/19 09:32	11/01/19 00:10	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/31/19 09:32	11/01/19 00:10	1
2,4-Dimethylphenol	0.62	U	10	0.62	ug/L		10/31/19 09:32	11/01/19 00:10	1
2,4-Dichlorophenol	1.1	U	10	1.1	ug/L		10/31/19 09:32	11/01/19 00:10	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/31/19 09:32	11/01/19 00:10	1
2,4,6-Trichlorophenol	0.86	U	10	0.86	ug/L		10/31/19 09:32	11/01/19 00:10	1
2,4,5-Trichlorophenol	0.88	U	10	0.88	ug/L		10/31/19 09:32	11/01/19 00:10	1
2,4-Dinitrophenol	14	U *	20	14	ug/L		10/31/19 09:32	11/01/19 00:10	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		10/31/19 09:32	11/01/19 00:10	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/31/19 09:32	11/01/19 00:10	1
Bis(2-chloroethyl)ether	**8.7**		1.0	0.63	ug/L		10/31/19 09:32	11/01/19 00:10	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/31/19 09:32	11/01/19 00:10	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/31/19 09:32	11/01/19 00:10	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/31/19 09:32	11/01/19 00:10	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/31/19 09:32	11/01/19 00:10	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		10/31/19 09:32	11/01/19 00:10	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/31/19 09:32	11/01/19 00:10	1
Isophorone	0.80	U	10	0.80	ug/L		10/31/19 09:32	11/01/19 00:10	1
Bis(2-chloroethoxy)methane	0.59	U	10	0.59	ug/L		10/31/19 09:32	11/01/19 00:10	1
1,2,4-Trichlorobenzene	0.64	U	2.0	0.64	ug/L		10/31/19 09:32	11/01/19 00:10	1
Naphthalene	1.1	U	10	1.1	ug/L		10/31/19 09:32	11/01/19 00:10	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/31/19 09:32	11/01/19 00:10	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/31/19 09:32	11/01/19 00:10	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/31/19 09:32	11/01/19 00:10	1
Hexachlorocyclopentadiene	3.6	U	10	3.6	ug/L		10/31/19 09:32	11/01/19 00:10	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/31/19 09:32	11/01/19 00:10	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/31/19 09:32	11/01/19 00:10	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/31/19 09:32	11/01/19 00:10	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/31/19 09:32	11/01/19 00:10	1
2,6-Dinitrotoluene	0.83	U	2.0	0.83	ug/L		10/31/19 09:32	11/01/19 00:10	1
3-Nitroaniline	1.9	U	10	1.9	ug/L		10/31/19 09:32	11/01/19 00:10	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/31/19 09:32	11/01/19 00:10	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/31/19 09:32	11/01/19 00:10	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/31/19 09:32	11/01/19 00:10	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/31/19 09:32	11/01/19 00:10	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/31/19 09:32	11/01/19 00:10	1
Fluorene	0.91	U	10	0.91	ug/L		10/31/19 09:32	11/01/19 00:10	1
4-Nitroaniline	1.2	U	10	1.2	ug/L		10/31/19 09:32	11/01/19 00:10	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/31/19 09:32	11/01/19 00:10	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/31/19 09:32	11/01/19 00:10	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/31/19 09:32	11/01/19 00:10	1
Anthracene	0.63	U	10	0.63	ug/L		10/31/19 09:32	11/01/19 00:10	1
Carbazole	0.68	U	10	0.68	ug/L		10/31/19 09:32	11/01/19 00:10	1

Client Sample ID: DDA-20-TZ — Lab Sample ID: 460-195187-2

Date Collected: 10/29/19 14:50 **Matrix: Water**
Date Received: 10/29/19 20:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/31/19 09:32	11/01/19 00:10	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/31/19 09:32	11/01/19 00:10	1
Pyrene	1.6	U	10	1.6	ug/L		10/31/19 09:32	11/01/19 00:10	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/31/19 09:32	11/01/19 00:10	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/31/19 09:32	11/01/19 00:10	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/31/19 09:32	11/01/19 00:10	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/31/19 09:32	11/01/19 00:10	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/31/19 09:32	11/01/19 00:10	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/31/19 09:32	11/01/19 00:10	1
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		10/31/19 09:32	11/01/19 00:10	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/31/19 09:32	11/01/19 00:10	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/31/19 09:32	11/01/19 00:10	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/31/19 09:32	11/01/19 00:10	1
n,n'-Dimethylaniline	**1.8**		1.0	0.91	ug/L		10/31/19 09:32	11/01/19 00:10	1
Caprolactam	0.68	U	10	0.68	ug/L		10/31/19 09:32	11/01/19 00:10	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/31/19 09:32	11/01/19 00:10	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/31/19 09:32	11/01/19 00:10	1
N-Methylaniline	1.3	U	5.0	1.3	ug/L		10/31/19 09:32	11/01/19 00:10	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, 1,2,3-trimethyl-	*14*	*J N*	*ug/L*		*4.25*	*526-73-8*	*10/31/19 09:32*	*11/01/19 00:10*	*1*
2-Isopropoxyphenol	*8.8*	*J N*	*ug/L*		*5.48*	*4812-20-8*	*10/31/19 09:32*	*11/01/19 00:10*	*1*
1,3,5-Triazine-2,4,6(1H,3H,5H) -trione, 1,3,5-trimethyl-	*7.3*	*J N*	*ug/L*		*6.62*	*827-16-7*	*10/31/19 09:32*	*11/01/19 00:10*	*1*
Unknown	*30*	*J*	*ug/L*		*7.05*		*10/31/19 09:32*	*11/01/19 00:10*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*80*		*51 - 108*	*10/31/19 09:32*	*11/01/19 00:10*	*1*
Phenol-d5 (Surr)	*25*		*14 - 39*	*10/31/19 09:32*	*11/01/19 00:10*	*1*
Terphenyl-d14 (Surr)	*47*		*40 - 148*	*10/31/19 09:32*	*11/01/19 00:10*	*1*
2,4,6-Tribromophenol (Surr)	*100*		*26 - 139*	*10/31/19 09:32*	*11/01/19 00:10*	*1*
2-Fluorophenol (Surr)	*37*		*25 - 58*	*10/31/19 09:32*	*11/01/19 00:10*	*1*
2-Fluorobiphenyl (Surr)	*71*		*45 - 107*	*10/31/19 09:32*	*11/01/19 00:10*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**69.7**		3.12	0.36	mg/L			10/31/19 15:20	26
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/30/19 20:16	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/30/19 20:16	1
Sulfate	**1.96**		0.60	0.35	mg/L			10/30/19 20:16	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**31200**		250	66.8	ug/L		10/31/19 21:00	11/01/19 16:29	5
Magnesium	**7700**		250	24.8	ug/L		10/31/19 21:00	11/01/19 16:29	5
Potassium	**2630**		250	73.5	ug/L		10/31/19 21:00	11/01/19 16:29	5
Calcium	**12300**		250	233	ug/L		10/31/19 21:00	11/01/19 16:29	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**35.1**	**J**	50.0	1.7	ug/L		11/01/19 09:25	11/01/19 21:00	1

Client Sample ID: DDA-20-TZ — Lab Sample ID: 460-195187-2

Date Collected: 10/29/19 14:50 Matrix: Water
Date Received: 10/29/19 20:35

Method: 6010D - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	44600		150	34.2	ug/L		11/01/19 09:25	11/01/19 21:00	1
Manganese, Dissolved	424		15.0	0.99	ug/L		11/01/19 09:25	11/01/19 21:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	2.2	B	0.10	0.068	mg/L			11/01/19 10:55	1
Bicarbonate Alkalinity as CaCO3	49.4		5.0	5.0	mg/L			11/01/19 12:38	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			11/01/19 12:38	1
Sulfide	0.58	U	1.0	0.58	mg/L			11/01/19 13:00	1

Client Sample ID: AWC-E1(132) — Lab Sample ID: 460-195187-3

Date Collected: 10/29/19 13:50 Matrix: Water
Date Received: 10/29/19 20:35

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	16200		150	34.2	ug/L		11/01/19 09:34	11/02/19 22:04	1
Manganese	1180		15.0	0.99	ug/L		11/01/19 09:34	11/02/19 22:04	1
Cobalt	10.6	J	50.0	1.7	ug/L		11/01/19 09:34	11/02/19 22:04	1

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	9.7	J	50.0	1.7	ug/L		11/01/19 09:25	11/01/19 20:36	1
Iron, Dissolved	7760		150	34.2	ug/L		11/01/19 09:25	11/01/19 20:36	1
Manganese, Dissolved	1090		15.0	0.99	ug/L		11/01/19 09:25	11/01/19 20:36	1

Client Sample ID: AWC-E1(156) — Lab Sample ID: 460-195187-4

Date Collected: 10/29/19 14:55 Matrix: Water
Date Received: 10/29/19 20:35

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	33400		150	34.2	ug/L		11/01/19 09:34	11/02/19 22:08	1
Manganese	1120		15.0	0.99	ug/L		11/01/19 09:34	11/02/19 22:08	1
Cobalt	10.7	J	50.0	1.7	ug/L		11/01/19 09:34	11/02/19 22:08	1

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	9.1	J	50.0	1.7	ug/L		11/01/19 09:25	11/01/19 20:40	1
Iron, Dissolved	9150		150	34.2	ug/L		11/01/19 09:25	11/01/19 20:40	1
Manganese, Dissolved	1080		15.0	0.99	ug/L		11/01/19 09:25	11/01/19 20:40	1

Client Sample ID: AWC-E2(140) — Lab Sample ID: 460-195187-5

Date Collected: 10/29/19 08:55 Matrix: Water
Date Received: 10/29/19 20:35

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	8420		150	34.2	ug/L		11/01/19 09:24	11/02/19 16:59	1
Manganese	901		15.0	0.99	ug/L		11/01/19 09:24	11/02/19 16:59	1
Cobalt	7.0	J	50.0	1.7	ug/L		11/01/19 09:24	11/02/19 16:59	1

Client Sample ID: AWC-E2(140) Lab Sample ID: 460-195187-5

Date Collected: 10/29/19 08:55 Matrix: Water
Date Received: 10/29/19 20:35

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	6.6	J	50.0	1.7	ug/L		11/01/19 09:25	11/01/19 20:44	1
Iron, Dissolved	8110		150	34.2	ug/L		11/01/19 09:25	11/01/19 20:44	1
Manganese, Dissolved	882		15.0	0.99	ug/L		11/01/19 09:25	11/01/19 20:44	1

Client Sample ID: AWC-E2(165) Lab Sample ID: 460-195187-6

Date Collected: 10/29/19 09:30 Matrix: Water
Date Received: 10/29/19 20:35

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	4710		150	34.2	ug/L		11/01/19 09:34	11/02/19 22:12	1
Manganese	550		15.0	0.99	ug/L		11/01/19 09:34	11/02/19 22:12	1
Cobalt	9.7	J	50.0	1.7	ug/L		11/01/19 09:34	11/02/19 22:12	1

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	7.5	J	50.0	1.7	ug/L		11/01/19 09:25	11/01/19 20:48	1
Iron, Dissolved	3630		150	34.2	ug/L		11/01/19 09:25	11/01/19 20:48	1
Manganese, Dissolved	523		15.0	0.99	ug/L		11/01/19 09:25	11/01/19 20:48	1

Client Sample ID: AWC-K1 Lab Sample ID: 460-195187-7

Date Collected: 10/29/19 12:15 Matrix: Water
Date Received: 10/29/19 20:35

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.94		0.40	0.33	ug/L			11/01/19 12:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*72 - 133*		*11/01/19 12:32*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			11/02/19 09:23	1
Bromomethane	0.55	U	1.0	0.55	ug/L			11/02/19 09:23	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			11/02/19 09:23	1
Chloroethane	0.32	U	1.0	0.32	ug/L			11/02/19 09:23	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			11/02/19 09:23	1
Acetone	4.4	U	5.0	4.4	ug/L			11/02/19 09:23	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			11/02/19 09:23	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			11/02/19 09:23	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			11/02/19 09:23	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			11/02/19 09:23	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			11/02/19 09:23	1
Chloroform	0.33	U	1.0	0.33	ug/L			11/02/19 09:23	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			11/02/19 09:23	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			11/02/19 09:23	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			11/02/19 09:23	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			11/02/19 09:23	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			11/02/19 09:23	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			11/02/19 09:23	1

Client Sample ID: AWC-K1 Lab Sample ID: 460-195187-7

Date Collected: 10/29/19 12:15 **Matrix: Water**
Date Received: 10/29/19 20:35

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			11/02/19 09:23	1
Trichloroethene	**1.7**		1.0	0.31	ug/L			11/02/19 09:23	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			11/02/19 09:23	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			11/02/19 09:23	1
Benzene	0.20	U	1.0	0.20	ug/L			11/02/19 09:23	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			11/02/19 09:23	1
Bromoform	0.54	U	1.0	0.54	ug/L			11/02/19 09:23	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			11/02/19 09:23	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			11/02/19 09:23	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			11/02/19 09:23	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			11/02/19 09:23	1
Toluene	0.38	U	1.0	0.38	ug/L			11/02/19 09:23	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			11/02/19 09:23	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			11/02/19 09:23	1
Styrene	0.42	U	1.0	0.42	ug/L			11/02/19 09:23	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			11/02/19 09:23	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			11/02/19 09:23	1
MTBE	0.47	U	1.0	0.47	ug/L			11/02/19 09:23	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			11/02/19 09:23	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			11/02/19 09:23	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			11/02/19 09:23	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			11/02/19 09:23	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			11/02/19 09:23	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			11/02/19 09:23	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			11/02/19 09:23	1
Indane	0.35	U	1.0	0.35	ug/L			11/02/19 09:23	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			11/02/19 09:23	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			11/02/19 09:23	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*11/02/19 09:23*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*74 - 132*		*11/02/19 09:23*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/02/19 09:23*	*1*
4-Bromofluorobenzene	*94*		*77 - 124*		*11/02/19 09:23*	*1*
Dibromofluoromethane (Surr)	*96*		*72 - 131*		*11/02/19 09:23*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/31/19 09:32	11/01/19 00:08	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/31/19 09:32	11/01/19 00:08	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/31/19 09:32	11/01/19 00:08	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/31/19 09:32	11/01/19 00:08	1
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/31/19 09:32	11/01/19 00:08	1
Bis(2-chloroethyl)ether	0.026	U	0.030	0.026	ug/L		10/31/19 09:32	11/01/19 00:08	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/31/19 09:32	11/01/19 00:31	1

Client Sample ID: AWC-K1 Lab Sample ID: 460-195187-7

Date Collected: 10/29/19 12:15 **Matrix: Water**
Date Received: 10/29/19 20:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/31/19 09:32	11/01/19 00:31	1
2-Methylphenol	0.67	U	10	0.67	ug/L		10/31/19 09:32	11/01/19 00:31	1
4-Methylphenol	0.65	U	10	0.65	ug/L		10/31/19 09:32	11/01/19 00:31	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/31/19 09:32	11/01/19 00:31	1
2,4-Dimethylphenol	0.62	U	10	0.62	ug/L		10/31/19 09:32	11/01/19 00:31	1
2,4-Dichlorophenol	1.1	U	10	1.1	ug/L		10/31/19 09:32	11/01/19 00:31	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/31/19 09:32	11/01/19 00:31	1
2,4,6-Trichlorophenol	0.86	U	10	0.86	ug/L		10/31/19 09:32	11/01/19 00:31	1
2,4,5-Trichlorophenol	0.88	U	10	0.88	ug/L		10/31/19 09:32	11/01/19 00:31	1
2,4-Dinitrophenol	14	U *	20	14	ug/L		10/31/19 09:32	11/01/19 00:31	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		10/31/19 09:32	11/01/19 00:31	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/31/19 09:32	11/01/19 00:31	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/31/19 09:32	11/01/19 00:31	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/31/19 09:32	11/01/19 00:31	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/31/19 09:32	11/01/19 00:31	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/31/19 09:32	11/01/19 00:31	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		10/31/19 09:32	11/01/19 00:31	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/31/19 09:32	11/01/19 00:31	1
Isophorone	0.80	U	10	0.80	ug/L		10/31/19 09:32	11/01/19 00:31	1
Bis(2-chloroethoxy)methane	0.59	U	10	0.59	ug/L		10/31/19 09:32	11/01/19 00:31	1
1,2,4-Trichlorobenzene	0.64	U	2.0	0.64	ug/L		10/31/19 09:32	11/01/19 00:31	1
Naphthalene	1.1	U	10	1.1	ug/L		10/31/19 09:32	11/01/19 00:31	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/31/19 09:32	11/01/19 00:31	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/31/19 09:32	11/01/19 00:31	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/31/19 09:32	11/01/19 00:31	1
Hexachlorocyclopentadiene	3.6	U	10	3.6	ug/L		10/31/19 09:32	11/01/19 00:31	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/31/19 09:32	11/01/19 00:31	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/31/19 09:32	11/01/19 00:31	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/31/19 09:32	11/01/19 00:31	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/31/19 09:32	11/01/19 00:31	1
2,6-Dinitrotoluene	0.83	U	2.0	0.83	ug/L		10/31/19 09:32	11/01/19 00:31	1
3-Nitroaniline	1.9	U	10	1.9	ug/L		10/31/19 09:32	11/01/19 00:31	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/31/19 09:32	11/01/19 00:31	1
Dibenzofuran	1.1	U	10	1.1	ug/L		10/31/19 09:32	11/01/19 00:31	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/31/19 09:32	11/01/19 00:31	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/31/19 09:32	11/01/19 00:31	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/31/19 09:32	11/01/19 00:31	1
Fluorene	0.91	U	10	0.91	ug/L		10/31/19 09:32	11/01/19 00:31	1
4-Nitroaniline	1.2	U	10	1.2	ug/L		10/31/19 09:32	11/01/19 00:31	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/31/19 09:32	11/01/19 00:31	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/31/19 09:32	11/01/19 00:31	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/31/19 09:32	11/01/19 00:31	1
Anthracene	0.63	U	10	0.63	ug/L		10/31/19 09:32	11/01/19 00:31	1
Carbazole	0.68	U	10	0.68	ug/L		10/31/19 09:32	11/01/19 00:31	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/31/19 09:32	11/01/19 00:31	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/31/19 09:32	11/01/19 00:31	1
Pyrene	1.6	U	10	1.6	ug/L		10/31/19 09:32	11/01/19 00:31	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/31/19 09:32	11/01/19 00:31	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/31/19 09:32	11/01/19 00:31	1

Client Sample ID: AWC-K1 Lab Sample ID: 460-195187-7

Date Collected: 10/29/19 12:15 **Matrix: Water**
Date Received: 10/29/19 20:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chrysene	0.91	U	2.0	0.91	ug/L		10/31/19 09:32	11/01/19 00:31	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/31/19 09:32	11/01/19 00:31	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/31/19 09:32	11/01/19 00:31	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/31/19 09:32	11/01/19 00:31	1
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		10/31/19 09:32	11/01/19 00:31	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/31/19 09:32	11/01/19 00:31	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/31/19 09:32	11/01/19 00:31	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/31/19 09:32	11/01/19 00:31	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		10/31/19 09:32	11/01/19 00:31	1
Caprolactam	0.68	U	10	0.68	ug/L		10/31/19 09:32	11/01/19 00:31	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/31/19 09:32	11/01/19 00:31	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/31/19 09:32	11/01/19 00:31	1
N-Methylaniline	1.3	U	5.0	1.3	ug/L		10/31/19 09:32	11/01/19 00:31	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*10/31/19 09:32*	*11/01/19 00:31*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*88*		*51 - 108*	*10/31/19 09:32*	*11/01/19 00:31*	*1*
Phenol-d5 (Surr)	*30*		*14 - 39*	*10/31/19 09:32*	*11/01/19 00:31*	*1*
Terphenyl-d14 (Surr)	*73*		*40 - 148*	*10/31/19 09:32*	*11/01/19 00:31*	*1*
2,4,6-Tribromophenol (Surr)	*108*		*26 - 139*	*10/31/19 09:32*	*11/01/19 00:31*	*1*
2-Fluorophenol (Surr)	*45*		*25 - 58*	*10/31/19 09:32*	*11/01/19 00:31*	*1*
2-Fluorobiphenyl (Surr)	*77*		*45 - 107*	*10/31/19 09:32*	*11/01/19 00:31*	*1*

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	1.7	U	50.0	1.7	ug/L		11/01/19 09:25	11/01/19 20:52	1
Iron, Dissolved	**7830**		150	34.2	ug/L		11/01/19 09:25	11/01/19 20:52	1
Manganese, Dissolved	**120**		15.0	0.99	ug/L		11/01/19 09:25	11/01/19 20:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.1 ~~0.068~~	~~J B~~ U	0.10	0.068	mg/L			11/01/19 10:57	1

Client Sample ID: FDGW_102919 Lab Sample ID: 460-195187-8

Date Collected: 10/29/19 00:00 **Matrix: Water**
Date Received: 10/29/19 20:35

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**39**		0.40	0.33	ug/L			10/31/19 23:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*101*		*72 - 133*		*10/31/19 23:26*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			11/02/19 09:42	1
Bromomethane	0.55	U	1.0	0.55	ug/L			11/02/19 09:42	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			11/02/19 09:42	1

Client Sample ID: FDGW_102919 Lab Sample ID: 460-195187-8

Date Collected: 10/29/19 00:00 **Matrix: Water**
Date Received: 10/29/19 20:35

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroethane	0.32	U	1.0	0.32	ug/L			11/02/19 09:42	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			11/02/19 09:42	1
Acetone	4.4	U	5.0	4.4	ug/L			11/02/19 09:42	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			11/02/19 09:42	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			11/02/19 09:42	1
1,1-Dichloroethane	**0.26**	**J**	1.0	0.26	ug/L			11/02/19 09:42	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			11/02/19 09:42	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			11/02/19 09:42	1
Chloroform	0.33	U	1.0	0.33	ug/L			11/02/19 09:42	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			11/02/19 09:42	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			11/02/19 09:42	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			11/02/19 09:42	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			11/02/19 09:42	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			11/02/19 09:42	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			11/02/19 09:42	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			11/02/19 09:42	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			11/02/19 09:42	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			11/02/19 09:42	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			11/02/19 09:42	1
Benzene	**30**		1.0	0.20	ug/L			11/02/19 09:42	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			11/02/19 09:42	1
Bromoform	0.54	U	1.0	0.54	ug/L			11/02/19 09:42	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			11/02/19 09:42	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			11/02/19 09:42	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			11/02/19 09:42	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			11/02/19 09:42	1
Toluene	**0.52**	**J**	1.0	0.38	ug/L			11/02/19 09:42	1
Chlorobenzene	**0.60**	**J**	1.0	0.38	ug/L			11/02/19 09:42	1
Ethylbenzene	**17**		1.0	0.30	ug/L			11/02/19 09:42	1
Styrene	0.42	U	1.0	0.42	ug/L			11/02/19 09:42	1
Xylenes, Total	**32**		2.0	0.65	ug/L			11/02/19 09:42	1
Diethyl ether	**0.82**	**J**	1.0	0.21	ug/L			11/02/19 09:42	1
MTBE	0.47	U	1.0	0.47	ug/L			11/02/19 09:42	1
Tetrahydrofuran	**14**		2.0	1.0	ug/L			11/02/19 09:42	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			11/02/19 09:42	1
1,2,4-Trimethylbenzene	**22**		1.0	0.37	ug/L			11/02/19 09:42	1
1,3,5-Trimethylbenzene	**2.2**		1.0	0.33	ug/L			11/02/19 09:42	1
Isopropylbenzene	**4.6**		1.0	0.34	ug/L			11/02/19 09:42	1
N-Propylbenzene	**4.7**		1.0	0.32	ug/L			11/02/19 09:42	1
Methylcyclohexane	**3.0**		1.0	0.26	ug/L			11/02/19 09:42	1
Indane	**4.7**		1.0	0.35	ug/L			11/02/19 09:42	1
Dichlorofluoromethane	**3.5**		1.0	0.34	ug/L			11/02/19 09:42	1
1,2,3-Trimethylbenzene	**2.8**		1.0	0.36	ug/L			11/02/19 09:42	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, 1-ethyl-4-methyl-	*6.6*	*J N*	*ug/L*		*10.09*	*622-96-8*		*11/02/19 09:42*	*1*
Benzene, 1-ethyl-2-methyl-	*5.6*	*J N*	*ug/L*		*10.37*	*611-14-3*		*11/02/19 09:42*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*74 - 132*		*11/02/19 09:42*	*1*

Client Sample ID: FDGW_102919 Lab Sample ID: 460-195187-8

Date Collected: 10/29/19 00:00 **Matrix: Water**
Date Received: 10/29/19 20:35

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/02/19 09:42*	*1*
4-Bromofluorobenzene	*93*		*77 - 124*		*11/02/19 09:42*	*1*
Dibromofluoromethane (Surr)	*98*		*72 - 131*		*11/02/19 09:42*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		10/31/19 09:32	11/01/19 00:30	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		10/31/19 09:32	11/01/19 00:30	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		10/31/19 09:32	11/01/19 00:30	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		10/31/19 09:32	11/01/19 00:30	1
Pentachlorophenol	0.15	U *	0.20	0.15	ug/L		10/31/19 09:32	11/01/19 00:30	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		10/31/19 09:32	11/01/19 00:52	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/31/19 09:32	11/01/19 00:52	1
2-Methylphenol	0.67	U	10	0.67	ug/L		10/31/19 09:32	11/01/19 00:52	1
4-Methylphenol	0.65	U	10	0.65	ug/L		10/31/19 09:32	11/01/19 00:52	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/31/19 09:32	11/01/19 00:52	1
2,4-Dimethylphenol	0.62	U	10	0.62	ug/L		10/31/19 09:32	11/01/19 00:52	1
2,4-Dichlorophenol	1.1	U	10	1.1	ug/L		10/31/19 09:32	11/01/19 00:52	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		10/31/19 09:32	11/01/19 00:52	1
2,4,6-Trichlorophenol	0.86	U	10	0.86	ug/L		10/31/19 09:32	11/01/19 00:52	1
2,4,5-Trichlorophenol	0.88	U	10	0.88	ug/L		10/31/19 09:32	11/01/19 00:52	1
2,4-Dinitrophenol	14	U *	20	14	ug/L		10/31/19 09:32	11/01/19 00:52	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		10/31/19 09:32	11/01/19 00:52	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		10/31/19 09:32	11/01/19 00:52	1
Bis(2-chloroethyl)ether	**8.4**		1.0	0.63	ug/L		10/31/19 09:32	11/01/19 00:52	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/31/19 09:32	11/01/19 00:52	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/31/19 09:32	11/01/19 00:52	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/31/19 09:32	11/01/19 00:52	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/31/19 09:32	11/01/19 00:52	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		10/31/19 09:32	11/01/19 00:52	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		10/31/19 09:32	11/01/19 00:52	1
Isophorone	0.80	U	10	0.80	ug/L		10/31/19 09:32	11/01/19 00:52	1
Bis(2-chloroethoxy)methane	0.59	U	10	0.59	ug/L		10/31/19 09:32	11/01/19 00:52	1
1,2,4-Trichlorobenzene	0.64	U	2.0	0.64	ug/L		10/31/19 09:32	11/01/19 00:52	1
Naphthalene	1.1	U	10	1.1	ug/L		10/31/19 09:32	11/01/19 00:52	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		10/31/19 09:32	11/01/19 00:52	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		10/31/19 09:32	11/01/19 00:52	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		10/31/19 09:32	11/01/19 00:52	1
Hexachlorocyclopentadiene	3.6	U	10	3.6	ug/L		10/31/19 09:32	11/01/19 00:52	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/31/19 09:32	11/01/19 00:52	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		10/31/19 09:32	11/01/19 00:52	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/31/19 09:32	11/01/19 00:52	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/31/19 09:32	11/01/19 00:52	1
2,6-Dinitrotoluene	0.83	U	2.0	0.83	ug/L		10/31/19 09:32	11/01/19 00:52	1
3-Nitroaniline	1.9	U	10	1.9	ug/L		10/31/19 09:32	11/01/19 00:52	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/31/19 09:32	11/01/19 00:52	1

Client Sample ID: FDGW_102919 Lab Sample ID: 460-195187-8

Date Collected: 10/29/19 00:00 **Matrix: Water**
Date Received: 10/29/19 20:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenzofuran	1.1	U	10	1.1	ug/L		10/31/19 09:32	11/01/19 00:52	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/31/19 09:32	11/01/19 00:52	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/31/19 09:32	11/01/19 00:52	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/31/19 09:32	11/01/19 00:52	1
Fluorene	0.91	U	10	0.91	ug/L		10/31/19 09:32	11/01/19 00:52	1
4-Nitroaniline	1.2	U	10	1.2	ug/L		10/31/19 09:32	11/01/19 00:52	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/31/19 09:32	11/01/19 00:52	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/31/19 09:32	11/01/19 00:52	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/31/19 09:32	11/01/19 00:52	1
Anthracene	0.63	U	10	0.63	ug/L		10/31/19 09:32	11/01/19 00:52	1
Carbazole	0.68	U	10	0.68	ug/L		10/31/19 09:32	11/01/19 00:52	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		10/31/19 09:32	11/01/19 00:52	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/31/19 09:32	11/01/19 00:52	1
Pyrene	1.6	U	10	1.6	ug/L		10/31/19 09:32	11/01/19 00:52	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/31/19 09:32	11/01/19 00:52	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		10/31/19 09:32	11/01/19 00:52	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/31/19 09:32	11/01/19 00:52	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		10/31/19 09:32	11/01/19 00:52	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		10/31/19 09:32	11/01/19 00:52	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		10/31/19 09:32	11/01/19 00:52	1
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		10/31/19 09:32	11/01/19 00:52	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		10/31/19 09:32	11/01/19 00:52	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		10/31/19 09:32	11/01/19 00:52	1
Diphenyl ether	1.2	U	10	1.2	ug/L		10/31/19 09:32	11/01/19 00:52	1
n,n'-Dimethylaniline	**1.8**		1.0	0.91	ug/L		10/31/19 09:32	11/01/19 00:52	1
Caprolactam	0.68	U	10	0.68	ug/L		10/31/19 09:32	11/01/19 00:52	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/31/19 09:32	11/01/19 00:52	1
Bisphenol-A	9.9	U	10	9.9	ug/L		10/31/19 09:32	11/01/19 00:52	1
N-Methylaniline	1.3	U	5.0	1.3	ug/L		10/31/19 09:32	11/01/19 00:52	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene, 1,3-dimethyl-	*6.9*	*J N*	*ug/L*		*3.39*	*108-38-3*	*10/31/19 09:32*	*11/01/19 00:52*	*1*
Benzene, 1,2,3-trimethyl-	*15*	*J N*	*ug/L*		*4.25*	*526-73-8*	*10/31/19 09:32*	*11/01/19 00:52*	*1*
2-Isopropoxyphenol	*8.1*	*J N*	*ug/L*		*5.48*	*4812-20-8*	*10/31/19 09:32*	*11/01/19 00:52*	*1*
1,3,5-Triazine-2,4,6(1H,3H,5H) -trione, 1,3,5-trimethyl-	*7.5*	*J N*	*ug/L*		*6.62*	*827-16-7*	*10/31/19 09:32*	*11/01/19 00:52*	*1*
Unknown	*29*	*J*	*ug/L*		*7.05*		*10/31/19 09:32*	*11/01/19 00:52*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*84*		*51 - 108*	*10/31/19 09:32*	*11/01/19 00:52*	*1*
Phenol-d5 (Surr)	*26*		*14 - 39*	*10/31/19 09:32*	*11/01/19 00:52*	*1*
Terphenyl-d14 (Surr)	*58*		*40 - 148*	*10/31/19 09:32*	*11/01/19 00:52*	*1*
2,4,6-Tribromophenol (Surr)	*106*		*26 - 139*	*10/31/19 09:32*	*11/01/19 00:52*	*1*
2-Fluorophenol (Surr)	*41*		*25 - 58*	*10/31/19 09:32*	*11/01/19 00:52*	*1*
2-Fluorobiphenyl (Surr)	*75*		*45 - 107*	*10/31/19 09:32*	*11/01/19 00:52*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**68.3**		3.24	0.38	mg/L			10/30/19 23:36	27
Nitrate as N	0.056	U	0.10	0.056	mg/L			10/30/19 16:03	1

Client Sample ID: FDGW_102919 Lab Sample ID: 460-195187-8

Date Collected: 10/29/19 00:00 **Matrix: Water**
Date Received: 10/29/19 20:35

Method: 300.0 - Anions, Ion Chromatography (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	0.076	U	0.12	0.076	mg/L			10/30/19 16:03	1
Sulfate	**1.60**		0.60	0.35	mg/L			10/30/19 16:03	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**33100**		250	66.8	ug/L		10/31/19 21:00	11/01/19 16:31	5
Magnesium	**8280**		250	24.8	ug/L		10/31/19 21:00	11/01/19 16:31	5
Potassium	**2710**		250	73.5	ug/L		10/31/19 21:00	11/01/19 16:31	5
Calcium	**12400**		250	233	ug/L		10/31/19 21:00	11/01/19 16:31	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**33.5**	J	50.0	1.7	ug/L		11/01/19 09:25	11/01/19 20:56	1
Iron, Dissolved	**44400**		150	34.2	ug/L		11/01/19 09:25	11/01/19 20:56	1
Manganese, Dissolved	**426**		15.0	0.99	ug/L		11/01/19 09:25	11/01/19 20:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**2.2**	B	0.10	0.068	mg/L			11/01/19 10:58	1
Bicarbonate Alkalinity as CaCO3	**52.2**		5.0	5.0	mg/L			11/04/19 12:55	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			11/04/19 12:55	1
Sulfide	0.58	U	1.0	0.58	mg/L			11/01/19 17:45	1

Client Sample ID: TBGW_102919 Lab Sample ID: 460-195187-9

Date Collected: 10/29/19 14:50 **Matrix: Water**
Date Received: 10/29/19 20:35

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.33	U	0.40	0.33	ug/L			10/31/19 17:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*94*		*72 - 133*		*10/31/19 17:05*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			11/02/19 08:28	1
Bromomethane	0.55	U	1.0	0.55	ug/L			11/02/19 08:28	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			11/02/19 08:28	1
Chloroethane	0.32	U	1.0	0.32	ug/L			11/02/19 08:28	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			11/02/19 08:28	1
Acetone	**9.2**		5.0	4.4	ug/L			11/02/19 08:28	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			11/02/19 08:28	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			11/02/19 08:28	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			11/02/19 08:28	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			11/02/19 08:28	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			11/02/19 08:28	1
Chloroform	0.33	U	1.0	0.33	ug/L			11/02/19 08:28	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			11/02/19 08:28	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			11/02/19 08:28	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			11/02/19 08:28	1

Client Sample ID: TBGW_102919 Lab Sample ID: 460-195187-9

Date Collected: 10/29/19 14:50 **Matrix: Water**
Date Received: 10/29/19 20:35

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			11/02/19 08:28	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			11/02/19 08:28	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			11/02/19 08:28	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			11/02/19 08:28	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			11/02/19 08:28	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			11/02/19 08:28	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			11/02/19 08:28	1
Benzene	0.20	U	1.0	0.20	ug/L			11/02/19 08:28	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			11/02/19 08:28	1
Bromoform	0.54	U	1.0	0.54	ug/L			11/02/19 08:28	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			11/02/19 08:28	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			11/02/19 08:28	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			11/02/19 08:28	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			11/02/19 08:28	1
Toluene	0.38	U	1.0	0.38	ug/L			11/02/19 08:28	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			11/02/19 08:28	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			11/02/19 08:28	1
Styrene	0.42	U	1.0	0.42	ug/L			11/02/19 08:28	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			11/02/19 08:28	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			11/02/19 08:28	1
MTBE	0.47	U	1.0	0.47	ug/L			11/02/19 08:28	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			11/02/19 08:28	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			11/02/19 08:28	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			11/02/19 08:28	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			11/02/19 08:28	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			11/02/19 08:28	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			11/02/19 08:28	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			11/02/19 08:28	1
Indane	0.35	U	1.0	0.35	ug/L			11/02/19 08:28	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			11/02/19 08:28	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			11/02/19 08:28	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*11/02/19 08:28*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*74 - 132*		*11/02/19 08:28*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/02/19 08:28*	*1*
4-Bromofluorobenzene	*96*		*77 - 124*		*11/02/19 08:28*	*1*
Dibromofluoromethane (Surr)	*97*		*72 - 131*		*11/02/19 08:28*	*1*

Client Sample ID: DGC-7S Lab Sample ID: 460-195259-1

Date Collected: 10/30/19 10:00 **Matrix: Water**
Date Received: 10/30/19 20:50

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**29.1**		1.32	0.15	mg/L			11/01/19 10:58	11
Nitrate as N	0.056	U	0.10	0.056	mg/L			11/01/19 00:12	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			11/01/19 00:12	1

Client Sample ID: DGC-7S — Lab Sample ID: 460-195259-1

Date Collected: 10/30/19 10:00 **Matrix: Water**
Date Received: 10/30/19 20:50

Method: 300.0 - Anions, Ion Chromatography (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**25.8**		6.60	3.81	mg/L			11/01/19 10:58	11

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**15600**		250	66.8	ug/L		10/31/19 21:00	11/01/19 16:39	5
Magnesium	**10600**		250	24.8	ug/L		10/31/19 21:00	11/01/19 16:39	5
Potassium	**2600**		250	73.5	ug/L		10/31/19 21:00	11/01/19 16:39	5
Calcium	**19500**		250	233	ug/L		10/31/19 21:00	11/01/19 16:39	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.104 **~~0.39~~**	J+	0.10	0.068	mg/L			11/01/19 12:16	1
Bicarbonate Alkalinity as CaCO3	**116**		5.0	5.0	mg/L			11/01/19 13:52	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			11/01/19 13:52	1
Sulfide	0.58	U	1.0	0.58	mg/L			11/01/19 17:45	1

Client Sample ID: DGC-7C — Lab Sample ID: 460-195259-2

Date Collected: 10/30/19 10:30 **Matrix: Water**
Date Received: 10/30/19 20:50

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.33	U	0.40	0.33	ug/L			11/03/19 14:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*91*		*72 - 133*		*11/03/19 14:06*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			11/04/19 16:45	1
Bromomethane	0.55	U	1.0	0.55	ug/L			11/04/19 16:45	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			11/04/19 16:45	1
Chloroethane	0.32	U	1.0	0.32	ug/L			11/04/19 16:45	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			11/04/19 16:45	1
Acetone	**17**	U	~~5.0~~ 17	4.4	ug/L			11/04/19 16:45	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			11/04/19 16:45	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			11/04/19 16:45	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			11/04/19 16:45	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			11/04/19 16:45	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			11/04/19 16:45	1
Chloroform	0.33	U	1.0	0.33	ug/L			11/04/19 16:45	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			11/04/19 16:45	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			11/04/19 16:45	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			11/04/19 16:45	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			11/04/19 16:45	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			11/04/19 16:45	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			11/04/19 16:45	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			11/04/19 16:45	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			11/04/19 16:45	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			11/04/19 16:45	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			11/04/19 16:45	1

Client Sample ID: DGC-7C Lab Sample ID: 460-195259-2

Date Collected: 10/30/19 10:30 **Matrix: Water**
Date Received: 10/30/19 20:50

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.20	U	1.0	0.20	ug/L			11/04/19 16:45	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			11/04/19 16:45	1
Bromoform	0.54	U	1.0	0.54	ug/L			11/04/19 16:45	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			11/04/19 16:45	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			11/04/19 16:45	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			11/04/19 16:45	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			11/04/19 16:45	1
Toluene	**1.5**		1.0	0.38	ug/L			11/04/19 16:45	1
Chlorobenzene	**0.53**	**J**	1.0	0.38	ug/L			11/04/19 16:45	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			11/04/19 16:45	1
Styrene	0.42	U	1.0	0.42	ug/L			11/04/19 16:45	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			11/04/19 16:45	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			11/04/19 16:45	1
MTBE	**1.7**		1.0	0.47	ug/L			11/04/19 16:45	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			11/04/19 16:45	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			11/04/19 16:45	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			11/04/19 16:45	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			11/04/19 16:45	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			11/04/19 16:45	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			11/04/19 16:45	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			11/04/19 16:45	1
Indane	0.35	U	1.0	0.35	ug/L			11/04/19 16:45	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			11/04/19 16:45	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			11/04/19 16:45	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*11/04/19 16:45*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*74 - 132*		*11/04/19 16:45*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/04/19 16:45*	*1*
4-Bromofluorobenzene	*96*		*77 - 124*		*11/04/19 16:45*	*1*
Dibromofluoromethane (Surr)	*98*		*72 - 131*		*11/04/19 16:45*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		11/01/19 09:10	11/01/19 23:30	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		11/01/19 09:10	11/01/19 23:30	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		11/01/19 09:10	11/01/19 23:30	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		11/01/19 09:10	11/01/19 23:30	1
Pentachlorophenol	0.15	U	0.20	0.15	ug/L		11/01/19 09:10	11/01/19 23:30	1
Bis(2-chloroethyl)ether	0.026	U	0.030	0.026	ug/L		11/01/19 09:10	11/01/19 23:30	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		11/01/19 09:10	11/02/19 00:59	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		11/01/19 09:10	11/02/19 00:59	1
2-Methylphenol	0.67	U	10	0.67	ug/L		11/01/19 09:10	11/02/19 00:59	1
4-Methylphenol	0.65	U	10	0.65	ug/L		11/01/19 09:10	11/02/19 00:59	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		11/01/19 09:10	11/02/19 00:59	1

Client Sample ID: DGC-7C Lab Sample ID: 460-195259-2

Date Collected: 10/30/19 10:30 **Matrix: Water**
Date Received: 10/30/19 20:50

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dimethylphenol	0.62	U	10	0.62	ug/L		11/01/19 09:10	11/02/19 00:59	1
2,4-Dichlorophenol	1.1	U	10	1.1	ug/L		11/01/19 09:10	11/02/19 00:59	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		11/01/19 09:10	11/02/19 00:59	1
2,4,6-Trichlorophenol	0.86	U	10	0.86	ug/L		11/01/19 09:10	11/02/19 00:59	1
2,4,5-Trichlorophenol	0.88	U	10	0.88	ug/L		11/01/19 09:10	11/02/19 00:59	1
2,4-Dinitrophenol	14	U	20	14	ug/L		11/01/19 09:10	11/02/19 00:59	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		11/01/19 09:10	11/02/19 00:59	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		11/01/19 09:10	11/02/19 00:59	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		11/01/19 09:10	11/02/19 00:59	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		11/01/19 09:10	11/02/19 00:59	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		11/01/19 09:10	11/02/19 00:59	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		11/01/19 09:10	11/02/19 00:59	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		11/01/19 09:10	11/02/19 00:59	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		11/01/19 09:10	11/02/19 00:59	1
Isophorone	0.80	U	10	0.80	ug/L		11/01/19 09:10	11/02/19 00:59	1
Bis(2-chloroethoxy)methane	0.59	U	10	0.59	ug/L		11/01/19 09:10	11/02/19 00:59	1
1,2,4-Trichlorobenzene	0.64	U	2.0	0.64	ug/L		11/01/19 09:10	11/02/19 00:59	1
Naphthalene	1.1	U	10	1.1	ug/L		11/01/19 09:10	11/02/19 00:59	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		11/01/19 09:10	11/02/19 00:59	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		11/01/19 09:10	11/02/19 00:59	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		11/01/19 09:10	11/02/19 00:59	1
Hexachlorocyclopentadiene	3.6	U	10	3.6	ug/L		11/01/19 09:10	11/02/19 00:59	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		11/01/19 09:10	11/02/19 00:59	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		11/01/19 09:10	11/02/19 00:59	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		11/01/19 09:10	11/02/19 00:59	1
Acenaphthylene	0.82	U	10	0.82	ug/L		11/01/19 09:10	11/02/19 00:59	1
2,6-Dinitrotoluene	0.83	U	2.0	0.83	ug/L		11/01/19 09:10	11/02/19 00:59	1
3-Nitroaniline	1.9	U	10	1.9	ug/L		11/01/19 09:10	11/02/19 00:59	1
Acenaphthene	1.1	U	10	1.1	ug/L		11/01/19 09:10	11/02/19 00:59	1
Dibenzofuran	1.1	U	10	1.1	ug/L		11/01/19 09:10	11/02/19 00:59	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		11/01/19 09:10	11/02/19 00:59	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		11/01/19 09:10	11/02/19 00:59	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		11/01/19 09:10	11/02/19 00:59	1
Fluorene	0.91	U	10	0.91	ug/L		11/01/19 09:10	11/02/19 00:59	1
4-Nitroaniline	1.2	U	10	1.2	ug/L		11/01/19 09:10	11/02/19 00:59	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		11/01/19 09:10	11/02/19 00:59	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		11/01/19 09:10	11/02/19 00:59	1
Phenanthrene	0.58	U	10	0.58	ug/L		11/01/19 09:10	11/02/19 00:59	1
Anthracene	0.63	U	10	0.63	ug/L		11/01/19 09:10	11/02/19 00:59	1
Carbazole	0.68	U	10	0.68	ug/L		11/01/19 09:10	11/02/19 00:59	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		11/01/19 09:10	11/02/19 00:59	1
Fluoranthene	0.84	U	10	0.84	ug/L		11/01/19 09:10	11/02/19 00:59	1
Pyrene	1.6	U	10	1.6	ug/L		11/01/19 09:10	11/02/19 00:59	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		11/01/19 09:10	11/02/19 00:59	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		11/01/19 09:10	11/02/19 00:59	1
Chrysene	0.91	U	2.0	0.91	ug/L		11/01/19 09:10	11/02/19 00:59	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		11/01/19 09:10	11/02/19 00:59	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		11/01/19 09:10	11/02/19 00:59	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		11/01/19 09:10	11/02/19 00:59	1

Client Sample ID: DGC-7C — Lab Sample ID: 460-195259-2

Date Collected: 10/30/19 10:30 **Matrix: Water**
Date Received: 10/30/19 20:50

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		11/01/19 09:10	11/02/19 00:59	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		11/01/19 09:10	11/02/19 00:59	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		11/01/19 09:10	11/02/19 00:59	1
Diphenyl ether	1.2	U	10	1.2	ug/L		11/01/19 09:10	11/02/19 00:59	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		11/01/19 09:10	11/02/19 00:59	1
Caprolactam	0.68	U	10	0.68	ug/L		11/01/19 09:10	11/02/19 00:59	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		11/01/19 09:10	11/02/19 00:59	1
Bisphenol-A	9.9	U	10	9.9	ug/L		11/01/19 09:10	11/02/19 00:59	1
N-Methylaniline	1.3	U	5.0	1.3	ug/L		11/01/19 09:10	11/02/19 00:59	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*11/01/19 09:10*	*11/02/19 00:59*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*76*		*51 - 108*	*11/01/19 09:10*	*11/02/19 00:59*	*1*
Phenol-d5 (Surr)	*27*		*14 - 39*	*11/01/19 09:10*	*11/02/19 00:59*	*1*
Terphenyl-d14 (Surr)	*75*		*40 - 148*	*11/01/19 09:10*	*11/02/19 00:59*	*1*
2,4,6-Tribromophenol (Surr)	*84*		*26 - 139*	*11/01/19 09:10*	*11/02/19 00:59*	*1*
2-Fluorophenol (Surr)	*40*		*25 - 58*	*11/01/19 09:10*	*11/02/19 00:59*	*1*
2-Fluorobiphenyl (Surr)	*69*		*45 - 107*	*11/01/19 09:10*	*11/02/19 00:59*	*1*

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**22.1**	**J**	50.0	1.7	ug/L		11/01/19 09:25	11/01/19 21:04	1
Iron, Dissolved	**91800**		150	34.2	ug/L		11/01/19 09:25	11/01/19 21:04	1
Manganese, Dissolved	**1020**		15.0	0.99	ug/L		11/01/19 09:25	11/01/19 21:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**2.2**		0.10	0.068	mg/L			11/01/19 12:17	1

Client Sample ID: DDA-10-US — Lab Sample ID: 460-195259-3

Date Collected: 10/30/19 11:35 **Matrix: Water**
Date Received: 10/30/19 20:50

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			11/04/19 17:04	1
Bromomethane	0.55	U	1.0	0.55	ug/L			11/04/19 17:04	1
Vinyl chloride	**0.61**	**J**	1.0	0.17	ug/L			11/04/19 17:04	1
Chloroethane	0.32	U	1.0	0.32	ug/L			11/04/19 17:04	1
Methylene Chloride	**0.41**	**J**	1.0	0.32	ug/L			11/04/19 17:04	1
Acetone	**5.8**	U	~~5.0~~ 5.8	4.4	ug/L			11/04/19 17:04	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			11/04/19 17:04	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			11/04/19 17:04	1
1,1-Dichloroethane	**0.86**	**J**	1.0	0.26	ug/L			11/04/19 17:04	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			11/04/19 17:04	1
cis-1,2-Dichloroethene	**0.88**	**J**	1.0	0.22	ug/L			11/04/19 17:04	1
Chloroform	0.33	U	1.0	0.33	ug/L			11/04/19 17:04	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			11/04/19 17:04	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			11/04/19 17:04	1

Client Sample ID: DDA-10-US Lab Sample ID: 460-195259-3

Date Collected: 10/30/19 11:35 **Matrix: Water**
Date Received: 10/30/19 20:50

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			11/04/19 17:04	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			11/04/19 17:04	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			11/04/19 17:04	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			11/04/19 17:04	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			11/04/19 17:04	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			11/04/19 17:04	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			11/04/19 17:04	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			11/04/19 17:04	1
Benzene	**150**		1.0	0.20	ug/L			11/04/19 17:04	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			11/04/19 17:04	1
Bromoform	0.54	U	1.0	0.54	ug/L			11/04/19 17:04	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			11/04/19 17:04	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			11/04/19 17:04	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			11/04/19 17:04	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			11/04/19 17:04	1
Toluene	**0.52**	**J**	1.0	0.38	ug/L			11/04/19 17:04	1
Chlorobenzene	**2.5**		1.0	0.38	ug/L			11/04/19 17:04	1
Ethylbenzene	**19**		1.0	0.30	ug/L			11/04/19 17:04	1
Styrene	0.42	U	1.0	0.42	ug/L			11/04/19 17:04	1
Xylenes, Total	**11**		2.0	0.65	ug/L			11/04/19 17:04	1
Diethyl ether	**3.7**		1.0	0.21	ug/L			11/04/19 17:04	1
MTBE	0.47	U	1.0	0.47	ug/L			11/04/19 17:04	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			11/04/19 17:04	1
Cyclohexane	**21**		1.0	0.32	ug/L			11/04/19 17:04	1
1,4-Dioxane	**160**		50	28	ug/L			11/04/19 17:04	1
1,2,4-Trimethylbenzene	**11**		1.0	0.37	ug/L			11/04/19 17:04	1
1,3,5-Trimethylbenzene	**2.0**		1.0	0.33	ug/L			11/04/19 17:04	1
Isopropylbenzene	**8.1**		1.0	0.34	ug/L			11/04/19 17:04	1
N-Propylbenzene	**7.7**		1.0	0.32	ug/L			11/04/19 17:04	1
Methylcyclohexane	**41**		1.0	0.26	ug/L			11/04/19 17:04	1
Indane	**5.9**		1.0	0.35	ug/L			11/04/19 17:04	1
Dichlorofluoromethane	**17**		1.0	0.34	ug/L			11/04/19 17:04	1
1,2,3-Trimethylbenzene	**2.2**		1.0	0.36	ug/L			11/04/19 17:04	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Propene	*15*	*J N*	*ug/L*		*1.37*	*115-07-1*		*11/04/19 17:04*	*1*
Cyclopentane, methyl-	*9.1*	*J N*	*ug/L*		*3.67*	*96-37-7*		*11/04/19 17:04*	*1*
Hexane, 2-methyl-	*7.7*	*J N*	*ug/L*		*4.18*	*591-76-4*		*11/04/19 17:04*	*1*
Hexane, 3-methyl-	*14*	*J N*	*ug/L*		*4.34*	*589-34-4*		*11/04/19 17:04*	*1*
Cyclopentane, 1,1-dimethyl-	*7.9*	*J N*	*ug/L*		*4.41*	*1638-26-2*		*11/04/19 17:04*	*1*
Isopropylcyclobutane	*13*	*J N*	*ug/L*		*4.67*	*872-56-0*		*11/04/19 17:04*	*1*
Heptane	*11*	*J N*	*ug/L*		*4.74*	*142-82-5*		*11/04/19 17:04*	*1*
Cyclopentane, ethyl-	*7.7*	*J N*	*ug/L*		*5.51*	*1640-89-7*		*11/04/19 17:04*	*1*
Unknown	*5.5*	*J*	*ug/L*		*13.16*			*11/04/19 17:04*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*74 - 132*		*11/04/19 17:04*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*11/04/19 17:04*	*1*
4-Bromofluorobenzene	*96*		*77 - 124*		*11/04/19 17:04*	*1*
Dibromofluoromethane (Surr)	*100*		*72 - 131*		*11/04/19 17:04*	*1*

Client Sample ID: DDA-10-US Lab Sample ID: 460-195259-3

Date Collected: 10/30/19 11:35 **Matrix: Water**
Date Received: 10/30/19 20:50

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	**0.28**	**J**	0.50	0.16	ug/L		11/01/19 09:10	11/05/19 02:44	10
Benzo[a]pyrene	0.22	U	0.50	0.22	ug/L		11/01/19 09:10	11/05/19 02:44	10
Benzo[b]fluoranthene	0.24	U	0.50	0.24	ug/L		11/01/19 09:10	11/05/19 02:44	10
Hexachlorobenzene	0.13	U	0.20	0.13	ug/L		11/01/19 09:10	11/05/19 02:44	10
Pentachlorophenol	1.5	U	2.0	1.5	ug/L		11/01/19 09:10	11/05/19 02:44	10
Bis(2-chloroethyl)ether	**36**		0.30	0.26	ug/L		11/01/19 09:10	11/05/19 02:44	10

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		11/01/19 09:10	11/02/19 01:20	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		11/01/19 09:10	11/02/19 01:20	1
2-Methylphenol	0.67	U	10	0.67	ug/L		11/01/19 09:10	11/02/19 01:20	1
4-Methylphenol	0.65	U	10	0.65	ug/L		11/01/19 09:10	11/02/19 01:20	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		11/01/19 09:10	11/02/19 01:20	1
2,4-Dimethylphenol	0.62	U	10	0.62	ug/L		11/01/19 09:10	11/02/19 01:20	1
2,4-Dichlorophenol	1.1	U	10	1.1	ug/L		11/01/19 09:10	11/02/19 01:20	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		11/01/19 09:10	11/02/19 01:20	1
2,4,6-Trichlorophenol	0.86	U	10	0.86	ug/L		11/01/19 09:10	11/02/19 01:20	1
2,4,5-Trichlorophenol	0.88	U	10	0.88	ug/L		11/01/19 09:10	11/02/19 01:20	1
2,4-Dinitrophenol	14	U	20	14	ug/L		11/01/19 09:10	11/02/19 01:20	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		11/01/19 09:10	11/02/19 01:20	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		11/01/19 09:10	11/02/19 01:20	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		11/01/19 09:10	11/02/19 01:20	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		11/01/19 09:10	11/02/19 01:20	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		11/01/19 09:10	11/02/19 01:20	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		11/01/19 09:10	11/02/19 01:20	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		11/01/19 09:10	11/02/19 01:20	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		11/01/19 09:10	11/02/19 01:20	1
Isophorone	0.80	U	10	0.80	ug/L		11/01/19 09:10	11/02/19 01:20	1
Bis(2-chloroethoxy)methane	0.59	U	10	0.59	ug/L		11/01/19 09:10	11/02/19 01:20	1
1,2,4-Trichlorobenzene	0.64	U	2.0	0.64	ug/L		11/01/19 09:10	11/02/19 01:20	1
Naphthalene	1.1	U	10	1.1	ug/L		11/01/19 09:10	11/02/19 01:20	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		11/01/19 09:10	11/02/19 01:20	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		11/01/19 09:10	11/02/19 01:20	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		11/01/19 09:10	11/02/19 01:20	1
Hexachlorocyclopentadiene	3.6	U	10	3.6	ug/L		11/01/19 09:10	11/02/19 01:20	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		11/01/19 09:10	11/02/19 01:20	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		11/01/19 09:10	11/02/19 01:20	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		11/01/19 09:10	11/02/19 01:20	1
Acenaphthylene	0.82	U	10	0.82	ug/L		11/01/19 09:10	11/02/19 01:20	1
2,6-Dinitrotoluene	0.83	U	2.0	0.83	ug/L		11/01/19 09:10	11/02/19 01:20	1
3-Nitroaniline	1.9	U	10	1.9	ug/L		11/01/19 09:10	11/02/19 01:20	1
Acenaphthene	1.1	U	10	1.1	ug/L		11/01/19 09:10	11/02/19 01:20	1
Dibenzofuran	1.1	U	10	1.1	ug/L		11/01/19 09:10	11/02/19 01:20	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		11/01/19 09:10	11/02/19 01:20	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		11/01/19 09:10	11/02/19 01:20	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		11/01/19 09:10	11/02/19 01:20	1
Fluorene	0.91	U	10	0.91	ug/L		11/01/19 09:10	11/02/19 01:20	1
4-Nitroaniline	1.2	U	10	1.2	ug/L		11/01/19 09:10	11/02/19 01:20	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		11/01/19 09:10	11/02/19 01:20	1

Client Sample ID: DDA-10-US Lab Sample ID: 460-195259-3

Date Collected: 10/30/19 11:35 **Matrix: Water**
Date Received: 10/30/19 20:50

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		11/01/19 09:10	11/02/19 01:20	1
Phenanthrene	0.58	U	10	0.58	ug/L		11/01/19 09:10	11/02/19 01:20	1
Anthracene	0.63	U	10	0.63	ug/L		11/01/19 09:10	11/02/19 01:20	1
Carbazole	0.68	U	10	0.68	ug/L		11/01/19 09:10	11/02/19 01:20	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		11/01/19 09:10	11/02/19 01:20	1
Fluoranthene	0.84	U	10	0.84	ug/L		11/01/19 09:10	11/02/19 01:20	1
Pyrene	1.6	U	10	1.6	ug/L		11/01/19 09:10	11/02/19 01:20	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		11/01/19 09:10	11/02/19 01:20	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		11/01/19 09:10	11/02/19 01:20	1
Chrysene	0.91	U	2.0	0.91	ug/L		11/01/19 09:10	11/02/19 01:20	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		11/01/19 09:10	11/02/19 01:20	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		11/01/19 09:10	11/02/19 01:20	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		11/01/19 09:10	11/02/19 01:20	1
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		11/01/19 09:10	11/02/19 01:20	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		11/01/19 09:10	11/02/19 01:20	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		11/01/19 09:10	11/02/19 01:20	1
Diphenyl ether	1.2	U	10	1.2	ug/L		11/01/19 09:10	11/02/19 01:20	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		11/01/19 09:10	11/02/19 01:20	1
Caprolactam	0.68	U	10	0.68	ug/L		11/01/19 09:10	11/02/19 01:20	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		11/01/19 09:10	11/02/19 01:20	1
Bisphenol-A	9.9	U	10	9.9	ug/L		11/01/19 09:10	11/02/19 01:20	1
N-Methylaniline	1.3	U	5.0	1.3	ug/L		11/01/19 09:10	11/02/19 01:20	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*8.7*	*J*	*ug/L*		*2.47*		*11/01/19 09:10*	*11/02/19 01:20*	*1*
Carbamic acid, ethyl-, methyl ester	*7.2*	*J N*	*ug/L*		*2.69*	*6135-31-5*	*11/01/19 09:10*	*11/02/19 01:20*	*1*
Unknown	*35*	*J*	*ug/L*		*3.87*		*11/01/19 09:10*	*11/02/19 01:20*	*1*
2-Isopropoxyphenol	*29*	*J N*	*ug/L*		*5.20*	*4812-20-8*	*11/01/19 09:10*	*11/02/19 01:20*	*1*
1-Propanol, 3-phenoxy-	*14*	*J N*	*ug/L*		*5.65*	*6180-61-6*	*11/01/19 09:10*	*11/02/19 01:20*	*1*
Unknown	*9.1*	*J*	*ug/L*		*5.94*		*11/01/19 09:10*	*11/02/19 01:20*	*1*
Unknown	*8.5*	*J*	*ug/L*		*6.09*		*11/01/19 09:10*	*11/02/19 01:20*	*1*
Unknown	*7.3*	*J*	*ug/L*		*6.18*		*11/01/19 09:10*	*11/02/19 01:20*	*1*
Unknown	*41*	*J*	*ug/L*		*6.78*		*11/01/19 09:10*	*11/02/19 01:20*	*1*
Unknown	*13*	*J*	*ug/L*		*7.08*		*11/01/19 09:10*	*11/02/19 01:20*	*1*
Unknown	*13*	*J*	*ug/L*		*9.45*		*11/01/19 09:10*	*11/02/19 01:20*	*1*
Unknown	*11*	*J*	*ug/L*		*11.11*		*11/01/19 09:10*	*11/02/19 01:20*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*80*		*51 - 108*	*11/01/19 09:10*	*11/02/19 01:20*	*1*
Phenol-d5 (Surr)	*24*		*14 - 39*	*11/01/19 09:10*	*11/02/19 01:20*	*1*
Terphenyl-d14 (Surr)	*81*		*40 - 148*	*11/01/19 09:10*	*11/02/19 01:20*	*1*
2,4,6-Tribromophenol (Surr)	*85*		*26 - 139*	*11/01/19 09:10*	*11/02/19 01:20*	*1*
2-Fluorophenol (Surr)	*38*		*25 - 58*	*11/01/19 09:10*	*11/02/19 01:20*	*1*
2-Fluorobiphenyl (Surr)	*70*		*45 - 107*	*11/01/19 09:10*	*11/02/19 01:20*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**86.4**		3.84	0.45	mg/L			11/01/19 19:58	32
Nitrate as N	0.056	U	0.10	0.056	mg/L			11/01/19 04:11	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			11/01/19 04:11	1

Client Sample ID: DDA-10-US — Lab Sample ID: 460-195259-3

Date Collected: 10/30/19 11:35 **Matrix: Water**
Date Received: 10/30/19 20:50

Method: 300.0 - Anions, Ion Chromatography (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**7.48**		0.60	0.35	mg/L			11/01/19 04:11	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**33200**		250	66.8	ug/L		10/31/19 21:00	11/01/19 16:46	5
Magnesium	**7610**		250	24.8	ug/L		10/31/19 21:00	11/01/19 16:46	5
Potassium	**5070**		250	73.5	ug/L		10/31/19 21:00	11/01/19 16:46	5
Calcium	**33100**		250	233	ug/L		10/31/19 21:00	11/01/19 16:46	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**60.0**		50.0	1.7	ug/L		11/01/19 09:25	11/01/19 21:07	1
Iron, Dissolved	**53100**		150	34.2	ug/L		11/01/19 09:25	11/01/19 21:07	1
Manganese, Dissolved	**4500**		15.0	0.99	ug/L		11/01/19 09:25	11/01/19 21:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.104 **0.69**	J+	0.10	0.068	mg/L			11/01/19 12:34	1
Bicarbonate Alkalinity as CaCO3	**97.0**		5.0	5.0	mg/L			11/01/19 13:59	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			11/01/19 13:59	1
Sulfide	0.58	U	1.0	0.58	mg/L			11/01/19 17:45	1

Client Sample ID: RBGW_103019 — Lab Sample ID: 460-195259-4

Date Collected: 10/30/19 14:15 **Matrix: Water**
Date Received: 10/30/19 20:50

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.33	U	0.40	0.33	ug/L			11/02/19 12:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*72 - 133*		*11/02/19 12:48*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			11/04/19 15:32	1
Bromomethane	0.55	U	1.0	0.55	ug/L			11/04/19 15:32	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			11/04/19 15:32	1
Chloroethane	0.32	U	1.0	0.32	ug/L			11/04/19 15:32	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			11/04/19 15:32	1
Acetone	4.4	U	5.0	4.4	ug/L			11/04/19 15:32	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			11/04/19 15:32	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			11/04/19 15:32	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			11/04/19 15:32	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			11/04/19 15:32	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			11/04/19 15:32	1
Chloroform	0.33	U	1.0	0.33	ug/L			11/04/19 15:32	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			11/04/19 15:32	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			11/04/19 15:32	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			11/04/19 15:32	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			11/04/19 15:32	1

Client Sample ID: RBGW_103019 Lab Sample ID: 460-195259-4

Date Collected: 10/30/19 14:15 **Matrix: Water**
Date Received: 10/30/19 20:50

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			11/04/19 15:32	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			11/04/19 15:32	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			11/04/19 15:32	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			11/04/19 15:32	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			11/04/19 15:32	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			11/04/19 15:32	1
Benzene	0.20	U	1.0	0.20	ug/L			11/04/19 15:32	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			11/04/19 15:32	1
Bromoform	0.54	U	1.0	0.54	ug/L			11/04/19 15:32	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			11/04/19 15:32	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			11/04/19 15:32	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			11/04/19 15:32	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			11/04/19 15:32	1
Toluene	0.38	U	1.0	0.38	ug/L			11/04/19 15:32	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			11/04/19 15:32	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			11/04/19 15:32	1
Styrene	0.42	U	1.0	0.42	ug/L			11/04/19 15:32	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			11/04/19 15:32	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			11/04/19 15:32	1
MTBE	0.47	U	1.0	0.47	ug/L			11/04/19 15:32	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			11/04/19 15:32	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			11/04/19 15:32	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			11/04/19 15:32	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			11/04/19 15:32	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			11/04/19 15:32	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			11/04/19 15:32	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			11/04/19 15:32	1
Indane	0.35	U	1.0	0.35	ug/L			11/04/19 15:32	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			11/04/19 15:32	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			11/04/19 15:32	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*11/04/19 15:32*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*74 - 132*		*11/04/19 15:32*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*11/04/19 15:32*	*1*
4-Bromofluorobenzene	*96*		*77 - 124*		*11/04/19 15:32*	*1*
Dibromofluoromethane (Surr)	*97*		*72 - 131*		*11/04/19 15:32*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		11/01/19 09:10	11/02/19 00:11	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		11/01/19 09:10	11/02/19 00:11	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		11/01/19 09:10	11/02/19 00:11	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		11/01/19 09:10	11/02/19 00:11	1
Pentachlorophenol	0.15	U	0.20	0.15	ug/L		11/01/19 09:10	11/02/19 00:11	1
Bis(2-chloroethyl)ether	0.026	U	0.030	0.026	ug/L		11/01/19 09:10	11/02/19 00:11	1

Client Sample ID: RBGW_103019 Lab Sample ID: 460-195259-4

Date Collected: 10/30/19 14:15 **Matrix: Water**
Date Received: 10/30/19 20:50

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U	10	0.29	ug/L		11/01/19 09:10	11/02/19 01:41	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		11/01/19 09:10	11/02/19 01:41	1
2-Methylphenol	0.67	U	10	0.67	ug/L		11/01/19 09:10	11/02/19 01:41	1
4-Methylphenol	0.65	U	10	0.65	ug/L		11/01/19 09:10	11/02/19 01:41	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		11/01/19 09:10	11/02/19 01:41	1
2,4-Dimethylphenol	0.62	U	10	0.62	ug/L		11/01/19 09:10	11/02/19 01:41	1
2,4-Dichlorophenol	1.1	U	10	1.1	ug/L		11/01/19 09:10	11/02/19 01:41	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		11/01/19 09:10	11/02/19 01:41	1
2,4,6-Trichlorophenol	0.86	U	10	0.86	ug/L		11/01/19 09:10	11/02/19 01:41	1
2,4,5-Trichlorophenol	0.88	U	10	0.88	ug/L		11/01/19 09:10	11/02/19 01:41	1
2,4-Dinitrophenol	14	U	20	14	ug/L		11/01/19 09:10	11/02/19 01:41	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		11/01/19 09:10	11/02/19 01:41	1
4,6-Dinitro-2-methylphenol	13	U	20	13	ug/L		11/01/19 09:10	11/02/19 01:41	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		11/01/19 09:10	11/02/19 01:41	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		11/01/19 09:10	11/02/19 01:41	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		11/01/19 09:10	11/02/19 01:41	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		11/01/19 09:10	11/02/19 01:41	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		11/01/19 09:10	11/02/19 01:41	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		11/01/19 09:10	11/02/19 01:41	1
Isophorone	0.80	U	10	0.80	ug/L		11/01/19 09:10	11/02/19 01:41	1
Bis(2-chloroethoxy)methane	0.59	U	10	0.59	ug/L		11/01/19 09:10	11/02/19 01:41	1
1,2,4-Trichlorobenzene	0.64	U	2.0	0.64	ug/L		11/01/19 09:10	11/02/19 01:41	1
Naphthalene	1.1	U	10	1.1	ug/L		11/01/19 09:10	11/02/19 01:41	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		11/01/19 09:10	11/02/19 01:41	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		11/01/19 09:10	11/02/19 01:41	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		11/01/19 09:10	11/02/19 01:41	1
Hexachlorocyclopentadiene	3.6	U	10	3.6	ug/L		11/01/19 09:10	11/02/19 01:41	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		11/01/19 09:10	11/02/19 01:41	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		11/01/19 09:10	11/02/19 01:41	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		11/01/19 09:10	11/02/19 01:41	1
Acenaphthylene	0.82	U	10	0.82	ug/L		11/01/19 09:10	11/02/19 01:41	1
2,6-Dinitrotoluene	0.83	U	2.0	0.83	ug/L		11/01/19 09:10	11/02/19 01:41	1
3-Nitroaniline	1.9	U	10	1.9	ug/L		11/01/19 09:10	11/02/19 01:41	1
Acenaphthene	1.1	U	10	1.1	ug/L		11/01/19 09:10	11/02/19 01:41	1
Dibenzofuran	1.1	U	10	1.1	ug/L		11/01/19 09:10	11/02/19 01:41	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		11/01/19 09:10	11/02/19 01:41	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		11/01/19 09:10	11/02/19 01:41	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		11/01/19 09:10	11/02/19 01:41	1
Fluorene	0.91	U	10	0.91	ug/L		11/01/19 09:10	11/02/19 01:41	1
4-Nitroaniline	1.2	U	10	1.2	ug/L		11/01/19 09:10	11/02/19 01:41	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		11/01/19 09:10	11/02/19 01:41	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		11/01/19 09:10	11/02/19 01:41	1
Phenanthrene	0.58	U	10	0.58	ug/L		11/01/19 09:10	11/02/19 01:41	1
Anthracene	0.63	U	10	0.63	ug/L		11/01/19 09:10	11/02/19 01:41	1
Carbazole	0.68	U	10	0.68	ug/L		11/01/19 09:10	11/02/19 01:41	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		11/01/19 09:10	11/02/19 01:41	1
Fluoranthene	0.84	U	10	0.84	ug/L		11/01/19 09:10	11/02/19 01:41	1
Pyrene	1.6	U	10	1.6	ug/L		11/01/19 09:10	11/02/19 01:41	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		11/01/19 09:10	11/02/19 01:41	1

Client Sample ID: RBGW_103019 Lab Sample ID: 460-195259-4

Date Collected: 10/30/19 14:15 **Matrix: Water**
Date Received: 10/30/19 20:50

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		11/01/19 09:10	11/02/19 01:41	1
Chrysene	0.91	U	2.0	0.91	ug/L		11/01/19 09:10	11/02/19 01:41	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		11/01/19 09:10	11/02/19 01:41	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		11/01/19 09:10	11/02/19 01:41	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		11/01/19 09:10	11/02/19 01:41	1
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		11/01/19 09:10	11/02/19 01:41	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		11/01/19 09:10	11/02/19 01:41	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		11/01/19 09:10	11/02/19 01:41	1
Diphenyl ether	1.2	U	10	1.2	ug/L		11/01/19 09:10	11/02/19 01:41	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		11/01/19 09:10	11/02/19 01:41	1
Caprolactam	0.68	U	10	0.68	ug/L		11/01/19 09:10	11/02/19 01:41	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		11/01/19 09:10	11/02/19 01:41	1
Bisphenol-A	9.9	U	10	9.9	ug/L		11/01/19 09:10	11/02/19 01:41	1
N-Methylaniline	1.3	U	5.0	1.3	ug/L		11/01/19 09:10	11/02/19 01:41	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*11/01/19 09:10*	*11/02/19 01:41*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*81*		*51 - 108*	*11/01/19 09:10*	*11/02/19 01:41*	*1*
Phenol-d5 (Surr)	*29*		*14 - 39*	*11/01/19 09:10*	*11/02/19 01:41*	*1*
Terphenyl-d14 (Surr)	*88*		*40 - 148*	*11/01/19 09:10*	*11/02/19 01:41*	*1*
2,4,6-Tribromophenol (Surr)	*89*		*26 - 139*	*11/01/19 09:10*	*11/02/19 01:41*	*1*
2-Fluorophenol (Surr)	*43*		*25 - 58*	*11/01/19 09:10*	*11/02/19 01:41*	*1*
2-Fluorobiphenyl (Surr)	*72*		*45 - 107*	*11/01/19 09:10*	*11/02/19 01:41*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.014	U	0.12	0.014	mg/L			11/01/19 08:05	1
Nitrate as N	0.056	U	0.10	0.056	mg/L			11/01/19 08:05	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			11/01/19 08:05	1
Sulfate	0.35	U	0.60	0.35	mg/L			11/01/19 08:05	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	66.8	U	250	66.8	ug/L		10/31/19 21:00	11/01/19 16:48	5
Magnesium	24.8	U	250	24.8	ug/L		10/31/19 21:00	11/01/19 16:48	5
Potassium	73.5	U	250	73.5	ug/L		10/31/19 21:00	11/01/19 16:48	5
Calcium	233	U	250	233	ug/L		10/31/19 21:00	11/01/19 16:48	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	1.7	U	50.0	1.7	ug/L		11/01/19 09:25	11/01/19 21:11	1
Iron, Dissolved	34.2	U	150	34.2	ug/L		11/01/19 09:25	11/01/19 21:11	1
Manganese, Dissolved	0.99	U	15.0	0.99	ug/L		11/01/19 09:25	11/01/19 21:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.068	U	0.10	0.068	mg/L			11/01/19 12:29	1
Bicarbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			11/01/19 14:05	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			11/01/19 14:05	1

Client Sample ID: RBGW_103019 Lab Sample ID: 460-195259-4

Date Collected: 10/30/19 14:15 **Matrix: Water**
Date Received: 10/30/19 20:50

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	0.58	U	1.0	0.58	mg/L			11/01/19 17:45	1

Client Sample ID: TBGW_103019 Lab Sample ID: 460-195259-5

Date Collected: 10/30/19 14:15 **Matrix: Water**
Date Received: 10/30/19 20:50

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.33	U	0.40	0.33	ug/L			11/02/19 13:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*94*		*72 - 133*		*11/02/19 13:13*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			11/04/19 13:20	1
Bromomethane	0.55	U	1.0	0.55	ug/L			11/04/19 13:20	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			11/04/19 13:20	1
Chloroethane	0.32	U	1.0	0.32	ug/L			11/04/19 13:20	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			11/04/19 13:20	1
Acetone	**8.8**		5.0	4.4	ug/L			11/04/19 13:20	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			11/04/19 13:20	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			11/04/19 13:20	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			11/04/19 13:20	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			11/04/19 13:20	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			11/04/19 13:20	1
Chloroform	0.33	U	1.0	0.33	ug/L			11/04/19 13:20	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			11/04/19 13:20	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			11/04/19 13:20	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			11/04/19 13:20	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			11/04/19 13:20	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			11/04/19 13:20	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			11/04/19 13:20	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			11/04/19 13:20	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			11/04/19 13:20	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			11/04/19 13:20	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			11/04/19 13:20	1
Benzene	0.20	U	1.0	0.20	ug/L			11/04/19 13:20	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			11/04/19 13:20	1
Bromoform	0.54	U	1.0	0.54	ug/L			11/04/19 13:20	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			11/04/19 13:20	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			11/04/19 13:20	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			11/04/19 13:20	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			11/04/19 13:20	1
Toluene	0.38	U	1.0	0.38	ug/L			11/04/19 13:20	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			11/04/19 13:20	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			11/04/19 13:20	1
Styrene	0.42	U	1.0	0.42	ug/L			11/04/19 13:20	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			11/04/19 13:20	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			11/04/19 13:20	1

Client Sample ID: TBGW_103019 Lab Sample ID: 460-195259-5

Date Collected: 10/30/19 14:15 **Matrix: Water**
Date Received: 10/30/19 20:50

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MTBE	0.47	U	1.0	0.47	ug/L			11/04/19 13:20	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			11/04/19 13:20	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			11/04/19 13:20	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			11/04/19 13:20	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			11/04/19 13:20	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			11/04/19 13:20	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			11/04/19 13:20	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			11/04/19 13:20	1
Indane	0.35	U	1.0	0.35	ug/L			11/04/19 13:20	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			11/04/19 13:20	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			11/04/19 13:20	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*11/04/19 13:20*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*74 - 132*		*11/04/19 13:20*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/04/19 13:20*	*1*
4-Bromofluorobenzene	*95*		*77 - 124*		*11/04/19 13:20*	*1*
Dibromofluoromethane (Surr)	*97*		*72 - 131*		*11/04/19 13:20*	*1*

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-195926-1

Client Sample ID: AWC-E1 (132)

Lab Sample ID: 460-195926-1

Date Collected: 11/07/19 10:20
Date Received: 11/07/19 21:15

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**0.058**	**J**	0.10	0.056	mg/L			11/08/19 18:11	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			11/08/19 18:11	1
Sulfate	**22.5**		0.60	0.35	mg/L			11/08/19 18:11	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**59.0**	**D**	2.76	0.32	mg/L			11/08/19 21:26	23

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**30700**		250	66.8	ug/L		11/08/19 20:50	11/11/19 14:28	5
Magnesium	**12600**		250	24.8	ug/L		11/08/19 20:50	11/11/19 14:28	5
Potassium	**3990**		250	73.5	ug/L		11/08/19 20:50	11/11/19 14:28	5
Calcium	**26400**		250	233	ug/L		11/08/19 20:50	11/11/19 14:28	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**1.6**		0.10	0.034	mg/L			11/13/19 11:13	1
Bicarbonate Alkalinity as CaCO3	**84.0**		5.0	5.0	mg/L			11/09/19 10:38	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			11/09/19 10:38	1
Sulfide	0.58	U	1.0	0.58	mg/L			11/10/19 10:30	1

Client Sample ID: AWC-E1 (156)

Lab Sample ID: 460-195926-2

Date Collected: 11/07/19 11:05
Date Received: 11/07/19 21:15

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**0.060**	**J**	0.10	0.056	mg/L			11/08/19 18:26	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			11/08/19 18:26	1
Sulfate	**20.5**		0.60	0.35	mg/L			11/08/19 18:26	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**61.5**	**D**	2.88	0.34	mg/L			11/08/19 21:40	24

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**30900**		250	66.8	ug/L		11/08/19 20:50	11/11/19 14:30	5
Magnesium	**12500**		250	24.8	ug/L		11/08/19 20:50	11/11/19 14:30	5
Potassium	**4000**		250	73.5	ug/L		11/08/19 20:50	11/11/19 14:30	5
Calcium	**26000**		250	233	ug/L		11/08/19 20:50	11/11/19 14:30	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**1.6**		0.10	0.034	mg/L			11/13/19 11:14	1
Bicarbonate Alkalinity as CaCO3	**84.4**		5.0	5.0	mg/L			11/09/19 10:45	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			11/09/19 10:45	1
Sulfide	0.58	U	1.0	0.58	mg/L			11/10/19 10:30	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G Semi-Annual Groundwater

Job ID: 460-195926-1

Client Sample ID: AWC-E2 (140)

Lab Sample ID: 460-195926-3

Date Collected: 11/07/19 12:00
Date Received: 11/07/19 21:15

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.056	U	0.10	0.056	mg/L			11/08/19 18:41	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			11/08/19 18:41	1
Sulfate	**11.0**		0.60	0.35	mg/L			11/08/19 18:41	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**28.0**	D	1.20	0.14	mg/L			11/08/19 21:55	10

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**17300**		250	66.8	ug/L		11/08/19 20:50	11/11/19 14:33	5
Magnesium	**7270**		250	24.8	ug/L		11/08/19 20:50	11/11/19 14:33	5
Potassium	**2090**		250	73.5	ug/L		11/08/19 20:50	11/11/19 14:33	5
Calcium	**18200**		250	233	ug/L		11/08/19 20:50	11/11/19 14:33	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.034	U	0.10	0.034	mg/L			11/13/19 11:16	1
Bicarbonate Alkalinity as CaCO3	**69.4**		5.0	5.0	mg/L			11/09/19 10:23	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			11/09/19 10:23	1
Sulfide	0.58	U	1.0	0.58	mg/L			11/10/19 10:30	1

Client Sample ID: AWC-E2 (165)

Lab Sample ID: 460-195926-4

Date Collected: 11/07/19 13:10
Date Received: 11/07/19 21:15

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.056	U	0.10	0.056	mg/L			11/08/19 18:56	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			11/08/19 18:56	1
Sulfate	**17.6**		0.60	0.35	mg/L			11/08/19 18:56	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**41.9**	D	1.92	0.22	mg/L			11/08/19 22:10	16

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**27600**		250	66.8	ug/L		11/08/19 20:50	11/11/19 14:35	5
Magnesium	**10900**		250	24.8	ug/L		11/08/19 20:50	11/11/19 14:35	5
Potassium	**2880**		250	73.5	ug/L		11/08/19 20:50	11/11/19 14:35	5
Calcium	**26600**		250	233	ug/L		11/08/19 20:50	11/11/19 14:35	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.59**		0.10	0.034	mg/L			11/13/19 11:22	1
Bicarbonate Alkalinity as CaCO3	**98.9**		5.0	5.0	mg/L			11/09/19 10:52	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			11/09/19 10:52	1
Sulfide	0.58	U	1.0	0.58	mg/L			11/10/19 10:30	1

Client Sample ID: AWC-2 Lab Sample ID: 460-195926-5

Date Collected: 11/07/19 13:40 **Matrix: Water**
Date Received: 11/07/19 21:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**4.20**		0.10	0.056	mg/L			11/08/19 19:11	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			11/08/19 19:11	1
Sulfate	**14.6**		0.60	0.35	mg/L			11/08/19 19:11	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**28.5**	D	1.32	0.15	mg/L			11/08/19 22:24	11

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**13200**		250	66.8	ug/L		11/08/19 20:50	11/11/19 14:43	5
Magnesium	**5950**		250	24.8	ug/L		11/08/19 20:50	11/11/19 14:43	5
Potassium	**2040**		250	73.5	ug/L		11/08/19 20:50	11/11/19 14:43	5
Calcium	**11900**		250	233	ug/L		11/08/19 20:50	11/11/19 14:43	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.034	U	0.10	0.034	mg/L			11/13/19 11:24	1
Bicarbonate Alkalinity as CaCO3	**14.0**		5.0	5.0	mg/L			11/09/19 11:00	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			11/09/19 11:00	1
Sulfide	0.58	U	1.0	0.58	mg/L			11/10/19 10:30	1

Client Sample ID: AWC-6R Lab Sample ID: 460-195926-6

Date Collected: 11/07/19 14:00 **Matrix: Water**
Date Received: 11/07/19 21:15

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**0.88**		0.40	0.33	ug/L			11/09/19 03:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*96*		*72 - 133*		*11/09/19 03:04*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			11/12/19 05:29	1
Bromomethane	0.55	U	1.0	0.55	ug/L			11/12/19 05:29	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			11/12/19 05:29	1
Chloroethane	0.32	U	1.0	0.32	ug/L			11/12/19 05:29	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			11/12/19 05:29	1
Acetone	4.4	U	5.0	4.4	ug/L			11/12/19 05:29	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			11/12/19 05:29	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			11/12/19 05:29	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			11/12/19 05:29	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			11/12/19 05:29	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			11/12/19 05:29	1
Chloroform	**0.43**	**J**	1.0	0.33	ug/L			11/12/19 05:29	1
1,2-Dichloroethane	**0.64**	**J**	1.0	0.43	ug/L			11/12/19 05:29	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			11/12/19 05:29	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			11/12/19 05:29	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			11/12/19 05:29	1

Client Sample ID: AWC-6R Lab Sample ID: 460-195926-6

Date Collected: 11/07/19 14:00 **Matrix: Water**
Date Received: 11/07/19 21:15

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			11/12/19 05:29	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			11/12/19 05:29	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			11/12/19 05:29	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			11/12/19 05:29	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			11/12/19 05:29	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			11/12/19 05:29	1
Benzene	0.20	U	1.0	0.20	ug/L			11/12/19 05:29	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			11/12/19 05:29	1
Bromoform	0.54	U	1.0	0.54	ug/L			11/12/19 05:29	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			11/12/19 05:29	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			11/12/19 05:29	1
Tetrachloroethene	**0.62**	**J**	1.0	0.25	ug/L			11/12/19 05:29	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			11/12/19 05:29	1
Toluene	0.38	U	1.0	0.38	ug/L			11/12/19 05:29	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			11/12/19 05:29	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			11/12/19 05:29	1
Styrene	0.42	U	1.0	0.42	ug/L			11/12/19 05:29	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			11/12/19 05:29	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			11/12/19 05:29	1
MTBE	**0.58**	**J**	1.0	0.47	ug/L			11/12/19 05:29	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			11/12/19 05:29	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			11/12/19 05:29	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			11/12/19 05:29	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			11/12/19 05:29	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			11/12/19 05:29	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			11/12/19 05:29	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			11/12/19 05:29	1
Indane	0.35	U	1.0	0.35	ug/L			11/12/19 05:29	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			11/12/19 05:29	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			11/12/19 05:29	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*11/12/19 05:29*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*74 - 132*		*11/12/19 05:29*	*1*
Toluene-d8 (Surr)	*90*		*80 - 120*		*11/12/19 05:29*	*1*
4-Bromofluorobenzene	*91*		*77 - 124*		*11/12/19 05:29*	*1*
Dibromofluoromethane (Surr)	*94*		*72 - 131*		*11/12/19 05:29*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.016	U	0.050	0.016	ug/L		11/09/19 07:46	11/10/19 06:59	1
Benzo[a]pyrene	0.022	U	0.050	0.022	ug/L		11/09/19 07:46	11/10/19 06:59	1
Benzo[b]fluoranthene	0.024	U	0.050	0.024	ug/L		11/09/19 07:46	11/10/19 06:59	1
Hexachlorobenzene	0.013	U	0.020	0.013	ug/L		11/09/19 07:46	11/10/19 06:59	1
Pentachlorophenol	**0.16**	**J**	0.20	0.15	ug/L		11/09/19 07:46	11/10/19 06:59	1
Bis(2-chloroethyl)ether	0.026	U	0.030	0.026	ug/L		11/09/19 07:46	11/10/19 06:59	1

Client Sample ID: AWC-6R Lab Sample ID: 460-195926-6

Date Collected: 11/07/19 14:00 **Matrix: Water**
Date Received: 11/07/19 21:15

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.29	U *	10	0.29	ug/L		11/09/19 07:46	11/10/19 02:28	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		11/09/19 07:46	11/10/19 02:28	1
2-Methylphenol	0.67	U	10	0.67	ug/L		11/09/19 07:46	11/10/19 02:28	1
4-Methylphenol	0.65	U	10	0.65	ug/L		11/09/19 07:46	11/10/19 02:28	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		11/09/19 07:46	11/10/19 02:28	1
2,4-Dimethylphenol	0.62	U	10	0.62	ug/L		11/09/19 07:46	11/10/19 02:28	1
2,4-Dichlorophenol	1.1	U	10	1.1	ug/L		11/09/19 07:46	11/10/19 02:28	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		11/09/19 07:46	11/10/19 02:28	1
2,4,6-Trichlorophenol	0.86	U	10	0.86	ug/L		11/09/19 07:46	11/10/19 02:28	1
2,4,5-Trichlorophenol	0.88	U	10	0.88	ug/L		11/09/19 07:46	11/10/19 02:28	1
2,4-Dinitrophenol	14	U *	20	14	ug/L		11/09/19 07:46	11/10/19 02:28	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		11/09/19 07:46	11/10/19 02:28	1
4,6-Dinitro-2-methylphenol	13	U *	20	13	ug/L		11/09/19 07:46	11/10/19 02:28	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		11/09/19 07:46	11/10/19 02:28	1
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		11/09/19 07:46	11/10/19 02:28	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		11/09/19 07:46	11/10/19 02:28	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		11/09/19 07:46	11/10/19 02:28	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		11/09/19 07:46	11/10/19 02:28	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		11/09/19 07:46	11/10/19 02:28	1
Isophorone	0.80	U	10	0.80	ug/L		11/09/19 07:46	11/10/19 02:28	1
Bis(2-chloroethoxy)methane	0.59	U	10	0.59	ug/L		11/09/19 07:46	11/10/19 02:28	1
1,2,4-Trichlorobenzene	0.64	U	2.0	0.64	ug/L		11/09/19 07:46	11/10/19 02:28	1
Naphthalene	1.1	U	10	1.1	ug/L		11/09/19 07:46	11/10/19 02:28	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		11/09/19 07:46	11/10/19 02:28	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		11/09/19 07:46	11/10/19 02:28	1
2-Methylnaphthalene	1.1	U	10	1.1	ug/L		11/09/19 07:46	11/10/19 02:28	1
Hexachlorocyclopentadiene	3.6	U	10	3.6	ug/L		11/09/19 07:46	11/10/19 02:28	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		11/09/19 07:46	11/10/19 02:28	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		11/09/19 07:46	11/10/19 02:28	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		11/09/19 07:46	11/10/19 02:28	1
Acenaphthylene	0.82	U	10	0.82	ug/L		11/09/19 07:46	11/10/19 02:28	1
2,6-Dinitrotoluene	0.83	U	2.0	0.83	ug/L		11/09/19 07:46	11/10/19 02:28	1
3-Nitroaniline	1.9	U	10	1.9	ug/L		11/09/19 07:46	11/10/19 02:28	1
Acenaphthene	1.1	U	10	1.1	ug/L		11/09/19 07:46	11/10/19 02:28	1
Dibenzofuran	1.1	U	10	1.1	ug/L		11/09/19 07:46	11/10/19 02:28	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		11/09/19 07:46	11/10/19 02:28	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		11/09/19 07:46	11/10/19 02:28	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		11/09/19 07:46	11/10/19 02:28	1
Fluorene	0.91	U	10	0.91	ug/L		11/09/19 07:46	11/10/19 02:28	1
4-Nitroaniline	1.2	U	10	1.2	ug/L		11/09/19 07:46	11/10/19 02:28	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		11/09/19 07:46	11/10/19 02:28	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		11/09/19 07:46	11/10/19 02:28	1
Phenanthrene	0.58	U	10	0.58	ug/L		11/09/19 07:46	11/10/19 02:28	1
Anthracene	0.63	U	10	0.63	ug/L		11/09/19 07:46	11/10/19 02:28	1
Carbazole	0.68	U	10	0.68	ug/L		11/09/19 07:46	11/10/19 02:28	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		11/09/19 07:46	11/10/19 02:28	1
Fluoranthene	0.84	U	10	0.84	ug/L		11/09/19 07:46	11/10/19 02:28	1
Pyrene	1.6	U	10	1.6	ug/L		11/09/19 07:46	11/10/19 02:28	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		11/09/19 07:46	11/10/19 02:28	1

Client Sample ID: AWC-6R — Lab Sample ID: 460-195926-6

Date Collected: 11/07/19 14:00 **Matrix: Water**
Date Received: 11/07/19 21:15

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		11/09/19 07:46	11/10/19 02:28	1
Chrysene	0.91	U	2.0	0.91	ug/L		11/09/19 07:46	11/10/19 02:28	1
Bis(2-ethylhexyl) phthalate	1.7	U	2.0	1.7	ug/L		11/09/19 07:46	11/10/19 02:28	1
Di-n-octyl phthalate	4.8	U	10	4.8	ug/L		11/09/19 07:46	11/10/19 02:28	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		11/09/19 07:46	11/10/19 02:28	1
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		11/09/19 07:46	11/10/19 02:28	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		11/09/19 07:46	11/10/19 02:28	1
Benzo[g,h,i]perylene	1.4	U	10	1.4	ug/L		11/09/19 07:46	11/10/19 02:28	1
Diphenyl ether	1.2	U	10	1.2	ug/L		11/09/19 07:46	11/10/19 02:28	1
n,n'-Dimethylaniline	0.91	U	1.0	0.91	ug/L		11/09/19 07:46	11/10/19 02:28	1
Caprolactam	0.68	U	10	0.68	ug/L		11/09/19 07:46	11/10/19 02:28	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		11/09/19 07:46	11/10/19 02:28	1
Bisphenol-A	9.9	U	10	9.9	ug/L		11/09/19 07:46	11/10/19 02:28	1
N-Methylaniline	1.3	U *	5.0	1.3	ug/L		11/09/19 07:46	11/10/19 02:28	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*11/09/19 07:46*	*11/10/19 02:28*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*88*		*51 - 108*	*11/09/19 07:46*	*11/10/19 02:28*	*1*
Phenol-d5 (Surr)	*27*		*14 - 39*	*11/09/19 07:46*	*11/10/19 02:28*	*1*
Terphenyl-d14 (Surr)	*95*		*40 - 148*	*11/09/19 07:46*	*11/10/19 02:28*	*1*
2,4,6-Tribromophenol (Surr)	*96*		*26 - 139*	*11/09/19 07:46*	*11/10/19 02:28*	*1*
2-Fluorophenol (Surr)	*43*		*25 - 58*	*11/09/19 07:46*	*11/10/19 02:28*	*1*
2-Fluorobiphenyl (Surr)	*77*		*45 - 107*	*11/09/19 07:46*	*11/10/19 02:28*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**4.26**		0.10	0.056	mg/L			11/08/19 19:26	1
Nitrite as N	0.076	U	0.12	0.076	mg/L			11/08/19 19:26	1
Sulfate	**18.9**		0.60	0.35	mg/L			11/08/19 19:26	1

Method: 300.0 - Anions, Ion Chromatography - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**52.3**	D	2.40	0.28	mg/L			11/08/19 22:39	20

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**20600**		250	66.8	ug/L		11/08/19 20:50	11/11/19 14:50	5
Magnesium	**7650**		250	24.8	ug/L		11/08/19 20:50	11/11/19 14:50	5
Potassium	**2540**		250	73.5	ug/L		11/08/19 20:50	11/11/19 14:50	5
Calcium	**16900**		250	233	ug/L		11/08/19 20:50	11/11/19 14:50	5

Method: 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt, Dissolved	**3.5**	J	50.0	1.7	ug/L		11/13/19 07:41	11/13/19 21:03	1
Iron, Dissolved	34.2	U	150	34.2	ug/L		11/13/19 07:41	11/13/19 21:03	1
Manganese, Dissolved	**30.1**		15.0	0.99	ug/L		11/13/19 07:41	11/13/19 21:03	1

Client Sample ID: AWC-6R — Lab Sample ID: 460-195926-6

Date Collected: 11/07/19 14:00 **Matrix: Water**
Date Received: 11/07/19 21:15

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.14**		0.10	0.034	mg/L			11/13/19 11:25	1
Bicarbonate Alkalinity as CaCO3	**18.3**		5.0	5.0	mg/L			11/09/19 11:07	1
Carbonate Alkalinity as CaCO3	5.0	U	5.0	5.0	mg/L			11/09/19 11:07	1
Sulfide	0.58	U	1.0	0.58	mg/L			11/10/19 10:30	1

Client Sample ID: TBGW_11719 — Lab Sample ID: 460-195926-7

Date Collected: 11/07/19 14:00 **Matrix: Water**
Date Received: 11/07/19 21:15

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.33	U	0.40	0.33	ug/L			11/09/19 02:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*72 - 133*		*11/09/19 02:41*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			11/11/19 23:44	1
Bromomethane	0.55	U	1.0	0.55	ug/L			11/11/19 23:44	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			11/11/19 23:44	1
Chloroethane	0.32	U	1.0	0.32	ug/L			11/11/19 23:44	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			11/11/19 23:44	1
Acetone	**18**		5.0	4.4	ug/L			11/11/19 23:44	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			11/11/19 23:44	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			11/11/19 23:44	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			11/11/19 23:44	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			11/11/19 23:44	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			11/11/19 23:44	1
Chloroform	0.33	U	1.0	0.33	ug/L			11/11/19 23:44	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			11/11/19 23:44	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			11/11/19 23:44	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			11/11/19 23:44	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			11/11/19 23:44	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			11/11/19 23:44	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			11/11/19 23:44	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			11/11/19 23:44	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			11/11/19 23:44	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			11/11/19 23:44	1
1,1,2-Trichloroethane	0.43	U	1.0	0.43	ug/L			11/11/19 23:44	1
Benzene	0.20	U	1.0	0.20	ug/L			11/11/19 23:44	1
trans-1,3-Dichloropropene	0.49	U	1.0	0.49	ug/L			11/11/19 23:44	1
Bromoform	0.54	U	1.0	0.54	ug/L			11/11/19 23:44	1
4-Methyl-2-pentanone	1.3	U	5.0	1.3	ug/L			11/11/19 23:44	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			11/11/19 23:44	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			11/11/19 23:44	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			11/11/19 23:44	1
Toluene	0.38	U	1.0	0.38	ug/L			11/11/19 23:44	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			11/11/19 23:44	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			11/11/19 23:44	1

Client Sample ID: TBGW_11719 Lab Sample ID: 460-195926-7

Date Collected: 11/07/19 14:00 **Matrix: Water**
Date Received: 11/07/19 21:15

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	0.42	U	1.0	0.42	ug/L			11/11/19 23:44	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			11/11/19 23:44	1
Diethyl ether	0.21	U	1.0	0.21	ug/L			11/11/19 23:44	1
MTBE	0.47	U	1.0	0.47	ug/L			11/11/19 23:44	1
Tetrahydrofuran	1.0	U	2.0	1.0	ug/L			11/11/19 23:44	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			11/11/19 23:44	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			11/11/19 23:44	1
1,3,5-Trimethylbenzene	0.33	U	1.0	0.33	ug/L			11/11/19 23:44	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			11/11/19 23:44	1
N-Propylbenzene	0.32	U	1.0	0.32	ug/L			11/11/19 23:44	1
Methylcyclohexane	0.26	U	1.0	0.26	ug/L			11/11/19 23:44	1
Indane	0.35	U	1.0	0.35	ug/L			11/11/19 23:44	1
Dichlorofluoromethane	0.34	U	1.0	0.34	ug/L			11/11/19 23:44	1
1,2,3-Trimethylbenzene	0.36	U	1.0	0.36	ug/L			11/11/19 23:44	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Isopropyl Alcohol	*6.3*	*J N*	*ug/L*		*3.42*	*67-63-0*		*11/11/19 23:44*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*74 - 132*		*11/11/19 23:44*	*1*
Toluene-d8 (Surr)	*89*		*80 - 120*		*11/11/19 23:44*	*1*
4-Bromofluorobenzene	*90*		*77 - 124*		*11/11/19 23:44*	*1*
Dibromofluoromethane (Surr)	*94*		*72 - 131*		*11/11/19 23:44*	*1*

APPENDIX B

Summary of Detected Compounds

APPENDIX B-1

October/November 2019 Groundwater

Appendix B-1
Summary of Detected Compounds - October/November 2019 Groundwater
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

Parameter	CAS	Unit	RSL HQ=0.1	RSL HQ=1.0	MCL	[redacted]
Volatile Organic Compounds						
1,1-Dichloroethane	75-34-3	ug/L	2.8	2.8	NE	NE
1,1-Dichloroethene	75-35-4	ug/L	28	280	7	NE
1,2,3-Trimethylbenzene	526-73-8	ug/L	5.5	55	NE	NE
1,2,4-Trimethylbenzene	95-63-6	ug/L	5.6	56	NE	5.7
1,2-Dichloroethane	107-06-2	ug/L	0.17	0.17	5	NE
1,3,5-Trimethylbenzene	108-67-8	ug/L	6	60	NE	6.1
1,4-Dioxane	123-91-1	ug/L	0.46	0.46	NE	4.6
2-Butanone	78-93-3	ug/L	560	5600	NE	NE
Acetone	67-64-1	ug/L	1400	14000	NE	NE
Benzene	71-43-2	ug/L	0.46	0.46	5	4.6
Bromodichloromethane	75-27-4	ug/L	0.13	0.13	80	NE
Carbon Disulfide	75-15-0	ug/L	81	810	NE	NE
Chlorobenzene	108-90-7	ug/L	7.8	78	100	NE
Chloroethane	75-00-3	ug/L	2100	21000	NE	NE
Chloroform	67-66-3	ug/L	0.22	0.22	80	NE
Chloromethane	74-87-3	ug/L	19	190	NE	NE
cis-1,2-Dichloroethene	156-59-2	ug/L	3.6	36	70	NE
Cyclohexane	110-82-7	ug/L	1300	13000	NE	NE
Dibromochloromethane	124-48-1	ug/L	0.87	0.87	80	NE
Dichlorofluoromethane	75-43-4	ug/L	NE	NE	NE	NE
Diethyl Ether	60-29-7	ug/L	390	3900	NE	NE
Ethylbenzene	100-41-4	ug/L	1.5	1.5	700	15
Indane	496-11-7	ug/L	NE	NE	NE	NE
Isopropylbenzene	98-82-8	ug/L	45	450	NE	NE
Methyl Cyclohexane	108-87-2	ug/L	NE	NE	NE	NE
Methyl tert-Butyl Ether	1634-04-4	ug/L	14	14	NE	NE
Methylene Chloride	75-09-2	ug/L	11	11	5	NE
n-Propylbenzene	103-65-1	ug/L	66	660	NE	NE
Tetrachloroethene	127-18-4	ug/L	4.1	11	5	NE
Tetrahydrofuran	109-99-9	ug/L	340	3400	NE	NE
Toluene	108-88-3	ug/L	110	1100	1000	NE
trans-1,2-Dichloroethene	156-60-5	ug/L	36	360	100	NE
Trichloroethene	79-01-6	ug/L	0.28	0.49	5	NE
Vinyl Chloride	75-01-4	ug/L	0.019	0.019	2	NE
Xylenes, Total	1330-20-7	ug/L	19	190	10000	21
Semivolatile Organic Compounds						
1,2,4-Trichlorobenzene	120-82-1	ug/L	0.4	1.2	70	NE
1,2-Dichlorobenzene	95-50-1	ug/L	30	300	600	NE
1,3-Dichlorobenzene	541-73-1	ug/L	NE	NE	NE	NE
1,4-Dichlorobenzene	106-46-7	ug/L	0.48	0.48	75	NE
2,4-Dimethylphenol	105-67-9	ug/L	36	360	NE	NE
2-Chlorophenol	95-57-8	ug/L	9.1	91	NE	NE
2-Methylnaphthalene	91-57-6	ug/L	3.6	36	NE	NE
2-Methylphenol	95-48-7	ug/L	93	930	NE	NE
4-Methylphenol	106-44-5	ug/L	190	1900	NE	NE
Benzo[a]anthracene	56-55-3	ug/L	0.03	0.03	NE	NE
Benzo[a]pyrene	50-32-8	ug/L	0.025	0.025	0.2	NE
Benzo[b]fluoranthene	205-99-2	ug/L	0.25	0.25	NE	NE
Bis(2-chloroethyl) Ether	111-44-4	ug/L	0.014	0.014	NE	0.14
Bis(2-ethylhexyl) Phthalate	117-81-7	ug/L	5.6	5.6	6	NE
Bisphenol A	80-05-7	ug/L	77	770	NE	NE
Diethyl Phthalate	84-66-2	ug/L	1500	15000	NE	NE
Di-n-Butyl Phthalate	84-74-2	ug/L	90	900	NE	NE
Diphenyl Ether	101-84-8	ug/L	NE	NE	NE	NE
Hexachlorobenzene	118-74-1	ug/L	0.0098	0.0098	1	NE
N,N-Dimethylaniline	121-69-7	ug/L	2.5	2.5	NE	25
Naphthalene	91-20-3	ug/L	0.17	0.17	NE	0.63
N-Methylaniline	100-61-8	ug/L	NE	38	NE	NE
Pentachlorophenol	87-86-5	ug/L	0.041	0.041	1	NE
Phenol	108-95-2	ug/L	580	5800	NE	NE
Total Metals						
Calcium	7440-70-2	ug/L	NE	NE	NE	NE
Cobalt	7440-48-4	ug/L	0.6	6	NE	6
Iron	7439-89-6	ug/L	1400	14000	NE	13939
Magnesium	7439-95-4	ug/L	NE	NE	NE	NE
Manganese	7439-96-5	ug/L	43	430	NE	260
Potassium	7440-09-7	ug/L	NE	NE	NE	NE
Sodium	7440-23-5	ug/L	NE	NE	NE	NE
Dissolved Metals						
Cobalt	7440-48-4	ug/L	0.6	6	NE	6
Iron	7439-89-6	ug/L	1400	14000	NE	13939
Manganese	7439-96-5	ug/L	43	430	NE	260
Wet Chemistry Parameters						
Alkalinity, Bicarbonate as CaCO3	ALKB-C	mg/L	NE	NE	NE	NE
Alkalinity, Total	ALK	mg/L	NE	NE	NE	NE
Ammonia	7664-41-7	mg/L	NE	NE	NE	NE
Chloride	16887-00-6	mg/L	NE	NE	NE	NE
Nitrate as N	14797-55-8-N	mg/L	3.2	32	10	NE
Sulfate	14808-79-8	mg/L	NE	NE	NE	NE

DDA Extraction Monitoring Wells

Sample ID / Sample Date / N=Normal, FD=Field Duplicate	B-4DR 10/24/2019 N			BG-1 10/25/2019 N			C-18D 10/25/2019 N			C-19D 10/25/2019 N			C-20D 10/25/2019 N			C-2D 10/25/2019 N			C-30 10/25/2019 N			C-4D 10/25/2019 N		
Parameter	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL
Volatile Organic Compounds																								
1,1-Dichloroethane		U	5		U	1		U	5	0.92	J	1		U	1		U	1	0.92	J	2		U	1
1,1-Dichloroethene		U	5		U	1		U	5		U	1		U	1		U	1		U	2		U	1
1,2,3-Trimethylbenzene	120		5	6.5		1	10		5		U	1	2.2		1	29		1	8		2	2.1		1
1,2,4-Trimethylbenzene	[redacted]			[redacted]			[redacted]				U	1		U	1	[redacted]			[redacted]			0.37	J	1
1,2-Dichloroethane	2.4	J	5		U	1		U	5		U	1	0.87	J	1		U	1	2.7		2		U	1
1,3,5-Trimethylbenzene	[redacted]			4.7		1	[redacted]				U	1		U	1	[redacted]			[redacted]				U	1
1,4-Dioxane	[redacted]			[redacted]			[redacted]			[redacted]			[redacted]			[redacted]			[redacted]			[redacted]		
2-Butanone		U	25		U	5		U	25		U	5		U	5		U	5		U	10		U	5
Acetone	37		25		U	5		U	25		U	5		U	5		U	5		U	10		U	5
Benzene		U	5	4.2		1	[redacted]			[redacted]			2.2		1	[redacted]			[redacted]			[redacted]		
Bromodichloromethane		U	5		U	1		U	5		U	1		U	1		U	1		U	2		U	1
Carbon Disulfide		U	5		U	1		U	5		U	1		U	1		U	1		U	2		U	1
Chlorobenzene	1400		5	0.99	J	1	21		5	5.9		1	2.1		1	18		1	14		2	11		1
Chloroethane		U	5		U	1		U	5		U	1		U	1		U	1		U	2		U	1
Chloroform		U	5		U	1		U	5		U	1		U	1		U	1		U	2		U	1
Chloromethane		U	5		U	1		U	5	0.4	J	1		U	1		U	1		U	2		U	1
cis-1,2-Dichloroethene		U	5	0.47	J	1	14		5		U	1		U	1	0.29	J	1	22		2		U	1
Cyclohexane		U	5	2.7		1		U	5		U	1	0.72	J	1	5.4		1	1.4	J	2		U	1
Dibromochloromethane		U	5		U	1		U	5		U	1		U	1		U	1		U	2		U	1
Dichlorofluoromethane	3.6	J	5	0.75	J	1		U	5	1.1		1		U	1		U	1		U	2	1		1
Diethyl Ether		U	5		U	1		U	5	2.9		1	1.6		1		U	1	0.88	J	2		U	1
Ethylbenzene	12		5		U	1	[redacted]				U	1		U	1	0.36	J	1	[redacted]				U	1
Indane	69		5	2.6		1	18		5	1.1		1	4.1		1	73		1	6.6		2	0.87	J	1
Isopropylbenzene	4.8	J	5	4.1		1	3.2	J	5	0.45	J	1	1.7		1	13		1	1.7	J	2	18		1
Methyl Cyclohexane		U	5	4.3		1	2.9	J	5		U	1		U	1	7.4		1	2.1		2		U	1
Methyl tert-Butyl Ether		U	5		U	1		U	5		U	1		U	1		U	1		U	2		U	1
Methylene Chloride		U	5		U	1		U	5		U	1		U	1		U	1		U	2		U	1
n-Propylbenzene	2.2	J	5	3.4		1	5.8		5	0.32	J	1	1.7		1	15		1	2.9		2	1.4		1
Tetrachloroethene		U	5		U	1		U	5		U	1		U	1		U	1		U	2		U	1
Tetrahydrofuran		U	10		U	2	7.8	J	10	3.7		2	1.7	J	2	3		2		U	4		U	2
Toluene	3.6	J	5		U	1	1100		5	0.64	J	1		U	1	0.59	J	1	440		2	1.7		1
trans-1,2-Dichloroethene		U	5		U	1		U	5		U	1		U	1		U	1		U	2		U	1
Trichloroethene		U	5	1.1		1		U	5		U	1		U	1		U	1		U	2		U	1
Vinyl Chloride		U	5		U	1		U	5		U	1		U	1		U	1		U	2		U	1
Xylenes, Total	[redacted]			6.8		2	[redacted]				U	2		U	2	[redacted]			[redacted]				U	2
Semivolatile Organic Compounds																								
1,2,4-Trichlorobenzene		U	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2
1,2-Dichlorobenzene	29		10		U	10		U	10		U	10		U	10		U	10		U	10	2.9	J	10
1,3-Dichlorobenzene	8.7	J	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
1,4-Dichlorobenzene	35		10		U	10		U	10		U	10		U	10		U	10		U	10	4.5	J	10
2,4-Dimethylphenol		U	10		U	10	1.4	J	10		U	10		U	10		U	10		U	10		U	10
2-Chlorophenol	0.97	J	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
2-Methylnaphthalene	1.5	J	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
2-Methylphenol		U	10		U	10	3.3	J	10		U	10		U	10		U	10	4.1	J	10		U	10
4-Methylphenol	1.3	J	10		U	10	5.9	J	10		U	10		U	10		U	10	2.5	J	10		U	10
Benzo[a]anthracene	2.1	J+	1		U	0.05	0.48	J+	0.25	0.5	J+	0.25		U	0.05		U	0.05		U	0.05	1.1	J+	0.5
Benzo[a]pyrene	1.6		1		U	0.05	0.35		0.25	0.37		0.25		U	0.05		U	0.05		U	0.05	0.78		0.5
Benzo[b]fluoranthene	1.4	J+	1		U	0.05	0.27	J+	0.25	0.28	J+	0.25		U	0.05		U	0.05		U	0.05	0.6	J+	0.5
Bis(2-chloroethyl) Ether	[redacted]			[redacted]			[redacted]			[redacted]			[redacted]			[redacted]			[redacted]			[redacted]		
Bis(2-ethylhexyl) Phthalate		U	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2
Bisphenol A	100		10		U	10	100		10	42		10	17		10	38		10	18		10	46		10
Diethyl Phthalate		U	10		U	10	4.3	J	10		U	10		U	10	1.1	J	10	1.6	J	10		U	10
Di-n-Butyl Phthalate		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10
Diphenyl Ether	34		10	1.3	J	10	9.1	J	10	2.3	J	10	1.5	J	10	14		10		U	10	9.5	J	10
Hexachlorobenzene		U	0.4		U	0.02		U	0.1		U	0.1		U	0.02		U	0.02		U	0.02		U	0.2
N,N-Dimethylaniline	3.9		1		U	1		U	1		U	1		U	1		U	1		U	1	1.2		1
Naphthalene	[redacted]				U	10	[redacted]				U	10		U	10	[redacted]				U	10		U	10
N-Methylaniline		U	5		U	5		U	5		U	5		U	5		U	5		U	5	2	J	5
Pentachlorophenol		U	4		U	0.2		U	1		U	1		UJ	0.2		UJ	0.2		UJ	0.2		U	2
Phenol		U	10		U	10	1.7	J	10		U	10		U	10		U	10	0.68	J	10		U	10
Total Metals																								
Calcium	NA			NA			NA			NA			NA			NA			NA			NA		
Cobalt	NA			NA			NA			NA			NA			NA			NA			NA		
Iron	NA			NA			NA			NA			NA			NA			NA			NA		
Magnesium	NA			NA			NA			NA			NA			NA			NA			NA		
Manganese	NA			NA			NA			NA			NA			NA			NA			NA		
Potassium	NA			NA			NA			NA			NA			NA			NA			NA		
Sodium	NA			NA			NA			NA			NA			NA			NA			NA		
Dissolved Metals																								
Cobalt	[redacted]			[redacted]			[redacted]			[redacted]			[redacted]			[redacted]			[redacted]			[redacted]		
Iron	[redacted]			[redacted]			[redacted]			[redacted]			[redacted]			[redacted]			[redacted]			[redacted]		
Manganese	[redacted]			[redacted]			[redacted]			[redacted]			[redacted]			[redacted]			[redacted]			[redacted]		
Wet Chemistry Parameters																								
Alkalinity, Bicarbonate as CaCO3	NA			NA			NA			NA			NA			NA			NA			NA		
Alkalinity, Total	NA			NA			NA			NA			NA			NA			NA			NA		
Ammonia	4.1		0.1	0.58		0.1	2		0.1	1.1		0.1	0.54		0.1	0.95		0.1	0.94		0.1	2.2		0.1
Chloride	NA			NA			NA			NA			NA			NA			NA			NA		
Nitrate as N	NA			NA			NA			NA			NA			NA			NA			NA		
Sulfate	NA			NA			NA			NA			NA			NA			NA			NA		

DDA Monitoring Wells

Sample ID / Sample Date / N=Normal, FD=Field Duplicate	GA-101 10/9/2019 N			PZ-5-EXT 10/24/2019 N			PZ-11-EXT 10/24/2019 N			DGC-7C 10/30/2019 N		
Parameter	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL
Volatile Organic Compounds												
1,1-Dichloroethane		U	2		U	2		U	20		U	1
1,1-Dichloroethene		U	2		U	2		U	20		U	1
1,2,3-Trimethylbenzene	190		2	150		2	590		20		U	1
1,2,4-Trimethylbenzene	[redacted]			[redacted]			[redacted]				U	1
1,2-Dichloroethane		U	2		U	2		U	20		U	1
1,3,5-Trimethylbenzene	[redacted]			[redacted]			[redacted]				U	1
1,4-Dioxane	4.1		0.8		U	2	[redacted]				U	0.4
2-Butanone		U	10		U	10		U	100		U	5
Acetone	13	U	13		U	10		U	100	17	U	17
Benzene	1.6	J	2	0.43	J	2	[redacted]				U	1
Bromodichloromethane		U	2		U	2		U	20		U	1
Carbon Disulfide		U	2		U	2		U	20		U	1
Chlorobenzene	2.8		2	2.4		2	92		20	0.53	J	1
Chloroethane		U	2		U	2		U	20		U	1
Chloroform		U	2		U	2		U	20		U	1
Chloromethane		U	2		U	2		U	20		U	1
cis-1,2-Dichloroethene	1.9	J	2	13		2		U	20		U	1
Cyclohexane	2.8		2	8.9		2	21		20		U	1
Dibromochloromethane		U	2		U	2		U	20		U	1
Dichlorofluoromethane		U	2		U	2		U	20		U	1
Diethyl Ether		U	2		U	2		U	20		U	1
Ethylbenzene	[redacted]			[redacted]			8.7	J	20		U	1
Indane	57		2	64		2	320		20		U	1
Isopropylbenzene	43		2	51		2	120		20		U	1
Methyl Cyclohexane	21		2	15		2	39		20		U	1
Methyl tert-Butyl Ether		U	2		U	2		U	20	1.7		1
Methylene Chloride		U	2		U	2		U	20		U	1
n-Propylbenzene	120		2	74		2	350		20		U	1
Tetrachloroethene	1.2	J	2		U	2		U	20		U	1
Tetrahydrofuran		U	4		U	4		U	40		U	2
Toluene	120		2	110		2		U	20	1.5		1
trans-1,2-Dichloroethene		U	2		U	2		U	20		U	1
Trichloroethene	1	J	2		U	2		U	20		U	1
Vinyl Chloride		U	2	0.74	J	2		U	20		U	1
Xylenes, Total	[redacted]			[redacted]			[redacted]				U	2
Semivolatile Organic Compounds												
1,2,4-Trichlorobenzene	6.2		2	1.2	J	2		U	2		U	2
1,2-Dichlorobenzene		U	10	1.6	J	10		U	10		U	10
1,3-Dichlorobenzene		U	10		U	10		U	10		U	10
1,4-Dichlorobenzene		U	10	1.6	J	10	2.6	J	10		U	10
2,4-Dimethylphenol	1.9	J	10	1.5	J	10	10		10		U	10
2-Chlorophenol		U	10		U	10		U	10		U	10
2-Methylnaphthalene	4	J	10		U	10	3.6	J	10		U	10
2-Methylphenol		U	10		U	10		U	10		U	10
4-Methylphenol	1.3	J	10	0.89	J	10		U	10		U	10
Benzo[a]anthracene		U	0.05		U	0.05	0.019	J	0.05		U	0.05
Benzo[a]pyrene		U	0.05		U	0.05		U	0.05		U	0.05
Benzo[b]fluoranthene		U	0.05		U	0.05		U	0.05		U	0.05
Bis(2-chloroethyl) Ether		U	0.03		U	0.03	[redacted]				U	0.03
Bis(2-ethylhexyl) Phthalate		U	2		U	2		U	2		U	2
Bisphenol A		U	10		U	10	120		10		U	10
Diethyl Phthalate		U	10		U	10	6.2	J	10		U	10
Di-n-Butyl Phthalate	8.7	J	10		U	10	2.9	J	10		U	10
Diphenyl Ether	67		10	6.4	J	10	40		10		U	10
Hexachlorobenzene		U	0.02		U	0.02		U	0.02		U	0.02
N,N-Dimethylaniline		U	1		U	1	1.4		1		U	1
Naphthalene	[redacted]			[redacted]			[redacted]				U	10
N-Methylaniline		U	5		U	5	1.9	J	5		U	5
Pentachlorophenol		U	0.2		UJ	0.2		UJ	0.2		U	0.2
Phenol		U	10	1	J	10		U	10		U	10
Total Metals												
Calcium	NA			NA			NA			NA		
Cobalt	NA			NA			NA			NA		
Iron	NA			NA			NA			NA		
Magnesium	NA			NA			NA			NA		
Manganese	NA			NA			NA			NA		
Potassium	NA			NA			NA			NA		
Sodium	NA			NA			NA			NA		
Dissolved Metals												
Cobalt		U	50		U	50	[redacted]			[redacted]		
Iron	7230		150	[redacted]			[redacted]			[redacted]		
Manganese	[redacted]			[redacted]			135		15	[redacted]		
Wet Chemistry Parameters												
Alkalinity, Bicarbonate as CaCO3	NA			NA			NA			NA		
Alkalinity, Total	NA			NA			NA			NA		
Ammonia	0.45		0.1	0.36		0.1	3.1		0.1	2.2		0.1
Chloride	NA			NA			NA			NA		
Nitrate as N	NA			NA			NA			NA		
Sulfate	NA			NA			NA			NA		

PW-1 (U) UPCUTZ Monitoring Wells

Sample ID / Sample Date / N=Normal, FD=Field Duplicate	DDA-05 10/28/2019 N			DDA-06 10/22/2019 N			DDA-18-TZ 10/25/2019 N			DDA-18-TZ 10/25/2019 FD			DDA-19-TZ 10/24/2019 N			DDA-20-TZ 10/29/2019 N		
Parameter	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL
Volatile Organic Compounds																		
1,1-Dichloroethane	NA			NA				U	1		U	1	0.39	J	1	0.29	J	1
1,1-Dichloroethene	NA			NA				U	1		U	1		U	1		U	1
1,2,3-Trimethylbenzene	NA			NA				U	1		U	1		U	1	2.7		1
1,2,4-Trimethylbenzene	NA			NA				U	1		U	1		U	1	[redacted]		
1,2-Dichloroethane	NA			NA				U	1		U	1	1.2		1		U	1
1,3,5-Trimethylbenzene	NA			NA				U	1		U	1		U	1	2		1
1,4-Dioxane	NA			NA			1.9		0.4	1.8		0.4	[redacted]			[redacted]		
2-Butanone	NA			NA				U	5		U	5		U	5		U	5
Acetone	NA			NA				U	5		U	5		U	5		U	5
Benzene	NA			NA				U	1		U	1	[redacted]			[redacted]		
Bromodichloromethane	NA			NA				U	1		U	1		U	1		U	1
Carbon Disulfide	NA			NA				U	1		U	1		U	1		U	1
Chlorobenzene	NA			NA			1.1		1	1.1		1	0.93	J	1	0.58	J	1
Chloroethane	NA			NA				U	1		U	1		U	1		U	1
Chloroform	NA			NA				U	1		U	1		U	1		U	1
Chloromethane	NA			NA				U	1		U	1		U	1		U	1
cis-1,2-Dichloroethene	NA			NA				U	1		U	1	1.1		1		U	1
Cyclohexane	NA			NA				U	1		U	1	0.47	J	1		U	1
Dibromochloromethane	NA			NA				U	1		U	1		U	1		U	1
Dichlorofluoromethane	NA			NA				U	1		U	1	5		1	3.7		1
Diethyl Ether	NA			NA				U	1		U	1	1.3		1	0.76	J	1
Ethylbenzene	NA			NA				U	1		U	1	0.42	J	1	[redacted]		
Indane	NA			NA				U	1		U	1	1.6		1	4.6		1
Isopropylbenzene	NA			NA				U	1		U	1	1.5		1	4.5		1
Methyl Cyclohexane	NA			NA				U	1		U	1		U	1	2.8		1
Methyl tert-Butyl Ether	NA			NA				U	1		U	1		U	1		U	1
Methylene Chloride	NA			NA				U	1		U	1		U	1		U	1
n-Propylbenzene	NA			NA				U	1		U	1	2.1		1	4.5		1
Tetrachloroethene	NA			NA				U	1		U	1		U	1		U	1
Tetrahydrofuran	NA			NA				U	2		U	2		U	2	15		2
Toluene	NA			NA				U	1		U	1		U	1	0.55	J	1
trans-1,2-Dichloroethene	NA			NA				U	1		U	1		U	1		U	1
Trichloroethene	NA			NA				U	1		U	1		U	1		U	1
Vinyl Chloride	NA			NA				U	1		U	1		U	1		U	1
Xylenes, Total	NA			NA				U	2		U	2		U	2	[redacted]		
Semivolatile Organic Compounds																		
1,2,4-Trichlorobenzene	NA			NA				U	2		U	2		U	2		U	2
1,2-Dichlorobenzene	NA			NA				U	10		U	10		U	10		U	10
1,3-Dichlorobenzene	NA			NA				U	10		U	10		U	10		U	10
1,4-Dichlorobenzene	NA			NA				U	10		U	10		U	10		U	10
2,4-Dimethylphenol	NA			NA				U	10		U	10		U	10		U	10
2-Chlorophenol	NA			NA				U	10		U	10		U	10		U	10
2-Methylnaphthalene	NA			NA				U	10		U	10		U	10		U	10
2-Methylphenol	NA			NA				U	10		U	10		U	10		U	10
4-Methylphenol	NA			NA				U	10		U	10		U	10		U	10
Benzo[a]anthracene	NA			NA				U	0.05		U	0.05	0.13		0.1		U	0.05
Benzo[a]pyrene	NA			NA				U	0.05		U	0.05	0.07	J	0.1		U	0.05
Benzo[b]fluoranthene	NA			NA				U	0.05		U	0.05	0.052	J	0.1		U	0.05
Bis(2-chloroethyl) Ether	NA			NA				U	0.03		U	0.03	[redacted]			[redacted]		
Bis(2-ethylhexyl) Phthalate	NA			NA				U	2		U	2		U	2		U	2
Bisphenol A	NA			NA				U	10		U	10		U	10		U	10
Diethyl Phthalate	NA			NA				U	10		U	10		U	10		U	10
Di-n-Butyl Phthalate	NA			NA				U	10		U	10		U	10		U	10
Diphenyl Ether	NA			NA				U	10		U	10		U	10		U	10
Hexachlorobenzene	NA			NA				U	0.02		U	0.02		U	0.04		U	0.02
N,N-Dimethylaniline	NA			NA				U	1		U	1		U	1	1.8		1
Naphthalene	NA			NA				U	10		U	10		U	10		U	10
N-Methylaniline	NA			NA				U	5		U	5		U	5		U	5
Pentachlorophenol	NA			NA				UJ	0.2		U	0.2		UJ	0.4		U	0.2
Phenol	NA			NA				U	10		U	10		U	10		U	10
Total Metals																		
Calcium	10500		250	13200		250	17900		250	18800		250	17200		250	12300		250
Cobalt	NA			NA			NA			NA			NA			NA		
Iron	NA			NA			NA			NA			NA			NA		
Magnesium	7300		250	34900		250	30000		250	28400		250	8440		250	7700		250
Manganese	NA			NA			NA			NA			NA			NA		
Potassium	2410		250	3510		250	4350		250	4490		250	1770		250	2630		250
Sodium	19000		250	35800		250	53800		250	51300		250	27100		250	31200		250
Dissolved Metals																		
Cobalt	NA			NA			[redacted]			[redacted]			[redacted]			[redacted]		
Iron	NA			NA			8460		150	8970		150	[redacted]			[redacted]		
Manganese	NA			NA			[redacted]			[redacted]			[redacted]			[redacted]		
Wet Chemistry Parameters																		
Alkalinity, Bicarbonate as CaCO3	90.6		5	119		5	228		5	223		5	63.6		5	49.4		5
Alkalinity, Total	NA			NA			NA			NA			63.6		5	NA		
Ammonia	4.5		0.1	2.6		0.1	0.54		0.1	0.52		0.1	0.64		0.1	2.2		0.1
Chloride	24.6		1.08	85.9		3.84	66.8		3.12	68.9		3.12	44.7		2.04	69.7		3.12
Nitrate as N		U	0.1	0.2		0.1		U	0.1		U	0.1		U	0.1		U	0.1
Sulfate	12.2		0.6	5.65		0.6	17.5		0.6	17.6		0.6	8.63		0.6	1.96		0.6

2/29/2020

Created by: YJS
Checked by: SLS
Approved by: TAM
GOLDER

ED_004821A_00011884-00437

Appendix B-1
Summary of Detected Compounds - October/November 2019 Groundwater
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

Parameter	CAS	Unit	RSL HQ= 0.1	RSL HQ=1.0	MCL	[redacted]	PW-1 (U) UPCUTZ Monitoring Wells DGC-5 (40) 10/24/2019 N Result	Qual	RDL	DGC-5 (50) 10/24/2019 N Result	Qual	RDL	PW-1 (U) Upper Sand Monitoring Wells DDA-01 10/28/2019 N Result	Qual	RDL	DDA-02 10/21/2019 N Result	Qual	RDL	DDA-03 10/22/2019 N Result	Qual	RDL
Volatile Organic Compounds																					
1,1-Dichloroethane	75-34-3	ug/L	2.8	2.8	NE	NE		U	1		U	1	NA				U	1	NA		
1,1-Dichloroethene	75-35-4	ug/L	28	280	7	NE		U	1		U	1	NA				U	1	NA		
1,2,3-Trimethylbenzene	526-73-8	ug/L	5.5	55	NE	NE		U	1		U	1	NA				U	1	NA		
1,2,4-Trimethylbenzene	95-63-6	ug/L	5.6	56	NE	5.7		U	1		U	1	NA				U	1	NA		
1,2-Dichloroethane	107-06-2	ug/L	0.17	0.17	5	NE		U	1		U	1	NA				U	1	NA		
1,3,5-Trimethylbenzene	108-67-8	ug/L	6	60	NE	6.1		U	1		U	1	NA				U	1	NA		
1,4-Dioxane	123-91-1	ug/L	0.46	0.46	NE	4.6	[redacted]			[redacted]			NA			[redacted]			NA		
2-Butanone	78-93-3	ug/L	560	5600	NE	NE		U	5		U	5	NA				U	5	NA		
Acetone	67-64-1	ug/L	1400	14000	NE	NE		U	5		U	5	NA				U	5	NA		
Benzene	71-43-2	ug/L	0.46	0.46	5	4.6	0.2	J	1	0.23	J	1	NA			0.7	J	1	NA		
Bromodichloromethane	75-27-4	ug/L	0.13	0.13	80	NE		U	1		U	1	NA				U	1	NA		
Carbon Disulfide	75-15-0	ug/L	81	810	NE	NE		U	1		U	1	NA				U	1	NA		
Chlorobenzene	108-90-7	ug/L	7.8	78	100	NE		U	1		U	1	NA				U	1	NA		
Chloroethane	75-00-3	ug/L	2100	21000	NE	NE		U	1		U	1	NA				U	1	NA		
Chloroform	67-66-3	ug/L	0.22	0.22	80	NE		U	1		U	1	NA				U	1	NA		
Chloromethane	74-87-3	ug/L	19	190	NE	NE		U	1		U	1	NA				U	1	NA		
cis-1,2-Dichloroethene	156-59-2	ug/L	3.6	36	70	NE		U	1		U	1	NA				U	1	NA		
Cyclohexane	110-82-7	ug/L	1300	13000	NE	NE		U	1		U	1	NA				U	1	NA		
Dibromochloromethane	124-48-1	ug/L	0.87	0.87	80	NE		U	1		U	1	NA				U	1	NA		
Dichlorofluoromethane	75-43-4	ug/L	NE	NE	NE	NE		U	1		U	1	NA				U	1	NA		
Diethyl Ether	60-29-7	ug/L	390	3900	NE	NE		U	1		U	1	NA				U	1	NA		
Ethylbenzene	100-41-4	ug/L	1.5	1.5	700	15		U	1		U	1	NA			0.42	J	1	NA		
Indane	496-11-7	ug/L	NE	NE	NE	NE		U	1		U	1	NA				U	1	NA		
Isopropylbenzene	98-82-8	ug/L	45	450	NE	NE		U	1		U	1	NA				U	1	NA		
Methyl Cyclohexane	108-87-2	ug/L	NE	NE	NE	NE		U	1		U	1	NA				U	1	NA		
Methyl tert-Butyl Ether	1634-04-4	ug/L	14	14	NE	NE		U	1		U	1	NA			0.87	J	1	NA		
Methylene Chloride	75-09-2	ug/L	11	11	5	NE		U	1		U	1	NA				U	1	NA		
n-Propylbenzene	103-65-1	ug/L	66	660	NE	NE		U	1		U	1	NA				U	1	NA		
Tetrachloroethene	127-18-4	ug/L	4.1	11	5	NE		U	1		U	1	NA				U	1	NA		
Tetrahydrofuran	109-99-9	ug/L	340	3400	NE	NE		U	2		U	2	NA				U	2	NA		
Toluene	108-88-3	ug/L	110	1100	1000	NE		U	1		U	1	NA				U	1	NA		
trans-1,2-Dichloroethene	156-60-5	ug/L	36	360	100	NE		U	1		U	1	NA				U	1	NA		
Trichloroethene	79-01-6	ug/L	0.28	0.49	5	NE		U	1		U	1	NA				U	1	NA		
Vinyl Chloride	75-01-4	ug/L	0.019	0.019	2	NE		U	1		U	1	NA				U	1	NA		
Xylenes, Total	1330-20-7	ug/L	19	190	10000	21		U	2		U	2	NA				U	2	NA		
Semivolatile Organic Compounds																					
1,2,4-Trichlorobenzene	120-82-1	ug/L	0.4	1.2	70	NE		U	2		U	2	NA				U	2	NA		
1,2-Dichlorobenzene	95-50-1	ug/L	30	300	600	NE		U	10		U	10	NA				U	10	NA		
1,3-Dichlorobenzene	541-73-1	ug/L	NE	NE	NE	NE		U	10		U	10	NA				U	10	NA		
1,4-Dichlorobenzene	106-46-7	ug/L	0.48	0.48	75	NE		U	10		U	10	NA				U	10	NA		
2,4-Dimethylphenol	105-67-9	ug/L	36	360	NE	NE		U	10		U	10	NA				U	10	NA		
2-Chlorophenol	95-57-8	ug/L	9.1	91	NE	NE		U	10		U	10	NA				U	10	NA		
2-Methylnaphthalene	91-57-6	ug/L	3.6	36	NE	NE		U	10		U	10	NA				U	10	NA		
2-Methylphenol	95-48-7	ug/L	93	930	NE	NE		U	10		U	10	NA				U	10	NA		
4-Methylphenol	106-44-5	ug/L	190	1900	NE	NE		U	10		U	10	NA				U	10	NA		
Benzo[a]anthracene	56-55-3	ug/L	0.03	0.03	NE	NE		U	0.05		U	0.05	NA				U	0.05	NA		
Benzo[a]pyrene	50-32-8	ug/L	0.025	0.025	0.2	NE		U	0.05		U	0.05	NA				U	0.05	NA		
Benzo[b]fluoranthene	205-99-2	ug/L	0.25	0.25	NE	NE		U	0.05		U	0.05	NA				U	0.05	NA		
Bis(2-chloroethyl) Ether	111-44-4	ug/L	0.014	0.014	NE	0.14	[redacted]			[redacted]			NA			[redacted]			NA		
Bis(2-ethylhexyl) Phthalate	117-81-7	ug/L	5.6	5.6	6	NE		U	2		U	2	NA				U	2	NA		
Bisphenol A	80-05-7	ug/L	77	770	NE	NE		U	10		U	10	NA				U	10	NA		
Diethyl Phthalate	84-66-2	ug/L	1500	15000	NE	NE		U	10		U	10	NA				U	10	NA		
Di-n-Butyl Phthalate	84-74-2	ug/L	90	900	NE	NE		U	10		U	10	NA				U	10	NA		
Diphenyl Ether	101-84-8	ug/L	NE	NE	NE	NE		U	10		U	10	NA				U	10	NA		
Hexachlorobenzene	118-74-1	ug/L	0.0098	0.0098	1	NE		U	0.02		U	0.02	NA			0.014	J	0.02	NA		
N,N-Dimethylaniline	121-69-7	ug/L	2.5	2.5	NE	25		U	1		U	1	NA				U	1	NA		
Naphthalene	91-20-3	ug/L	0.17	0.17	NE	0.63		U	10		U	10	NA				U	10	NA		
N-Methylaniline	100-61-8	ug/L	NE	38	NE	NE		U	5		U	5	NA				U	5	NA		
Pentachlorophenol	87-86-5	ug/L	0.041	0.041	1	NE		UJ	0.2		UJ	0.2	NA				U	0.2	NA		
Phenol	108-95-2	ug/L	580	5800	NE	NE		U	10		U	10	NA				U	10	NA		
Total Metals																					
Calcium	7440-70-2	ug/L	NE	NE	NE	NE	20000		250	NA			14400		250	10500		250	16700		250
Cobalt	7440-48-4	ug/L	0.6	6	NE	6	NA			NA			NA			NA			NA		
Iron	7439-89-6	ug/L	1400	14000	NE	13939	NA			NA			NA			NA			NA		
Magnesium	7439-95-4	ug/L	NE	NE	NE	NE	11600		250	NA			5630		250	5420		250	8740		250
Manganese	7439-96-5	ug/L	43	430	NE	260	NA			NA			NA			NA			NA		
Potassium	7440-09-7	ug/L	NE	NE	NE	NE	3780		250	NA			2490		250	2680		250	3420		250
Sodium	7440-23-5	ug/L	NE	NE	NE	NE	28600		250	NA			19500		250	19400		250	40300		250
Dissolved Metals																					
Cobalt	7440-48-4	ug/L	0.6	6	NE	6	[redacted]						NA			[redacted]			NA		
Iron	7439-89-6	ug/L	1400	14000	NE	13939							NA						NA		
Manganese	7439-96-5	ug/L	43	430	NE	260							NA						NA		
Wet Chemistry Parameters																					
Alkalinity, Bicarbonate as CaCO3	ALKB-C	mg/L	NE	NE	NE	NE	70.7		5	NA			54.8		5	49.4		5	56.5		5
Alkalinity, Total	ALK	mg/L	NE	NE	NE	NE	70.7		5	NA			NA			NA			NA		
Ammonia	7664-41-7	mg/L	NE	NE	NE	NE	0.54		0.1	0.55		0.1	0.15		0.1	0.77		0.1	0.079	J	0.1
Chloride	16887-00-6	mg/L	NE	NE	NE	NE	61.2		2.76	NA			39.1		1.8	30.3		1.44	71.5		3.24
Nitrate as N	14797-55-8-N	mg/L	3.2	32	10	NE		R	0.1	NA				U	0.1		U	0.1		U	0.1
Sulfate	14808-79-8	mg/L	NE	NE	NE	NE	9.79		0.6	NA			20.2		0.6	17.2		0.6	20.4		0.6

Parameter	DDA-10-US 10/30/2019 N Result	Qual	RDL	DDA-12-US 10/21/2019 N Result	Qual	RDL	DDA-18-US 10/25/2019 N Result	Qual	RDL	DDA-19-US 10/24/2019 N Result	Qual	RDL	DDA-20-US 10/29/2019 N Result	Qual	RDL
Volatile Organic Compounds															
1,1-Dichloroethane	0.86	J	1		U	5		U	1	1.1		1		U	1
1,1-Dichloroethene		U	1		U	5		U	1		U	1		U	1
1,2,3-Trimethylbenzene	2.2		1	260		5		U	1		U	1		U	1
1,2,4-Trimethylbenzene	[redacted]							UJ	1		U	1	0.52	J	1
1,2-Dichloroethane		U	1		U	5		U	1	3.5		1	1.4		1
1,3,5-Trimethylbenzene	2		1	[redacted]				UJ	1		U	1		U	1
1,4-Dioxane	[redacted]						2.4		0.4	[redacted]					
2-Butanone		U	5		U	25		U	5		U	5		U	5
Acetone	5.8	U	5.8		U	25		U	5		U	5		U	5
Benzene	[redacted]						1.8		1	[redacted]			0.63	J	1
Bromodichloromethane		U	1		U	5		U	1		U	1		U	1
Carbon Disulfide		U	1		U	5		U	1		U	1		U	1
Chlorobenzene	2.5		1	4	J	5		U	1	3.2		1		U	1
Chloroethane		U	1		U	5		U	1		U	1		U	1
Chloroform		U	1		U	5		U	1		U	1		U	1
Chloromethane		U	1		U	5		U	1		U	1		U	1
cis-1,2-Dichloroethene	0.88	J	1		U	5		U	1	2.8		1		U	1
Cyclohexane	21		1	56		5		U	1	3.6		1		U	1
Dibromochloromethane		U	1		U	5		U	1		U	1		U	1
Dichlorofluoromethane	17		1	2	J	5		U	1	13		1		U	1
Diethyl Ether	3.7		1		U	5		U	1	3.9		1		U	1
Ethylbenzene	[redacted]			12		5		U	1	2.6		1		U	1
Indane	5.9		1	110		5		UJ	1	3.7		1		U	1
Isopropylbenzene	8.1		1	[redacted]				U	1	3.8		1		U	1
Methyl Cyclohexane	41		1	120		5		U	1	5.1		1		U	1
Methyl tert-Butyl Ether		U	1		U	5		U	1		U	1	0.85	J	1
Methylene Chloride	0.41	J	1		U	5		U	1		U	1		U	1
n-Propylbenzene	7.7		1	[redacted]				UJ	1	3.6		1		U	1
Tetrachloroethene		U	1		U	5		U	1		U	1		U	1
Tetrahydrofuran		U	2		U	10		U	2		U	2		U	2
Toluene	0.52	J	1	3.3	J	5		U	1		U	1		U	1
trans-1,2-Dichloroethene		U	1		U	5		U	1		U	1		U	1
Trichloroethene		U	1		U	5		U	1		U	1		U	1
Vinyl Chloride	0.61	J	1		U	5		U	1		U	1		U	1
Xylenes, Total	11		2	[redacted]				U	2		U	2		U	2
Semivolatile Organic Compounds															
1,2,4-Trichlorobenzene		U	2		U	2		U	2		U	2		U	2
1,2-Dichlorobenzene		U	10	2.6	J	10		U	10		U	10		U	10
1,3-Dichlorobenzene		U	10		U	10		U	10		U	10		U	10
1,4-Dichlorobenzene		U	10	1.7	J	10		U	10		U	10		U	10
2,4-Dimethylphenol		U	10	3.6	J	10		U	10		U	10		UJ	10
2-Chlorophenol		U	10		U	10		U	10		U	10		UJ	10
2-Methylnaphthalene		U	10	2	J	10		U	10		U	10		U	10
2-Methylphenol		U	10		U	10		U	10		U	10		UJ	10
4-Methylphenol		U	10		U	10		U	10		U	10		UJ	10
Benzo[a]anthracene	0.28	J	0.5	0.024	J	0.05		U	0.05	0.46		0.25		UJ	0.05
Benzo[a]pyrene		U	0.5		U	0.05		UJ	0.05	0.34		0.25		UJ	0.05
Benzo[b]fluoranthene		U	0.5		U	0.05		U	0.05	0.31		0.25		UJ	0.05
Bis(2-chloroethyl) Ether	[redacted]														
Bis(2-ethylhexyl) Phthalate		U	2		U	2		U	2		U	2		U	2
Bisphenol A		U	10	11		10		U	10	10		10		R	10
Diethyl Phthalate		U	10		U	10		U	10		U	10		U	10
Di-n-Butyl Phthalate		U	10		U	10		U	10		U	10		U	10
Diphenyl Ether		U	10	14		10		U	10		U	10		U	10
Hexachlorobenzene		U	0.2	0.023		0.02		U	0.02		U	0.1		U	0.02
N,N-Dimethylaniline		U	1	9.3		1		U	1	1.6		1		U	1
Naphthalene		U	10	[redacted]				U	10		U	10		U	10
N-Methylaniline		U	5	2.5	J	5		UJ	5		U	5		UJ	5
Pentachlorophenol		U	2		U	0.2		U	0.2		UJ	1		UJ	0.2
Phenol		U	10		U	10		U	10	0.64	J	10		R	10
Total Metals															
Calcium	33100		250	7420		250	13100		250	22400		250	17100		250
Cobalt	NA			NA			NA			NA			NA		
Iron	NA			NA			NA			NA			NA		
Magnesium	7610		250	2200		250	6970		250	9300		250	6440		250
Manganese	NA			NA			NA			NA			NA		
Potassium	5070		250	4470		250	2860		250	2290		250	1940		250
Sodium	33200		250	17800		250	17400		250	42100		250	24200		250
Dissolved Metals															
Cobalt	[redacted]						1.7	J	50	[redacted]					
Iron	[redacted]												7810		150
Manganese	[redacted]														
Wet Chemistry Parameters															
Alkalinity, Bicarbonate as CaCO3	97		5	36.1		5	46.5		5	103		5	25.2		5
Alkalinity, Total	NA			NA			NA			103		5	NA		
Ammonia	0.69	J+	0.1	4.4		0.1	0.3		0.1	0.15		0.1		U	0.1
Chloride	86.4		3.84	38.7		1.8	30.2	J-	1.32	45.3		2.04	63.9	R	3
Nitrate as N		U	0.1		U	0.1		U	0.1		U	0.1	0.37		0.1
Sulfate	7.48		0.6		U	0.6	19.5	J-	6.6	9.13		0.6	17.8	J-	0.6

Parameter	DDA-20-US 10/29/2019 FD Result	Qual	RDL	DGC-2S 10/23/2019 N Result	Qual	RDL	DGC-2S 10/24/2019 N Result	Qual	RDL	DGC-7S 10/30/2019 N Result	Qual	RDL	MHW-1D 10/28/2019 N Result	Qual	RDL	PW-1(U) 10/22/2019 N Result	Qual	RDL
Volatile Organic Compounds																		
1,1-Dichloroethane	0.26	J	1	NA			NA			NA				U	1		U	1
1,1-Dichloroethene		U	1	NA			NA			NA				U	1		U	1
1,2,3-Trimethylbenzene	2.8		1	NA			NA			NA				U	1	2.1		1
1,2,4-Trimethylbenzene	[redacted]			NA			NA			NA				U	1	[redacted]		
1,2-Dichloroethane		U	1	NA			NA			NA				U	1		U	1
1,3,5-Trimethylbenzene	2.2		1	NA			NA			NA				U	1	2		1
1,4-Dioxane	[redacted]			NA			NA			NA			[redacted]					
2-Butanone		U	5	NA			NA			NA				U	5		U	5
Acetone		U	5	NA			NA			NA				U	5		U	5
Benzene	[redacted]			NA			NA			NA				U	1	[redacted]		
Bromodichloromethane		U	1	NA			NA			NA				U	1		U	1
Carbon Disulfide		U	1	NA			NA			NA				U	1		U	1
Chlorobenzene	0.6	J	1	NA			NA			NA				U	1	1.9		1
Chloroethane		U	1	NA			NA			NA				U	1		U	1
Chloroform		U	1	NA			NA			NA				U	1		U	1
Chloromethane		U	1	NA			NA			NA				U	1		U	1
cis-1,2-Dichloroethene		U	1	NA			NA			NA				U	1		U	1
Cyclohexane		U	1	NA			NA			NA				U	1	0.75	J	1
Dibromochloromethane		U	1	NA			NA			NA				U	1		U	1
Dichlorofluoromethane	3.5		1	NA			NA			NA				U	1	0.4	J	1
Diethyl Ether	0.82	J	1	NA			NA			NA				U	1	0.56	J	1
Ethylbenzene	[redacted]			NA			NA			NA				U	1	3		1
Indane	4.7		1	NA			NA			NA				U	1	2.8		1
Isopropylbenzene	4.6		1	NA			NA			NA				U	1	1.5		1
Methyl Cyclohexane	3		1	NA			NA			NA				U	1	1.3		1
Methyl tert-Butyl Ether		U	1	NA			NA			NA				U	1		U	1
Methylene Chloride		U	1	NA			NA			NA				U	1		U	1
n-Propylbenzene	4.7		1	NA			NA			NA				U	1	1.7		1
Tetrachloroethene		U	1	NA			NA			NA				U	1	3		1
Tetrahydrofuran	14		2	NA			NA			NA				U	2		U	2
Toluene	0.52	J	1	NA			NA			NA				U	1		U	1
trans-1,2-Dichloroethene		U	1	NA			NA			NA				U	1		U	1
Trichloroethene		U	1	NA			NA			NA				U	1		U	1
Vinyl Chloride		U	1	NA			NA			NA				U	1		U	1
Xylenes, Total	[redacted]			NA			NA			NA				U	2	17		2
Semivolatile Organic Compounds																		
1,2,4-Trichlorobenzene		U	2	NA			NA			NA				U	2		U	2
1,2-Dichlorobenzene		U	10	NA			NA			NA				U	10		U	10
1,3-Dichlorobenzene		U	10	NA			NA			NA				U	10		U	10
1,4-Dichlorobenzene		U	10	NA			NA			NA				U	10		U	10
2,4-Dimethylphenol		U	10	NA			NA			NA				U	10		U	10
2-Chlorophenol		U	10	NA			NA			NA				U	10		U	10
2-Methylnaphthalene		U	10	NA			NA			NA				U	10		U	10
2-Methylphenol		U	10	NA			NA			NA				U	10		U	10
4-Methylphenol		U	10	NA			NA			NA				U	10		U	10
Benzo[a]anthracene		U	0.05	NA			NA			NA				U	0.05		U	0.05
Benzo[a]pyrene		U	0.05	NA			NA			NA				U	0.05		U	0.05
Benzo[b]fluoranthene		U	0.05	NA			NA			NA				U	0.05		U	0.05
Bis(2-chloroethyl) Ether	[redacted]			NA			NA			NA			0.13		0.03	[redacted]		
Bis(2-ethylhexyl) Phthalate		U	2	NA			NA			NA				U	2		U	2
Bisphenol A		U	10	NA			NA			NA				U	10		U	10
Diethyl Phthalate		U	10	NA			NA			NA				U	10		U	10
Di-n-Butyl Phthalate		U	10	NA			NA			NA				U	10		U	10
Diphenyl Ether		U	10	NA			NA			NA				U	10		U	10
Hexachlorobenzene		U	0.02	NA			NA			NA				U	0.02		U	0.02
N,N-Dimethylaniline	1.8		1	NA			NA			NA				U	1		U	1
Naphthalene		U	10	NA			NA			NA				U	10		U	10
N-Methylaniline		U	5	NA			NA			NA				U	5		U	5
Pentachlorophenol		U	0.2	NA			NA			NA				U	0.2		U	0.2
Phenol		U	10	NA			NA			NA				U	10		U	10
Total Metals																		
Calcium	12400		250	14900		250	NA			19500		250	2710		50	15600		250
Cobalt	NA			NA			NA			NA			NA			NA		
Iron	NA			NA			NA			NA			NA			NA		
Magnesium	8280		250	6980		250	NA			10600		250	1390		50	9710		250
Manganese	NA			NA			NA			NA			NA			NA		
Potassium	2710		250	3070		250	NA			2600		250	671		50	3060		250
Sodium	33100		250	15800		250	NA			15600		250	4860		50	29300		250
Dissolved Metals																		
Cobalt	[redacted]			NA			NA			NA			[redacted]					
Iron				NA			NA			NA								
Manganese				NA			NA			NA								
Wet Chemistry Parameters																		
Alkalinity, Bicarbonate as CaCO3	52.2		5	51.3		5				116		5	74.4		5	81.7		5
Alkalinity, Total	NA			NA			NA			NA			NA			NA		
Ammonia	2.2		0.1	0.13		0.1				0.39	J+	0.1	0.21		0.1	0.38		0.1
Chloride	68.3		3.24	22.5		1.08	22.5		0.96	29.1		1.32	36.5		1.68	50		2.28
Nitrate as N		U	0.1	0.062	J	0.1	0.29		0.1		U	0.1		U	0.1	0.91		0.1
Sulfate	1.6		0.6	21		0.6	17.3		0.6	25.8		6.6	19.1		0.6	15.5		0.6

2/29/2020

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Approved by: TAM
GOLDER

ED_004821A_00011884-00438

Appendix B-1
Summary of Detected Compounds - October/November 2019 Groundwater
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

							Downgradient Columbia Monitoring Wells									Downgradient UPCUTZ Monitoring Wells																					Downgradient Upper Sand Monitoring Wells																	
						Sample ID	CA-102			CA-103			CA-106			UPA-102-TZ			UPA-103-TZ			UPA-104-TZ			UPA-105A-TZ			UPA-105B-TZ			UPA-107-TZ			UPA-108B-TZ			DGC-8S			DGC-10S			DGC-11S			RT-1-UP			UPA-01			UPA-02S			UPA-102-US			UPA-103-US		
						Sample Date	10/9/2019			10/9/2019			10/8/2019			10/10/2019			10/4/2019			10/2/2019			10/1/2019			10/1/2019			10/2/2019			10/10/2019			10/14/2019			10/7/2019			10/7/2019			10/21/2019			10/21/2019			10/14/2019			10/14/2019			10/7/2019		
						N=Normal, FD=Field Duplicate	N			N			N			N			N			N			N			N			N			N			N			N			N			N			N			N			N			N		
Parameter	CAS	Unit	RSL HQ=0.1	RSL HQ=1.0	MCL	FD	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL
Volatile Organic Compounds																																																											
1,1-Dichloroethane	75-34-3	ug/L	2.8	2.8	NE	NE		U	1		U	1		U	1	2.9		1		U	1		U	1		U	1		U	1		U	1		U	1	NA				U	1		U	1		U	1	1.3		1				0.84	J	1		U	1
1,1-Dichloroethene	75-35-4	ug/L	28	280	7	NE		U	1		U	1		U	1	0.43	J	1		U	1		U	1		U	1		U	1		U	1		U	1	NA				U	1		U	1		U	1		U	1					U	1		U	1
1,2,3-Trimethylbenzene	526-73-8	ug/L	5.5	55	NE	NE		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	NA				U	1		U	1		U	1		U	1					U	1		U	1
1,2,4-Trimethylbenzene	95-63-6	ug/L	5.6	56	NE	5.7		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	NA				U	1		U	1		U	1		U	1					U	1		U	1
1,2-Dichloroethane	107-06-2	ug/L	0.17	0.17	5	NE		U	1		U	1		U	1	23		1		U	1	1.2		1		U	1		U	1	3		1		U	1	NA				U	1		U	1		U	1	0.74	J	1				1.6		1		U	1
1,3,5-Trimethylbenzene	108-67-8	ug/L	6	60	NE	6.1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	NA				U	1		U	1		U	1		U	1					U	1		U	1
1,4-Dioxane	123-91-1	ug/L	0.46	0.46	NE	4.6		U	0.4	1.4		0.4							2.8		0.4					U	0.4		U	0.4						NA							U	0.4															1.6		0.4
2-Butanone	78-93-3	ug/L	560	5600	NE	NE		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5	NA				U	5		U	5		U	5		U	5					U	5		U	5
Acetone	67-64-1	ug/L	1400	14000	NE	NE		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5	NA				U	5		U	5		U	5		U	5					U	5		U	5
Benzene	71-43-2	ug/L	0.46	0.46	5	4.6		U	1		U	1		U	1					U	1					U	1		U	1	0.88	J	1	0.58	J	1	NA				U	1		U	1		U	1									U	1		U	1
Bromodichloromethane	75-27-4	ug/L	0.13	0.13	80	NE		U	1	2.2		1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	NA				U	1		U	1		U	1		U	1					U	1		U	1
Carbon Disulfide	75-15-0	ug/L	81	810	NE	NE		U	1		U	1		U	1	3.4		1		U	1		U	1		U	1		U	1		U	1		U	1	NA				U	1		U	1		U	1		U	1					2.9		1		U	1
Chlorobenzene	108-90-7	ug/L	7.8	78	100	NE		U	1		U	1		U	1	91		1	0.43	J	1		U	1		U	1		U	1	0.98	J	1	6.1		1	NA				U	1		U	1		U	1	4.3		1				69		1	1.1		1
Chloroethane	75-00-3	ug/L	2100	21000	NE	NE		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	NA				U	1		U	1		U	1	0.52	J	1					U	1		U	1
Chloroform	67-66-3	ug/L	0.22	0.22	80	NE		U	1	2.8		1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	NA				U	1		U	1		U	1		U	1					U	1		U	1
Chloromethane	74-87-3	ug/L	19	190	NE	NE		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	NA				U	1		U	1		U	1		U	1					U	1		U	1
cis-1,2-Dichloroethene	156-59-2	ug/L	3.6	36	70	NE		U	1		U	1		U	1	9.8		1		U	1	0.24	J	1		U	1		U	1		U	1		U	1	NA				U	1		U	1		U	1	0.68	J	1				2.1		1		U	1
Cyclohexane	110-82-7	ug/L	1300	13000	NE	NE		U	1		U	1		U	1	3.3		1		U	1	0.46	J	1		U	1		U	1		U	1		U	1	NA				U	1		U	1		U	1		U	1					0.52	J	1		U	1
Dibromochloromethane	124-48-1	ug/L	0.87	0.87	80	NE		U	1	1.5		1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	NA				UJ	1		UJ	1		U	1		U	1						U	1		UJ	1
Dichlorofluoromethane	75-43-4	ug/L	NE	NE	NE	NE		U	1		U	1	0.93	J	1	33		1		U	1	4.3		1		U	1		U	1	1.3		1		U	1	NA			0.35	J	1		U	1		U	1	8.5		1				6.3		1		U	1
Diethyl Ether	60-29-7	ug/L	390	3900	NE	NE		U	1		U	1		U	1	6.4		1		U	1	0.92	J	1		U	1		U	1		U	1	46		1	NA				U	1		U	1		U	1	2.7		1				3.4		1	0.98	J	1
Ethylbenzene	100-41-4	ug/L	1.5	1.5	700	15		U	1		U	1		U	1	0.55	J	1		U	1		U	1		U	1		U	1		U	1		U	1	NA				U	1		U	1		U	1	12		1					U	1		U	1
Indane	496-11-7	ug/L	NE	NE	NE	NE		U	1		U	1		U	1	2.1		1		U	1		U	1		U	1		U	1		U	1	0.55	J	1	NA				U	1		U	1		U	1	10		1				2.7		1		U	1
Isopropylbenzene	98-82-8	ug/L	45	450	NE	NE		U	1		U	1		U	1	4.8		1		U	1	0.64	J	1		U	1		U	1		U	1		U	1	NA				U	1		U	1		U	1	11		1				0.39	J	1		U	1
Methyl Cyclohexane	108-87-2	ug/L	NE	NE	NE	NE		U	1		U	1		U	1	0.99	J	1		U	1		U	1		U	1		U	1		U	1		U	1	NA				U	1		U	1		U	1		U	1					0.31	J	1		U	1
Methyl tert-Butyl Ether	1634-04-4	ug/L	14	14	NE	NE		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	NA				U	1		U	1		U	1		U	1					0.88	J	1		U	1
Methylene Chloride	75-09-2	ug/L	11	11	5	NE		U	1		U	1		U	1	0.77	J	1		U	1		U	1		U	1		U	1		U	1		U	1	NA				U	1		U	1		U	1		U	1						U	1		U	1
n-Propylbenzene	103-65-1	ug/L	66	660	NE	NE		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	NA				U	1		U	1		U	1	12		1					U	1		U	1
Tetrachloroethene	127-18-4	ug/L	4.1	11	5	NE		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	NA				U	1		U	1		U	1	1.5		1					U	1		U	1
Tetrahydrofuran	109-99-9	ug/L	340	3400	NE	NE		U	2		U	2	4.2		2	73		2		U	2		U	2		U	2		U	2	4.7		2		U	2	NA				U	2		U	2	1.4	J	2		U	2				16		2		U	2
Toluene	108-88-3	ug/L	110	1100	1000	NE		U	1		U	1		U	1	0.69	J	1		U	1		U	1		U	1		U	1		U	1		U	1	NA				U	1		U	1		U	1		U	1						U	1		U	1
trans-1,2-Dichloroethene	156-60-5	ug/L	36	360	100	NE		U	1		U	1		U	1	0.49	J	1		U	1		U	1		U	1		U	1		U	1		U	1	NA				U	1		U	1		U	1		U	1						U	1		U	1
Trichloroethene	79-01-6	ug/L	0.28	0.49	5	NE		U	1		U	1		U	1	4.9		1	0.49	J	1		U	1		U	1		U	1		U	1		U	1	NA			0.86	J	1		U	1		U	1		U	1					0.69	J	1		U	1
Vinyl Chloride	75-01-4	ug/L	0.019	0.019	2	NE		U	1		U	1		U	1	3		1		U	1		U	1		U	1		U	1		U	1		U	1	NA				U	1		U	1		U	1		U	1					0.62	J	1		U	1
Xylenes, Total	1330-20-7	ug/L	19	190	10000	21		U	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2	NA				U	2		U	2		U	2		U	2						U	2		U	2
Semivolatile Organic Compounds																																																											
1,2,4-Trichlorobenzene	120-82-1	ug/L	0.4	1.2	70	NE		U	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2	NA				U	2		U	2		U	2		U	2					U	2		U	2
1,2-Dichlorobenzene	95-50-1	ug/L	30	300	600	NE		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10	NA				U	10		U	10		U	10		U	10					U	10		U	10
1,3-Dichlorobenzene	541-73-1	ug/L	NE	NE	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10	NA				U	10		U	10		U	10		U	10					U	10		U	10
1,4-Dichlorobenzene	106-46-7	ug/L	0.48	0.48	75	NE		U	10		U	10		U	10	1.3	J	10		U	10		U	10		U	10		U	10		U	10		U	10	NA				U	10		U	10		U	10		U	10				1.8	J	10		U	10
2,4-Dimethylphenol	105-67-9	ug/L	36	360	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10	NA				U	10		U	10		U	10		U	10					U	10		U	10
2-Chlorophenol	95-57-8	ug/L	9.1	91	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10	NA				U	10		U	10		U	10		U	10					U	10		U	10
2-Methylnaphthalene	91-57-6	ug/L	3.6	36	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10	NA				U	10		U	10		U	10		U	10					U	10		U	10
2-Methylphenol	95-48-7	ug/L	93	930	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10	NA				U	10		U	10		U	10		U	10					U	10		U	10
4-Methylphenol	106-44-5	ug/L	190	1900	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10	9.4	J	10		U	10		U	10		U	10	NA				U	10		U	10		U	10		U	10					U	10		U	10
Benzo[a]anthracene	56-55-3	ug/L	0.03	0.03	NE	NE		U	0.05		U	0.05		U	0.05		U	0.5		U	0.05	0.04	J	0.1		U	0.05		U	0.05		U	0.05		U	0.05	NA				U	0.05		U	0.05		U	0.05		U	0.05					U	0.05		U	0.05
Benzo[a]pyrene	50-32-8	ug/L	0.025	0.025	0.2	NE		U	0.05		U	0.05		U	0.05		U	0.5		U	0.05		UJ	0.1		U	0.05		U	0.05		UJ	0.05		U	0.05	NA				U	0.05		U	0.05		U	0.05		U	0.05					U	0.05		U	0.05
Benzo[b]fluoranthene	205-99-2	ug/L	0.25	0.25	NE	NE		U	0.05		U	0.05		U	0.05		U	0.5		U	0.05		U	0.1		U	0.05		U	0.05		U	0.05		U	0.05	NA				U	0.05		U	0.05		U	0.05		U	0.05					U	0.05		U	0.05
Bis(2-chloroethyl) Ether	111-44-4	ug/L	0.014	0.014	NE	0.14		U	0.03		U	0.03		U	0.03					U	0.03					U	0.03		U	0.03							NA							U	0.03		U	0.03									0.056		0.03
Bis(2-ethylhexyl) Phthalate	117-81-7	ug/L	5.6	5.6	6	NE		U	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2	NA				U	2		U	2		U	2		U	2					U	2		U	2
Bisphenol A	80-05-7	ug/L	77	770	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10	NA				UJ	10		UJ	10		U	10		U	10				31		10		UJ	10
Diethyl Phthalate	84-66-2	ug/L	1500	15000	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10	NA				U	10		U	10		U	10		U	10					U	10		U	10
Di-n-Butyl Phthalate	84-74-2	ug/L	90	900	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10	NA				U	10		U	10		U	10		U	10					U	10		U	10
Diphenyl Ether	101-84-8	ug/L	NE	NE	NE	NE		U	10		U	10	2.8	J	10	1.7	J	10		U	10		U	10		U	10		U	10		U	10		U	10	NA				U	10		U	10		U	10	1.6	J	10				1.9	J	10		U	10
Hexachlorobenzene	118-74-1	ug/L	0.0098	0.0098	1	NE		U	0.02		U	0.02		U	0.02		U	0.2		U	0.02		U	0.04		U	0.02		U	0.02	0.02		0.02		U	0.02	NA				U	0.02		U	0.02		U	0.02		U	0.02					U	0.02		U	0.02
N,N-Dimethylaniline	121-69-7	ug/L	2.5	2.5	NE	25		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	NA				U	1		U	1		U	1	5.8		1				0.95	J	1		U	1
Naphthalene	91-20-3	ug/L	0.17	0.17	NE	0.63		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10	NA				U	10		U	10		U	10		U	10					U	10		U	10
N-Methylaniline	100-61-8	ug/L	NE	38	NE	NE		U	5		U	5		U	5	1.6	J	5		U	5		U	5		U	5		U	5		U	5		U	5	NA				U	5		U	5		U	5	3.2	J	5					U	5		U	5
Pentachlorophenol	87-86-5	ug/L	0.041	0.041	1	NE		U	0.2		U	0.2		U	0.2		U	2		U	0.2		U	0.4		U	0.2		U	0.2		U	0.2		U	0.2	NA				U	0.2		U	0.2		U	0.2		U	0.2					U	0.2		U	0.2
Phenol	108-95-2	ug/L	580	5800	NE	NE		U	10		U	10		U	10	1.2	J	10		U	10		U	10		U	10		U	10		U	10		U	10	NA				U	10		U	10		U	10	0.56	J	10					U	10		U	10
Total Metals																																																											
Calcium	7440-70-2	ug/L	NE	NE	NE	NE	19200		250	11700		250	46200		250	77500		250	14000		250	12000		250	14800		250	24000		250	27100		250	29200		250	40000		250	13700		250	6950		250	10200		250	18000		250	13400		250	51200		250	20900		250
Cobalt	7440-48-4	ug/L	0.6	6	NE	6	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Iron	7439-89-6	ug/L	1400	14000	NE	13939	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Manganese	7439-96-5	ug/L	43	430	NE	260	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Wet Chemistry Parameters																																																											
Alkalinity, Bicarbonate as CaCO3	ALKB-C	mg/L	NE	NE	NE	NE	247		5	29.4		5	127		5	312		5	68.4		5	44.1		5	55		5	102		5	57.6		5	132		5	387		5	27.2		5	27		5	15.2		5	58.1		5	21.5		5	246		5	131		5
Alkalinity, Total	ALK	mg/L	NE	NE	NE	NE	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Ammonia	7664-41-7	mg/L	NE	NE	NE	NE	0.15		0.1	0.2		0.1	0.2		0.1	0.55		0.1	0.15		0.1		U	0.1		U	0.1		U	0.1	0.075	J	0.1	2.8		0.1	0.89		0.1		U	0.1		U	0.1		U	0.1	0.12		0.1		U	0.1	1.7		0.1	2.3		0.1
Chloride	16887-00-6	mg/L	NE	NE	NE	NE	161		7.44	32.5		1.44	197		9	106		4.56	57.5		2.64	21.2		0.96	5.56		0.12	17.6		0.72	34.8		1.56	60.5		2.76	17.4		0.72	29.9		1.32	2.93		0.12	26.6		1.2	48.3		2.16	50.4		2.4	45		2.04	40		1.8
Nitrate as N	14797-55-8-N	mg/L	3.2	32	10	NE		U	0.1	1.53		0.1		U	0.1		U	0.1		U	0.1		U	0.1		U	0.1		U	0.1		U	0.1		U	0.1	0.097	J	0.1	0.25		0.1		U	0.1		U	0.1		U	0.1	0.64		0.1		U	0.1		U	0.1
Sulfate	14808-79-8	mg/L	NE	NE	NE	NE	22.8		0.6	24		7.2	70.4		45	28.8		22.8	24		0.6	6.87		0.6	15.1		0.6		U	0.6	19.4		0.6	0.58	J	0.6	4.29		0.6	3.67		0.6	8.41		0.6	0.86		0.6	7.11		0.6	26.7		12	19.4		0.6	19.2		0.6

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Approved by: TAM
GOLDER

Appendix B-1
Summary of Detected Compounds - October/November 2019 Groundwater
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

							Downgradient Upper Sand Monitoring Wells																	
Sample ID / Sample Date / N=Normal, FD=Field Duplicate							UPA-104-US 10/2/2019 N			UPA-105A-US 10/18/2019 N			UPA-105B-US 9/30/2019 N			UPA-106-USA 10/4/2019 N			UPA-106-USB 10/8/2019 N			UPA-107-US 10/2/2019 N		
Parameter	CAS	Unit	RSL HQ=0.1	RSL HQ=1.0	MCL	[illegible]	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL
Volatile Organic Compounds																								
1,1-Dichloroethane	75-34-3	ug/L	2.8	2.8	NE	NE		U	1		U	1		U	1		U	1		U	1		U	1
1,1-Dichloroethene	75-35-4	ug/L	28	280	7	NE		U	1		U	1		U	1		U	1		U	1		U	1
1,2,3-Trimethylbenzene	526-73-8	ug/L	5.5	55	NE	NE		U	1		U	1		U	1		U	1		U	1		U	1
1,2,4-Trimethylbenzene	95-63-6	ug/L	5.6	56	NE	5.7		U	1		U	1		U	1		U	1		U	1		U	1
1,2-Dichloroethane	107-06-2	ug/L	0.17	0.17	5	NE		U	1	0.83	J	1		U	1		U	1		U	1		U	1
1,3,5-Trimethylbenzene	108-67-8	ug/L	6	60	NE	6.1		U	1		U	1		U	1		U	1		U	1		U	1
1,4-Dioxane	123-91-1	ug/L	0.46	0.46	NE	4.6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3		0.4	3.7		0.4	[illegible]	[illegible]	[illegible]	4.4		0.4
2-Butanone	78-93-3	ug/L	560	5600	NE	NE		U	5		U	5		U	5		U	5		U	5		U	5
Acetone	67-64-1	ug/L	1400	14000	NE	NE	5.1	U	5.1		U	5		U	5		U	5		U	5		U	5
Benzene	71-43-2	ug/L	0.46	0.46	5	4.6	[illegible]	[illegible]	[illegible]	1.2		1		U	1		U	1		U	1		U	1
Bromodichloromethane	75-27-4	ug/L	0.13	0.13	80	NE		U	1		U	1		U	1	0.56	J	1		U	1		U	1
Carbon Disulfide	75-15-0	ug/L	81	810	NE	NE		UJ	1		U	1		U	1		U	1		U	1		U	1
Chlorobenzene	108-90-7	ug/L	7.8	78	100	NE	3.4		1		U	1		U	1	0.49	J	1	9.3		1	6.6		1
Chloroethane	75-00-3	ug/L	2100	21000	NE	NE		U	1		U	1		U	1		U	1		U	1		U	1
Chloroform	67-66-3	ug/L	0.22	0.22	80	NE		U	1		U	1		U	1	2.1		1		U	1		U	1
Chloromethane	74-87-3	ug/L	19	190	NE	NE		U	1		U	1		U	1		U	1		U	1		U	1
cis-1,2-Dichloroethene	156-59-2	ug/L	3.6	36	70	NE		U	1		U	1		U	1		U	1		U	1		U	1
Cyclohexane	110-82-7	ug/L	1300	13000	NE	NE		U	1		U	1		U	1		U	1		U	1		U	1
Dibromochloromethane	124-48-1	ug/L	0.87	0.87	80	NE		U	1		U	1		U	1		U	1		U	1		U	1
Dichlorofluoromethane	75-43-4	ug/L	NE	NE	NE	NE	1.7		1	0.52	J	1		U	1		U	1		U	1		U	1
Diethyl Ether	60-29-7	ug/L	390	3900	NE	NE	2		1	0.23	J	1		U	1	0.56	J	1	13		1	11		1
Ethylbenzene	100-41-4	ug/L	1.5	1.5	700	15		U	1		U	1		U	1		U	1		U	1		U	1
Indane	496-11-7	ug/L	NE	NE	NE	NE	0.46	J	1		U	1		U	1		U	1	0.45	J	1		U	1
Isopropylbenzene	98-82-8	ug/L	45	450	NE	NE	1.5		1		U	1		U	1		U	1		U	1		U	1
Methyl Cyclohexane	108-87-2	ug/L	NE	NE	NE	NE		U	1		U	1		U	1		U	1		U	1		U	1
Methyl tert-Butyl Ether	1634-04-4	ug/L	14	14	NE	NE	0.62	J	1		U	1		U	1		U	1		U	1		U	1
Methylene Chloride	75-09-2	ug/L	11	11	5	NE		U	1		U	1		U	1	0.59	J	1		U	1		U	1
n-Propylbenzene	103-65-1	ug/L	66	660	NE	NE	0.52	J	1		U	1		U	1		U	1		U	1		U	1
Tetrachloroethene	127-18-4	ug/L	4.1	11	5	NE	0.62	J	1		U	1	6.2		1		U	1		U	1		U	1
Tetrahydrofuran	109-99-9	ug/L	340	3400	NE	NE	1.3	J	2		U	2		U	2		U	2		U	2		U	2
Toluene	108-88-3	ug/L	110	1100	1000	NE		U	1		U	1		U	1		U	1		U	1		U	1
trans-1,2-Dichloroethene	156-60-5	ug/L	36	360	100	NE		U	1		U	1		U	1		U	1		U	1		U	1
Trichloroethene	79-01-6	ug/L	0.28	0.49	5	NE		U	1	0.66	J	1		U	1		U	1		U	1		U	1
Vinyl Chloride	75-01-4	ug/L	0.019	0.019	2	NE		U	1		U	1		U	1		U	1		U	1		U	1
Xylenes, Total	1330-20-7	ug/L	19	190	10000	21		U	2		U	2		U	2		U	2		U	2		U	2
Semivolatile Organic Compounds																								
1,2,4-Trichlorobenzene	120-82-1	ug/L	0.4	1.2	70	NE		U	2		U	2		U	2		U	2		U	2		U	2
1,2-Dichlorobenzene	95-50-1	ug/L	30	300	600	NE		U	10		U	10		U	10		U	10		U	10		U	10
1,3-Dichlorobenzene	541-73-1	ug/L	NE	NE	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10
1,4-Dichlorobenzene	106-46-7	ug/L	0.48	0.48	75	NE		U	10		U	10		U	10		U	10		U	10		U	10
2,4-Dimethylphenol	105-67-9	ug/L	36	360	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10
2-Chlorophenol	95-57-8	ug/L	9.1	91	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10
2-Methylnaphthalene	91-57-6	ug/L	3.6	36	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10
2-Methylphenol	95-48-7	ug/L	93	930	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10
4-Methylphenol	106-44-5	ug/L	190	1900	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10
Benzo[a]anthracene	56-55-3	ug/L	0.03	0.03	NE	NE	0.11	J	0.25		U	0.05		U	0.05		U	0.05		U	0.05		U	0.05
Benzo[a]pyrene	50-32-8	ug/L	0.025	0.025	0.2	NE		UJ	0.25		U	0.05		UJ	0.05		U	0.05		U	0.05		UJ	0.05
Benzo[b]fluoranthene	205-99-2	ug/L	0.25	0.25	NE	NE		U	0.25		U	0.05		UJ	0.05		U	0.05		U	0.05		U	0.05
Bis(2-chloroethyl) Ether	111-44-4	ug/L	0.014	0.014	NE	0.14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		U	0.03	[illegible]	[illegible]	[illegible]	0.091		0.03
Bis(2-ethylhexyl) Phthalate	117-81-7	ug/L	5.6	5.6	6	NE		U	2		U	2		U	2		U	2		U	2		U	2
Bisphenol A	80-05-7	ug/L	77	770	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10
Diethyl Phthalate	84-66-2	ug/L	1500	15000	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10
Di-n-Butyl Phthalate	84-74-2	ug/L	90	900	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10
Diphenyl Ether	101-84-8	ug/L	NE	NE	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10
Hexachlorobenzene	118-74-1	ug/L	0.0098	0.0098	1	NE		U	0.1		U	0.02		U	0.02		U	0.02		U	0.02		U	0.02
N,N-Dimethylaniline	121-69-7	ug/L	2.5	2.5	NE	25		UJ	1		U	1		U	1		U	1		U	1		U	1
Naphthalene	91-20-3	ug/L	0.17	0.17	NE	0.63		U	10		U	10		U	10		U	10		U	10		U	10
N-Methylaniline	100-61-8	ug/L	NE	38	NE	NE		UJ	5		U	5		U	5		U	5		U	5		U	5
Pentachlorophenol	87-86-5	ug/L	0.041	0.041	1	NE		U	1		U	0.2		U	0.2		U	0.2		U	0.2		U	0.2
Phenol	108-95-2	ug/L	580	5800	NE	NE	2.6	J	10		U	10		U	10		U	10		U	10		U	10
Total Metals																								
Calcium	7440-70-2	ug/L	NE	NE	NE	NE	22100		250	12500		250	13200		250	23000		250	20000		250	29300		250
Cobalt	7440-48-4	ug/L	0.6	6	NE	6	NA			NA			NA			NA			NA			NA		
Iron	7439-89-6	ug/L	1400	14000	NE	13939	NA			NA			NA			NA			NA			NA		
Magnesium	7439-95-4	ug/L	NE	NE	NE	NE	7380		250	4300		250	5270		250	9370		250	10500		250	12300		250
Manganese	7439-96-5	ug/L	43	430	NE	260	NA			NA			NA			NA			NA			NA		
Potassium	7440-09-7	ug/L	NE	NE	NE	NE	2480		250	1840		250	2890		250	5610		250	17000		250	8670		250
Sodium	7440-23-5	ug/L	NE	NE	NE	NE	21500		250	15600		250	20600		250	43300		250	30100		250	32000		250
Dissolved Metals																								
Cobalt	7440-48-4	ug/L	0.6	6	NE	6	[illegible]	[illegible]	[illegible]		U	50	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Iron	7439-89-6	ug/L	1400	14000	NE	13939	[illegible]	[illegible]	[illegible]	6520		150	44.7	J	150	1430		150	[illegible]	[illegible]	[illegible]	8150		150
Manganese	7439-96-5	ug/L	43	430	NE	260	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Wet Chemistry Parameters																								
Alkalinity, Bicarbonate as CaCO3	ALKB-C	mg/L	NE	NE	NE	NE	79.9		5	39.4		5	16.7		5	80.9		5	192		5	149		5
Alkalinity, Total	ALK	mg/L	NE	NE	NE	NE	NA			NA			NA			NA			NA			NA		
Ammonia	7664-41-7	mg/L	NE	NE	NE	NE	0.31		0.1		U	0.1		U	0.1		U	0.1	27.4		0.5	10.3		0.1
Chloride	16887-00-6	mg/L	NE	NE	NE	NE	41.1	J-	1.8	31.4		1.44	42.1		1.92	56.6		2.64	48.5		2.16	49.5		2.52
Nitrate as N	14797-55-8-N	mg/L	3.2	32	10	NE		UF1	0.1		U	0.1	2.76		0.1	0.76		0.1		U	0.1		U	0.1
Sulfate	14808-79-8	mg/L	NE	NE	NE	NE	7.78	J+	0.6	5.24		0.6	11.1		0.6	29.6		0.6	0.53	J	0.6	16.2		0.6

	Downgradient Upper Sand Monitoring Wells									Downgradient Lower Sand Monitoring Wells								
Sample ID / Sample Date / N=Normal, FD=Field Duplicate	UPA-107-US 10/2/2019 FD			UPA-108B-US 10/10/2019 N			UPA-108C-US 10/16/2019 N			UPA-101-LSA 10/18/2019 N			UPA-101-LSB 10/18/2019 N			UPA-103-LS 10/4/2019 N		
Parameter	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL
Volatile Organic Compounds																		
1,1-Dichloroethane		U	1		U	1		U	1		U	1	0.3	J	1		U	1
1,1-Dichloroethene		U	1		U	1		U	1		U	1		U	1		U	1
1,2,3-Trimethylbenzene		U	1		U	1		U	1		U	1		U	1		U	1
1,2,4-Trimethylbenzene		U	1		U	1		U	1		U	1		U	1		U	1
1,2-Dichloroethane		U	1		U	1		U	1		U	1		U	1		U	1
1,3,5-Trimethylbenzene		U	1		U	1		U	1		U	1		U	1		U	1
1,4-Dioxane	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		U	0.4
2-Butanone		U	5		U	5		U	5		U	5		U	5		U	5
Acetone		U	5		U	5		U	5	5.8	U	5.8		U	5	5.5	U	5.5
Benzene		U	1		U	1	0.57	J	1	0.93	J	1	[illegible]	[illegible]	[illegible]		U	1
Bromodichloromethane		U	1		U	1		U	1		U	1		U	1		U	1
Carbon Disulfide		U	1		U	1		U	1		U	1		U	1	3.5		1
Chlorobenzene	7.1		1	5.4		1	6.7		1	7.8		1	14		1		U	1
Chloroethane		U	1		U	1		U	1		U	1		U	1		U	1
Chloroform		U	1		U	1		U	1		U	1		U	1		U	1
Chloromethane		U	1		U	1		U	1		U	1		U	1		U	1
cis-1,2-Dichloroethene		U	1		U	1		U	1		U	1		U	1		U	1
Cyclohexane		U	1		U	1		U	1		U	1		U	1		U	1
Dibromochloromethane		U	1		U	1		U	1		U	1		U	1		U	1
Dichlorofluoromethane		U	1		U	1		U	1	1		1	1.2		1		U	1
Diethyl Ether	11		1	24		1	48		1	3.1		1	5.1		1		U	1
Ethylbenzene		U	1		U	1		U	1		U	1		U	1		U	1
Indane		U	1	0.69	J	1	0.62	J	1	0.58	J	1		U	1		U	1
Isopropylbenzene		U	1		U	1		U	1		U	1		U	1		U	1
Methyl Cyclohexane		U	1		U	1		U	1		U	1		U	1		U	1
Methyl tert-Butyl Ether		U	1		U	1		U	1	2.3		1	1.8		1		U	1
Methylene Chloride		U	1		U	1		U	1		U	1		U	1		U	1
n-Propylbenzene		U	1		U	1		U	1		U	1		U	1		U	1
Tetrachloroethene		U	1		U	1		U	1		U	1		U	1		U	1
Tetrahydrofuran		U	2		U	2	1.6	J	2	2.8		2	7		2		U	2
Toluene		U	1		U	1		U	1		U	1		U	1		U	1
trans-1,2-Dichloroethene		U	1		U	1		U	1		U	1		U	1		U	1
Trichloroethene		U	1		U	1		U	1		U	1		U	1		U	1
Vinyl Chloride		U	1		U	1		U	1		U	1		U	1		U	1
Xylenes, Total		U	2		U	2		U	2		U	2		U	2		U	2
Semivolatile Organic Compounds																		
1,2,4-Trichlorobenzene		U	2		U	2		U	2		U	2		U	2		U	2
1,2-Dichlorobenzene		U	10		U	10		U	10		U	10		U	10		U	10
1,3-Dichlorobenzene		U	10		U	10		U	10		U	10		U	10		U	10
1,4-Dichlorobenzene		U	10		U	10	1.3	J	10		U	10		U	10		U	10
2,4-Dimethylphenol		U	10		U	10		U	10		U	10		U	10		U	10
2-Chlorophenol		U	10		U	10		U	10		U	10		U	10		U	10
2-Methylnaphthalene		U	10		U	10		U	10		U	10		U	10		U	10
2-Methylphenol		U	10		U	10		U	10		U	10		U	10		U	10
4-Methylphenol		U	10		U	10		U	10		U	10		U	10		U	10
Benzo[a]anthracene		U	0.05		U	0.05		U	0.05		U	0.05		U	0.25		U	0.05
Benzo[a]pyrene		U	0.05		U	0.05		U	0.05		U	0.05		U	0.25		U	0.05
Benzo[b]fluoranthene		U	0.05		U	0.05		U	0.05		U	0.05		U	0.25		U	0.05
Bis(2-chloroethyl) Ether	0.092		0.03		U	0.03	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		U	0.03
Bis(2-ethylhexyl) Phthalate		U	2		U	2		U	2		U	2		U	2		U	2
Bisphenol A		U	10		U	10		U	10		U	10		U	10		U	10
Diethyl Phthalate		U	10		U	10		U	10		U	10		U	10		U	10
Di-n-Butyl Phthalate		U	10		U	10		U	10		U	10		U	10		U	10
Diphenyl Ether		U	10		U	10		U	10	2.4	J	10	2.9	J	10		U	10
Hexachlorobenzene		U	0.02		U	0.02		U	0.02		U	0.02		U	0.1		U	0.02
N,N-Dimethylaniline		U	1		U	1		U	1		U	1		U	1		U	1
Naphthalene		U	10		U	10		U	10		U	10		U	10		U	10
N-Methylaniline		U	5		U	5		U	5		U	5		U	5		U	5
Pentachlorophenol		U	0.2		U	0.2		U	0.2		U	0.2		U	1		U	0.2
Phenol		U	10		U	10		U	10		U	10		U	10		U	10
Total Metals																		
Calcium	28100		250	10300		250	13600		250	42300		250	36000		250	19900		250
Cobalt	NA			NA			NA			NA			NA			NA		
Iron	NA			NA			NA			NA			NA			NA		
Magnesium	13200		250	7710		250	9710		250	11200		250	10200		250	6850		250
Manganese	NA			NA			NA			NA			NA			NA		
Potassium	8990		250	11600		250	14000		250	8860		250	5380		250	4160		250
Sodium	32400		250	32000		250	38200		250	27000		250	29000		250	24300		250
Dissolved Metals																		
Cobalt	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.2	J	50	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Iron	7630		150	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	13600		150
Manganese	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	238		15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Wet Chemistry Parameters																		
Alkalinity, Bicarbonate as CaCO3	149		5	128		5	155		5	153		5	148		5	58.3		5
Alkalinity, Total	NA			NA			NA			NA			NA			NA		
Ammonia	10.4		0.1	16.9		0.1	9		0.1	0.94		0.1	0.81		0.1	0.72		0.1
Chloride	51.4		2.28	49.9		2.16	44.4		1.92	37.7		1.68	37		1.68	36.6		1.68
Nitrate as N		U	0.1		U	0.1		U	0.1		U	0.1		U	0.1	2.56		0.1
Sulfate	16.6		0.6		U	0.6	10.6		0.6	17.2		0.6	9.34		0.6	22.5		0.6

	Downgradient Lower Sand Monitoring Wells																	
Sample ID / Sample Date / N=Normal, FD=Field Duplicate	UPA-105A-LS 10/18/2019 N			UPA-105B-LS 10/1/2019 N			UPA-106-LS 10/8/2019 N			UPA-107-LS 10/3/2019 N			UPA-108B-LS 10/10/2019 N			DGC-8D 10/14/2019 N		
Parameter	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL
Volatile Organic Compounds																		
1,1-Dichloroethane		U	1		U	1		U	1		U	1		U	1	NA		
1,1-Dichloroethene		U	1		U	1		U	1		U	1		U	1	NA		
1,2,3-Trimethylbenzene		U	1		U	1		U	1		U	1		U	1	NA		
1,2,4-Trimethylbenzene		U	1		U	1		U	1		U	1		U	1	NA		
1,2-Dichloroethane		U	1		U	1		U	1		U	1		U	1	NA		
1,3,5-Trimethylbenzene		U	1		U	1		U	1		U	1		U	1	NA		
1,4-Dioxane	1.6		0.4	1.4		0.4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NA		
2-Butanone		U	5		U	5		U	5	16		5		U	5	NA		
Acetone		U	5		U	5	5.8	U	5.8		U	5		U	5	NA		
Benzene		U	1		U	1		U	1		U	1		U	1	NA		
Bromodichloromethane		U	1		U	1		U	1		U	1		U	1	NA		
Carbon Disulfide		U	1	6.4		1	0.94	J	1	2.6		1		U	1	NA		
Chlorobenzene		U	1		U	1	3		1	3.7		1	5.3		1	NA		
Chloroethane		U	1		U	1		U	1		U	1		U	1	NA		
Chloroform		U	1		U	1		U	1		U	1		U	1	NA		
Chloromethane		U	1		U	1		U	1		U	1		U	1	NA		
cis-1,2-Dichloroethene		U	1		U	1		U	1		U	1		U	1	NA		
Cyclohexane		U	1		U	1		U	1		U	1		U	1	NA		
Dibromochloromethane		U	1		U	1		U	1		U	1		U	1	NA		
Dichlorofluoromethane		U	1		U	1		U	1		U	1		U	1	NA		
Diethyl Ether		U	1		U	1	6.9		1	3		1	21		1	NA		
Ethylbenzene		U	1		U	1		U	1		U	1		U	1	NA		
Indane		U	1		U	1		U	1		U	1	0.38	J	1	NA		
Isopropylbenzene		U	1		U	1		U	1		U	1		U	1	NA		
Methyl Cyclohexane		U	1		U	1		U	1		U	1		U	1	NA		
Methyl tert-Butyl Ether		U	1		U	1		U	1	1.6		1	0.51	J	1	NA		
Methylene Chloride		U	1		U	1		U	1		U	1		U	1	NA		
n-Propylbenzene		U	1		U	1		U	1		U	1		U	1	NA		
Tetrachloroethene	1		1	3.3		1	0.27	J	1	0.34	J	1		U	1	NA		
Tetrahydrofuran		U	2		U	2		U	2	2.1		2		U	2	NA		
Toluene		U	1		U	1		U	1		U	1		U	1	NA		
trans-1,2-Dichloroethene		U	1		U	1		U	1		U	1		U	1	NA		
Trichloroethene		U	1		U	1		U	1		U	1		U	1	NA		
Vinyl Chloride		U	1		U	1		U	1		U	1		U	1	NA		
Xylenes, Total		U	2		U	2		U	2		U	2		U	2	NA		
Semivolatile Organic Compounds																		
1,2,4-Trichlorobenzene		U	2		U	2		U	2		U	2		U	2	NA		
1,2-Dichlorobenzene		U	10		U	10		U	10		U	10		U	10	NA		
1,3-Dichlorobenzene		U	10		U	10		U	10		U	10		U	10	NA		
1,4-Dichlorobenzene		U	10		U	10		U	10		U	10		U	10	NA		
2,4-Dimethylphenol		U	10		U	10		U	10		U	10		U	10	NA		
2-Chlorophenol		U	10		U	10		U	10		U	10		U	10	NA		
2-Methylnaphthalene		U	10		U	10		U	10		U	10		U	10	NA		
2-Methylphenol		U	10		U	10		U	10		U	10		U	10	NA		
4-Methylphenol		U	10		U	10		U	10	4.5	J	10		U	10	NA		
Benzo[a]anthracene		U	0.05		U	0.05		U	0.05		U	0.05		U	0.05	NA		
Benzo[a]pyrene		U	0.05		U	0.05		U	0.05		U	0.05		U	0.05	NA		
Benzo[b]fluoranthene		U	0.05		U	0.05		U	0.05		U	0.05		U	0.05	NA		
Bis(2-chloroethyl) Ether	[illegible]	[illegible]	[illegible]	0.11		0.03	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		U	0.03	NA		
Bis(2-ethylhexyl) Phthalate		U	2	20		2		U	2		U	2		U	2	NA		
Bisphenol A		U	10		U	10		U	10		U	10		U	10	NA		
Diethyl Phthalate		U	10		U	10		U	10		U	10		U	10	NA		
Di-n-Butyl Phthalate		U	10		U	10		U	10		U	10		U	10	NA		
Diphenyl Ether		U	10		U	10		U	10		U	10		U	10	NA		
Hexachlorobenzene		U	0.02		U	0.02		U	0.02		U	0.02		U	0.02	NA		
N,N-Dimethylaniline		U	1		U	1		U	1		U	1		U	1	NA		
Naphthalene		U	10		U	10		U	10		U	10		U	10	NA		
N-Methylaniline		U	5		U	5		U	5		U	5		U	5	NA		
Pentachlorophenol		U	0.2		U	0.2		U	0.2		U	0.2		U	0.2	NA		
Phenol		U	10		U	10		U	10		U	10		U	10	NA		
Total Metals																		
Calcium	16200		250	31000		250	17200		250	27300		250	14200		250	17200		250
Cobalt	NA			NA			NA			NA			NA			NA		
Iron	NA			NA			NA			NA			NA			NA		
Magnesium	5280		250	3380		250	8490		250	10400		250	7710		250	3250		250
Manganese	NA			NA			NA			NA			NA			NA		
Potassium	2790		250	4220		250	12400		250	8460		250	16100		250	2940		250
Sodium	29700		250	34500		250	22500		250	39600		250	26600		250	13200		250
Dissolved Metals																		
Cobalt	[illegible]	[illegible]	[illegible]		U	50	[illegible]	[illegible]	[illegible]		U	50	2.1	J	50	NA		
Iron	147	J	150	926		150	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NA		
Manganese	[illegible]	[illegible]	[illegible]	145		15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NA		
Wet Chemistry Parameters																		
Alkalinity, Bicarbonate as CaCO3	38.9		5	74.1		5	133		5	127		5	135		5	31.6		5
Alkalinity, Total	NA			NA			NA			NA			NA			NA		
Ammonia		U	0.1	0.2		0.1	17.3		0.1		U	0.1	15.4		0.1	0.81		0.1
Chloride	51.4		2.4	42.5		1.92	36		1.68	40.5		1.8	37.6		1.68	33.3		1.56
Nitrate as N	1.77		0.1	1.37		0.1		U	0.1		U	0.1		U	0.1	0.56		0.1
Sulfate	11.8		0.6	17.4		0.6	8.82		0.6	2.29		0.6	6.15		0.6	4.18		0.6

2/29/2020

Created by: YJS
Checked by: SLS
Approved by: TAM
GOLDER

ED_004821A_00011884-00440

Appendix B-1
Summary of Detected Compounds - October/November 2019 Groundwater
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

						Sample ID	Downgradient Lower Sand Monitoring Wells: DGC-10D			DGC-11D			UPA-02D			UPA-03D			UPA-104-LS		
						Sample Date	10/7/2019			10/7/2019			10/14/2019			10/14/2019			10/1/2019		
						N=Normal, FD=Field Duplicate	N			N			N			N			N		
Parameter	CAS	Unit	RSL HQ=0.1	RSL HQ=1.0	MCL	[illegible]	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL
Volatile Organic Compounds																					
1,1-Dichloroethane	75-34-3	ug/L	2.8	2.8	NE	NE		U	1		U	1		U	1		U	1		U	1
1,1-Dichloroethene	75-35-4	ug/L	28	280	7	NE		U	1		U	1		U	1		U	1		U	1
1,2,3-Trimethylbenzene	526-73-8	ug/L	5.5	55	NE	NE		U	1		U	1		U	1		U	1		U	1
1,2,4-Trimethylbenzene	95-63-6	ug/L	5.6	56	NE	5.7		U	1		U	1		U	1		U	1		U	1
1,2-Dichloroethane	107-06-2	ug/L	0.17	0.17	5	NE		U	1		U	1		U	1		U	1		U	1
1,3,5-Trimethylbenzene	108-67-8	ug/L	6	60	NE	6.1		U	1		U	1		U	1		U	1		U	1
1,4-Dioxane	123-91-1	ug/L	0.46	0.46	NE	4.6	0.67		0.4		U	0.4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2-Butanone	78-93-3	ug/L	560	5600	NE	NE		U	5		U	5		U	5		U	5	17		5
Acetone	67-64-1	ug/L	1400	14000	NE	NE		U	5		U	5		U	5		U	5		U	5
Benzene	71-43-2	ug/L	0.46	0.46	5	4.6		U	1		U	1		U	1		U	1	0.4	J	1
Bromodichloromethane	75-27-4	ug/L	0.13	0.13	80	NE		U	1		U	1		U	1		U	1		U	1
Carbon Disulfide	75-15-0	ug/L	81	810	NE	NE		U	1		U	1		U	1		U	1	1.2		1
Chlorobenzene	108-90-7	ug/L	7.8	78	100	NE		U	1		U	1	5.5		1	2		1	8.4		1
Chloroethane	75-00-3	ug/L	2100	21000	NE	NE		U	1		U	1		U	1		U	1		U	1
Chloroform	67-66-3	ug/L	0.22	0.22	80	NE		U	1		U	1		U	1		U	1		U	1
Chloromethane	74-87-3	ug/L	19	190	NE	NE		U	1		U	1		U	1		U	1		U	1
cis-1,2-Dichloroethene	156-59-2	ug/L	3.6	36	70	NE		U	1		U	1		U	1		U	1		U	1
Cyclohexane	110-82-7	ug/L	1300	13000	NE	NE		U	1		U	1		U	1		U	1		U	1
Dibromochloromethane	124-48-1	ug/L	0.87	0.87	80	NE		UJ	1		UJ	1		U	1		U	1		U	1
Dichlorofluoromethane	75-43-4	ug/L	NE	NE	NE	NE		U	1		U	1		U	1	0.53	J	1	0.39	J	1
Diethyl Ether	60-29-7	ug/L	390	3900	NE	NE		U	1		U	1	3.1		1	0.59	J	1	4		1
Ethylbenzene	100-41-4	ug/L	1.5	1.5	700	15		U	1		U	1		U	1		U	1		U	1
Indane	496-11-7	ug/L	NE	NE	NE	NE		U	1		U	1		U	1		U	1		U	1
Isopropylbenzene	98-82-8	ug/L	45	450	NE	NE		U	1		U	1		U	1		U	1		U	1
Methyl Cyclohexane	108-87-2	ug/L	NE	NE	NE	NE		U	1		U	1		U	1		U	1		U	1
Methyl tert-Butyl Ether	1634-04-4	ug/L	14	14	NE	NE	0.48	J	1		U	1	2.5		1	0.75	J	1	2.3		1
Methylene Chloride	75-09-2	ug/L	11	11	5	NE		U	1		U	1		U	1		U	1		U	1
n-Propylbenzene	103-65-1	ug/L	66	660	NE	NE		U	1		U	1		U	1		U	1		U	1
Tetrachloroethene	127-18-4	ug/L	4.1	11	5	NE	1.5		1		U	1	0.26	J	1		U	1		U	1
Tetrahydrofuran	109-99-9	ug/L	340	3400	NE	NE		U	2		U	2	2.7		2		U	2	3.3		2
Toluene	108-88-3	ug/L	110	1100	1000	NE		U	1		U	1		U	1		U	1		U	1
trans-1,2-Dichloroethene	156-60-5	ug/L	36	360	100	NE		U	1		U	1		U	1		U	1		U	1
Trichloroethene	79-01-6	ug/L	0.28	0.49	5	NE	0.31	J	1		U	1		U	1		U	1		U	1
Vinyl Chloride	75-01-4	ug/L	0.019	0.019	2	NE		U	1		U	1		U	1		U	1		U	1
Xylenes, Total	1330-20-7	ug/L	19	190	10000	21		U	2		U	2		U	2		U	2		U	2
Semivolatile Organic Compounds																					
1,2,4-Trichlorobenzene	120-82-1	ug/L	0.4	1.2	70	NE		U	2		U	2		U	2		U	2		U	2
1,2-Dichlorobenzene	95-50-1	ug/L	30	300	600	NE		U	10		U	10		U	10		U	10		U	10
1,3-Dichlorobenzene	541-73-1	ug/L	NE	NE	NE	NE		U	10		U	10		U	10		U	10		U	10
1,4-Dichlorobenzene	106-46-7	ug/L	0.48	0.48	75	NE		U	10		U	10		U	10		U	10		U	10
2,4-Dimethylphenol	105-67-9	ug/L	36	360	NE	NE		U	10		U	10		U	10		U	10		U	10
2-Chlorophenol	95-57-8	ug/L	9.1	91	NE	NE		U	10		U	10		U	10		U	10		U	10
2-Methylnaphthalene	91-57-6	ug/L	3.6	36	NE	NE		U	10		U	10		U	10		U	10		U	10
2-Methylphenol	95-48-7	ug/L	93	930	NE	NE		U	10		U	10		U	10		U	10		U	10
4-Methylphenol	106-44-5	ug/L	190	1900	NE	NE		U	10		U	10		U	10		U	10		U	10
Benzo[a]anthracene	56-55-3	ug/L	0.03	0.03	NE	NE		U	0.05		U	0.05		U	0.05		U	0.05		U	0.05
Benzo[a]pyrene	50-32-8	ug/L	0.025	0.025	0.2	NE		U	0.05		U	0.05		U	0.05		U	0.05		U	0.05
Benzo[b]fluoranthene	205-99-2	ug/L	0.25	0.25	NE	NE		U	0.05		U	0.05		U	0.05		U	0.05		U	0.05
Bis(2-chloroethyl) Ether	111-44-4	ug/L	0.014	0.014	NE	0.14		U	0.03		U	0.03	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Bis(2-ethylhexyl) Phthalate	117-81-7	ug/L	5.6	5.6	6	NE		U	2		U	2		U	2		U	2		U	2
Bisphenol A	80-05-7	ug/L	77	770	NE	NE		UJ	10		UJ	10		U	10		U	10		U	10
Diethyl Phthalate	84-66-2	ug/L	1500	15000	NE	NE		U	10		U	10		U	10		U	10		U	10
Di-n-Butyl Phthalate	84-74-2	ug/L	90	900	NE	NE		U	10		U	10		U	10		U	10		U	10
Diphenyl Ether	101-84-8	ug/L	NE	NE	NE	NE		U	10		U	10	2.4	J	10		U	10	4.1	J	10
Hexachlorobenzene	118-74-1	ug/L	0.0098	0.0098	1	NE		U	0.02		U	0.02		U	0.02		U	0.02		U	0.02
N,N-Dimethylaniline	121-69-7	ug/L	2.5	2.5	NE	25		U	1		U	1		U	1		U	1		U	1
Naphthalene	91-20-3	ug/L	0.17	0.17	NE	0.63		U	10		U	10		U	10		U	10		U	10
N-Methylaniline	100-61-8	ug/L	NE	38	NE	NE		U	5		U	5		U	5		U	5		U	5
Pentachlorophenol	87-86-5	ug/L	0.041	0.041	1	NE		U	0.2		U	0.2		U	0.2		U	0.2		U	0.2
Phenol	108-95-2	ug/L	580	5800	NE	NE		U	10		U	10		U	10		U	10		U	10
Total Metals																					
Calcium	7440-70-2	ug/L	NE	NE	NE	NE	13700		250	15800		250	24200		250	12700		250	21400		250
Cobalt	7440-48-4	ug/L	0.6	6	NE	6	NA			NA			NA			2.5	J	50	NA		
Iron	7439-89-6	ug/L	1400	14000	NE	13939	NA			NA			NA				U	150	NA		
Magnesium	7439-95-4	ug/L	NE	NE	NE	NE	4780		250	10200		250	12700		250	5070		250	10200		250
Manganese	7439-96-5	ug/L	43	430	NE	260	NA			NA			NA			7.1	J	15	NA		
Potassium	7440-09-7	ug/L	NE	NE	NE	NE	2670		250	2130		250	5250		250	2200		250	15200		250
Sodium	7440-23-5	ug/L	NE	NE	NE	NE	19000		250	7570		250	23800		250	17200		250	39600		250
Dissolved Metals																					
Cobalt	7440-48-4	ug/L	0.6	6	NE	6	3.5	J	50		U	50	[illegible]	[illegible]	[illegible]	2.7	J	50	[illegible]	[illegible]	[illegible]
Iron	7439-89-6	ug/L	1400	14000	NE	13939		U	150		U	150	10200		150		U	150	[illegible]	[illegible]	[illegible]
Manganese	7439-96-5	ug/L	43	430	NE	260	160		15	4.4	J	15	[illegible]	[illegible]	[illegible]	7.9	J	15	[illegible]	[illegible]	[illegible]
Wet Chemistry Parameters																					
Alkalinity, Bicarbonate as CaCO3	ALKB-C	mg/L	NE	NE	NE	NE	17.4		5	29.9		5	110		5	24.6		5	140		5
Alkalinity, Total	ALK	mg/L	NE	NE	NE	NE	NA			NA			NA			NA			NA		
Ammonia	7664-41-7	mg/L	NE	NE	NE	NE		U	0.1	0.11		0.1	1.6		0.1		U	0.1	0.76		0.1
Chloride	16887-00-6	mg/L	NE	NE	NE	NE	37.8		1.8	7.97		0.48	37.9		1.68	33.7		1.56	38.8		1.8
Nitrate as N	14797-55-8-N	mg/L	3.2	32	10	NE	2.1		0.1	0.53		0.1		U	0.1	0.65		0.1		U	0.1
Sulfate	14808-79-8	mg/L	NE	NE	NE	NE	9.51		0.6	52		2.4	22.1		0.6	11		0.6	8.54		0.6

Sample ID	AWC Monitoring Wells: AWC-2			AWC-E1 (132)			AWC-E1 (156)			AWC-E1 (132)			AWC-E1 (156)			AWC-E2 (140)			AWC-E2 (165)			AWC-E2 (140)			AWC-E2 (165)		
Sample Date	11/7/2019			10/29/2019			10/29/2019			11/7/2019			11/7/2019			10/29/2019			10/29/2019			11/7/2019			11/7/2019		
N=Normal, FD=Field Duplicate	N			N			N			N			N			N			N			N			N		
Parameter	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL
Volatile Organic Compounds																											
1,1-Dichloroethane	NA			NA			NA			NA			NA			NA			NA			NA			NA		
1,1-Dichloroethene	NA			NA			NA			NA			NA			NA			NA			NA			NA		
1,2,3-Trimethylbenzene	NA			NA			NA			NA			NA			NA			NA			NA			NA		
1,2,4-Trimethylbenzene	NA			NA			NA			NA			NA			NA			NA			NA			NA		
1,2-Dichloroethane	NA			NA			NA			NA			NA			NA			NA			NA			NA		
1,3,5-Trimethylbenzene	NA			NA			NA			NA			NA			NA			NA			NA			NA		
1,4-Dioxane	NA			NA			NA			NA			NA			NA			NA			NA			NA		
2-Butanone	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Acetone	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Benzene	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Bromodichloromethane	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Carbon Disulfide	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Chlorobenzene	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Chloroethane	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Chloroform	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Chloromethane	NA			NA			NA			NA			NA			NA			NA			NA			NA		
cis-1,2-Dichloroethene	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Cyclohexane	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Dibromochloromethane	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Dichlorofluoromethane	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Diethyl Ether	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Ethylbenzene	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Indane	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Isopropylbenzene	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Methyl Cyclohexane	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Methyl tert-Butyl Ether	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Methylene Chloride	NA			NA			NA			NA			NA			NA			NA			NA			NA		
n-Propylbenzene	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Tetrachloroethene	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Tetrahydrofuran	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Toluene	NA			NA			NA			NA			NA			NA			NA			NA			NA		
trans-1,2-Dichloroethene	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Trichloroethene	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Vinyl Chloride	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Xylenes, Total	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Semivolatile Organic Compounds																											
1,2,4-Trichlorobenzene	NA			NA			NA			NA			NA			NA			NA			NA			NA		
1,2-Dichlorobenzene	NA			NA			NA			NA			NA			NA			NA			NA			NA		
1,3-Dichlorobenzene	NA			NA			NA			NA			NA			NA			NA			NA			NA		
1,4-Dichlorobenzene	NA			NA			NA			NA			NA			NA			NA			NA			NA		
2,4-Dimethylphenol	NA			NA			NA			NA			NA			NA			NA			NA			NA		
2-Chlorophenol	NA			NA			NA			NA			NA			NA			NA			NA			NA		
2-Methylnaphthalene	NA			NA			NA			NA			NA			NA			NA			NA			NA		
2-Methylphenol	NA			NA			NA			NA			NA			NA			NA			NA			NA		
4-Methylphenol	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Benzo[a]anthracene	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Benzo[a]pyrene	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Benzo[b]fluoranthene	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Bis(2-chloroethyl) Ether	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Bis(2-ethylhexyl) Phthalate	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Bisphenol A	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Diethyl Phthalate	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Di-n-Butyl Phthalate	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Diphenyl Ether	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Hexachlorobenzene	NA			NA			NA			NA			NA			NA			NA			NA			NA		
N,N-Dimethylaniline	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Naphthalene	NA			NA			NA			NA			NA			NA			NA			NA			NA		
N-Methylaniline	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Pentachlorophenol	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Phenol	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Total Metals																											
Calcium	11900		250	NA			NA			26400		250	26000		250							18200		250	26600		250
Cobalt	NA			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NA			NA			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NA			NA		
Iron	NA			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NA			NA			9420		150	4710		150	NA			NA		
Magnesium	5950		250	NA			NA			12600		250	12500		250	NA			NA			7270		250	10900		250
Manganese	NA			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NA			NA			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NA			NA		
Potassium	2040		250	NA			NA			3990		250	4000		250	NA			NA			2090		250	2880		250
Sodium	13200		250	NA			NA			30700		250	30900		250	NA			NA			17300		250	27600		250
Dissolved Metals																											
Cobalt	NA			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NA			NA			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NA			NA		
Iron	NA			7780		150	9150		150	NA			NA			9110		150	3630		150	NA			NA		
Manganese	NA			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NA			NA			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NA			NA		
Wet Chemistry Parameters																											
Alkalinity, Bicarbonate as CaCO3	14		5	NA			NA			84		5	84.4		5	NA			NA			69.4		5	98.9		5
Alkalinity, Total	NA			NA			NA			NA			NA			NA			NA			NA			NA		
Ammonia		U	0.1	NA			NA			1.6		0.1	1.6		0.1	NA			NA				U	0.1	0.59		0.1
Chloride	28.5		1.32	NA			NA			59		2.76	61.5		2.88	NA			NA			28		1.2	41.9		1.92
Nitrate as N	4.2		0.1	NA			NA			0.058	J	0.1	0.06	J	0.1	NA			NA				U	0.1		U	0.1
Sulfate	14.6		0.6	NA			NA			22.5		0.6	20.5		0.6	NA			NA			11		0.6	17.6		0.6

Sample ID	AWC Monitoring Wells: AWC-K1			AWC-6R			NCC UPA Monitoring Wells and P-6 Vicinity: BW-2 (128)			BW-2 (138)			MW-18		
Sample Date	10/29/2019			11/7/2019			10/11/2019			10/11/2019			10/15/2019		
N=Normal, FD=Field Duplicate	N			N			N			N			N		
Parameter	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL
Volatile Organic Compounds															
1,1-Dichloroethane		U	1		U	1		U	1		U	1		U	1
1,1-Dichloroethene		U	1		U	1		U	1		U	1		U	1
1,2,3-Trimethylbenzene		U	1		U	1		U	1		U	1		U	1
1,2,4-Trimethylbenzene		U	1		U	1		U	1		U	1		U	1
1,2-Dichloroethane		U	1	0.64	J	1		U	1		U	1		U	1
1,3,5-Trimethylbenzene		U	1		U	1		U	1		U	1		U	1
1,4-Dioxane	0.94		0.4	0.88		0.4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4.4		0.4
2-Butanone		U	5		U	5		U	5		U	5		U	5
Acetone		U	5		U	5		U	5		U	5		U	5
Benzene		U	1		U	1		U	1		U	1	0.24	J	1
Bromodichloromethane		U	1		U	1		U	1		U	1		U	1
Carbon Disulfide		U	1		U	1		U	1		U	1		U	1
Chlorobenzene		U	1		U	1	2.2		1	3		1	6.9		1
Chloroethane		U	1		U	1		U	1		U	1		U	1
Chloroform		U	1	0.43	J	1		U	1		U	1		U	1
Chloromethane		U	1		U	1		U	1		U	1		U	1
cis-1,2-Dichloroethene		U	1		U	1		U	1		U	1		U	1
Cyclohexane		U	1		U	1		U	1		U	1		U	1
Dibromochloromethane		U	1		U	1		U	1		U	1		U	1
Dichlorofluoromethane		U	1		U	1		U	1		U	1		U	1
Diethyl Ether		U	1		U	1	5.8		1	7.9		1	13		1
Ethylbenzene		U	1		U	1		U	1		U	1		U	1
Indane		U	1		U	1		U	1		U	1		U	1
Isopropylbenzene		U	1		U	1		U	1		U	1		U	1
Methyl Cyclohexane		U	1		U	1		U	1		U	1		U	1
Methyl tert-Butyl Ether		U	1	0.58	J	1		U	1		U	1		U	1
Methylene Chloride		U	1		U	1		U	1		U	1		U	1
n-Propylbenzene		U	1		U	1		U	1		U	1		U	1
Tetrachloroethene		U	1	0.62	J	1		U	1		U	1		U	1
Tetrahydrofuran		U	2		U	2		U	2		U	2		U	2
Toluene		U	1		U	1		U	1		U	1		U	1
trans-1,2-Dichloroethene		U	1		U	1		U	1		U	1		U	1
Trichloroethene	1.7		1		U	1		U	1		U	1		U	1
Vinyl Chloride		U	1		U	1		U	1		U	1		U	1
Xylenes, Total		U	2		U	2		U	2		U	2		U	2
Semivolatile Organic Compounds															
1,2,4-Trichlorobenzene		U	2		U	2		U	2		U	2		U	2
1,2-Dichlorobenzene		U	10		U	10		U	10		U	10		U	10
1,3-Dichlorobenzene		U	10		U	10		U	10		U	10		U	10
1,4-Dichlorobenzene		U	10		U	10		U	10		U	10		U	10
2,4-Dimethylphenol		U	10		U	10		U	10		U	10		U	10
2-Chlorophenol		U	10		U	10		U	10		U	10		U	10
2-Methylnaphthalene		U	10		U	10		U	10		U	10		U	10
2-Methylphenol		U	10		U	10		U	10		U	10		U	10
4-Methylphenol		U	10		U	10		U	10		U	10		U	10
Benzo[a]anthracene		U	0.05		U	0.05		U	0.05		U	0.05		U	0.05
Benzo[a]pyrene		U	0.05		U	0.05		U	0.05		U	0.05		U	0.05
Benzo[b]fluoranthene		U	0.05		U	0.05		U	0.05		U	0.05		U	0.05
Bis(2-chloroethyl) Ether		U	0.03		U	0.03	0.1		0.03	0.12		0.03	[illegible]	[illegible]	[illegible]
Bis(2-ethylhexyl) Phthalate		U	2		U	2		U	2		U	2		U	2
Bisphenol A		U	10		U	10		U	10		U	10		U	10
Diethyl Phthalate		U	10		U	10		U	10		U	10		U	10
Di-n-Butyl Phthalate		U	10		U	10		U	10		U	10		U	10
Diphenyl Ether		U	10		U	10		U	10		U	10		U	10
Hexachlorobenzene		U	0.02		U	0.02		U	0.02		U	0.02		U	0.02
N,N-Dimethylaniline		U	1		U	1		U	1		U	1		U	1
Naphthalene		U	10		U	10		U	10		U	10		U	10
N-Methylaniline		U	5		U	5		U	5		U	5		U	5
Pentachlorophenol		U	0.2	0.16	J	0.2		U	0.2		U	0.2		U	0.2
Phenol		U	10		U	10		U	10		U	10		U	10
Total Metals															
Calcium	NA			16900		250	25400		250	21400		250	23500		250
Cobalt	NA			NA			NA			NA			NA		
Iron	NA			NA			NA			NA			NA		
Magnesium	NA			7650		250	10200		250	9700		250	11800		250
Manganese	NA			NA			NA			NA			NA		
Potassium	NA			2540		250	8890		250	7910		250	15400		250
Sodium	NA			20600		250	25200		250	23800		250	31200		250
Dissolved Metals															
Cobalt		U	50	3.5	J	50	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Iron	7930		150		U	150	3040		150	4550		150	[illegible]	[illegible]	[illegible]
Manganese	120		15	30.1		15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Wet Chemistry Parameters															
Alkalinity, Bicarbonate as CaCO3	NA			18.3		5	121		5	112		5	178		5
Alkalinity, Total	NA			NA			NA			NA			NA		
Ammonia	0.068	U	0.1	0.14		0.1	7.4		0.1	7.6		0.1	22.2		0.2
Chloride	NA			52.3		2.4	40.8		1.8	42.2		1.92	49.1	J-	2.28
Nitrate as N	NA			4.26		0.1		U	0.1		U	0.1		U	0.1
Sulfate	NA			18.9		0.6	7.3		0.6	7.45		0.6	7.13		0.6

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Checked by: SLS
Approved by: TAM
GOLDER

Appendix B-1
Summary of Detected Compounds - October/November 2019 Groundwater
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

							NCC UPA Monitoring Wells and P-6 Vicinity																													
Sample ID / Sample Date / N=Normal, FD=Field Duplicate							MW-26N 10/9/2019 N			MW-26N (128) 10/17/2019 N			MW-26N (138) 10/17/2019 N			MW-34 (80) 10/15/2019 N			MW-34 (80) 10/15/2019 FD			MW-34 (110) 10/15/2019 N			MW-34 (124) 10/16/2019 N			P-5L 10/3/2019 N			P-5U 10/3/2019 N			P-6 10/8/2019 N		
Parameter	CAS	Unit	RSL HQ=0.1	RSL HQ=1.0	MCL	[illegible]	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL
Volatile Organic Compounds																																				
1,1-Dichloroethane	75-34-3	ug/L	2.8	2.8	NE	NE	0.47	J	1		U	1	0.89	J	1		U	1		U	1		U	1		U	1		U	1	NA			0.75	J	1
1,1-Dichloroethene	75-35-4	ug/L	28	280	7	NE		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	NA				U	1
1,2,3-Trimethylbenzene	526-73-8	ug/L	5.5	55	NE	NE		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	NA			43		1
1,2,4-Trimethylbenzene	95-63-6	ug/L	5.6	56	NE	5.7		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	NA			[illegible]		[illegible]
1,2-Dichloroethane	107-06-2	ug/L	0.17	0.17	5	NE		U	1		U	1	0.6	J	1		U	1		U	1		U	1		U	1		U	1	NA				U	1
1,3,5-Trimethylbenzene	108-67-8	ug/L	6	60	NE	6.1		U	1		U	1		U	1		U	1		U	1		U	1		UJ	1		U	1	NA			[illegible]		[illegible]
1,4-Dioxane	123-91-1	ug/L	0.46	0.46	NE	4.6	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	3.8		0.4	4.4		0.4	4.3		0.4	[illegible]		[illegible]	[illegible]		[illegible]	NA			[illegible]		[illegible]
2-Butanone	78-93-3	ug/L	560	5600	NE	NE		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5	NA				U	5
Acetone	67-64-1	ug/L	1400	14000	NE	NE		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5	NA			6.2	U	6.2
Benzene	71-43-2	ug/L	0.46	0.46	5	4.6	0.82	J	1		U	1	[illegible]		[illegible]		U	1		U	1		U	1		U	1		U	1	NA			[illegible]		[illegible]
Bromodichloromethane	75-27-4	ug/L	0.13	0.13	80	NE		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	NA				U	1
Carbon Disulfide	75-15-0	ug/L	81	810	NE	NE		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	NA				U	1
Chlorobenzene	108-90-7	ug/L	7.8	78	100	NE	2.1		1		U	1	3.8		1	2		1	1.9		1	2.9		1	2.1		1		U	1	NA			12		1
Chloroethane	75-00-3	ug/L	2100	21000	NE	NE		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	NA			3.1		1
Chloroform	67-66-3	ug/L	0.22	0.22	80	NE		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	NA				U	1
Chloromethane	74-87-3	ug/L	19	190	NE	NE		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	NA				U	1
cis-1,2-Dichloroethene	156-59-2	ug/L	3.6	36	70	NE	0.42	J	1		U	1	0.55	J	1		U	1		U	1		U	1		U	1		U	1	NA			0.36	J	1
Cyclohexane	110-82-7	ug/L	1300	13000	NE	NE		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	NA			15		1
Dibromochloromethane	124-48-1	ug/L	0.87	0.87	80	NE		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	NA				U	1
Dichlorofluoromethane	75-43-4	ug/L	NE	NE	NE	NE	2.7		1	1.6		1	6.3		1		U	1		U	1		U	1		U	1		U	1	NA			23		1
Diethyl Ether	60-29-7	ug/L	390	3900	NE	NE	1.8		1	0.49	J	1	3.2		1	3.1		1	3.2		1	4.6		1	3.8		1		U	1	NA			8.3		1
Ethylbenzene	100-41-4	ug/L	1.5	1.5	700	15		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	NA			[illegible]		[illegible]
Indane	496-11-7	ug/L	NE	NE	NE	NE		U	1		U	1	0.67	J	1		U	1		U	1		U	1		U	1		U	1	NA			20		1
Isopropylbenzene	98-82-8	ug/L	45	450	NE	NE	0.75	J	1		U	1	2.3		1		U	1		U	1		U	1		U	1		U	1	NA			17		1
Methyl Cyclohexane	108-87-2	ug/L	NE	NE	NE	NE		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	NA			18		1
Methyl tert-Butyl Ether	1634-04-4	ug/L	14	14	NE	NE		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	NA				U	1
Methylene Chloride	75-09-2	ug/L	11	11	5	NE		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	NA				U	1
n-Propylbenzene	103-65-1	ug/L	66	660	NE	NE		U	1		U	1	1.4		1		U	1		U	1		U	1		U	1		U	1	NA			31		1
Tetrachloroethene	127-18-4	ug/L	4.1	11	5	NE		U	1		U	1		U	1	0.92	J	1	0.89	J	1	0.91	J	1	1.2		1	0.68	J	1	NA				U	1
Tetrahydrofuran	109-99-9	ug/L	340	3400	NE	NE	4.4		2	4.7		2	12		2	1.6	J	2		U	2		U	2		U	2		U	2	NA			110		2
Toluene	108-88-3	ug/L	110	1100	1000	NE		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	NA			2.3		1
trans-1,2-Dichloroethene	156-60-5	ug/L	36	360	100	NE		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	NA				U	1
Trichloroethene	79-01-6	ug/L	0.28	0.49	5	NE		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	NA				U	1
Vinyl Chloride	75-01-4	ug/L	0.019	0.019	2	NE		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	NA				U	1
Xylenes, Total	1330-20-7	ug/L	19	190	10000	21		U	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2	NA			[illegible]		[illegible]
Semivolatile Organic Compounds																																				
1,2,4-Trichlorobenzene	120-82-1	ug/L	0.4	1.2	70	NE		U	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2	NA				U	2
1,2-Dichlorobenzene	95-50-1	ug/L	30	300	600	NE		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10	NA			2.2	J	10
1,3-Dichlorobenzene	541-73-1	ug/L	NE	NE	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10	NA				U	10
1,4-Dichlorobenzene	106-46-7	ug/L	0.48	0.48	75	NE		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10	NA				U	10
2,4-Dimethylphenol	105-67-9	ug/L	36	360	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10	NA				U	10
2-Chlorophenol	95-57-8	ug/L	9.1	91	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10	NA				U	10
2-Methylnaphthalene	91-57-6	ug/L	3.6	36	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10	NA				U	10
2-Methylphenol	95-48-7	ug/L	93	930	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10	NA				U	10
4-Methylphenol	106-44-5	ug/L	190	1900	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10	NA				U	10
Benzo[a]anthracene	56-55-3	ug/L	0.03	0.03	NE	NE		U	0.05		U	0.1		U	0.5		U	0.05		U	0.05		U	0.05		U	0.05		U	0.05	NA				U	0.05
Benzo[a]pyrene	50-32-8	ug/L	0.025	0.025	0.2	NE		U	0.05		U	0.1		U	0.5		U	0.05		U	0.05		U	0.05		U	0.05		U	0.05	NA				U	0.05
Benzo[b]fluoranthene	205-99-2	ug/L	0.25	0.25	NE	NE		U	0.05		U	0.1		U	0.5		U	0.05		U	0.05		U	0.05		U	0.05		U	0.05	NA				U	0.05
Bis(2-chloroethyl) Ether	111-44-4	ug/L	0.014	0.014	NE	0.14	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	0.037		0.03	NA			[illegible]		[illegible]
Bis(2-ethylhexyl) Phthalate	117-81-7	ug/L	5.6	5.6	6	NE		U	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2	NA				U	2
Bisphenol A	80-05-7	ug/L	77	770	NE	NE		U	10		U	10	17		10		U	10		U	10		U	10		U	10		U	10	NA			110		10
Diethyl Phthalate	84-66-2	ug/L	1500	15000	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10	NA				U	10
Di-n-Butyl Phthalate	84-74-2	ug/L	90	900	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10	NA				U	10
Diphenyl Ether	101-84-8	ug/L	NE	NE	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10	NA			2.8	J	10
Hexachlorobenzene	118-74-1	ug/L	0.0098	0.0098	1	NE		U	0.02		U	0.04		U	0.2		U	0.02		U	0.02		U	0.02		U	0.02		U	0.02	NA				U	0.02
N,N-Dimethylaniline	121-69-7	ug/L	2.5	2.5	NE	25		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	NA			21		1
Naphthalene	91-20-3	ug/L	0.17	0.17	NE	0.63		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10	NA			[illegible]		[illegible]
N-Methylaniline	100-61-8	ug/L	NE	38	NE	NE		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5	NA			12		5
Pentachlorophenol	87-86-5	ug/L	0.041	0.041	1	NE		U	0.2		U	0.4		U	2		U	0.2		U	0.2		U	0.2		U	0.2		U	0.2	NA				U	0.2
Phenol	108-95-2	ug/L	580	5800	NE	NE		U	10		U	10		U	10		U	10		U	10		U	10		U	10		U	10	NA				U	10
Total Metals																																				
Calcium	7440-70-2	ug/L	NE	NE	NE	NE	20400		250	19900		250	22500		250	16100		250	16900		250	17500		250	16000		250	15500		250	18600		250	29100		250
Cobalt	7440-48-4	ug/L	0.6	6	NE	6	NA			NA			3.8	J	50	NA			NA			NA			NA			NA			NA			NA		
Iron	7439-89-6	ug/L	1400	14000	NE	13939	NA			NA				U	150	NA			NA			NA			NA			NA			NA			NA		
Magnesium	7439-95-4	ug/L	NE	NE	NE	NE	11800		250	10500		250	12300		250	8310		250	8180		250	9140		250	8350		250	4830		250	8770		250	15400		250
Manganese	7439-96-5	ug/L	43	430	NE	260	NA			NA			[illegible]		[illegible]	NA			NA			NA			NA			NA			NA			NA		
Potassium	7440-09-7	ug/L	NE	NE	NE	NE	2280		250	1980		250	2420		250	4110		250	4180		250	4530		250	4150		250	3240		250	3480		250	506		250
Sodium	7440-23-5	ug/L	NE	NE	NE	NE	26400		250	21700		250	23800		250	21100		250	21000		250	22500		250	21000		250	20700		250	32200		250	58100		250
Dissolved Metals																																				
Cobalt	7440-48-4	ug/L	0.6	6	NE	6	3.3	J	50		U	50	4.1	J	50	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	1.9	J	50	NA			4.7	J	50
Iron	7439-89-6	ug/L	1400	14000	NE	13939		U	150		U	150		U	150	2450		150	2490		150	6290		150	8890		150	138	J	150	NA			5070		150
Manganese	7439-96-5	ug/L	43	430	NE	260	170		15	100		15	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	96.6		15	NA			[illegible]		[illegible]
Wet Chemistry Parameters																																				
Alkalinity, Bicarbonate as CaCO3	ALKB-C	mg/L	NE	NE	NE	NE	61.9		5	35.9		5	74.4		5	54.1		5	54.8		5	66.5		5	61.6		5	52.4		5	39.4		5	155		5
Alkalinity, Total	ALK	mg/L	NE	NE	NE	NE	NA			NA			NA			NA			NA			NA			NA			NA			NA			NA		
Ammonia	7664-41-7	mg/L	NE	NE	NE	NE	0.28		0.1		U	0.1	0.099	J	0.1	0.62		0.1	0.63		0.1	0.95		0.1	0.8		0.1		U	0.1		U	0.1	0.16		0.1
Chloride	16887-00-6	mg/L	NE	NE	NE	NE	49.3		2.28	35.6		1.68	48		2.28	38.3		1.68	37.5		1.8	37.4		1.8	38.4		1.68	27.4		1.2	58.1		2.76	74.6		3.48
Nitrate as N	14797-55-8-N	mg/L	3.2	32	10	NE	0.16		0.1	0.79		0.1		U	0.1	0.52		0.1	0.51		0.1	0.67		0.1	1.48		0.1	0.34		0.1	0.38		0.1		U	0.1
Sulfate	14808-79-8	mg/L	NE	NE	NE	NE	14.6		0.6	23.6		8.4	8.47		0.6	12.9		0.6	12.9		0.6	13.7		0.6	13		0.6	3.65		0.6	22.6		0.6	0.39	J	0.6

Created by: YJS
Checked by: SLS
Approved by: TAM
GOLDER

Summary of Detected Compounds - October/November 2019 Groundwater
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

Notes:

Red highlight =	Concentration exceeds PRG
Orange highlight =	Concentration exceeds MCL
Yellow highlight =	Concentration exceeds RSL HQ=1.0
Green highlight =	Concentration exceeds RSL HQ=0.1

Abbreviations:
HQ = Hazard Quotient
MCL = USEPA Maximum Contaminant Level, updated June 2017
mg/L = milligrams per liter
NA = Not Applicable / Not Analyzed
ND = Not Detected
NE = Standard does not exist
PRG = Site Specific Preliminary Remediation Goals for Delaware Sand & Gravel Landfill, provided to the United States Environmental Protection Agency (USEPA) by the Trust in October 2017.
QC - Quality Control
Qual = interpreted qualifier
RDL = reporting detection limit
RSL = Regional Screening Level for tapwater, updated June 2017
SVOC = Semi-Volitale Organic Compounds
ug/L = micrograms per liter
VOC = Volitale Organic Compounds

Qualifiers:
J - estimated result
J+ - The result is an estimated quantity, but the result may be biased high.
J- - The result is an estimated quantity, but the result may be biased low.
R - The sample result is rejected due to serious deficiencies in meeting QC criteria.
U - not detected above RDL
UJ - not detected above RDL, RDL is estimated

APPENDIX B-2

Summary of PRG/MCL/RSL Screening - October/ November 2019

Appendix B-2A
Summary of PRG Screening - Fall 2019
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

		VOCs												SVOCs				Total Metals						Dissolved Metals					
	Compound	1,2,4-Trimethylbenzene		1,3,5-Trimethylbenzene		1,4-Dioxane		Benzene		Ethylbenzene		Xylenes, Total		Bis(2-chloroethyl) Ether		Naphthalene		Cobalt		Iron		Manganese		Cobalt		Iron		Manganese	
	PRG	5.7		6.1		4.6		4.6		15		21		0.14		0.63		6		13939		260		6		13939		260	
All results in ug/L	Depth (ft bgs)	Maximum Result	PRG Exceedance	Maximum Result	PRG Exceedance	Maximum Result	PRG Exceedance	Maximum Result	PRG Exceedance	Maximum Result	PRG Exceedance	Maximum Result	PRG Exceedance	Maximum Result	PRG Exceedance	Maximum Result	PRG Exceedance	Maximum Result	PRG Exceedance	Maximum Result	PRG Exceedance	Maximum Result	PRG Exceedance	Maximum Result	PRG Exceedance	Maximum Result	PRG Exceedance	Maximum Result	PRG Exceedance
DDA Extraction Monitoring Wells																													
B-4DR	NA	29	Yes	120	Yes	77	Yes	< 5	(ND)	12	No	120	Yes	85	Yes	15	Yes	NA	NA	NA	NA	NA	NA	44.8	Yes	81900	Yes	5460	Yes
BG-1	NA	8	Yes	4.7	No	35	Yes	4.2	No	< 1	(ND)	6.8	No	4.3	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	37.6	Yes	47100	Yes	5020	Yes
C-18D	NA	32	Yes	9.1	Yes	130	Yes	150	Yes	67	Yes	230	Yes	19	Yes	1.8	Yes	NA	NA	NA	NA	NA	NA	44.3	Yes	37300	Yes	3680	Yes
C-19D	NA	< 1	(ND)	< 1	(ND)	190	Yes	11	Yes	< 1	(ND)	< 2	(ND)	17	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	83.3	Yes	33100	Yes	6610	Yes
C-20D	NA	< 1	(ND)	< 1	(ND)	140	Yes	2.2	No	< 1	(ND)	< 2	(ND)	5.1	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	45.8	Yes	25900	Yes	8000	Yes
C-2D	NA	70	Yes	32	Yes	18	Yes	22	Yes	0.36	No	130	Yes	1.2	Yes	4.6	Yes	NA	NA	NA	NA	NA	NA	11.4	Yes	31100	Yes	2170	Yes
C-30	NA	23	Yes	7.1	Yes	68	Yes	83	Yes	27	Yes	130	Yes	2.2	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	97	Yes	25600	Yes	3880	Yes
C-4D	NA	0.37	No	< 1	(ND)	31	Yes	7.1	Yes	< 1	(ND)	< 2	(ND)	59	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	14.8	Yes	29700	Yes	1560	Yes
DDA Monitoring Wells																													
DGC-7C	NA	< 1	(ND)	< 1	(ND)	< 0.4	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 0.03	(ND)	< 10	(ND)	NA	NA	NA	NA	NA	NA	22.1	Yes	91800	Yes	1020	Yes
GA-101	NA	600	Yes	180	Yes	4.1	No	1.6	No	240	Yes	820	Yes	< 0.03	(ND)	28	Yes	NA	NA	NA	NA	NA	NA	< 50	(ND)	7230	No	563	Yes
PZ-11-EXT	NA	2100	Yes	550	Yes	44	Yes	300	Yes	8.7	No	5400	Yes	4.6	Yes	56	Yes	NA	NA	NA	NA	NA	NA	21.3	Yes	39600	Yes	135	No
PZ-5-EXT	NA	600	Yes	78	Yes	< 2	(ND)	0.43	No	310	Yes	700	Yes	< 0.03	(ND)	6.5	Yes	NA	NA	NA	NA	NA	NA	< 50	(ND)	31500	Yes	688	Yes
PW-1(U) UPCUTZ Monitoring Wells																													
DDA-18-TZ	NA	< 1	(ND)	< 1	(ND)	1.9	No	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 0.03	(ND)	< 10	(ND)	NA	NA	NA	NA	NA	NA	429	Yes	8460	No	37500	Yes
DDA-18-TZ (Field duplicate)	NA	< 1	(ND)	< 1	(ND)	1.8	No	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 0.03	(ND)	< 10	(ND)	NA	NA	NA	NA	NA	NA	459	Yes	8970	No	38200	Yes
DDA-19-TZ	NA	< 1	(ND)	< 1	(ND)	43	Yes	33	Yes	0.42	No	< 2	(ND)	13	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	11.2	Yes	26400	Yes	554	Yes
DDA-20-TZ	NA	21	Yes	2	No	50	Yes	30	Yes	17	Yes	30	Yes	8.7	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	35.1	Yes	44600	Yes	424	Yes
DGC-5	40	< 1	(ND)	< 1	(ND)	11	Yes	0.2	No	< 1	(ND)	< 2	(ND)	0.96	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	31.6	Yes	24600	Yes	1990	Yes
DGC-5	50	< 1	(ND)	< 1	(ND)	9	Yes	0.23	No	< 1	(ND)	< 2	(ND)	0.81	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	34.3	Yes	26900	Yes	2040	Yes
PW-1(U) Upper Sand Monitoring Wells																													
DDA-02	NA	< 1	(ND)	< 1	(ND)	4.8	Yes	0.7	No	0.42	No	< 2	(ND)	0.15	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	18.8	Yes	19100	Yes	1520	Yes
DDA-10-US	NA	11	Yes	2	No	160	Yes	150	Yes	19	Yes	11	No	36	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	60	Yes	53100	Yes	4500	Yes
DDA-12-US	NA	1200	Yes	280	Yes	75	Yes	38	Yes	12	No	1600	Yes	2.8	Yes	14	Yes	NA	NA	NA	NA	NA	NA	15.4	Yes	46100	Yes	330	Yes
DDA-18-US	NA	< 1	(ND)	< 1	(ND)	2.4	No	1.8	No	< 1	(ND)	< 2	(ND)	0.4	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	1.7	No	37800	Yes	783	Yes
DDA-19-US	NA	< 1	(ND)	< 1	(ND)	190	Yes	91	Yes	2.6	No	< 2	(ND)	21	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	6.5	Yes	21100	Yes	1430	Yes
DDA-20-US	NA	0.52	No	< 1	(ND)	5.8	Yes	0.63	No	< 1	(ND)	< 2	(ND)	0.83	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	17.3	Yes	7810	No	309	Yes
DDA-20-US (Field duplicate)	NA	22	Yes	2.2	No	39	Yes	30	Yes	17	Yes	32	Yes	8.4	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	33.5	Yes	44400	Yes	426	Yes
MHW-1D	NA	< 1	(ND)	< 1	(ND)	8.1	Yes	< 1	(ND)	< 1	(ND)	< 2	(ND)	0.13	No	< 10	(ND)	NA	NA	NA	NA	NA	NA	79.4	Yes	20100	Yes	3210	Yes
PW-1(U)	NA	8.4	Yes	2	No	47	Yes	15	Yes	3	No	17	No	5.6	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	23.9	Yes	25800	Yes	1910	Yes
Downgradient Columbia Monitoring Wells																													
CA-102	NA	< 1	(ND)	< 1	(ND)	< 0.4	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 0.03	(ND)	< 10	(ND)	NA	NA	NA	NA	NA	NA	45.6	Yes	87400	Yes	5230	Yes
CA-103	NA	< 1	(ND)	< 1	(ND)	1.4	No	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 0.03	(ND)	< 10	(ND)	NA	NA	NA	NA	NA	NA	7.6	Yes	76.3	No	1920	Yes
CA-106	NA	< 1	(ND)	< 1	(ND)	29	Yes	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 0.03	(ND)	< 10	(ND)	NA	NA	NA	NA	NA	NA	247	Yes	11600	No	5890	Yes
Downgradient UPCUTZ Monitoring Wells																													
UPA-102-TZ	NA	< 1	(ND)	< 1	(ND)	270	Yes	180	Yes	0.55	No	< 2	(ND)	35	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	100	Yes	26100	Yes	5580	Yes
UPA-103-TZ	NA	< 1	(ND)	< 1	(ND)	2.8	No	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 0.03	(ND)	< 10	(ND)	NA	NA	NA	NA	NA	NA	31.7	Yes	8750	No	807	Yes
UPA-104-TZ	NA	< 1	(ND)	< 1	(ND)	69	Yes	36	Yes	< 1	(ND)	< 2	(ND)	12	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	16.5	Yes	6650	No	352	Yes
UPA-105A-TZ	NA	< 1	(ND)	< 1	(ND)	< 0.4	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 0.03	(ND)	< 10	(ND)	NA	NA	NA	NA	NA	NA	< 50	(ND)	3200	No	93.6	No
UPA-105B-TZ	NA	< 1	(ND)	< 1	(ND)	< 0.4	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 0.03	(ND)	< 10	(ND)	NA	NA	NA	NA	NA	NA	< 50	(ND)	14200	Yes	221	No
UPA-107-TZ	NA	< 1	(ND)	< 1	(ND)	25	Yes	0.88	No	< 1	(ND)	< 2	(ND)	2.8	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	6.7	Yes	754	No	533	Yes
UPA-108B-TZ	NA	< 1	(ND)	< 1	(ND)	46	Yes	0.58	No	< 1	(ND)	< 2	(ND)	0.61	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	189	Yes	60400	Yes	2210	Yes
Downgradient Upper Sand Monitoring Wells																													
DGC-10S	NA	< 1	(ND)	< 1	(ND)	4.7	Yes	< 1	(ND)	< 1	(ND)	< 2	(ND)	0.3	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	2.5	No	728	No	80	No
DGC-11S	NA	< 1	(ND)	< 1	(ND)	< 0.4	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 0.03	(ND)	< 10	(ND)	NA	NA	NA	NA	NA	NA	< 50	(ND)	< 150	(ND)	8	No
RT-1-UP	NA	< 1	(ND)	< 1	(ND)	78	Yes	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 0.03	(ND)	< 10	(ND)	NA	NA	NA	NA	NA	NA	18.5	Yes	4670	No	167	No
UPA-01	NA	< 1	(ND)	< 1	(ND)	130	Yes	110	Yes	12	No	< 2	(ND)	55	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	20.3	Yes	20500	Yes	2880	Yes
UPA-102-US	NA	< 1	(ND)	< 1	(ND)	170	Yes	31	Yes	< 1	(ND)	< 2	(ND)	21	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	10.8	Yes	42400	Yes	3020	Yes
UPA-103-US	NA	< 1	(ND)	< 1	(ND)	1.6	No	< 1	(ND)	< 1	(ND)	< 2	(ND)	0.056	No	< 10	(ND)	NA	NA	NA	NA	NA	NA	57.6	Yes	57400	Yes	4530	Yes
UPA-104-US	NA	< 1	(ND)	< 1	(ND)	170	Yes	67	Yes	< 1	(ND)	< 2	(ND)	29	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	32.8	Yes	14300	Yes	4510	Yes
UPA-105A-US	NA	< 1	(ND)	< 1	(ND)	6.3	Yes	1.2	No	< 1	(ND)	< 2	(ND)	1.3	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	< 50	(ND)	6520	No	276	Yes
UPA-105B-US	NA	< 1	(ND)	< 1	(ND)	3	No	< 1	(ND)	< 1	(ND)	< 2	(ND)	0.53	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	64.8	Yes	44.7	No	1310	Yes
UPA-106-USA	NA	< 1	(ND)	< 1	(ND)	3.7	No	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 0.03	(ND)	< 10	(ND)	NA	NA	NA	NA	NA	NA	8.9	Yes	1430	No	1750	Yes
UPA-106-USB	NA	< 1	(ND)	< 1	(ND)	5.1	Yes	< 1	(ND)	< 1	(ND)	< 2	(ND)	0.2	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	85.8	Yes	38900	Yes	2150	Yes
UPA-107-US (Field duplicate)	NA	< 1	(ND)	< 1	(ND)	6.2	Yes	< 1	(ND)	< 1	(ND)	< 2	(ND)	0.092	No	< 10	(ND)	NA	NA	NA	NA	NA	NA	18.9	Yes	7630	No	3310	Yes
UPA-107-US	NA	< 1	(ND)	< 1	(ND)	4.4	No	< 1	(ND)	< 1	(ND)	< 2	(ND)	0.091	No	< 10	(ND)	NA	NA	NA	NA	NA	NA	20.9	Yes	9150	No	3400	Yes
UPA-108B-US	NA	< 1	(ND)	< 1	(ND)	210	Yes	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 0.03	(ND)	< 10	(ND)	NA	NA	NA	NA	NA	NA	13.6	Yes	32300	Yes	397	Yes
UPA-108C-US	NA	< 1	(ND)	< 1	(ND)	600	Yes	0.57	No	< 1	(ND)	< 2	(ND)	0.34	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	3.2	No	66900	Yes	238	No
Downgradient Lower Sand Monitoring Wells																													
DGC-10D	NA	< 1	(ND)	< 1	(ND)	0.67	No	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 0.03	(ND)	< 10	(ND)	NA	NA	NA	NA	NA	NA	3.5	No	< 150	(ND)	180	No
DGC-11D	NA	< 1	(ND)	< 1	(ND)	< 0.4	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 0.03	(ND)	< 10	(ND)	NA	NA	NA	NA	NA	NA	< 50	(ND)	< 150	(ND)	4.4	No
UPA-02D	NA	< 1	(ND)	< 1	(ND)	28	Yes	< 1	(ND)	< 1	(ND)	< 2	(ND)	4.6	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	24.2	Yes	10200	No	2010	Yes
UPA-03D	NA	< 1	(ND)	< 1	(ND)	39	Yes	< 1	(ND)	< 1	(ND)	< 2	(ND)	6.6	Yes	< 10	(ND)	2.5	No	< 150	(ND)	7.1	No	2.7	No	< 150	(ND)	7.9	No
UPA-101-LSA	NA	< 1	(ND)	< 1	(ND)	50	Yes	0.93	No	< 1	(ND)	< 2	(ND)	7.5	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	9.2	Yes	44300	Yes	1440	Yes
UPA-101-LSB	NA	< 1	(ND)	< 1	(ND)	120	Yes	12	Yes	< 1	(ND)	< 2	(ND)	20	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	38.2	Yes	24200	Yes	1610	Yes
UPA-103-LS	NA	< 1	(ND)	< 1	(ND)	< 0.4	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 0.03	(ND)	< 10	(ND)	NA	NA	NA	NA	NA	NA	38.8	Yes	13600	No	573	Yes
UPA-104-LS	NA	< 1	(ND)	< 1	(ND)	40	Yes	0.4	No	< 1	(ND)	< 2	(ND)	7.5	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	13.4	Yes	39200	Yes	2840	Yes
UPA-105A-LS	NA	< 1	(ND)	< 1	(ND)	1.6	No	< 1	(ND)	< 1	(ND)	< 2	(ND)	0.17	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	14.9	Yes	147	No	1220	Yes
UPA-105B-LS	NA	< 1	(ND)	< 1	(ND)	1.4	No	< 1	(ND)	< 1	(ND)	< 2	(ND)	0.11	No	< 10	(ND)	NA	NA	NA	NA	NA	NA	< 50	(ND)	926	No	145	No
UPA-106-LS	NA	< 1	(ND)	< 1	(ND)	4.9	Yes	< 1	(ND)	< 1	(ND)	< 2	(ND)	0.68	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	16.6	Yes	35400	Yes	1190	Yes
UPA-107-LS	NA	< 1	(ND)	< 1	(ND)	18	Yes	< 1	(ND)	< 1	(ND)	< 2	(ND)	1.2	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	< 50	(ND)	21800	Yes	1790	Yes
UPA-108B-LS	NA	< 1	(ND)	< 1	(ND)	110	Yes	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 0.03	(ND)	< 10	(ND)	NA	NA	NA	NA	NA	NA	2.1	No	55500	Yes	1660	Yes
AWC Monitoring Wells																													
AWC-6R	NA	< 1	(ND)	< 1	(ND)	0.88	No	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 0.03	(ND)	< 10	(ND)	NA	NA	NA	NA	NA	NA	3.5	No	< 150	(ND)	30.1	No
AWC-E1	132	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10.6	Yes	16200	Yes	1180	Yes	9.7	Yes	7760	No	1090	Yes
AWC-E1	156	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10.7	Yes	33400	Yes	1120	Yes	9.1	Yes	9150	No	1080	Yes
AWC-E2	140	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7	Yes	8420	No	901	Yes	6.6	Yes	8110	No	882	Yes
AWC-E2	165	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.7	Yes	4710	No	550	Yes	7.5	Yes	3630	No	523	Yes
AWC-K1	NA	< 1	(ND)	< 1	(ND)	0.94	No	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 0.03	(ND)	< 10	(ND)	NA	NA	NA	NA	NA	NA	< 50	(ND)	7830	No	120	No
NCC UPA Monitoring Wells and P-6 Vicinity																													
BW-2	128	< 1	(ND)	< 1	(ND)	47	Yes	< 1	(ND)	< 1	(ND)	< 2	(ND)	0.1	No	< 10	(ND)	NA	NA	NA	NA	NA	NA	18.6	Yes	3040	No	1870	Yes
BW-2	138	< 1	(ND)	< 1	(ND)	47	Yes	< 1	(ND)	< 1	(ND)	< 2	(ND)	0.12	No	< 10	(ND)	NA	NA	NA	NA	NA	NA	21.7	Yes	4550	No	1940	Yes
MW-18	NA	< 1	(ND)	< 1	(ND)	4.4	No	0.24	No	< 1	(ND)	< 2	(ND)	0.19	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	27	Yes	33100	Yes	2670	Yes
MW-26N	NA	< 1	(ND)	< 1	(ND)	150	Yes	0.82	No	< 1	(ND)	< 2	(ND)	30	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	3.3	No	< 150	(ND)	170	No
MW-26N	128	< 1	(ND)	< 1	(ND)	37	Yes	< 1	(ND)	< 1	(ND)	< 2	(ND)	11	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	< 50	(ND)	< 150	(ND)	100	No
MW-26N	138	< 1	(ND)	< 1	(ND)	260	Yes	9.5	Yes	< 1	(ND)	< 2	(ND)	55	Yes	< 10	(ND)	3.8	No	< 150	(ND)	336	Yes	4.1	No	< 150	(ND)	346	Yes
MW-34 (Field duplicate)	80	< 1	(ND)	< 1	(ND)	4.4	No	< 1	(ND)	< 1	(ND)	< 2	(ND)	0.58	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	13	Yes	2480	No	1190	Yes
MW-34	110	< 1	(ND)	< 1	(ND)	4.3	No	< 1	(ND)	< 1	(ND)	< 2	(ND)	0.56	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	13.9	Yes	6280	No	1300	Yes
MW-34	80	< 1	(ND)	< 1	(ND)	3.8	No	< 1	(ND)	< 1	(ND)	< 2	(ND)	0.62	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	12.9	Yes	2450	No	1200	Yes
MW-34	124	< 1	(ND)	< 1	(ND)	6.1	Yes	< 1	(ND)	< 1	(ND)	< 2	(ND)	0.42	Yes	< 10	(ND)	NA	NA	NA	NA	NA	NA	13.1	Yes	8690	No	1080	Yes
P-5L	NA	< 1	(ND)	< 1	(ND)	14	Yes	< 1	(ND)	< 1	(ND)	< 2	(ND)	0.037	No	< 10	(ND)	NA	NA	NA	NA	NA	NA	1.9	No	138	No	96.8	No
P-6	NA	37	Yes	21	Yes	370	Yes	420	Yes	140	Yes	61	Yes	120	Yes	1.9	Yes	NA	NA	NA	NA	NA	NA	4.7	No	5070	No	391	Yes

Prepared by: KMS 1/28/2020
Checked by: ERW 1/29/2020
Approved by: TAM 2/28/2020

Appendix B-2B
Summary of MCL Screening - Fall 2019
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

		VOCs												SVOCs			
	Compound	1,2-Dichloroethane		Benzene		Chlorobenzene		Tetrachloroethene		Toluene		Vinyl Chloride		Benzo[a]pyrene		Bis(2-ethylhexyl) Phthalate	
	MCL	5		5		100		5		1000		2		0.2		6	
All results in ug/L	Depth (ft bgs)	Maximum Result	MCL Exceedance	Maximum Result	MCL Exceedance	Maximum Result	MCL Exceedance	Maximum Result	MCL Exceedance	Maximum Result	MCL Exceedance	Maximum Result	MCL Exceedance	Maximum Result	MCL Exceedance	Maximum Result	MCL Exceedance
DDA Extraction Monitoring Wells																	
B-4DR	NA	2.4	No	< 5	(ND)	1400	Yes	< 5	(ND)	3.6	No	< 5	(ND)	1.6	Yes	< 2	(ND)
BG-1	NA	< 1	(ND)	4.2	No	0.99	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
C-18D	NA	< 5	(ND)	150	Yes	21	No	< 5	(ND)	1100	Yes	< 5	(ND)	0.35	Yes	< 2	(ND)
C-19D	NA	< 1	(ND)	11	Yes	5.9	No	< 1	(ND)	0.64	No	< 1	(ND)	0.37	Yes	< 2	(ND)
C-20D	NA	0.87	No	2.2	No	2.1	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
C-2D	NA	< 1	(ND)	22	Yes	18	No	< 1	(ND)	0.59	No	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
C-30	NA	2.7	No	83	Yes	14	No	< 2	(ND)	440	No	< 2	(ND)	< 0.05	(ND)	< 2	(ND)
C-4D	NA	< 1	(ND)	7.1	Yes	11	No	< 1	(ND)	1.7	No	< 1	(ND)	0.78	Yes	< 2	(ND)
DDA Monitoring Wells																	
DGC-7C	NA	< 1	(ND)	< 1	(ND)	0.53	No	< 1	(ND)	1.5	No	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
GA-101	NA	< 2	(ND)	1.6	No	2.8	No	1.2	No	120	No	< 2	(ND)	< 0.05	(ND)	< 2	(ND)
PZ-11-EXT	NA	< 20	(ND)	300	Yes	92	No	< 20	(ND)	< 20	(ND)	< 20	(ND)	< 0.05	(ND)	< 2	(ND)
PZ-5-EXT	NA	< 2	(ND)	0.43	No	2.4	No	< 2	(ND)	110	No	0.74	No	< 0.05	(ND)	< 2	(ND)
PW-1(U) UPCUTZ Monitoring Wells																	
DDA-18-TZ	NA	< 1	(ND)	< 1	(ND)	1.1	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
DDA-18-TZ (Field duplicate)	NA	< 1	(ND)	< 1	(ND)	1.1	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
DDA-19-TZ	NA	1.2	No	33	Yes	0.93	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	0.07	No	< 2	(ND)
DDA-20-TZ	NA	< 1	(ND)	30	Yes	0.58	No	< 1	(ND)	0.55	No	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
DGC-5	40	< 1	(ND)	0.2	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
DGC-5	50	< 1	(ND)	0.23	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
PW-1(U) Upper Sand Monitoring Wells																	
DDA-02	NA	< 1	(ND)	0.7	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
DDA-10-US	NA	< 1	(ND)	150	Yes	2.5	No	< 1	(ND)	0.52	No	0.61	No	< 0.5	(ND)	< 2	(ND)
DDA-12-US	NA	< 5	(ND)	38	Yes	4	No	< 5	(ND)	3.3	No	< 5	(ND)	< 0.05	(ND)	< 2	(ND)
DDA-18-US	NA	< 1	(ND)	1.8	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
DDA-19-US	NA	3.5	No	91	Yes	3.2	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	0.34	Yes	< 2	(ND)
DDA-20-US	NA	1.4	No	0.63	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
DDA-20-US (Field duplicate)	NA	< 1	(ND)	30	Yes	0.6	No	< 1	(ND)	0.52	No	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
MHW-1D	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
PW-1(U)	NA	< 1	(ND)	15	Yes	1.9	No	3	No	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
Downgradient Columbia Monitoring Wells																	
CA-102	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
CA-103	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
CA-106	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
Downgradient UPCUTZ Monitoring Wells																	
UPA-102-TZ	NA	23	Yes	180	Yes	51	No	< 1	(ND)	0.69	No	3	Yes	< 0.5	(ND)	< 2	(ND)
UPA-103-TZ	NA	< 1	(ND)	< 1	(ND)	0.43	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
UPA-104-TZ	NA	1.2	No	36	Yes	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.1	(ND)	< 2	(ND)
UPA-105A-TZ	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
UPA-105B-TZ	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
UPA-107-TZ	NA	3	No	0.88	No	0.98	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
UPA-108B-TZ	NA	< 1	(ND)	0.58	No	6.1	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
Downgradient Upper Sand Monitoring Wells																	
DGC-10S	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
DGC-11S	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
RT-1-UP	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
UPA-01	NA	0.74	No	110	Yes	4.3	No	1.5	No	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
UPA-102-US	NA	1.6	No	31	Yes	65	No	< 1	(ND)	< 1	(ND)	0.62	No	< 0.05	(ND)	< 2	(ND)
UPA-103-US	NA	< 1	(ND)	< 1	(ND)	1.1	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
UPA-104-US	NA	< 1	(ND)	67	Yes	3.4	No	0.62	No	< 1	(ND)	< 1	(ND)	< 0.25	(ND)	< 2	(ND)
UPA-105A-US	NA	0.83	No	1.2	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
UPA-105B-US	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	6.2	Yes	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
UPA-106-USA	NA	< 1	(ND)	< 1	(ND)	0.49	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
UPA-106-USB	NA	< 1	(ND)	< 1	(ND)	9.3	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
UPA-107-US (Field duplicate)	NA	< 1	(ND)	< 1	(ND)	7.1	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
UPA-107-US	NA	< 1	(ND)	< 1	(ND)	6.6	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
UPA-108B-US	NA	< 1	(ND)	< 1	(ND)	5.4	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
UPA-108C-US	NA	< 1	(ND)	0.57	No	6.7	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
Downgradient Lower Sand Monitoring Wells																	
DGC-10D	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	1.5	No	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
DGC-11D	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
UPA-02D	NA	< 1	(ND)	< 1	(ND)	5.5	No	0.26	No	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
UPA-03D	NA	< 1	(ND)	< 1	(ND)	2	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
UPA-101-LSA	NA	< 1	(ND)	0.93	No	7.8	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
UPA-101-LSB	NA	< 1	(ND)	12	Yes	14	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.25	(ND)	< 2	(ND)
UPA-103-LS	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
UPA-104-LS	NA	< 1	(ND)	0.4	No	8.4	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
UPA-105A-LS	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	1	No	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
UPA-105B-LS	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	3.3	No	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	20	Yes
UPA-106-LS	NA	< 1	(ND)	< 1	(ND)	3	No	0.27	No	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
UPA-107-LS	NA	< 1	(ND)	< 1	(ND)	3.7	No	0.34	No	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
UPA-108B-LS	NA	< 1	(ND)	< 1	(ND)	5.3	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
AWC Monitoring Wells																	
AWC-6R	NA	0.64	No	< 1	(ND)	< 1	(ND)	0.62	No	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
AWC-K1	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
NCC UPA Monitoring Wells and P-6 Vicinity																	
BW-2	128	< 1	(ND)	< 1	(ND)	2.2	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
BW-2	138	< 1	(ND)	< 1	(ND)	3	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
MW-18	NA	< 1	(ND)	0.24	No	6.9	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
MW-26N	NA	< 1	(ND)	0.82	No	2.1	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
MW-26N	128	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.1	(ND)	< 2	(ND)
MW-26N	138	0.6	No	9.5	Yes	3.8	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.5	(ND)	< 2	(ND)
MW-34 (Field duplicate)	80	< 1	(ND)	< 1	(ND)	1.9	No	0.89	No	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
MW-34	110	< 1	(ND)	< 1	(ND)	2.9	No	0.91	No	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
MW-34	80	< 1	(ND)	< 1	(ND)	2	No	0.92	No	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
MW-34	124	< 1	(ND)	< 1	(ND)	2.1	No	1.2	No	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
P-5L	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	0.68	No	< 1	(ND)	< 1	(ND)	< 0.05	(ND)	< 2	(ND)
P-6	NA	< 1	(ND)	420	Yes	12	No	< 1	(ND)	2.3	No	< 1	(ND)	< 0.05	(ND)	< 2	(ND)

Prepared by: KMS 1/28/2020
Checked by: YJS 1/28/2020
Approved by: TAM 2/28/2020

Appendix B-2C
Summary of RSL THQ=0.1 Screening - Fall 2019
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

		VOCs																			
Compound		1,1-Dichloroethane		1,2,3-Trimethylbenzene		1,2,4-Trimethylbenzene		1,2-Dichloroethane		1,3,5-Trimethylbenzene		1,4-Dioxane		Benzene		Bromodichloromethane		Chlorobenzene		Chloroform	
RSL THQ=0.1		2.8		5.5		5.6		0.17		6		0.46		0.46		0.13		7.8		0.22	
All results in ug/L	Depth (ft bgs)	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance
DDA Extraction Monitoring Wells																					
B-4DR	NA	< 5	(ND)	120	Yes	29	Yes	2.4	Yes	120	Yes	77	Yes	< 5	(ND)	< 5	(ND)	1400	Yes	< 5	(ND)
BG-1	NA	< 1	(ND)	6.5	Yes	8	Yes	< 1	(ND)	4.7	No	35	Yes	4.2	Yes	< 1	(ND)	0.99	No	< 1	(ND)
C-18D	NA	< 5	(ND)	10	Yes	32	Yes	< 5	(ND)	9.1	Yes	130	Yes	150	Yes	< 5	(ND)	21	Yes	< 5	(ND)
C-19D	NA	0.92	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	190	Yes	11	Yes	< 1	(ND)	5.9	No	< 1	(ND)
C-20D	NA	< 1	(ND)	2.2	No	< 1	(ND)	0.87	Yes	< 1	(ND)	140	Yes	2.2	Yes	< 1	(ND)	2.1	No	< 1	(ND)
C-2D	NA	< 1	(ND)	29	Yes	70	Yes	< 1	(ND)	32	Yes	18	Yes	22	Yes	< 1	(ND)	18	Yes	< 1	(ND)
C-30	NA	0.92	No	9	Yes	23	Yes	2.7	Yes	7.1	Yes	68	Yes	83	Yes	< 2	(ND)	14	Yes	< 2	(ND)
C-4D	NA	< 1	(ND)	2.1	No	0.37	No	< 1	(ND)	< 1	(ND)	31	Yes	7.1	Yes	< 1	(ND)	11	Yes	< 1	(ND)
DDA Monitoring Wells																					
DGC-7C	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.4	(ND)	< 1	(ND)	< 1	(ND)	0.53	No	< 1	(ND)
GA-101	NA	< 2	(ND)	190	Yes	600	Yes	< 2	(ND)	180	Yes	4.1	Yes	1.6	Yes	< 2	(ND)	2.8	No	< 2	(ND)
PZ-11-EXT	NA	< 20	(ND)	590	Yes	2100	Yes	< 20	(ND)	550	Yes	44	Yes	300	Yes	< 20	(ND)	92	Yes	< 20	(ND)
PZ-5-EXT	NA	< 2	(ND)	150	Yes	600	Yes	< 2	(ND)	78	Yes	< 2	(ND)	0.43	No	< 2	(ND)	2.4	No	< 2	(ND)
PW-1(U) UPCUTZ Monitoring Wells																					
DDA-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DDA-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DDA-18-TZ	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	1.9	Yes	< 1	(ND)	< 1	(ND)	1.1	No	< 1	(ND)
DDA-18-TZ (Field duplicate)	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	1.8	Yes	< 1	(ND)	< 1	(ND)	1.1	No	< 1	(ND)
DDA-19-TZ	NA	0.39	No	< 1	(ND)	< 1	(ND)	1.2	Yes	< 1	(ND)	43	Yes	33	Yes	< 1	(ND)	0.93	No	< 1	(ND)
DDA-20-TZ	NA	0.29	No	2.7	No	21	Yes	< 1	(ND)	2	No	50	Yes	30	Yes	< 1	(ND)	0.58	No	< 1	(ND)
DGC-5	40	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	11	Yes	0.2	No	< 1	(ND)	< 1	(ND)	< 1	(ND)
DGC-5	50	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	9	Yes	0.23	No	< 1	(ND)	< 1	(ND)	< 1	(ND)
PW-1(U) Upper Sand Monitoring Wells																					
DDA-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DDA-02	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	4.8	Yes	0.7	Yes	< 1	(ND)	< 1	(ND)	< 1	(ND)
DDA-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DDA-10-US	NA	0.86	No	2.2	No	11	Yes	< 1	(ND)	2	No	160	Yes	150	Yes	< 1	(ND)	2.5	No	< 1	(ND)
DDA-12-US	NA	< 5	(ND)	260	Yes	1200	Yes	< 5	(ND)	280	Yes	75	Yes	38	Yes	< 5	(ND)	4	No	< 5	(ND)
DDA-18-US	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	2.4	Yes	1.8	Yes	< 1	(ND)	< 1	(ND)	< 1	(ND)
DDA-19-US	NA	1.1	No	< 1	(ND)	< 1	(ND)	3.5	Yes	< 1	(ND)	190	Yes	91	Yes	< 1	(ND)	3.2	No	< 1	(ND)
DDA-20-US	NA	< 1	(ND)	< 1	(ND)	0.52	No	1.4	Yes	< 1	(ND)	5.8	Yes	0.63	Yes	< 1	(ND)	< 1	(ND)	< 1	(ND)
DDA-20-US (Field duplicate)	NA	0.26	No	2.8	No	22	Yes	< 1	(ND)	2.2	No	39	Yes	30	Yes	< 1	(ND)	0.6	No	< 1	(ND)
DGC-2S	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DGC-2S	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DGC-7S	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MHW-1D	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	8.1	Yes	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)
PW-1(U)	NA	< 1	(ND)	2.1	No	8.4	Yes	< 1	(ND)	2	No	47	Yes	15	Yes	< 1	(ND)	1.9	No	< 1	(ND)
Downgradient Columbia Monitoring Wells																					
CA-102	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.4	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)
CA-103	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	1.4	Yes	< 1	(ND)	2.2	Yes	< 1	(ND)	2.8	Yes
CA-106	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	29	Yes	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)
Downgradient UPCUTZ Monitoring Wells																					
UPA-102-TZ	NA	2.9	Yes	< 1	(ND)	< 1	(ND)	23	Yes	< 1	(ND)	270	Yes	180	Yes	< 1	(ND)	51	Yes	< 1	(ND)
UPA-103-TZ	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	2.8	Yes	< 1	(ND)	< 1	(ND)	0.43	No	< 1	(ND)
UPA-104-TZ	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	1.2	Yes	< 1	(ND)	69	Yes	36	Yes	< 1	(ND)	< 1	(ND)	< 1	(ND)
UPA-105A-TZ	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.4	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)
UPA-105B-TZ	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.4	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)
UPA-107-TZ	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	3	Yes	< 1	(ND)	25	Yes	0.88	Yes	< 1	(ND)	0.98	No	< 1	(ND)
UPA-108B-TZ	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	46	Yes	0.58	Yes	< 1	(ND)	6.1	No	< 1	(ND)
Downgradient Upper Sand Monitoring Wells																					
DGC-10S	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	4.7	Yes	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)
DGC-11S	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.4	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)
DGC-8S	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RT-1-UP	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	78	Yes	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)
UPA-01	NA	1.3	No	< 1	(ND)	< 1	(ND)	0.74	Yes	< 1	(ND)	130	Yes	110	Yes	< 1	(ND)	4.3	No	< 1	(ND)
UPA-02S	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
UPA-102-US	NA	0.84	No	< 1	(ND)	< 1	(ND)	1.6	Yes	< 1	(ND)	170	Yes	31	Yes	< 1	(ND)	65	Yes	< 1	(ND)
UPA-103-US	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	1.6	Yes	< 1	(ND)	< 1	(ND)	1.1	No	< 1	(ND)
UPA-104-US	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	170	Yes	67	Yes	< 1	(ND)	3.4	No	< 1	(ND)
UPA-105A-US	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	0.83	Yes	< 1	(ND)	6.3	Yes	1.2	Yes	< 1	(ND)	< 1	(ND)	< 1	(ND)
UPA-105B-US	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	3	Yes	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)
UPA-106-USA	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	3.7	Yes	< 1	(ND)	0.56	Yes	0.49	No	2.1	Yes
UPA-106-USB	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	5.1	Yes	< 1	(ND)	< 1	(ND)	9.3	Yes	< 1	(ND)
UPA-107-US (Field duplicate)	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	6.2	Yes	< 1	(ND)	< 1	(ND)	7.1	No	< 1	(ND)
UPA-107-US	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	4.4	Yes	< 1	(ND)	< 1	(ND)	6.6	No	< 1	(ND)
UPA-108B-US	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	210	Yes	< 1	(ND)	< 1	(ND)	5.4	No	< 1	(ND)
UPA-108C-US	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	600	Yes	0.57	Yes	< 1	(ND)	6.7	No	< 1	(ND)

Prepared by: KMS 1/27/2020
Checked by: ERW 1/29/2020
Approved by: TAM 2/28/2020
GOLDER

Appendix B-2C
Summary of RSL THQ=0.1 Screening - Fall 2019
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

		VOCs																			
Compound		1,1-Dichloroethane		1,2,3-Trimethylbenzene		1,2,4-Trimethylbenzene		1,2-Dichloroethane		1,3,5-Trimethylbenzene		1,4-Dioxane		Benzene		Bromodichloromethane		Chlorobenzene		Chloroform	
RSL THQ=0.1		2.8		5.5		5.6		0.17		6		0.46		0.46		0.13		7.8		0.22	
All results in ug/L	Depth (ft bgs)	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance
Downgradient Lower Sand Monitoring Wells																					
DGC-10D	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	0.67	Yes	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)
DGC-11D	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.4	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)
DGC-8D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
UPA-02D	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	28	Yes	< 1	(ND)	< 1	(ND)	5.5	No	< 1	(ND)
UPA-03D	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	39	Yes	< 1	(ND)	< 1	(ND)	2	No	< 1	(ND)
UPA-101-LSA	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	50	Yes	0.93	Yes	< 1	(ND)	7.8	Yes	< 1	(ND)
UPA-101-LSB	NA	0.3	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	120	Yes	12	Yes	< 1	(ND)	14	Yes	< 1	(ND)
UPA-103-LS	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 0.4	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)
UPA-104-LS	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	40	Yes	0.4	No	< 1	(ND)	8.4	Yes	< 1	(ND)
UPA-105A-LS	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	1.6	Yes	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)
UPA-105B-LS	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	1.4	Yes	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)
UPA-106-LS	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	4.9	Yes	< 1	(ND)	< 1	(ND)	3	No	< 1	(ND)
UPA-107-LS	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	18	Yes	< 1	(ND)	< 1	(ND)	3.7	No	< 1	(ND)
UPA-108B-LS	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	110	Yes	< 1	(ND)	< 1	(ND)	5.3	No	< 1	(ND)
AWC Monitoring Wells																					
AWC-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AWC-6R	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	0.64	Yes	< 1	(ND)	0.88	Yes	< 1	(ND)	< 1	(ND)	< 1	(ND)	0.43	Yes
AWC-E1	132	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AWC-E1	156	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AWC-E1	132	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AWC-E1	156	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AWC-E2	140	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AWC-E2	165	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AWC-E2	140	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AWC-E2	165	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AWC-K1	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	0.94	Yes	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)
NCC UPA Monitoring Wells and P-6 Vicinity																					
BW-2	128	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	47	Yes	< 1	(ND)	< 1	(ND)	2.2	No	< 1	(ND)
BW-2	138	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	47	Yes	< 1	(ND)	< 1	(ND)	3	No	< 1	(ND)
MW-18	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	4.4	Yes	0.24	No	< 1	(ND)	6.9	No	< 1	(ND)
MW-26N	NA	0.47	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	150	Yes	0.82	Yes	< 1	(ND)	2.1	No	< 1	(ND)
MW-26N	128	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	37	Yes	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)
MW-26N	138	0.89	No	< 1	(ND)	< 1	(ND)	0.6	Yes	< 1	(ND)	260	Yes	9.5	Yes	< 1	(ND)	3.8	No	< 1	(ND)
MW-34 (Field duplicate)	80	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	4.4	Yes	< 1	(ND)	< 1	(ND)	1.9	No	< 1	(ND)
MW-34	110	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	4.3	Yes	< 1	(ND)	< 1	(ND)	2.9	No	< 1	(ND)
MW-34	80	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	3.8	Yes	< 1	(ND)	< 1	(ND)	2	No	< 1	(ND)
MW-34	124	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	6.1	Yes	< 1	(ND)	< 1	(ND)	2.1	No	< 1	(ND)
P-5L	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	14	Yes	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)
P-5U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
P-6	NA	0.75	No	43	Yes	37	Yes	< 1	(ND)	21	Yes	370	Yes	420	Yes	< 1	(ND)	12	Yes	< 1	(ND)

Prepared by: KMS 1/27/2020
Checked by: ERW 1/29/2020
Approved by: TAM 2/28/2020
CALDER

Appendix B-2C
Summary of RSL THQ=0.1 Screening - Fall 2019
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

		VOCs																				SVOCs	
Compound		cis-1,2-Dichloroethene		Dibromochloromethane		Ethylbenzene		Isopropylbenzene		n-Propylbenzene		Tetrachloroethene		Toluene		Trichloroethene		Vinyl Chloride		Xylenes, Total		1,2,4-Trichlorobenzene	
RSL THQ=0.1		3.6		0.87		1.5		45		66		4.1		110		0.28		0.019		19		0.4	
All results in ug/L	Depth (ft bgs)	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance
DDA Extraction Monitoring Wells																							
B-4DR	NA	< 5	(ND)	< 5	(ND)	12	Yes	4.8	No	2.2	No	< 5	(ND)	3.6	No	< 5	(ND)	< 5	(ND)	120	Yes	< 2	(ND)
BG-1	NA	0.47	No	< 1	(ND)	< 1	(ND)	4.1	No	3.4	No	< 1	(ND)	< 1	(ND)	1.1	Yes	< 1	(ND)	6.8	No	< 2	(ND)
C-18D	NA	14	Yes	< 5	(ND)	67	Yes	3.2	No	5.8	No	< 5	(ND)	1100	Yes	< 5	(ND)	< 5	(ND)	230	Yes	< 2	(ND)
C-19D	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	0.45	No	0.32	No	< 1	(ND)	0.64	No	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
C-20D	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	1.7	No	1.7	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
C-2D	NA	0.29	No	< 1	(ND)	0.36	No	13	No	15	No	< 1	(ND)	0.59	No	< 1	(ND)	< 1	(ND)	130	Yes	< 2	(ND)
C-30	NA	22	Yes	< 2	(ND)	27	Yes	1.7	No	2.9	No	< 2	(ND)	440	Yes	< 2	(ND)	< 2	(ND)	130	Yes	< 2	(ND)
C-4D	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	18	No	1.4	No	< 1	(ND)	1.7	No	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
DDA Monitoring Wells																							
DGC-7C	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	1.5	No	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
GA-101	NA	1.9	No	< 2	(ND)	240	Yes	43	No	120	Yes	1.2	No	120	Yes	1	Yes	< 2	(ND)	820	Yes	6.2	Yes
PZ-11-EXT	NA	< 20	(ND)	< 20	(ND)	8.7	Yes	120	Yes	330	Yes	< 20	(ND)	< 20	(ND)	< 20	(ND)	< 20	(ND)	5400	Yes	< 2	(ND)
PZ-5-EXT	NA	13	Yes	< 2	(ND)	310	Yes	51	Yes	74	Yes	< 2	(ND)	110	Yes	< 2	(ND)	0.74	Yes	700	Yes	1.2	Yes
PW-1(U) UPCUTZ Monitoring Wells																							
DDA-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DDA-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DDA-18-TZ	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
DDA-18-TZ (Field duplicate)	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
DDA-19-TZ	NA	1.1	No	< 1	(ND)	0.42	No	1.5	No	2.1	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
DDA-20-TZ	NA	< 1	(ND)	< 1	(ND)	17	Yes	4.5	No	4.5	No	< 1	(ND)	0.55	No	< 1	(ND)	< 1	(ND)	30	Yes	< 2	(ND)
DGC-5	40	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
DGC-5	50	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
PW-1(U) Upper Sand Monitoring Wells																							
DDA-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DDA-02	NA	< 1	(ND)	< 1	(ND)	0.42	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
DDA-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DDA-10-US	NA	0.88	No	< 1	(ND)	19	Yes	8.1	No	7.7	No	< 1	(ND)	0.52	No	< 1	(ND)	0.61	Yes	11	No	< 2	(ND)
DDA-12-US	NA	< 5	(ND)	< 5	(ND)	12	Yes	88	Yes	160	Yes	< 5	(ND)	3.3	No	< 5	(ND)	< 5	(ND)	1600	Yes	< 2	(ND)
DDA-18-US	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
DDA-19-US	NA	2.8	No	< 1	(ND)	2.6	Yes	3.8	No	3.6	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
DDA-20-US	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
DDA-20-US (Field duplicate)	NA	< 1	(ND)	< 1	(ND)	17	Yes	4.6	No	4.7	No	< 1	(ND)	0.52	No	< 1	(ND)	< 1	(ND)	32	Yes	< 2	(ND)
DGC-2S	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DGC-2S	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DGC-7S	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MHW-1D	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
PW-1(U)	NA	< 1	(ND)	< 1	(ND)	3	Yes	1.5	No	1.7	No	3	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	17	No	< 2	(ND)
Downgradient Columbia Monitoring Wells																							
CA-102	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
CA-103	NA	< 1	(ND)	1.5	Yes	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
CA-106	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
Downgradient UPCUTZ Monitoring Wells																							
UPA-102-TZ	NA	9.6	Yes	< 1	(ND)	0.55	No	4.8	No	< 1	(ND)	< 1	(ND)	0.69	No	4.9	Yes	3	Yes	< 2	(ND)	< 2	(ND)
UPA-103-TZ	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	0.43	Yes	< 1	(ND)	< 2	(ND)	< 2	(ND)
UPA-104-TZ	NA	0.24	No	< 1	(ND)	< 1	(ND)	0.64	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
UPA-105A-TZ	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
UPA-105B-TZ	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
UPA-107-TZ	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
UPA-108B-TZ	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
Downgradient Upper Sand Monitoring Wells																							
DGC-10S	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	0.86	Yes	< 1	(ND)	< 2	(ND)	< 2	(ND)
DGC-11S	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
DGC-8S	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RT-1-UP	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
UPA-01	NA	0.68	No	< 1	(ND)	12	Yes	11	No	12	No	1.5	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
UPA-02S	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
UPA-102-US	NA	2.1	No	< 1	(ND)	< 1	(ND)	0.39	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	0.69	Yes	0.62	Yes	< 2	(ND)	< 2	(ND)
UPA-103-US	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
UPA-104-US	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	1.5	No	0.52	No	0.62	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
UPA-105A-US	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	0.66	Yes	< 1	(ND)	< 2	(ND)	< 2	(ND)
UPA-105B-US	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	6.2	Yes	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
UPA-106-USA	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
UPA-106-USB	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
UPA-107-US (Field duplicate)	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
UPA-107-US	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
UPA-108B-US	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
UPA-108C-US	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)

Prepared by: KMS 1/27/2020
Checked by: ERW 1/29/2020
Approved by: TAM 2/28/2020
GOLDER

Appendix B-2C
Summary of RSL THQ=0.1 Screening - Fall 2019
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

		VOCs																				SVOCs	
Compound		cis-1,2-Dichloroethene		Dibromochloromethane		Ethylbenzene		Isopropylbenzene		n-Propylbenzene		Tetrachloroethene		Toluene		Trichloroethene		Vinyl Chloride		Xylenes, Total		1,2,4-Trichlorobenzene	
RSL THQ=0.1		3.6		0.87		1.5		45		66		4.1		110		0.28		0.019		19		0.4	
All results in ug/L	Depth (ft bgs)	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance
Downgradient Lower Sand Monitoring Well:																							
DGC-10D	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	1.5	No	< 1	(ND)	0.31	Yes	< 1	(ND)	< 2	(ND)	< 2	(ND)
DGC-11D	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
DGC-8D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
UPA-02D	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	0.26	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
UPA-03D	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
UPA-101-LSA	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
UPA-101-LSB	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
UPA-103-LS	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
UPA-104-LS	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
UPA-105A-LS	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	1	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
UPA-105B-LS	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	3.3	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
UPA-106-LS	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	0.27	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
UPA-107-LS	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	0.34	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
UPA-108B-LS	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
AWC Monitoring Wells																							
AWC-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AWC-6R	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	0.62	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
AWC-E1	132	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AWC-E1	156	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AWC-E1	132	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AWC-E1	156	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AWC-E2	140	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AWC-E2	165	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AWC-E2	140	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AWC-E2	165	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AWC-K1	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	1.7	Yes	< 1	(ND)	< 2	(ND)	< 2	(ND)
NCC UPA Monitoring Wells and P-6 Vicinity																							
BW-2	128	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
BW-2	138	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
MW-18	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
MW-26N	NA	0.42	No	< 1	(ND)	< 1	(ND)	0.75	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
MW-26N	128	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
MW-26N	138	0.55	No	< 1	(ND)	< 1	(ND)	2.3	No	1.4	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
MW-34 (Field duplicate)	80	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	0.89	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
MW-34	110	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	0.91	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
MW-34	80	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	0.92	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
MW-34	124	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	1.2	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
P-5L	NA	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 1	(ND)	0.68	No	< 1	(ND)	< 1	(ND)	< 1	(ND)	< 2	(ND)	< 2	(ND)
P-5U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
P-6	NA	0.36	No	< 1	(ND)	140	Yes	17	No	31	No	< 1	(ND)	2.3	No	< 1	(ND)	< 1	(ND)	61	Yes	< 2	(ND)

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GOLDER

Appendix B-2C
Summary of RSL THQ=0.1 Screening - Fall 2019
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

		SVOCs																					
Compound		1,4-Dichlorobenzene		2-Methylnaphthalene		Benzo(a)pyrene		Benzo(b)fluoranthene		Benzo[a]anthracene		Bis(2-chloroethyl) Ether		Bis(2-ethylhexyl) Phthalate		Bisphenol A		Hexachlorobenzene		Naphthalene		N,N-Dimethylaniline	
RSL THQ=0.1		0.48		3.6		0.025		0.25		0.03		0.014		5.6		77		0.0098		0.17		2.5	
All results in ug/L	Depth (ft bgs)	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance
DDA Extraction Monitoring Wells																							
B-4DR	NA	35	Yes	1.5	No	1.6	Yes	1.4	Yes	2.1	Yes	85	Yes	< 2	(ND)	100	Yes	< 0.4	(ND)	15	Yes	3.9	Yes
BG-1	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	4.3	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
C-18D	NA	< 10	(ND)	< 10	(ND)	0.35	Yes	0.27	Yes	0.48	Yes	19	Yes	< 2	(ND)	100	Yes	< 0.1	(ND)	1.8	Yes	< 1	(ND)
C-19D	NA	< 10	(ND)	< 10	(ND)	0.37	Yes	0.28	Yes	0.5	Yes	17	Yes	< 2	(ND)	42	No	< 0.1	(ND)	< 10	(ND)	< 1	(ND)
C-20D	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	5.1	Yes	< 2	(ND)	17	No	< 0.02	(ND)	< 10	(ND)	< 1	No
C-2D	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	1.2	Yes	< 2	(ND)	38	No	< 0.02	(ND)	4.6	Yes	< 1	(ND)
C-30	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	2.2	Yes	< 2	(ND)	18	No	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
C-4D	NA	4.5	Yes	< 10	(ND)	0.78	Yes	0.6	Yes	1.1	Yes	59	Yes	< 2	(ND)	46	No	< 0.2	(ND)	< 10	(ND)	1.2	No
DDA Monitoring Wells																							
DGC-7C	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.03	(ND)	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
GA-101	NA	< 10	(ND)	4	Yes	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.03	(ND)	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	28	Yes	< 1	(ND)
PZ-11-EXT	NA	2.6	Yes	3.6	Yes	< 0.05	(ND)	< 0.05	(ND)	0.019	No	4.6	Yes	< 2	(ND)	120	Yes	< 0.02	(ND)	56	Yes	1.4	No
PZ-5-EXT	NA	1.6	Yes	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.03	(ND)	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	6.5	Yes	< 1	(ND)
PW-1(U) UPCUTZ Monitoring Wells																							
DDA-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DDA-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DDA-18-TZ	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.03	(ND)	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
DDA-18-TZ (Field duplicate)	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.03	(ND)	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
DDA-19-TZ	NA	< 10	(ND)	< 10	(ND)	0.07	Yes	0.052	No	0.13	Yes	13	Yes	< 2	(ND)	< 10	(ND)	< 0.04	(ND)	< 10	(ND)	< 1	(ND)
DDA-20-TZ	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	8.7	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	1.8	No
DGC-5	40	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	0.96	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
DGC-5	50	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	0.81	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
PW-1(U) Upper Sand Monitoring Wells																							
DDA-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DDA-02	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	0.15	Yes	< 2	(ND)	< 10	(ND)	0.014	Yes	< 10	(ND)	< 1	(ND)
DDA-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DDA-10-US	NA	< 10	(ND)	< 10	(ND)	< 0.5	(ND)	< 0.5	(ND)	0.28	Yes	36	Yes	< 2	(ND)	< 10	(ND)	< 0.2	(ND)	< 10	(ND)	< 1	(ND)
DDA-12-US	NA	1.7	Yes	2	No	< 0.05	(ND)	< 0.05	(ND)	0.024	No	2.8	Yes	< 2	(ND)	11	No	0.023	Yes	14	Yes	9.3	Yes
DDA-18-US	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	0.4	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
DDA-19-US	NA	< 10	(ND)	< 10	(ND)	0.34	Yes	0.31	Yes	0.46	Yes	21	Yes	< 2	(ND)	10	No	< 0.1	(ND)	< 10	(ND)	1.6	No
DDA-20-US	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	0.83	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
DDA-20-US (Field duplicate)	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	8.4	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	1.8	No
DGC-2S	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DGC-2S	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DGC-7S	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MHW-1D	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	0.13	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
PW-1(U)	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	5.6	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
Downgradient Columbia Monitoring Wells																							
CA-102	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.03	(ND)	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
CA-103	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.03	(ND)	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
CA-106	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.03	(ND)	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
Downgradient UPCUTZ Monitoring Wells																							
UPA-102-TZ	NA	1.3	Yes	< 10	(ND)	< 0.5	(ND)	< 0.5	(ND)	< 0.5	(ND)	35	Yes	< 2	(ND)	< 10	(ND)	< 0.2	(ND)	< 10	(ND)	< 1	(ND)
UPA-103-TZ	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.03	(ND)	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
UPA-104-TZ	NA	< 10	(ND)	< 10	(ND)	< 0.1	(ND)	< 0.1	(ND)	0.04	Yes	12	Yes	< 2	(ND)	< 10	(ND)	< 0.04	(ND)	< 10	(ND)	< 1	(ND)
UPA-105A-TZ	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.03	(ND)	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
UPA-105B-TZ	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.03	(ND)	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
UPA-107-TZ	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	2.8	Yes	< 2	(ND)	< 10	(ND)	0.02	Yes	< 10	(ND)	< 1	(ND)
UPA-108B-TZ	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	0.61	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
Downgradient Upper Sand Monitoring Wells																							
DGC-10S	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	0.3	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
DGC-11S	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.03	(ND)	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
DGC-8S	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RT-1-UP	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.03	(ND)	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
UPA-01	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	55	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	5.8	Yes
UPA-02S	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
UPA-102-US	NA	1.8	Yes	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	21	Yes	< 2	(ND)	31	No	< 0.02	(ND)	< 10	(ND)	0.95	No
UPA-103-US	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	0.056	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
UPA-104-US	NA	< 10	(ND)	< 10	(ND)	< 0.25	(ND)	< 0.25	(ND)	0.11	Yes	29	Yes	< 2	(ND)	< 10	(ND)	< 0.1	(ND)	< 10	(ND)	< 1	(ND)
UPA-105A-US	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	1.3	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
UPA-105B-US	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	0.53	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
UPA-106-USA	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.03	(ND)	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
UPA-106-USB	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	0.2	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
UPA-107-US (Field duplicate)	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	0.092	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
UPA-107-US	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	0.091	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
UPA-108B-US	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.03	(ND)	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
UPA-108C-US	NA	1.3	Yes	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	0.34	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)

Prepared by: KMS 1/27/2020
Checked by: ERW 1/29/2020
Approved by: TAM 2/28/2020
GOLDER

Appendix B-2C
Summary of RSL THQ=0.1 Screening - Fall 2019
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

		SVOCs																					
Compound		1,4-Dichlorobenzene		2-Methylnaphthalene		Benzo(a)pyrene		Benzo(b)fluoranthene		Benzo[a]anthracene		Bis(2-chloroethyl) Ether		Bis(2-ethylhexyl) Phthalate		Bisphenol A		Hexachlorobenzene		Naphthalene		N,N-Dimethylaniline	
RSL THQ=0.1		0.48		3.6		0.025		0.25		0.03		0.014		5.6		77		0.0098		0.17		2.5	
All results in ug/L	Depth (ft bgs)	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance
Downgradient Lower Sand Monitoring Well																							
DGC-10D	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.03	(ND)	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
DGC-11D	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.03	(ND)	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
DGC-8D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
UPA-02D	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	4.6	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
UPA-03D	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	6.6	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
UPA-101-LSA	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	7.5	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
UPA-101-LSB	NA	< 10	(ND)	< 10	(ND)	< 0.25	(ND)	< 0.25	(ND)	< 0.25	(ND)	20	Yes	< 2	(ND)	< 10	(ND)	< 0.1	(ND)	< 10	(ND)	< 1	(ND)
UPA-103-LS	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.03	(ND)	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
UPA-104-LS	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	7.5	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
UPA-105A-LS	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	0.17	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
UPA-105B-LS	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	0.11	Yes	20	Yes	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
UPA-106-LS	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	0.68	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
UPA-107-LS	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	1.2	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
UPA-108B-LS	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.03	(ND)	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
AWC Monitoring Wells																							
AWC-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AWC-6R	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.03	(ND)	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
AWC-E1	132	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AWC-E1	156	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AWC-E1	132	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AWC-E1	156	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AWC-E2	140	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AWC-E2	165	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AWC-E2	140	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AWC-E2	165	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AWC-K1	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.03	(ND)	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
NCC UPA Monitoring Wells and P-6 Vicinity																							
BW-2	128	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	0.1	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
BW-2	138	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	0.12	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
MW-18	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	0.19	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
MW-26N	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	30	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
MW-26N	128	< 10	(ND)	< 10	(ND)	< 0.1	(ND)	< 0.1	(ND)	< 0.1	(ND)	11	Yes	< 2	(ND)	< 10	(ND)	< 0.04	(ND)	< 10	(ND)	< 1	(ND)
MW-26N	138	< 10	(ND)	< 10	(ND)	< 0.5	(ND)	< 0.5	(ND)	< 0.5	(ND)	55	Yes	< 2	(ND)	17	No	< 0.2	(ND)	< 10	(ND)	< 1	(ND)
MW-34 (Field duplicate)	80	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	0.58	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
MW-34	110	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	0.56	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
MW-34	80	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	0.62	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
MW-34	124	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	0.42	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
P-5L	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	0.037	Yes	< 2	(ND)	< 10	(ND)	< 0.02	(ND)	< 10	(ND)	< 1	(ND)
P-5U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
P-6	NA	< 10	(ND)	< 10	(ND)	< 0.05	(ND)	< 0.05	(ND)	< 0.05	(ND)	120	Yes	< 2	(ND)	110	Yes	< 0.02	(ND)	1.9	Yes	21	Yes

Prepared by: KMS 1/27/2020
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Approved by: TAM 2/28/2020
GOLDER

Appendix B-2C
Summary of RSL THQ=0.1 Screening - Fall 2019
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

		SVOCs		Total Metals						Dissolved Metals						General Chemistry	
Compound		Pentachlorophenol		Cobalt		Iron		Manganese		Cobalt		Iron		Manganese		Nitrate as N	
RSL THQ=0.1		0.041		0.6		1400		43		0.6		1400		43		3200	
All results in ug/L	Depth (ft bgs)	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance
DDA Extraction Monitoring Wells																	
B-4DR	NA	< 4	(ND)	NA	NA	NA	NA	NA	NA	44.8	Yes	81900	Yes	5460	Yes	NA	NA
BG-1	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	37.6	Yes	47100	Yes	5020	Yes	NA	NA
C-18D	NA	< 1	(ND)	NA	NA	NA	NA	NA	NA	44.3	Yes	37300	Yes	3680	Yes	NA	NA
C-19D	NA	< 1	(ND)	NA	NA	NA	NA	NA	NA	83.3	Yes	33100	Yes	6610	Yes	NA	NA
C-20D	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	45.8	Yes	25900	Yes	8000	Yes	NA	NA
C-2D	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	11.4	Yes	31100	Yes	2170	Yes	NA	NA
C-30	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	97	Yes	25600	Yes	3880	Yes	NA	NA
C-4D	NA	< 2	(ND)	NA	NA	NA	NA	NA	NA	14.8	Yes	29700	Yes	1560	Yes	NA	NA
DDA Monitoring Wells																	
DGC-7C	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	22.1	Yes	91800	Yes	1020	Yes	NA	NA
GA-101	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	< 50	(ND)	7230	Yes	563	Yes	NA	NA
PZ-11-EXT	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	21.3	Yes	39600	Yes	135	Yes	NA	NA
PZ-5-EXT	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	< 50	(ND)	31500	Yes	688	Yes	NA	NA
PW-1(U) UPCUTZ Monitoring Wells																	
DDA-05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 100	(ND)
DDA-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	200	No
DDA-18-TZ	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	429	Yes	8460	Yes	37500	Yes	< 100	(ND)
DDA-18-TZ (Field duplicate)	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	459	Yes	8970	Yes	38200	Yes	< 100	(ND)
DDA-19-TZ	NA	< 0.4	(ND)	NA	NA	NA	NA	NA	NA	11.2	Yes	26400	Yes	554	Yes	< 100	(ND)
DDA-20-TZ	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	35.1	Yes	44600	Yes	424	Yes	< 100	(ND)
DGC-5	40	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	31.6	Yes	24600	Yes	1990	Yes	< 100	(ND)
DGC-5	50	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	34.3	Yes	26900	Yes	2040	Yes	NA	NA
PW-1(U) Upper Sand Monitoring Wells																	
DDA-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 100	(ND)
DDA-02	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	18.8	Yes	19100	Yes	1520	Yes	< 100	(ND)
DDA-03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 100	(ND)
DDA-10-US	NA	< 2	(ND)	NA	NA	NA	NA	NA	NA	60	Yes	53100	Yes	4500	Yes	< 100	(ND)
DDA-12-US	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	15.4	Yes	46100	Yes	330	Yes	< 100	(ND)
DDA-18-US	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	1.7	Yes	37800	Yes	783	Yes	< 100	(ND)
DDA-19-US	NA	< 1	(ND)	NA	NA	NA	NA	NA	NA	6.5	Yes	21100	Yes	1430	Yes	< 100	(ND)
DDA-20-US	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	17.3	Yes	7810	Yes	309	Yes	370	No
DDA-20-US (Field duplicate)	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	33.5	Yes	44400	Yes	426	Yes	< 100	(ND)
DGC-2S	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	62	No
DGC-2S	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	290	No
DGC-7S	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 100	(ND)
MHW-1D	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	79.4	Yes	20100	Yes	3210	Yes	< 100	(ND)
PW-1(U)	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	23.9	Yes	25800	Yes	1910	Yes	910	No
Downgradient Columbia Monitoring Wells																	
CA-102	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	45.6	Yes	87400	Yes	5230	Yes	< 100	(ND)
CA-103	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	7.6	Yes	76.3	No	1920	Yes	3520	Yes
CA-106	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	247	Yes	11600	Yes	5890	Yes	< 100	(ND)
Downgradient UPCUTZ Monitoring Wells																	
UPA-102-TZ	NA	< 2	(ND)	NA	NA	NA	NA	NA	NA	100	Yes	26100	Yes	5580	Yes	< 100	(ND)
UPA-103-TZ	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	31.7	Yes	8750	Yes	807	Yes	< 100	(ND)
UPA-104-TZ	NA	< 0.4	(ND)	NA	NA	NA	NA	NA	NA	16.5	Yes	6650	Yes	352	Yes	< 100	(ND)
UPA-105A-TZ	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	< 50	(ND)	3200	Yes	93.6	Yes	< 100	(ND)
UPA-105B-TZ	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	< 50	(ND)	14200	Yes	221	Yes	< 100	(ND)
UPA-107-TZ	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	6.7	Yes	754	No	533	Yes	< 100	(ND)
UPA-108B-TZ	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	189	Yes	60400	Yes	2210	Yes	< 100	(ND)
Downgradient Upper Sand Monitoring Well:																	
DGC-10S	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	2.5	Yes	728	Yes	80	Yes	250	No
DGC-11S	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	< 50	(ND)	< 150	(ND)	8	No	< 100	(ND)
DGC-8S	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	97	No
RT-1-UP	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	18.5	Yes	4670	Yes	167	Yes	< 100	(ND)
UPA-01	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	20.3	Yes	20500	Yes	2880	Yes	< 100	(ND)
UPA-02S	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	640	No
UPA-102-US	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	10.8	Yes	42400	Yes	3020	Yes	< 100	(ND)
UPA-103-US	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	57.6	Yes	57400	Yes	4530	Yes	< 100	(ND)
UPA-104-US	NA	< 1	(ND)	NA	NA	NA	NA	NA	NA	32.8	Yes	14300	Yes	4510	Yes	< 100	(ND)
UPA-105A-US	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	< 50	(ND)	6520	Yes	276	Yes	< 100	(ND)
UPA-105B-US	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	64.8	Yes	44.7	No	1310	Yes	2760	No
UPA-106-USA	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	8.9	Yes	1430	Yes	1750	Yes	760	No
UPA-106-USB	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	85.8	Yes	38900	Yes	2150	Yes	< 100	(ND)
UPA-107-US (Field duplicate)	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	18.9	Yes	7630	Yes	3310	Yes	< 100	(ND)
UPA-107-US	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	20.9	Yes	9150	Yes	3400	Yes	< 100	(ND)
UPA-108B-US	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	13.6	Yes	32300	Yes	397	Yes	< 100	(ND)
UPA-108C-US	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	3.2	Yes	66900	Yes	238	Yes	< 100	(ND)

Prepared by: KMS 1/27/2020
Checked by: ERW 1/29/2020
Approved by: TAM 2/28/2020
COLDER

Appendix B-2C
Summary of RSL THQ=0.1 Screening - Fall 2019
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

		SVOCs		Total Metals						Dissolved Metals						General Chemistry	
Compound		Pentachlorophenol		Cobalt		Iron		Manganese		Cobalt		Iron		Manganese		Nitrate as N	
RSL THQ=0.1		0.041		0.6		1400		43		0.6		1400		43		3200	
All results in ug/L	Depth (ft bgs)	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance	Maximum Result	RSL Exceedance
Downgradient Lower Sand Monitoring Well																	
DGC-10D	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	3.5	Yes	< 150	(ND)	180	Yes	2100	No
DGC-11D	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	< 50	(ND)	< 150	(ND)	4.4	No	530	No
DGC-8D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	560	No
UPA-02D	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	24.2	Yes	10200	Yes	2010	Yes	< 100	(ND)
UPA-03D	NA	< 0.2	(ND)	2.5	Yes	< 150	(ND)	7.1	No	2.7	Yes	< 150	(ND)	7.9	No	650	No
UPA-101-LSA	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	9.2	Yes	44300	Yes	1440	Yes	< 100	(ND)
UPA-101-LSB	NA	< 1	(ND)	NA	NA	NA	NA	NA	NA	38.2	Yes	24200	Yes	1610	Yes	< 100	(ND)
UPA-103-LS	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	38.8	Yes	13600	Yes	573	Yes	2560	No
UPA-104-LS	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	13.4	Yes	39200	Yes	2840	Yes	< 100	(ND)
UPA-105A-LS	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	14.9	Yes	147	No	1220	Yes	1770	No
UPA-105B-LS	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	< 50	(ND)	926	No	145	Yes	1370	No
UPA-106-LS	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	16.6	Yes	35400	Yes	1190	Yes	< 100	(ND)
UPA-107-LS	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	< 50	(ND)	21800	Yes	1790	Yes	< 100	(ND)
UPA-108B-LS	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	2.1	Yes	55500	Yes	1660	Yes	< 100	(ND)
AWC Monitoring Wells																	
AWC-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4200	Yes
AWC-6R	NA	0.16	Yes	NA	NA	NA	NA	NA	NA	3.5	Yes	< 150	(ND)	30.1	No	4260	Yes
AWC-E1	132	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	58	No
AWC-E1	156	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	60	No
AWC-E1	132	NA	NA	10.6	Yes	16200	Yes	1180	Yes	9.7	Yes	7760	Yes	1090	Yes	NA	NA
AWC-E1	156	NA	NA	10.7	Yes	33400	Yes	1120	Yes	9.1	Yes	9150	Yes	1080	Yes	NA	NA
AWC-E2	140	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 100	(ND)
AWC-E2	165	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 100	(ND)
AWC-E2	140	NA	NA	7	Yes	8420	Yes	901	Yes	6.6	Yes	8110	Yes	882	Yes	NA	NA
AWC-E2	165	NA	NA	9.7	Yes	4710	Yes	550	Yes	7.5	Yes	3630	Yes	523	Yes	NA	NA
AWC-K1	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	< 50	(ND)	7830	Yes	120	Yes	NA	NA
NCC UPA Monitoring Wells and P-6 Vicinity																	
BW-2	128	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	18.6	Yes	3040	Yes	1870	Yes	< 100	(ND)
BW-2	138	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	21.7	Yes	4550	Yes	1940	Yes	< 100	(ND)
MW-18	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	27	Yes	33100	Yes	2670	Yes	< 100	(ND)
MW-26N	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	3.3	Yes	< 150	(ND)	170	Yes	160	No
MW-26N	128	< 0.4	(ND)	NA	NA	NA	NA	NA	NA	< 50	(ND)	< 150	(ND)	100	Yes	790	No
MW-26N	138	< 2	(ND)	3.8	Yes	< 150	(ND)	336	Yes	4.1	Yes	< 150	(ND)	346	Yes	< 100	(ND)
MW-34 (Field duplicate)	80	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	13	Yes	2480	Yes	1190	Yes	510	No
MW-34	110	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	13.9	Yes	6280	Yes	1300	Yes	670	No
MW-34	80	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	12.9	Yes	2450	Yes	1200	Yes	520	No
MW-34	124	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	13.1	Yes	8690	Yes	1080	Yes	1480	No
P-5L	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	1.9	Yes	138	No	96.8	Yes	340	No
P-5U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	380	No
P-6	NA	< 0.2	(ND)	NA	NA	NA	NA	NA	NA	4.7	Yes	5070	Yes	391	Yes	< 100	(ND)

Prepared by: KMS 1/27/2020
Checked by: ERW 1/29/2020
Approved by: TAM 2/28/2020
GOLDER

APPENDIX B-3

July-December 2019 Bimonthly Groundwater

Appendix B-3
Summary of Detected Compounds - June 2019 through October 2019 Bimonthly Groundwater
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

						AWC Monitoring Wells																								NCC UPA Monitoring Wells and P-6 Vicinity												Downgradient Lower Sand Monitoring Wells					
					Sample Location	AWC-E1			AWC-E1			AWC-E1			AWC-E1			AWC-E2			AWC-E2			AWC-E2			AWC-E2			AWC-E2			MW-26N			MW-26N			MW-26N			MW-26N			UPA-03D			UPA-03D		
					Sample Date	6/19/2019			6/19/2019			10/29/2019			10/29/2019			6/19/2019			6/19/2019			6/19/2019			10/29/2019			10/29/2019			6/19/2019			10/9/2019			10/17/2019			10/17/2019			6/19/2019			10/14/2019		
					Sample Depth (ft bgs)	132			156			132			156			140			140			165			140			165									128			138								
					N=Normal, FD=Field Duplicate	N			N			N			N			N			FD			N			N			N			N			N			N			N			N			N		
Parameter	Unit	PRG	MCL	RSL HQ=1.0	RSL HQ=0.1	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL
Total Metals																																															
Cobalt	ug/L	6	NE	6	0.6	12.1		5	12.2		5	10.6	J	50	10.7	J	50	10.8		5	10.7		5	11.5		5	7	J	50	9.7	J	50	10.8		5							3.8	J	50	3.1	J	5	2.5	J	50
Iron	ug/L	13939	NE	14000	1400	3140		150	5580		150	15200		150	32400		150	9710		150	9160		150	2050		150	8420		150	4710		150																	
Manganese	ug/L	260	NE	430	43	1330		10	1450		10	1120		15	1120		15	1360		10	1330		10	1310		10	901		10	500		15	1450		10							336		15	18.1		10	7.1	J	15
Dissolved Metals																																															
Cobalt	ug/L	6	NE	6	0.6	11.8	J	50	11.2	J	50	9.7	J	50	9.1	J	50	16.1	J	50	16.4	J	50	12.8	J	50	8.8	J	50	7.5	J	50	3.1	J	50	3.3	J	50				4.1	J	50	2.7	J	50	2.7	J	50
Iron	ug/L	13939	NE	14000	1400	3100		150	5070		150	7760		150	9150		150	9360		150	9860		150	1080		150	8110		150	3630		150													50.5	J	150			
Manganese	ug/L	260	NE	430	43	1410		15	1450		15	1060		15	1060		15	1420		15	1450		15	1410		15	902		15	525		15	379		15	170		15	100		15	346		15	14.8	J	15	7.9	J	15

Prepared by: KMS 1/27/2020
Checked by: YJS 1/29/2020
Approved by: TAM 02/28/2020
GOLDER

Appendix B-3
Summary of Detected Compounds - June 2019 through October 2019 Bimonthly Groundwater
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

Notes:

Red highlight =	Concentration exceeds PRG
Orange highlight =	Concentration exceeds MCL
Yellow highlight =	Concentration exceeds RSL HQ=1.0
Green highlight =	Concentration exceeds RSL HQ=0.1

Abbreviations:

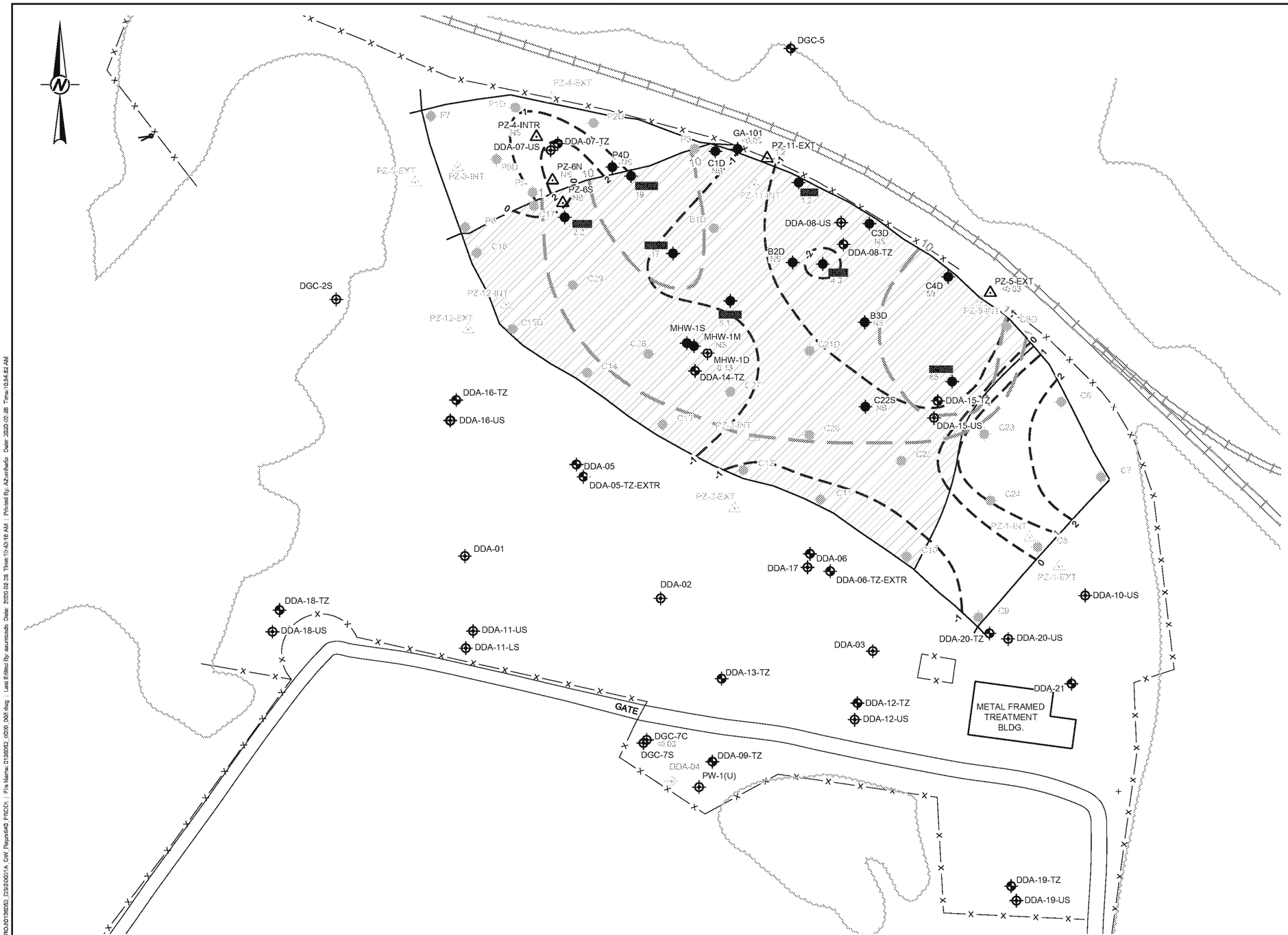
HQ = Hazard Quotient
MCL = USEPA Maximum Contaminant Level (June 2017)
NE = Standard Does Not Exist
PRG = Site Specific Preliminary Remediation Goals for Delaware Sand & Gravel Landfill, provided to the United States Environmental Protection Agency (USEPA) by the Trust in October 2017
Qual = Interpreted Qualifier
RDL = Reporting Detection Limit
RSL = Regional Screening Level for Tapwater, (June 2017)
ug/L = Micrograms per Liter

Qualifiers:

J = Estimated Result

APPENDIX C

Isoconcentration Maps



LEGEND

- FENCELINE
- CENTERLINE OF SLURRY WALL AROUND DRUM DISPOSAL AREA
- RAILROAD
- DDA LOW-FLOW EXTRACTION SYSTEM (LFExS) WELL
- DGC-2S — MONITORING WELL SCREENED IN UPPER POTOMAC AQUIFER
- DDA-05 — UPPER POTOMAC CONFINING UNIT TRANSITION ZONE MONITORING WELLS
- PZ-10 — DDA PIEZOMETERS
- C1D — COLUMBIA MONITORING WELLS
- INFERRED LFExS GROUNDWATER ELEVATION CONTOUR (ft-msl)
- APPROXIMATE EXTENT OF LFEXS-INDUCED UPWARD VERTICAL GRADIENTS (SEE NOTE 2)
- 4 — BCEE CONCENTRATION (ug/L)
- BCEE ISOCONCENTRATION CONTOURS (ug/L)(DASHED WHERE INFERRED)

NOTE(S)

1.) LOCATIONS OF WELLS AND BORING ARE BASED ON SURVEY BY TAYLOR WISEMAN & TAYLOR (REVISED 2019)
2.) GROUNDWATER ELEVATION CONTOURS (ft-msl) BASED ON NOVEMBER 2019 GROUNDWATER LEVEL MEASUREMENTS
3.) CONCENTRATIONS BASED ON RESULTS FROM OCTOBER 2019 GROUNDWATER MONITORING EVENT
4.) ft-msl = ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL
5.) ug/L = MICROGRAMS PER LITER

REFERENCE(S)

1.) BASE MAP TAKEN FROM DIGITAL U.S.G.S. 7.5 MINUTE QUADRANGLES OF WILMINGTON SOUTH, DELAWARE/NEW JERSEY (DATED 1984), DELAWARE CITY, DELAWARE (DATED 1984), NEWARK EAST, DELAWARE (DATED 1984) AND SAINT GEORGES, DELAWARE (DATED 1984).

CLIENT
DELAWARE SAND & GRAVEL
NEW CASTLE COUNTY, DELAWARE

PROJECT
SEMI-ANNUAL REPORT

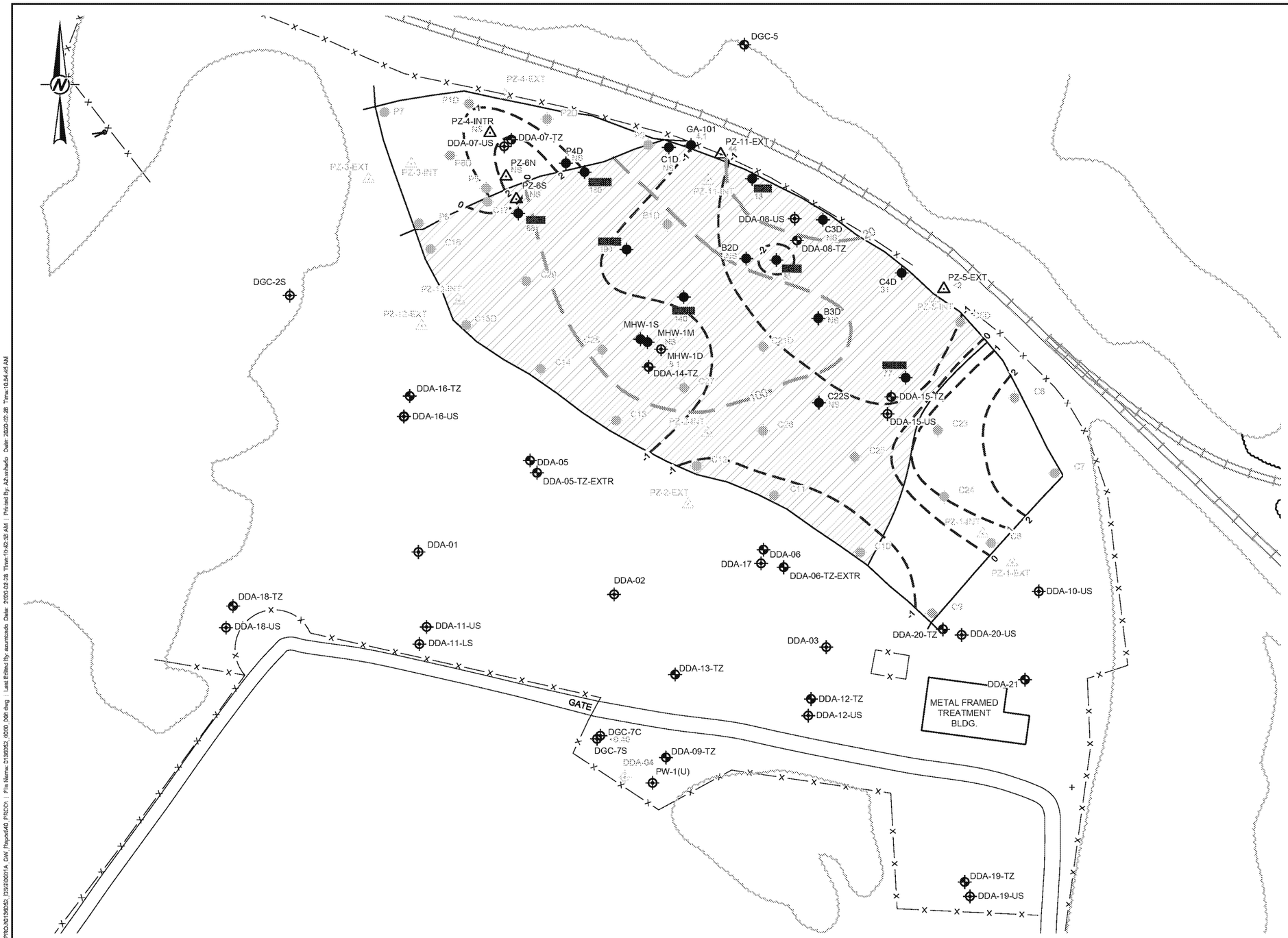
CONSULTANT
GOLDER

YYYY-MM-DD	2020-02-28
DESIGNED	BPC
PREPARED	AAZ
REVIEWED	TAM
APPROVED	TAM

TITLE
BCEE
DDA-COLUMBIA
OCTOBER 2019

PROJECT NO.	PHASE	REV.	FIGURE
013605214	0009	A	C1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D
1 in
0



LEGEND

- FENCELINE
- CENTERLINE OF SLURRY WALL AROUND DRUM DISPOSAL AREA
- RAILROAD
- DDA LOW-FLOW EXTRACTION SYSTEM (LFExS) WELL
- DGC-2S — MONITORING WELL SCREENED IN UPPER POTOMAC AQUIFER
- DDA-05 — UPPER POTOMAC CONFINING UNIT TRANSITION ZONE MONITORING WELLS
- PZ-10 — DDA PIEZOMETERS
- C1D — COLUMBIA MONITORING WELLS
- INFERRED LFExS GROUNDWATER ELEVATION CONTOUR (ft-msl)
- APPROXIMATE EXTENT OF LFEXS-INDUCED UPWARD VERTICAL GRADIENTS (SEE NOTE 2)
- 4 — 1,4-DIOXANE CONCENTRATION (ug/L)
- 1,4-DIOXANE ISOCONCENTRATION CONTOURS (ug/L)(DASHED WHERE INFERRED)

NOTE(S)

1.) LOCATIONS OF WELLS AND BORING ARE BASED ON SURVEY BY TAYLOR WISEMAN & TAYLOR (REVISED 2019)
2.) GROUNDWATER ELEVATION CONTOURS (ft-msl) BASED ON NOVEMBER 2019 GROUNDWATER LEVEL MEASUREMENTS
3.) CONCENTRATIONS BASED ON RESULTS FROM OCTOBER 2019 GROUNDWATER MONITORING EVENT
4.) ft-msl = ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL
5.) ug/L = MICROGRAMS PER LITER

REFERENCE(S)

1.) BASE MAP TAKEN FROM DIGITAL U.S.G.S. 7.5 MINUTE QUADRANGLES OF WILMINGTON SOUTH, DELAWARE/NEW JERSEY (DATED 1984), DELAWARE CITY, DELAWARE (DATED 1984), NEWARK EAST, DELAWARE (DATED 1984) AND SAINT GEORGES, DELAWARE (DATED 1984).

CLIENT
DELAWARE SAND & GRAVEL
NEW CASTLE COUNTY, DELAWARE

PROJECT
SEMI-ANNUAL REPORT

CONSULTANT
GOLDER

YYYY-MM-DD	2020-02-28
DESIGNED	BPC
PREPARED	AAZ
REVIEWED	TAM
APPROVED	TAM

TITLE
1,4-DIOXANE
DDA-COLUMBIA
OCTOBER 2019

PROJECT NO.	PHASE	REV.	FIGURE
013605214	0009	A	C2

APPENDIX D

System Performance Data

Appendix D-1
LFExS Monthly and Semi-Annual Average Extraction Rates
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

Dates	Monthly Extraction Volumes (Gallons)[1]	Monthly Average Extraction Rates (GPM)[1]	Semi-Annual Average Extraction Rates (GPM)	Notes
5/4/2009	NA	NA		LFExS temporary system began operation on May 4, 2009
5/31/2009	31724	0.82		
6/16/2009	46665	2.03		
7/31/2009	149386	2.31		
8/31/2009	151869	3.40		
9/30/2009	118197	2.74		
10/31/2009	132050	2.96		
5/4/2009 - 10/31/2009			2.43	
11/30/2009	105245	2.44		
12/31/2009	224591	5.03		LFExS shut down to construct the permanent system.
1/31/2010	0	0.00		
2/28/2010	59178	0.10		LFExS permanent system start-up. February 23, 2010
3/31/2010	213738	4.79		
4/30/2010	166205	3.85		
11/1/2009 - 4/30/2010			2.97	
5/31/2010	274434	5.98		
6/30/2010	257468	6.44		
7/31/2010	199135	4.55		
8/31/2010	299923	6.91		
9/30/2010	163175	3.78		
10/31/2010	86140	1.94		C-30 connected to LFExS.
5/1/2010 - 10/31/2010			4.86	
11/30/2010	168538	4.04		
12/31/2010	236487	5.31		
1/31/2011	275673	7.41		
2/28/2011	212994	6.08		
3/31/2011	176161	6.08		
4/30/2011	222325	9.46		
11/1/2010 - 4/30/2011			4.99	
5/31/2011	347392	9.12		
6/30/2011	312375	8.60		
7/31/2011	218072	7.50		
8/31/2011	274225	6.24		
9/30/2011	297546	6.15		
10/31/2011	291446	7.37		
5/1/2011 - 10/31/2011			6.61	
11/30/2011	354352	8.23		
12/31/2011	364276	8.24		
1/31/2012	392999	8.80		
2/28/2012	281290	6.74		
3/31/2012	279983	6.27		System off for maintenance and B-4DR connection: March 2-6, 2012
4/30/2012	320849	7.45		
11/1/2011 - 4/30/2012			7.65	
5/31/2012	379904	8.53		
6/30/2012	343060	7.96		
7/31/2012	299653	6.72		
8/31/2012	191801	4.30		System off for NCC sewer force main connection (August 23, 2012 - August 27, 2012)
9/30/2012	258732	5.96		System off intermittently for quarterly maintenance (September 9, 2012 - September 13, 2012)
10/31/2012	323007	7.25		
5/1/2012 - 10/31/2012			6.82	
11/30/2012	344910	8.00		
12/31/2012	415726	9.32		C-20D connected to LFExS
1/31/2013	436650	10.10		
2/28/2013	388316	9.66		
3/31/2013	448131	10.06		
4/30/2013	364156	8.45		System off for quarterly maintenance (April 9-11, 2013) and running at reduced flow rate until discharge pump repair on April 15, 2013.
11/1/2012 - 4/30/2013			9.25	
5/31/2013	503926	11.32		
6/30/2013	417369	9.67		
7/31/2013	450647	10.10		
8/31/2013	302058	6.77		System off for maintenance (August 14-15, 2013) and tank cleaning (August 19, 2013).
9/30/2013	447631	10.58		
10/31/2013	470859	10.58		
5/1/2013 - 10/31/2013			9.84	
11/30/2013	403331	9.37		
12/31/2013	394852	9.17		
1/31/2014	382307	8.90		
2/28/2014	361010	9.18		
3/31/2014	397578	9.26		
4/30/2014	401701	9.65		

Appendix D-1
LFExS Monthly and Semi-Annual Average Extraction Rates
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

Dates	Monthly Extraction Volumes (Gallons)[1]	Monthly Average Extraction Rates (GPM)[1]	Semi-Annual Average Extraction Rates (GPM)	Notes
11/1/2013 - 4/30/2014			8.98	
5/31/2014	425265	9.56		
6/30/2014	413594	9.60		
7/31/2014	431964	10.41		Addition of Redux to pumping wells C-2D and B-4DR and the LFExS discharge line via the balancing tank (July 10, 2014)
8/31/2014	415076	9.33		
9/30/2014	449710	10.45		
10/31/2014	503838	11.33		
5/1/2014 - 10/31/2014			10.08	
11/30/2014	280901	6.54		
12/31/2014	347712	8.09		
1/31/2015	437655	10.21		
2/28/2015	443212	11.44		
3/31/2015	476093	11.11		
4/30/2015	394217	9.45		
11/1/2014 - 4/30/2015			9.13	
5/31/2015	413658	9.45		
6/30/2015	424735	9.85		
7/31/2015	398855	8.97		
8/31/2015	429371	9.64		
9/30/2015	433035	10.08		
10/31/2015	386982	8.71		
5/1/2015 - 10/31/2015			9.38	
11/30/2015	378248	8.80		
12/31/2015	331836	7.47		
1/31/2016	282746	6.57		
2/28/2016	266160	6.68		New discharge pump
3/31/2016	317796	7.35		
4/30/2016	338733	8.16		
11/1/2015 - 4/30/2016			7.31	
5/31/2016	363227	8.17		
6/30/2016	418203	9.73		
7/31/2016	466965	10.48		
8/31/2016	464731	10.41		
9/30/2016	292499	6.78		
10/31/2016	276538	5.92		
5/1/2016 - 10/31/2016			8.61	
11/30/2016	225580	5.27		
12/31/2016	220075	4.98		
1/31/2017	236819	5.36		
2/28/2017	214236	5.39		
3/31/2017	414023	9.31		
4/30/2017	419863	9.75		
11/1/2016 - 4/30/2017			6.64	
5/31/2017	531609	11.97		
6/30/2017	469086	10.89		
7/31/2017	478549	10.72		
8/31/2017	429469	9.62		
9/30/2017	445807	10.32		
10/31/2017	405644	9.10		
5/1/2017 - 10/31/2017			10.42	
11/30/2017	379685	8.85		
12/31/2017	377895	8.79		
1/31/2018	396787	8.93		
2/28/2018	378123	9.43		
3/31/2018	478585	10.75		
4/30/2018	443009	10.64		
11/1/2017 - 4/30/2018			9.42	
5/31/2018	409684	9.25		
6/30/2018	466062	10.83		
7/31/2018	454583	10.24		
8/31/2018	434829	9.79		
9/30/2018	431685	10.03		
10/31/2018	481555	10.82		

Appendix D-1
LFExS Monthly and Semi-Annual Average Extraction Rates
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

Dates	Monthly Extraction Volumes (Gallons)[1]	Monthly Average Extraction Rates (GPM)[1]	Semi-Annual Average Extraction Rates (GPM)	Notes
5/1/2018 - 10/31/2018			10.11	
11/30/2018	407980	9.48		
12/31/2018	360806	8.38		
1/31/2019	288931	6.78		
2/28/2019	346120	8.90		
3/31/2019	434414	10.21		
4/30/2019	425052	10.19		
11/1/2018 - 4/30/2019			8.68	
5/31/2019	471062	10.59		
6/30/2019	543931	12.63		
7/31/2019	550775	12.38		
8/31/2019	506919	11.36		
9/30/2019	436264	10.10		
10/31/2019	428457	9.61		
5/1/2019 - 10/31/2019			11.09	

Notes:

(1) Monthly flow volumes and average rates based on totalizer volume spreadsheets provided by DS&G Remedial Trust
(2) LFExS = Low flow extraction system
(3) GPM = gallons per minute
(4) NCC = New Castle County

Prepared by: BPC
Checked by: ERW
Reviewed by: TAM

Appendix D-2
Well PW-1(U) Operational History - December 2011 to Present
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

Date and Time	Flow Meas. Date	Flow Meas. Time	Instantaneous Flow Reading (gpm)	Totalizer Reading (gal)	Flow since last reading (gal)	Calculated Flow Rate (gpm)	Notes
12/1/11 14:14	12/1/2011	14:14	24.80	43941008	518144	25.4	
12/8/11 14:12	12/8/2011	14:12	25.43	44177772	236764	23.5	
12/15/11 11:03	12/15/2011	11:03	24.11	44422508	244736	24.7	
12/22/11 10:04	12/22/2011	10:04	22.87	44658616	236108	23.6	
12/28/11 10:50	12/28/2011	10:50	21.46	44853416	194800	22.4	
1/5/12 13:50	1/5/2012	13:50	20.62	45101928	248512	21.2	
1/18/12 10:00	1/18/2012	10:00	18.73	45466288	164332	19.2	
1/19/12 10:08	1/19/2012	10:08	18.55	45493344	27056	18.7	
1/30/12 10:58	1/30/2012	10:58	16.92	45776524	283180	17.8	
2/1/12 10:19	2/1/2012	10:19	16.63	45824268	47744	16.8	Pump cleaned
2/13/12 14:10	2/13/2012	14:10	29.55	46229676	405408	23.2	
2/16/12 10:53	2/16/2012	10:53	29.35	46351520	121844	29.6	
2/22/12 14:33	2/22/2012	14:33	29.01	46609408	257888	29.1	
2/23/12 9:41	2/23/2012	9:41	29.10	46642656	33248	29.0	
3/12/12 11:50	3/12/2012	11:50	28.02	47381468	163088	27.8	
3/15/12 11:07	3/15/2012	11:07	27.95	47501308	119840	28.0	
3/22/12 10:41	3/22/2012	10:41	27.59	47781580	280272	27.9	
3/29/12 9:25	3/29/2012	9:25	25.88	48049700	268120	26.8	
4/4/12 10:00	4/4/2012	10:00	23.72	48266516	216816	25.0	
4/12/12 10:17	4/12/2012	10:17	20.72	48523840	257324	22.3	
4/19/12 10:05	4/19/2012	10:05	18.18	48719980	196140	19.5	
4/24/12 14:00	4/24/2012	14:00	16.28	48848272	128292	17.3	
4/26/12 10:45	4/26/2012	10:45	15.61	48891236	42964	16.0	
5/3/12 11:10	5/3/2012	11:10	13.25	49037620	146384	14.5	
5/7/12 11:55	5/7/2012	11:55	12.99	49115072	77452	13.3	
5/10/12 10:36	5/10/2012	10:36	11.92	49168192	53120	12.5	
5/16/12 13:45	5/16/2012	13:45	10.00	49265948	97756	11.1	
5/21/12 11:06	5/21/2012	11:06	8.57	49331484	65536	9.3	
5/24/12 10:19	5/24/2012	10:19	7.75	49366460	34976	8.2	
5/29/12 10:11	5/29/2012	10:11	6.54	49417796	51336	7.1	
5/31/12 11:20	5/31/2012	11:20	6.09	49436456	18660	6.3	
6/4/12 13:23	6/4/2012	13:23	5.27	49469944	33488	5.7	
6/7/12 11:58	6/7/2012	11:58	4.69	49491100	21156	5.0	Pump replaced
6/11/12 10:58	6/11/2012	10:58	4.09	49532636	41536	7.3	
6/21/12 11:45	6/21/2012	11:45	26.21	49800584	116724	26.3	
6/25/12 14:18	6/25/2012	14:18	25.83	49954900	154316	26.1	
6/28/12 15:15	6/28/2012	15:15	29.64	50079944	125044	28.6	
7/2/12 10:52	7/2/2012	10:52	26.80	50235632	155688	28.3	
7/5/12 10:13	7/5/2012	10:13	24.10	50344268	108636	25.4	
7/12/12 12:18	7/12/2012	12:18	21.00	50568548	224280	22.0	
7/16/12 14:29	7/16/2012	14:29	19.55	50688432	119884	20.4	
7/19/12 11:16	7/19/2012	11:16	18.32	50766740	78308	19.0	
7/23/12 10:10	7/23/2012	10:10	17.24	50868829	102089	17.9	
7/26/12 10:05	7/26/2012	10:05	16.89	50943120	74291	17.2	Pump cleaned
7/30/12 10:39	7/30/2012	10:39	23.20	51073720	130600	22.5	
8/2/12 9:33	8/2/2012	9:33	23.97	51175588	101868	23.9	
8/6/12 10:49	8/6/2012	10:49	24.77	51318468	142880	24.5	
8/8/12 10:21	8/8/2012	10:21	24.68	51389340	70872	24.8	
8/13/12 10:34	8/13/2012	10:34	25.02	51569176	179836	24.9	
8/16/12 11:12	8/16/2012	11:12	24.88	51677648	108472	24.9	
8/20/12 10:42	8/20/2012	10:42	24.02	51817704	140056	24.4	
8/22/12 15:25	8/22/2012	15:25	23.71	51893756	76052	24.0	
8/28/12 14:14	8/28/2012	14:14	25.73	51936988	43232	5.0	
8/30/12 14:30	8/30/2012	14:30	25.25	52011200	74212	25.6	
9/4/12 15:05	9/4/2012	15:05	24.00	52189544	178344	24.7	
9/6/12 11:46	9/6/2012	11:46	23.68	52253640	64096	23.9	
9/10/12 9:11	9/10/2012	9:11	21.82	30431	30431	21.8	
9/13/12 10:55	9/13/2012	10:55	21.78	101450	71020	16.1	
9/24/12 15:51	9/24/2012	15:51	21.62	449693	348243	21.6	
9/27/12 10:30	9/27/2012	10:30	21.66	536007	86314	21.6	
10/1/12 10:50	10/1/2012	10:50	21.25	660726	124719	21.6	
10/4/12 10:59	10/4/2012	10:59	21.18	753247	92521	21.4	
10/8/12 10:46	10/8/2012	10:46	20.06	873138	119891	20.9	
10/11/12 10:07	10/11/2012	10:07	19.94	959426	86289	20.2	
10/15/12 11:04	10/15/2012	11:04	19.37	1073659	114233	19.6	DS&G began well PW-1(U) OM&M
10/18/12 11:16	10/18/2012	11:16	18.78	1156491	82832	19.1	
10/22/12 11:45	10/22/2012	11:45	17.71	1262836	106345	18.4	
10/25/12 13:56	10/25/2012	13:56	16.93	1341029	78193	17.6	
11/5/12 10:16	11/5/2012	10:16	16.72	1570723	100468	17.3	
11/8/12 11:32	11/8/2012	11:32	15.76	1641843	71120	16.2	
11/12/12 13:15	11/12/2012	13:15	15.00	1731802	89959	15.3	
11/15/12 14:25	11/15/2012	14:25	14.09	1795415	63613	14.5	
11/29/12 15:45	11/29/2012	15:45	21.70	2005974	5957	1.1	Pump cleaned
11/30/12 10:42	11/30/2012	10:42	21.80	2030748	24774	21.8	
12/3/12 14:35	12/3/2012	14:35	21.12	2128688	97940	21.5	
12/5/12 11:16	12/5/2012	11:16	21.21	2184820	56132	20.9	
12/6/12 8:56	12/6/2012	8:56	21.01	2212205	27385	21.1	
12/10/12 11:06	12/10/2012	11:06	20.27	2334399	122194	20.7	
12/13/12 10:20	12/13/2012	10:20	20.11	2419496	85097	19.9	
12/17/12 10:10	12/17/2012	10:10	19.29	2532359	112863	19.6	
12/18/12 13:18	12/18/2012	13:18	18.56	2562919	30560	18.8	
12/20/12 10:00	12/20/2012	10:00	18.01	2612129	49210	18.3	
12/24/12 11:20	12/24/2012	11:20	17.10	2714640	102511	17.6	
12/27/12 10:45	12/27/2012	10:45	16.46	2786666	72026	16.8	
12/31/12 11:12	12/31/2012	11:12	16.04	2879942	93276	16.1	
1/3/13 12:01	1/3/2013	12:01	15.23	2947670	67728	15.5	
1/7/13 11:19	1/7/2013	11:19	14.61	3033103	85433	14.9	
1/8/13 8:30	1/8/2013	8:30	N/A	3051304	18201	14.3	Chemical scrub of well screen, vacuumed debris from base, surge block, redevelopment, and cleaned pump
1/15/13 10:00	1/15/2013	10:00	27.21	3176009	34376	23.5	
1/17/13 9:35	1/17/2013	9:35	28.40	3257062	81053	28.4	

Appendix D-2
Well PW-1(U) Operational History - December 2011 to Present
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

Date and Time	Flow Meas. Date	Flow Meas. Time	Instantaneous Flow Reading (gpm)	Totalizer Reading (gal)	Flow since last reading (gal)	Calculated Flow Rate (gpm)	Notes
1/22/13 9:34	1/22/2013	9:34	30.25	3467102	210040	29.2	
1/24/13 9:24	1/24/2013	9:24	30.34	3553534	86432	30.1	
1/31/13 15:15	1/31/2013	15:15	31.01	3874812	321278	30.8	
2/4/13 10:35	2/4/2013	10:35	30.51	4043808	168996	30.8	
2/5/13 9:27	2/5/2013	9:27	30.71	4085899	42091	30.7	
2/6/13 9:12	2/6/2013	9:12	30.54	4129698	43799	30.7	
2/7/13 11:09	2/7/2013	11:09	30.88	4177215	47517	30.5	
2/11/13 10:18	2/11/2013	10:18	29.12	4348943	171728	30.1	
2/12/13 10:50	2/12/2013	10:50	29.24	4392166	43223	29.4	
2/13/13 10:03	2/13/2013	10:03	28.87	4432776	40610	29.2	
2/14/13 10:43	2/14/2013	10:43	28.73	4475344	42568	28.8	
2/18/13 10:40	2/18/2013	10:40	27.14	4635839	160495	27.9	
2/19/13 10:00	2/19/2013	10:00	26.85	4673724	37885	27.1	
2/21/13 11:56	2/21/2013	11:56	26.01	4753407	79683	26.6	
2/25/13 11:30	2/25/2013	11:30	24.70	4899380	145973	25.5	
2/26/13 13:27	2/26/2013	13:27	29.40	4931168	31788	20.4	Pump cleaned
2/27/13 14:04	2/27/2013	14:04	30.05	4974441	43273	29.3	
2/28/13 14:48	2/28/2013	14:48	29.87	5018925	44484	30.0	
3/4/13 11:38	3/4/2013	11:38	28.32	5181224	162299	29.1	
3/5/13 10:47	3/5/2013	10:47	27.92	5220224	39000	28.1	
3/7/13 10:12	3/7/2013	10:12	27.60	5298671	78447	27.6	
3/11/13 10:54	3/11/2013	10:54	25.60	5450464	151793	26.2	
3/12/13 10:18	3/12/2013	10:18	25.56	5486345	35881	25.6	
3/14/13 9:14	3/14/2013	9:14	25.08	5557381	71036	25.2	Buildup in discharge line to sewer jetted out
3/18/13 9:16	3/18/2013	9:16	40.42	5783225	225844	39.2	
3/20/13 11:36	3/20/2013	11:36	40.18	5903470	120245	39.8	
3/21/13 11:10	3/21/2013	11:10	39.49	5959114	55644	39.4	
3/25/13 9:28	3/25/2013	9:28	39.08	6178809	219695	38.8	
3/27/13 10:45	3/27/2013	10:45	38.05	6291760	112951	38.2	
3/28/13 11:24	3/28/2013	11:24	37.76	6347526	55766	37.7	
4/2/13 11:22	4/2/2013	11:22	36.61	6613416	265890	36.9	
4/4/13 10:51	4/4/2013	10:51	36.34	6716499	103083	36.2	
4/8/13 11:54	4/8/2013	11:54	35.83	6925704	209205	35.9	
4/9/13 13:35	4/9/2013	13:35	35.92	6980797	55093	35.8	
4/11/13 13:24	4/11/2013	13:24	37.71	7083932	103135	35.9	
4/15/13 9:12	4/15/2013	9:12	36.95	7287186	203254	36.9	
4/16/13 8:46	4/16/2013	8:46	37.70	7336665	49479	35.0	
4/17/13 10:03	4/17/2013	10:03	0.00	7393803	57138	37.7	Pump off for aquifer testing
5/22/13 12:20	5/22/2013	12:20	47.00	7634146	240343	4.8	Pump off for aquifer testing, pump cleaned and check valve replaced
5/23/13 14:49	5/23/2013	14:49	40.98	7700402	66256	41.7	
5/24/13 9:10	5/24/2013	9:10	40.40	7745302	44900	40.8	
5/28/13 10:23	5/28/2013	10:23	38.80	7976031	230729	39.6	
5/29/13 9:56	5/29/2013	9:56	38.30	8030610	54579	38.6	
5/30/13 12:55	5/30/2013	12:55	38.10	8092659	62049	38.3	
6/3/13 9:41	6/3/2013	9:41	37.08	8302281	209622	37.7	
6/4/13 15:00	6/4/2013	15:00	36.68	8367111	64830	36.9	
6/5/13 10:19	6/5/2013	10:19	36.58	8409780	42669	36.8	
6/6/13 10:38	6/6/2013	10:38	36.75	8463462	53682	36.8	
6/10/13 9:36	6/10/2013	9:36	36.55	8673312	209850	36.8	
6/13/13 9:03	6/13/2013	9:03	35.67	8828999	155687	36.3	
6/17/13 10:02	6/17/2013	10:02	33.20	9029387	200388	34.4	
6/18/13 11:27	6/18/2013	11:27	32.86	9079726	50339	33.0	
6/19/13 10:35	6/19/2013	10:35	32.51	9125080	45354	32.7	
6/20/13 15:45	6/20/2013	15:45	31.83	9181524	56444	32.3	
6/24/13 13:48	6/24/2013	13:48	29.85	9356358	174834	31.0	
6/25/13 10:22	6/25/2013	10:22	29.66	9393034	36676	29.7	
6/27/13 13:43	6/27/2013	13:43	28.21	9481880	88846	28.8	
7/1/13 11:09	7/1/2013	11:09	26.16	9634846	152966	27.3	
7/2/13 8:46	7/2/2013	8:46	25.84	9668490	33644	25.9	Pump cleaned
7/8/13 9:00	7/8/2013	9:00	33.59	9957520	247080	34.6	
7/16/13 10:44	7/16/2013	10:44	34.25	10350580	53966	34.6	
7/17/13 9:26	7/17/2013	9:26	34.29	10397129	46549	34.2	
7/18/13 10:18	7/18/2013	10:18	33.95	10447140	50011	33.5	
7/23/13 9:32	7/23/2013	9:32	31.77	10677757	230617	32.2	
7/24/13 11:44	7/24/2013	11:44	31.13	10727194	49437	31.4	
7/25/13 12:07	7/25/2013	12:07	31.24	10772560	45366	31.0	
7/29/13 11:07	7/29/2013	11:07	28.97	10943931	171371	30.1	
7/30/13 15:49	7/30/2013	15:49	28.25	10993221	49290	28.6	
7/31/13 10:06	7/31/2013	10:06	28.23	11024181	30960	28.2	
8/1/13 12:23	8/1/2013	12:23	27.42	11068483	44302	28.1	
8/5/13 9:03	8/5/2013	9:03	26.42	11218719	150236	27.0	
8/6/13 13:26	8/6/2013	13:26	33.01	11259475	40756	23.9	Pump cleaned
8/7/13 9:25	8/7/2013	9:25	33.11	11300637	41162	34.3	
8/8/13 11:08	8/8/2013	11:08	32.53	11351202	50565	32.8	
8/12/13 11:07	8/12/2013	11:07	31.21	11533093	181891	31.6	
8/13/13 11:26	8/13/2013	11:26	30.61	11578161	45068	30.9	
8/14/13 8:54	8/14/2013	8:54	30.53	11617528	39367	30.6	
8/15/13 9:06	8/15/2013	9:06	29.88	11661412	43884	30.2	
8/16/13 14:00	8/16/2013	14:00	41.61	11669814	8402	4.8	Line jetted and cleaned and well screen cleaned
8/19/13 8:31	8/19/2013	8:31	40.25	11832183	162369	40.7	
8/20/13 8:45	8/20/2013	8:45	40.00	11890747	58564	40.3	
8/26/13 11:25	8/26/2013	11:25	38.20	12232119	341372	38.8	
8/27/13 10:43	8/27/2013	10:43	38.99	12284302	52183	37.3	
8/28/13 10:09	8/28/2013	10:09	38.43	12338475	54173	38.5	
8/29/13 9:50	8/29/2013	9:50	38.01	12392544	54069	38.0	
9/3/13 11:12	9/3/2013	11:12	35.88	12661045	268501	36.9	
9/4/13 10:01	9/4/2013	10:01	35.12	12709679	48634	35.5	
9/5/13 15:10	9/5/2013	15:10	34.56	12770850	61171	35.0	
9/9/13 10:33	9/9/2013	10:33	32.63	12955225	184375	33.6	
9/10/13 14:45	9/10/2013	14:45	31.99	13009853	54628	32.3	
9/11/13 10:03	9/11/2013	10:03	31.68	13046597	36744	31.7	

Appendix D-2
Well PW-1(U) Operational History - December 2011 to Present
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

Date and Time	Flow Meas. Date	Flow Meas. Time	Instantaneous Flow Reading (gpm)	Totalizer Reading (gal)	Flow since last reading (gal)	Calculated Flow Rate (gpm)	Notes
9/12/13 12:23	9/12/2013	12:23	31.45	13096776	50179	31.8	
9/16/13 11:05	9/16/2013	11:05	30.43	13270999	174223	30.7	
9/17/13 14:38	9/17/2013	14:38	29.48	13320242	49243	29.8	
9/19/13 9:06	9/19/2013	9:06	28.87	13394917	74675	29.3	
9/19/13 14:15	9/19/2013	14:15	32.57	13395545	628	2.0	Pump and pipe cleaned
9/23/13 8:21	9/23/2013	8:21	31.79	13571261	175716	32.5	
9/24/13 11:08	9/24/2013	11:08	31.66	13621860	50599	31.5	
9/25/13 13:00	9/25/2013	13:00	31.35	13670142	48282	31.1	
9/26/2013	9/26/2013	N/A	N/A	N/A	N/A	N/A	The power to the well PW-1(U) pump and totalizer were interrupted
10/3/2013	10/3/2013	N/A	N/A	N/A	N/A	N/A	Redux 620 application began
10/17/2013	10/17/2013	N/A	N/A	N/A	N/A	N/A	The totalizer was reset and the equipment was restarted
10/21/13 9:57	10/21/2013	9:57	40.39	231527	231527	41.3	
10/22/13 12:35	10/22/2013	12:35	40.87	296845	65318	40.9	
10/23/13 9:55	10/23/2013	9:55	40.83	349169	52324	40.9	
10/24/13 9:23	10/24/2013	9:23	40.70	406795	57626	40.9	
10/28/13 9:58	10/28/2013	9:58	40.98	644233	237438	41.0	
10/29/13 10:57	10/29/2013	10:57	40.90	705619	61386	41.0	
10/30/13 14:50	10/30/2013	14:50	40.94	774271	68652	41.0	
11/5/13 9:44	11/5/2013	9:44	40.95	1118489	56509	40.9	
11/11/13 10:58	11/11/2013	10:58	40.78	1474968	356479	40.9	
11/12/13 10:25	11/12/2013	10:25	40.74	1532332	57364	40.8	
11/13/13 10:57	11/13/2013	10:57	40.65	1592450	60118	40.8	
11/14/13 10:33	11/14/2013	10:33	40.87	1650175	57725	40.8	
11/18/13 11:03	11/18/2013	11:03	41.35	1885748	235573	40.7	
11/19/13 10:18	11/19/2013	10:18	40.16	1942334	56586	40.6	
11/20/13 10:51	11/20/2013	10:51	40.34	2002025	59691	40.5	
11/21/13 11:03	11/21/2013	11:03	40.20	2060772	58747	40.5	
11/25/13 11:05	11/25/2013	11:05	38.90	2290468	229696	39.9	
12/2/13 10:39	12/2/2013	10:39	39.05	2681887	391419	38.9	
12/3/13 13:52	12/3/2013	13:52	38.96	2745430	63543	38.9	
12/4/13 13:34	12/4/2013	13:34	38.80	2800674	55244	38.8	
12/5/13 15:30	12/5/2013	15:30	38.83	2867833	67159	43.2	
12/10/13 9:44	12/10/2013	9:44	38.56	3125810	257977	37.6	
12/12/13 9:58	12/12/2013	9:58 AM	38.63	3237624	111814	38.6	
12/16/13 11:08	12/16/2013	11:08 AM	39.87	3459456	221832	38.1	
12/17/13 11:56	12/17/2013	11:56 AM	37.55	3518131	58675	39.4	
12/18/13 10:07	12/18/2013	10:07 AM	39.89	3569188	51057	38.4	
12/19/13 14:50	12/19/2013	2:50 PM	37.74	3636376	67188	39.0	
12/23/13 11:37	12/23/2013	11:37 AM	38.10	3850296	213920	38.4	
12/27/13 12:52	12/27/2013	12:52 PM	38.11	4076687	226391	38.8	
12/30/13 13:55	12/30/2013	1:55 PM	39.95	4246201	169514	38.7	
12/31/13 10:39	12/31/2013	10:39 AM	40.11	4294399	48198	38.7	
1/2/14 10:29	1/2/2014	10:29 AM	38.27	4405620	111221	38.8	
1/6/14 10:02	1/6/2014	10:02 AM	38.45	4627777	222157	38.8	
1/7/14 11:27	1/7/2014	11:27 AM	38.51	4687029	59252	38.9	
1/8/14 9:37	1/8/2014	9:37 AM	38.54	4738802	51773	38.9	
1/9/14 10:27	1/9/2014	10:27 AM	38.55	4796733	57931	38.9	
1/13/14 10:29	1/13/2014	10:29 AM	38.57	5021113	224380	38.9	
1/14/14 11:58	1/14/2014	11:58 AM	38.66	5080694	59581	39.0	
1/15/14 9:18	1/15/2014	9:18 AM	38.61	5130754	50060	39.1	
1/16/14 9:49	1/16/2014	9:49 AM	38.70	5188199	57445	39.1	
1/20/14 12:04	1/20/2014	12:04 PM	38.67	5417964	229765	39.0	
1/21/14 9:30	1/21/2014	9:30 AM	40.37	5468126	50162	39.0	
1/23/14 11:28	1/23/2014	11:28 AM	38.81	5584450	116324	38.8	
1/27/14 11:00	1/27/2014	11:00 AM	38.82	5806907	222457	38.8	
1/28/14 11:56	1/28/2014	11:56 AM	38.75	5864968	58061	38.8	
1/29/14 9:39	1/29/2014	9:39 AM	38.92	5915567	50599	38.8	
1/30/14 11:37	1/30/2014	11:37 AM	38.78	5976642	61075	39.2	
2/3/14 10:33	2/3/2014	10:33 AM	39.54	6198556	221914	39.0	
2/4/14 9:52	2/4/2014	9:52 AM	40.59	6253263	54707	39.1	
2/5/14 9:15	2/5/2014	9:15 AM	40.10	6308888	55625	39.6	
2/6/14 12:49	2/6/2014	12:49 PM	38.26	6373982	65094	39.4	
2/10/14 10:50	2/10/2014	10:50 AM	40.28	6592399	218417	38.7	
2/11/14 9:15	2/11/2014	9:15 AM	40.19	6644565	52166	38.8	
2/12/14 10:30	2/12/2014	10:30 AM	40.15	6703349	58784	38.8	
2/17/14 11:53	2/17/2014	11:53 AM	38.22	6983823	280474	38.5	
2/18/14 11:30	2/18/2014	11:30 AM	39.61	7037971	54148	38.2	
2/20/14 10:40	2/20/2014	10:40 AM	42.05	7155784	117813	41.6	
2/24/14 9:16	2/24/2014	9:16 AM	37.86	7392670	236886	41.7	
2/25/14 15:09	2/25/2014	3:09 PM	39.94	7459970	67300	37.5	
2/26/14 14:58	2/26/2014	2:58 PM	37.83	7514576	54606	38.2	
2/27/14 13:50	2/27/2014	1:50 PM	37.99	7567221	52645	38.4	
3/4/14 10:56	3/4/2014	10:56 AM	38.05	7834047	266826	38.0	
3/5/14 9:15	3/5/2014	9:15 AM	37.94	7884924	50877	38.0	
3/6/14 10:06	3/6/2014	10:06 AM	39.66	7941640	56716	38.0	
3/10/14 10:28	3/10/2014	10:28 AM	39.50	8159329	217689	37.6	
3/11/14 13:10	3/11/2014	1:10 PM	40.01	8213332	54003	33.7	
3/12/14 10:33	3/12/2014	10:33 AM	40.04	8262043	48711	38.0	
3/13/14 11:55	3/13/2014	11:55 AM	40.05	8320124	58081	38.2	
3/19/14 8:40	3/19/2014	8:40 AM	37.54	8640577	320453	37.9	
3/20/14 13:17	3/20/2014	1:17 PM	40.21	8700552	59975	34.9	
3/24/14 10:19	3/24/2014	10:19 AM	39.10	8923381	222829	39.9	
3/25/14 12:38	3/25/2014	12:38 PM	39.52	8986129	62748	39.7	
3/26/14 11:20	3/26/2014	11:20 AM	39.64	9040096	53967	39.6	
3/27/14 10:41	3/27/2014	10:41 AM	39.66	9096017	55921	39.9	
3/31/14 10:40	3/31/2014	10:40 AM	38.11	9324439	228422	39.7	
4/1/14 15:20	4/1/2014	3:20 PM	39.28	9392266	67827	39.4	
4/2/14 10:48	4/2/2014	10:48 AM	40.18	9439024	46758	40.0	
4/3/14 14:17	4/3/2014	2:17 PM	39.01	9504550	65526	39.7	
4/7/14 10:48	4/7/2014	10:48 AM	39.12	9723859	219309	39.5	
4/8/14 11:43	4/8/2014	11:43 AM	39.22	9782930	59071	39.5	

Appendix D-2
Well PW-1(U) Operational History - December 2011 to Present
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

Date and Time	Flow Meas. Date	Flow Meas. Time	Instantaneous Flow Reading (gpm)	Totalizer Reading (gal)	Flow since last reading (gal)	Calculated Flow Rate (gpm)	Notes
4/9/14 11:05	4/9/2014	11:05 AM	38.54	9838222	55292	39.4	
4/10/14 9:51	4/10/2014	9:51 AM	39.04	9892063	53841	39.4	
4/14/14 12:29	4/14/2014	12:29 PM	39.10	10124712	232649	39.3	
4/15/14 11:52	4/15/2014	11:52 AM	39.01	10179859	55147	39.3	
4/16/14 9:23	4/16/2014	9:23 AM	38.54	10230650	50791	39.3	
4/17/14 9:52	4/17/2014	9:52 AM	38.95	10288289	57639	39.2	
4/22/14 10:40	4/22/2014	10:40 AM	40.16	10572132	283843	39.2	
4/23/14 10:26	4/23/2014	10:26 AM	38.88	10627997	55865	39.2	
4/24/14 10:04	4/24/2014	10:04 AM	38.66	10683481	55484	39.1	
4/28/14 10:12	4/28/2014	10:12 AM	38.20	10907768	224287	38.9	
4/29/14 11:52	4/29/2014	11:52 AM	38.77	10967574	59806	38.8	
4/30/14 10:33	4/30/2014	10:33 AM	38.36	11020130	52556	38.6	
5/1/14 12:16	5/1/2014	12:16 PM	38.71	11080264	60134	39.0	
5/5/14 10:46	5/5/2014	10:46 AM	38.58	11300269	220005	38.8	
5/6/14 9:14	5/6/2014	9:14 AM	39.77	11352657	52388	38.9	
5/7/14 10:07	5/7/2014	10:07 AM	38.61	11410252	57595	38.6	
5/8/14 10:07	5/8/2014	10:07 AM	38.69	11466157	55905	38.8	
5/12/14 11:05	5/12/2014	11:05 AM	38.21	11690468	224311	38.6	
5/13/14 15:54	5/13/2014	3:54 PM	38.17	11756906	66438	38.4	
5/14/14 11:20	5/14/2014	11:20 AM	39.60	11801790	44884	38.5	
5/15/14 14:53	5/15/2014	2:53 PM	39.48	11865227	63437	38.4	
5/19/14 14:10	5/19/2014	2:10 PM	38.20	12084782	219555	38.4	
5/20/14 10:25	5/20/2014	10:25 AM	39.30	12131867	47085	38.8	
5/21/14 14:12	5/21/2014	2:12 PM	40.21	12195010	63143	37.9	
5/22/14 13:14	5/22/2014	1:14 PM	38.66	12249297	54287	39.3	
5/27/14 11:44	5/27/2014	11:44 AM	38.61	12525261	275964	38.8	
5/28/14 10:55	5/28/2014	10:55 AM	38.57	12579307	54046	38.9	
5/29/14 12:21	5/29/2014	12:21 PM	38.41	12638102	58795	38.5	
6/2/14 11:59	6/2/2014	11:59 AM	39.47	12859832	221730	38.6	
6/3/14 11:06	6/3/2014	11:06 AM	38.04	12913121	53289	38.4	
6/4/14 9:20	6/4/2014	9:20 AM	38.42	12964693	51572	38.7	
6/5/14 10:35	6/5/2014	10:35 AM	38.28	13022755	58062	38.3	
6/9/14 10:26	6/9/2014	10:26 AM	38.11	13243957	221202	38.5	
6/10/14 14:14	6/10/2014	2:14 PM	39.35	13307735	63778	38.2	
6/12/14 10:02	6/12/2014	10:02 AM	38.04	13408815	101080	38.5	
6/17/14 10:56	6/17/2014	10:56 AM	37.96	13686403	277588	38.3	
6/18/14 9:14	6/18/2014	9:14 AM	37.90	13737620	51217	38.3	
6/19/14 10:13	6/19/2014	10:13 AM	37.95	13794915	57295	38.2	
6/23/14 9:57	6/23/2014	9:57 AM	37.97	14015128	220213	38.3	
6/24/14 10:17	6/24/2014	10:17 AM	39.20	14070741	55613	38.1	
6/25/14 11:40	6/25/2014	11:40 AM	39.15	14128608	57867	38.0	
6/26/14 9:32	6/26/2014	9:32 AM	37.94	14178630	50022	38.1	
6/30/14 10:18	6/30/2014	10:18 AM	37.94	14400204	221574	38.2	
7/1/14 10:35	7/1/2014	10:35 AM	37.46	14455552	55348	38.0	
7/2/14 9:08	7/2/2014	9:08 AM	37.61	14506927	51375	38.0	
7/3/14 14:08	7/3/2014	2:08 PM	37.48	14572799	65872	37.9	
7/7/14 14:47	7/7/2014	2:47 PM	37.44	14793344	220545	38.0	
7/8/14 9:17	7/8/2014	9:17 AM	39.11	14835540	42196	38.0	
7/9/14 9:00	7/9/2014	9:00 AM	39.17	14889356	53816	37.8	
7/10/14 8:47	7/10/2014	8:47 AM	37.66	14943220	53864	37.7	
7/14/14 9:24	7/14/2014	9:24 AM	39.31	15163430	220210	38.0	
7/15/14 10:18	7/15/2014	10:18 AM	39.15	15220037	56607	37.9	
7/16/14 9:03	7/16/2014	9:03 AM	37.46	15271668	51631	37.8	
7/17/14 9:40	7/17/2014	9:40 AM	37.57	15327733	56065	38.0	
7/24/14 9:04	7/24/2014	9:04 AM	37.73	15707438	379705	37.8	
7/28/14 10:44	7/28/2014	10:44 AM	37.88	15929110	221672	37.8	
7/29/14 10:02	7/29/2014	10:02 AM	37.64	15982234	53124	38.0	
7/30/14 9:21	7/30/2014	9:21 AM	37.57	16034882	52648	37.6	
7/31/14 10:38	7/31/2014	10:38 AM	37.66	16092427	57545	37.9	
8/4/14 11:07	8/4/2014	11:07 AM	37.75	16312057	219630	37.9	
8/5/14 8:54	8/5/2014	8:54 AM	37.85	16361549	49492	37.9	
8/6/14 8:30	8/6/2014	8:30 AM	N/A	16416387	54838	38.7	
8/7/14 9:57	8/7/2014	9:57 AM	40.50	16424879	8492	5.6	Pump and pipe cleaned
8/11/14 9:11	8/11/2014	9:11 AM	40.23	16648389	223510	39.1	
8/12/14 9:40	8/12/2014	9:40 AM	37.59	16704361	55972	38.1	
8/13/14 10:46	8/13/2014	10:46 AM	37.43	16761184	56823	37.7	
8/14/14 10:12	8/14/2014	10:12 AM	37.24	16813998	52814	37.6	
8/18/14 9:32	8/18/2014	9:32 AM	38.29	17026754	212756	37.2	
8/27/14 13:05	8/27/2014	1:05 PM	36.95	17514018	487264	37.0	
8/28/14 11:45	8/28/2014	11:45 AM	36.82	17564135	50117	36.9	
9/2/14 9:53	9/2/2014	9:53 AM	36.93	17825314	261179	36.8	
9/3/14 10:31	9/3/2014	10:31 AM	37.02	17880058	54744	37.0	
9/4/14 9:27	9/4/2014	9:27 AM	38.01	17931488	51430	37.4	
9/8/14 10:44	9/8/2014	10:44 AM	36.37	18146297	214809	36.8	
9/9/14 9:35	9/9/2014	9:35 AM	36.57	18196651	50354	36.7	
9/10/14 9:10	9/10/2014	9:10 AM	36.36	18248250	51599	36.5	
9/11/14 10:45	9/11/2014	10:45 AM	36.21	18304064	55814	36.4	
9/15/14 10:19	9/15/2014	10:19 AM	36.08	18512492	208428	36.3	
9/16/14 9:45	9/16/2014	9:45 AM	35.93	18563477	50985	36.3	
9/17/14 11:40	9/17/2014	11:40 AM	36.06	18619926	56449	36.3	
9/18/14 10:56	9/18/2014	10:56 AM	36.13	18670684	50758	36.4	
9/22/14 10:27	9/22/2014	10:27 AM	35.90	18876168	205484	35.9	
9/23/14 9:48	9/23/2014	9:48 AM	35.77	18926129	49961	35.7	
9/24/14 9:45	9/24/2014	9:45 AM	35.79	18977409	51280	35.7	
9/25/14 14:47	9/25/2014	2:47 PM	35.88	19039622	62213	35.7	
9/29/14 9:44	9/29/2014	9:44 AM	36.11	19235091	195469	35.8	
9/30/14 9:42	9/30/2014	9:42 AM	37.31	19286181	51090	35.5	
10/1/14 10:36	10/1/2014	10:36 AM	37.43	19339914	53733	36.0	
10/2/14 15:32	10/2/2014	3:32 PM	35.08	19402131	62217	35.8	
10/6/14 9:49	10/6/2014	9:49 AM	35.68	19595340	193209	35.7	
10/7/14 10:27	10/7/2014	10:27 AM	35.67	19648015	52675	35.6	

Appendix D-2
Well PW-1(U) Operational History - December 2011 to Present
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

Date and Time	Flow Meas. Date	Flow Meas. Time	Instantaneous Flow Reading (gpm)	Totalizer Reading (gal)	Flow since last reading (gal)	Calculated Flow Rate (gpm)	Notes
10/8/14 11:38	10/8/2014	11:38 AM	35.61	19701790	53775	35.6	
10/9/14 10:41	10/9/2014	10:41 AM	35.48	19750717	48927	35.4	
10/13/14 9:50	10/13/2014	9:50 AM	35.40	19953165	202448	35.5	
10/14/14 14:51	10/14/2014	2:51 PM	35.61	20014687	61522	35.3	
10/15/14 9:54	10/15/2014	9:54 AM	35.24	20055140	40453	35.4	
10/16/14 15:04	10/16/2014	3:04 PM	35.40	20116684	61544	35.2	
10/20/14 11:13	10/20/2014	11:13 AM	35.53	20311858	195174	35.3	
10/21/14 10:40	10/21/2014	10:40 AM	35.35	20361490	49632	35.3	
10/22/14 10:01	10/22/2014	10:01 AM	35.31	20410995	49505	35.3	
10/23/14 10:51	10/23/2014	10:51 AM	35.41	20463689	52694	35.4	
10/27/14 10:21	10/27/2014	10:21 AM	35.41	20666408	202719	35.4	
10/28/14 8:57	10/28/2014	8:57 AM	35.40	20714396	47988	35.4	
10/29/14 11:14	10/29/2014	11:14 AM	36.75	20770182	55786	35.4	
10/30/14 11:00	10/30/2014	11:00 AM	36.76	20820861	50679	35.5	
11/3/14 11:27	11/3/2014	11:27 AM	34.77	21026079	205218	35.5	
11/4/14 10:55	11/4/2014	10:55 AM	36.69	21075586	49507	35.2	
11/5/14 9:34	11/5/2014	9:34 AM	36.71	21125454	49868	36.7	
11/6/14 11:42	11/6/2014	11:42 AM	36.73	21180745	55291	35.3	
11/10/14 11:22	11/10/2014	11:22 AM	34.69	21381634	200889	35.0	
11/11/14 10:05	11/11/2014	10:05 AM	36.55	21429468	47834	35.1	
11/12/14 9:32	11/12/2014	9:32 AM	34.68	21478765	49297	35.0	
11/18/14 10:40	11/18/2014	10:40 AM	37.11	21773543	294778	33.9	
11/19/14 10:28	11/19/2014	10:28 AM	36.98	21824032	50489	35.4	
11/20/14 10:38	11/20/2014	10:38 AM	34.29	21875802	51770	35.7	
11/24/14 9:47	11/24/2014	9:47 AM	34.10	22078430	202628	35.5	
11/25/14 11:10	11/25/2014	11:10 AM	34.34	22132781	54351	35.7	
11/26/14 9:47	11/26/2014	9:47 AM	34.46	22181431	48650	35.9	
11/28/14 10:51	11/28/2014	10:51 AM	38.01	22287367	105936	36.0	
12/1/14 10:20	12/1/2014	10:20 AM	37.85	22441361	153994	35.9	
12/2/14 10:55	12/2/2014	10:55 AM	34.29	22494226	52865	35.8	
12/3/14 14:42	12/3/2014	2:42 PM	34.49	22553451	59225	35.5	
12/4/14 15:19	12/4/2014	3:19 PM	34.40	22606008	52557	35.6	
12/8/14 14:27	12/8/2014	2:27 PM	37.20	22808869	202861	35.5	
12/9/14 10:08	12/9/2014	10:08 AM	34.50	22851275	42406	35.9	
12/11/14 9:18	12/11/2014	9:18 AM	34.38	22952204	100929	35.7	
12/12/14 10:16	12/12/2014	10:16 AM	34.69	23005957	53753	35.9	
12/15/14 10:30	12/15/2014	10:30 AM	34.48	23160175	154218	35.6	
12/16/14 12:52	12/16/2014	12:52 PM	35.20	23213345	53170	33.6	
12/17/14 9:13	12/17/2014	9:13 AM	34.78	23256480	43135	35.3	
12/18/14 14:33	12/18/2014	2:33 PM	34.17	23318933	62453	35.5	
12/22/14 11:30	12/22/2014	11:30 AM	34.15	23515187	196254	35.2	
12/23/14 10:41	12/23/2014	10:41 AM	36.63	23563658	48471	34.8	
12/24/14 14:45	12/24/2014	2:45 PM	34.55	23622854	59196	35.2	
12/29/14 11:27	12/29/2014	11:27 AM	34.04	23868972	246118	35.1	
12/30/14 10:43	12/30/2014	10:43 AM	34.46	23917705	48733	34.9	
12/31/14 9:39	12/31/2014	9:39 AM	37.45	23966364	48659	35.4	
1/5/15 10:50	1/5/2015	10:50 AM	37.24	24226491	260127	35.8	
1/6/15 10:49	1/6/2015	10:49 AM	37.37	24278038	51547	35.8	
1/7/15 10:36	1/7/2015	10:36 AM	34.88	24328743	50705	35.5	
1/8/15 11:33	1/8/2015	11:33 AM	34.74	24381581	52838	35.3	
1/12/15 9:30	1/12/2015	9:30 AM	34.66	24580270	198689	35.2	
1/16/15 15:30	1/16/2015	3:30 PM	34.56	24794901	214631	35.1	
1/19/15 10:50	1/19/2015	10:50 AM	34.68	24936811	141910	35.1	
1/20/15 10:28	1/20/2015	10:28 AM	34.57	24986513	49702	35.1	
1/21/15 10:25	1/21/2015	10:25 AM	34.85	25036398	49885	34.7	
1/22/15 9:45	1/22/2015	9:45 AM	34.70	25085635	49237	35.2	
1/26/15 10:54	1/26/2015	10:54 AM	34.05	25288090	202455	34.7	
1/27/15 10:31	1/27/2015	10:31 AM	34.06	25337879	49789	35.1	
1/28/15 9:26	1/28/2015	9:26 AM	34.11	25385425	47546	34.6	
1/29/15 10:57	1/29/2015	10:57 AM	33.60	25439086	53661	35.0	
2/2/15 11:25	2/2/2015	11:25 AM	33.99	25640374	201288	34.8	
2/3/15 11:29	2/3/2015	11:29 AM	33.81	25690064	49690	34.4	
2/4/15 11:31	2/4/2015	11:31 AM	36.41	25740262	50198	34.8	
2/5/15 11:46	2/5/2015	11:46 AM	34.02	25790509	50247	34.5	
2/9/15 11:27	2/9/2015	11:27 AM	36.11	25987967	197458	34.4	
2/10/15 10:55	2/10/2015	10:55 AM	33.95	26036533	48566	34.5	
2/11/15 9:38	2/11/2015	9:38 AM	33.49	26083313	46780	34.3	
2/12/15 10:57	2/12/2015	10:57 AM	33.97	26135438	52125	34.3	
2/17/15 10:13	2/17/2015	10:13 AM	34.14	26381175	245737	34.3	
2/18/15 10:00	2/18/2015	10:00 AM	34.19	26430248	49073	34.4	
2/19/15 10:45	2/19/2015	10:45 AM	34.11	26480822	50574	34.1	
2/23/15 10:42	2/23/2015	10:42 AM	34.15	26677671	196849	34.2	
2/24/15 10:43	2/24/2015	10:43 AM	34.22	26728054	50383	35.0	
2/26/15 10:51	2/26/2015	10:51 AM	34.12	26826573	98519	34.1	
3/2/15 11:36	3/2/2015	11:36 AM	34.64	27026572	199999	34.5	
3/3/15 12:25	3/3/2015	12:25 PM	34.74	27078153	51581	34.6	
3/4/15 11:02	3/4/2015	11:02 AM	35.03	27125544	47391	34.9	
3/9/15 9:49	3/9/2015	9:49 AM	37.58	27377276	251732	35.3	
3/10/15 11:28	3/10/2015	11:28 AM	35.11	27425105	47829	31.1	
3/11/15 14:59	3/11/2015	2:59 PM	34.93	27483467	58362	35.3	
3/12/15 11:38	3/12/2015	11:38 AM	37.27	27528030	44563	36.0	
3/16/15 11:18	3/16/2015	11:18 AM	37.61	27732039	204009	35.5	
3/17/15 9:53	3/17/2015	9:53 AM	35.16	27781057	49018	36.2	
3/18/15 15:38	3/18/2015	3:38 PM	37.64	27844690	63633	35.6	
3/19/15 11:49	3/19/2015	11:49 AM	37.50	27888384	43694	36.1	
3/23/15 10:53	3/23/2015	10:53 AM	35.40	28093130	204746	35.9	
3/24/15 10:02	3/24/2015	10:02 AM	35.45	28143122	49992	36.0	
3/25/15 13:37	3/25/2015	1:37 PM	34.85	28203235	60113	36.3	
3/26/15 11:47	3/26/2015	11:47 AM	35.39	28251143	47908	36.0	
3/30/15 15:36	3/30/2015	3:36 PM	37.94	28467313	216170	36.1	
3/31/15 11:17	3/31/2015	11:17 AM	37.91	28509735	42422	35.9	

Appendix D-2
Well PW-1(U) Operational History - December 2011 to Present
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

Date and Time	Flow Meas. Date	Flow Meas. Time	Instantaneous Flow Reading (gpm)	Totalizer Reading (gal)	Flow since last reading (gal)	Calculated Flow Rate (gpm)	Notes
4/1/15 10:18	4/1/2015	10:18 AM	35.26	28559836	50101	36.3	
4/2/15 11:54	4/2/2015	11:54 AM	37.91	28615463	55627	36.2	
4/6/15 15:13	4/6/2015	3:13 PM	35.31	28830722	215259	36.1	
4/7/15 15:06	4/7/2015	3:06 PM	35.49	28882358	51636	36.0	
4/8/15 15:26	4/8/2015	3:26 PM	38.21	28935631	53273	36.5	
4/9/15 11:50	4/9/2015	11:50 AM	35.32	28979979	44348	36.2	
4/13/15 10:14	4/13/2015	10:14 AM	35.60	29185112	205133	36.2	
4/14/15 11:06	4/14/2015	11:06 AM	35.71	29239191	54079	36.2	
4/15/15 10:08	4/15/2015	10:08 AM	37.73	29289838	50647	36.6	
4/16/15 9:45	4/16/2015	9:45 AM	35.75	29341821	51983	36.7	
4/20/15 12:04	4/20/2015	12:04 PM	36.36	29556435	214614	36.4	
4/21/15 10:28	4/21/2015	10:28 AM	36.33	29605887	49452	36.8	
4/22/15 10:34	4/22/2015	10:34 AM	35.80	29658392	52505	36.3	
4/23/15 10:33	4/23/2015	10:33 AM	36.45	29711430	53038	36.9	
4/27/15 10:32	4/27/2015	10:32 AM	38.61	29923990	212560	36.9	
4/28/15 9:15	4/28/2015	9:15 AM	38.68	29974789	50799	37.3	
4/29/15 11:31	4/29/2015	11:31 AM	36.04	30032589	57800	36.7	
4/30/15 11:38	4/30/2015	11:38 AM	36.10	30085511	52922	36.6	
5/4/15 10:02	5/4/2015	10:02 AM	35.88	30293164	207653	36.7	
5/5/15 10:23	5/5/2015	10:23 AM	38.32	30346257	53093	36.3	
5/6/15 10:09	5/6/2015	10:09 AM	38.46	30398147	51890	36.4	
5/7/15 10:03	5/7/2015	10:03 AM	36.03	30450695	52548	36.6	
5/9/15 12:46	5/9/2015	12:46 PM	36.00	30563401	112706	37.0	
5/11/15 11:39	5/11/2015	11:39 AM	38.45	30670645	107244	38.1	
5/12/15 9:40	5/12/2015	9:40 AM	36.19	30719137	48492	36.7	
5/13/15 15:21	5/13/2015	3:21 PM	36.26	30784588	65451	36.7	
5/14/15 10:34	5/14/2015	10:34 AM	36.42	30827325	42737	37.1	
5/18/15 10:41	5/18/2015	10:41 AM	38.35	31037937	210612	36.5	
5/19/15 9:35	5/19/2015	9:35 AM	38.95	31088572	50635	36.9	
5/20/15 10:51	5/20/2015	10:51 AM	35.68	31136908	48336	31.9	
5/21/15 11:55	5/21/2015	11:55 AM	38.89	31192450	55542	36.9	
5/26/15 10:19	5/26/2015	10:19 AM	38.81	31454231	261781	36.8	
5/27/15 12:58	5/27/2015	12:58 PM	36.03	31513420	59189	37.0	
5/28/15 10:00	5/28/2015	10:00 AM	36.07	31559744	46324	36.7	
6/2/15 13:38	6/2/2015	1:38 PM	38.54	31831649	271905	36.7	
6/8/15 10:03	6/8/2015	10:03 AM	36.83	32142004	310355	36.8	
6/9/15 9:28	6/9/2015	9:28 AM	36.45	32193707	51703	36.8	
6/10/15 9:00	6/10/2015	9:00 AM	37.13	32245837	52130	36.9	
6/11/15 10:58	6/11/2015	10:58 AM	36.45	32302942	57105	36.7	
6/15/15 13:38	6/15/2015	1:38 PM	36.90	32521237	218295	36.9	
6/16/15 12:16	6/16/2015	12:16 PM	36.92	32571201	49964	36.8	
6/17/15 9:56	6/17/2015	9:56 AM	36.87	32619090	47889	36.8	
6/18/15 10:30	6/18/2015	10:30 AM	36.66	32673981	54891	37.2	
6/22/15 10:45	6/22/2015	10:45 AM	36.64	32887066	213085	36.9	
6/23/15 9:48	6/23/2015	9:48 AM	39.07	32938272	51206	37.0	
6/24/15 10:29	6/24/2015	10:29 AM	37.41	32994129	55857	37.7	
6/25/15 10:18	6/25/2015	10:18 AM	37.09	33047865	53736	37.6	
6/29/15 9:58	6/29/2015	9:58 AM	37.41	33261684	213819	37.3	
6/30/15 10:01	6/30/2015	10:01 AM	37.22	33315719	54035	37.4	
7/1/15 10:01	7/1/2015	10:01 AM	37.02	33369507	53788	37.4	
7/2/15 8:30	7/2/2015	8:30 AM	37.36	33419969	50462	37.4	Off while jetting tank discharge line
7/6/15 10:24	7/6/2015	10:24 AM	36.20	33621713	201744	34.3	
7/7/15 15:13	7/7/2015	3:13 PM	38.71	33685486	63773	36.9	
7/8/15 9:54	7/8/2015	9:54 AM	36.52	33727175	41689	37.2	
7/9/15 10:22	7/9/2015	10:22 AM	36.71	33781662	54487	37.1	
7/13/15 9:40	7/13/2015	9:40 AM	37.00	33992564	210902	36.9	
7/14/15 9:48	7/14/2015	9:48 AM	37.21	34046629	54065	37.3	
7/15/15 10:36	7/15/2015	10:36 AM	38.72	34103745	57116	38.4	
7/16/15 11:07	7/16/2015	11:07 AM	38.87	34160747	57002	38.8	
7/20/15 9:46	7/20/2015	9:46 AM	39.01	34369491	208744	36.8	
7/21/15 9:44	7/21/2015	9:44 AM	38.77	34422329	52838	36.7	
7/23/15 9:57	7/23/2015	9:57 AM	35.18	34528292	105963	36.6	
7/27/15 15:26	7/27/2015	3:26 PM	38.87	34753001	224709	36.9	
7/28/15 10:21	7/28/2015	10:21 AM	38.87	34796211	43210	38.1	
7/29/15 9:45	7/29/2015	9:45 AM	38.90	34848928	52717	37.5	
7/30/15 9:45	7/30/2015	9:45 AM	38.90	34902790	53862	37.4	
8/3/15 10:10	8/3/2015	10:10 AM	35.83	35116180	213390	36.9	
8/4/15 9:45	8/4/2015	9:45 AM	35.78	35168126	51946	36.7	
8/5/15 15:22	8/5/2015	3:22 PM	35.91	35233086	64960	36.6	
8/6/15 10:45	8/6/2015	10:45 AM	36.15	35275986	42900	36.9	
8/10/15 13:03	8/10/2015	1:03 PM	38.31	35491938	215952	36.6	
8/11/15 9:13	8/11/2015	9:13 AM	36.11	35535906	43968	36.3	
8/12/15 10:00	8/12/2015	10:00 AM	35.87	35589593	53687	36.1	
8/13/15 10:18	8/13/2015	10:18 AM	36.11	35643210	53617	36.8	
8/17/15 9:27	8/17/2015	9:27 AM	36.65	35851098	207888	36.4	
8/18/15 10:17	8/18/2015	10:17 AM	36.39	35905369	54271	36.4	
8/19/15 10:26	8/19/2015	10:26 AM	36.24	35959089	53720	37.1	
8/20/15 9:37	8/20/2015	9:37 AM	36.65	36010139	51050	36.7	
8/25/15 8:38	8/25/2015	8:38 AM	36.98	36275819	265680	37.2	PW-1 pump replaced
8/27/15 8:22	8/27/2015	8:22 AM	42.55	36324750	48931	17.1	
8/28/15 9:11	8/28/2015	9:11 AM	43.39	36375183	50433	33.9	
8/31/15 11:53	8/31/2015	11:53 AM	37.33	36543455	168272	37.5	
9/1/15 10:33	9/1/2015	10:33 AM	36.86	36593838	50383	37.0	
9/2/15 10:06	9/2/2015	10:06 AM	36.80	36646144	52306	37.0	
9/3/15 10:21	9/3/2015	10:21 AM	36.77	36699870	53726	36.9	
9/8/15 10:13	9/8/2015	10:13 AM	36.54	36964956	265086	36.9	
9/9/15 13:37	9/9/2015	1:37 PM	36.62	37025455	60499	36.8	
9/10/15 10:13	9/10/2015	10:13 AM	36.49	37070909	45454	36.8	
9/14/15 10:07	9/14/2015	10:07 AM	36.73	37283058	212149	36.9	
9/15/15 11:54	9/15/2015	11:54 AM	36.91	37336030	52972	34.2	
9/16/15 13:45	9/16/2015	1:45 PM	36.85	37393244	57214	36.9	
9/17/15 10:08	9/17/2015	10:08 AM	36.93	37438333	45089	36.9	

Appendix D-2
Well PW-1(U) Operational History - December 2011 to Present
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

Date and Time	Flow Meas. Date	Flow Meas. Time	Instantaneous Flow Reading (gpm)	Totalizer Reading (gal)	Flow since last reading (gal)	Calculated Flow Rate (gpm)	Notes
9/21/15 11:01	9/21/2015	11:01 AM	36.50	37652438	214105	36.8	
9/22/15 11:42	9/22/2015	11:42 AM	35.79	37702424	49986	33.8	
9/23/15 8:55	9/23/2015	8:55 AM	35.29	37748350	45926	36.1	
9/24/15 8:55	9/24/2015	8:55 AM	37.74	37799696	51346	35.7	
9/28/15 12:47	9/28/2015	12:47 PM	37.70	38013099	213403	35.6	
9/29/15 10:53	9/29/2015	10:53 AM	34.73	38059833	46734	35.2	
9/30/15 9:08	9/30/2015	9:08 AM	34.86	38107233	47400	35.5	
10/1/15 9:53	10/1/2015	9:53 AM	37.76	38159277	52044	35.0	
10/5/15 9:47	10/5/2015	9:47 AM	37.32	38366920	207643	36.1	
10/6/15 12:29	10/6/2015	12:29 PM	37.34	38422907	55987	34.9	
10/7/15 10:34	10/7/2015	10:34 AM	34.06	38469018	46111	34.8	
10/8/15 11:20	10/8/2015	11:20 AM	34.00	38520708	51690	34.8	
10/12/15 10:01	10/12/2015	10:01 AM	33.70	38718885	198177	34.9	
10/13/15 9:48	10/13/2015	9:48 AM	33.81	38768698	49813	34.9	
10/14/15 13:39	10/14/2015	1:39 PM	36.83	38827200	58502	35.0	
10/15/15 11:01	10/15/2015	11:01 AM	36.25	38871338	44138	34.4	
10/19/15 10:47	10/19/2015	10:47 AM	36.90	39071131	199793	34.8	
10/20/15 14:08	10/20/2015	2:08 PM	36.89	39128777	57646	35.1	
10/21/15 9:24	10/21/2015	9:24 AM	33.74	39168213	39436	34.1	
10/22/15 10:21	10/22/2015	10:21 AM	37.88	39215662	47449	31.7	
10/26/15 13:25	10/26/2015	1:25 PM	37.64	39426981	211319	35.6	
10/27/15 12:02	10/27/2015	12:02 PM	33.77	39474720	47739	35.2	
10/28/15 10:15	10/28/2015	10:15 AM	37.54	39521420	46700	35.0	
10/29/15 10:10	10/29/2015	10:10 AM	33.62	39572531	51111	35.6	
11/2/15 9:40	11/2/2015	9:40 AM	37.15	39774479	201948	35.2	
11/3/15 9:15	11/3/2015	9:15 AM	33.40	39823982	49503	35.0	
11/4/15 9:33	11/4/2015	9:33 AM	33.02	39873931	49949	34.3	
11/5/15 12:54	11/5/2015	12:54 PM	33.32	39931665	57734	35.2	
11/9/15 10:07	11/9/2015	10:07 AM	33.50	40125771	194106	34.7	
11/10/15 9:52	11/10/2015	9:52 AM	37.15	40176222	50451	35.4	
11/11/15 9:52	11/11/2015	9:52 AM	33.26	40225767	49545	34.4	
11/12/15 10:25	11/12/2015	10:25 AM	37.12	40276947	51180	34.7	
11/16/15 10:37	11/16/2015	10:37 AM	33.12	40476953	200006	34.7	
11/17/15 12:14	11/17/2015	12:14 PM	37.61	40531350	54397	35.4	
11/18/15 9:58	11/18/2015	9:58 AM	33.78	40577470	46120	35.4	
11/19/15 9:26	11/19/2015	9:26 AM	33.91	40626602	49132	34.9	
11/22/15 12:08	11/22/2015	12:08 PM	37.59	40785070	158468	35.4	
11/30/15 10:44	11/30/2015	10:44 AM	37.52	41187433	402363	35.2	
12/1/15 9:20	12/1/2015	9:20 AM	33.67	41234902	47469	35.0	
12/2/15 9:32	12/2/2015	9:32 AM	37.48	41286194	51292	35.3	
12/3/15 11:18	12/3/2015	11:18 AM	33.51	41339815	53621	34.7	
12/7/15 13:43	12/7/2015	1:43 PM	37.66	41547951	208136	35.2	
12/8/15 9:42	12/8/2015	9:42 AM	37.54	41590001	42050	35.1	
12/9/15 9:36	12/9/2015	9:36 AM	33.60	41640072	50071	34.9	
12/10/15 14:54	12/10/2015	2:54 PM	37.55	41702410	62338	35.5	
12/14/15 12:50	12/14/2015	12:50 PM	33.90	41901459	199049	35.3	
12/15/15 15:40	12/15/2015	3:40 PM	37.13	41957629	56170	34.9	
12/16/15 9:55	12/16/2015	9:55 AM	37.20	41996513	38884	35.5	
12/17/15 11:07	12/17/2015	11:07 AM	33.94	42050670	54157	35.8	
12/21/15 11:33	12/21/2015	11:33 AM	33.54	42254108	203438	35.2	
12/23/15 9:21	12/23/2015	9:21 AM	37.37	42350091	95983	34.9	
12/28/15 15:15	12/28/2015	3:15 PM	37.16	42613652	263561	34.9	
12/29/15 11:27	12/29/2015	11:27 AM	37.22	42655985	42333	34.9	
12/30/15 14:20	12/30/2015	2:20 PM	33.66	42712447	56462	35.0	
1/4/16 10:47	1/4/2016	10:47 AM	33.77	42957837	245390	35.1	
1/5/16 10:37	1/5/2016	10:37 AM	33.80	43007908	50071	35.0	
1/6/16 15:53	1/6/2016	3:53 PM	37.32	43069007	61099	34.8	
1/7/16 10:15	1/7/2016	10:15 AM	33.90	43107537	38530	35.0	
1/11/16 10:15	1/11/2016	10:15 AM	33.91	43309310	201773	35.0	
1/12/16 10:22	1/12/2016	10:22 AM	37.41	43359933	50623	35.0	
1/13/16 10:29	1/13/2016	10:29 AM	33.51	43410841	50908	35.2	
1/14/16 9:19	1/14/2016	9:19 AM	33.80	43458830	47989	35.0	
1/21/16 10:38	1/21/2016	10:38 AM	38.11	43816402	357572	35.2	
1/25/16 14:55	1/25/2016	2:55 PM	37.85	44031899	215497	35.8	
1/27/16 10:26	1/27/2016	10:26 AM	33.84	44124910	93011	35.6	
1/28/16 13:45	1/28/2016	1:45 PM	37.66	44183560	58650	35.8	
2/1/16 14:00	2/1/2016	2:00 PM	33.67	44388058	204498	35.4	
2/4/16 9:49	2/4/2016	9:49 AM	33.70	44530830	142772	35.1	
2/8/16 14:36	2/8/2016	2:36 PM	37.83	44744831	214001	35.4	
2/9/16 10:04	2/9/2016	10:04 AM	33.71	44786232	41401	35.4	
2/11/16 11:30	2/11/2016	11:30 AM	38.22	44892085	105853	35.7	
2/15/16 9:46	2/15/2016	9:46 AM	37.78	45092743	200658	35.5	
2/18/16 9:45	2/18/2016	9:45 AM	37.62	45245890	153147	35.5	
2/22/16 9:47	2/22/2016	9:47 AM	33.01	45450470	204580	35.5	
2/25/16 9:26	2/25/2016	9:26 AM	33.17	45603124	152654	35.5	
2/29/16 10:43	2/29/2016	10:43 AM	37.69	45809108	205984	35.3	
3/1/16 9:12	3/1/2016	9:12 AM	33.17	45855901	46793	34.7	
3/3/16 10:29	3/3/2016	10:29 AM	37.80	45959344	103443	35.0	
3/7/16 9:20	3/7/2016	9:20 AM	37.44	46159475	200131	35.2	
3/8/16 9:17	3/8/2016	9:17 AM	39.82	46211727	52252	36.4	
3/10/16 9:52	3/10/2016	9:52 AM	39.62	46321612	109885	37.7	
3/14/16 10:11	3/14/2016	10:11 AM	34.56	46535844	214232	37.1	
3/17/16 15:06	3/17/2016	3:06 PM	34.81	46704215	168371	36.5	
3/21/16 9:14	3/21/2016	9:14 AM	38.72	46904909	200694	37.1	
3/22/16 11:09	3/22/2016	11:09 AM	34.86	46960528	55619	35.8	
3/23/16 8:45	3/23/2016	8:45 AM	34.44	47006689	46161	35.6	On March 23, 2016; NCC cleaned the 2" piping and the check valve at the railroad bridge.
3/24/16 10:47	3/24/2016	10:47 AM	40.16	47060823	54134	34.7	
3/28/16 14:13	3/28/2016	2:13 PM	35.81	47282472	221649	37.2	
3/31/16 9:50	3/31/2016	9:50 AM	38.99	47430026	147554	36.4	
4/4/16 10:10	4/4/2016	10:10 AM	35.49	47640200	210174	36.4	
4/5/16 9:59	4/5/2016	9:59 AM	35.16	47691840	51640	36.1	
4/6/16 9:03	4/6/2016	9:03 AM	34.98	47741784	49944	36.1	

Appendix D-2
Well PW-1(U) Operational History - December 2011 to Present
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

Date and Time	Flow Meas. Date	Flow Meas. Time	Instantaneous Flow Reading (gpm)	Totalizer Reading (gal)	Flow since last reading (gal)	Calculated Flow Rate (gpm)	Notes
4/7/16 10:55	4/7/2016	10:55 AM	38.40	47798444	56660	36.5	
4/11/16 12:03	4/11/2016	12:03 PM	34.57	48008592	210148	36.1	
4/13/16 15:18	4/13/2016	3:18 PM	34.90	48118210	109618	35.6	
4/14/16 10:19	4/14/2016	10:19 AM	34.74	48159183	40973	35.9	
4/18/16 10:03	4/18/2016	10:03 AM	37.57	48364840	205657	35.8	
4/19/16 9:46	4/19/2016	9:46 AM	37.99	48415869	51029	35.9	
4/20/16 9:58	4/20/2016	9:58 AM	37.92	48467428	51559	35.5	
4/21/16 11:41	4/21/2016	11:41 AM	37.90	48522407	54979	35.6	
4/25/16 9:56	4/25/2016	9:56 AM	37.93	48723626	201219	35.6	
4/28/16 10:50	4/28/2016	10:50 AM	34.66	48879027	155401	35.5	
5/2/16 10:12	5/2/2016	10:12 AM	37.88	49082973	203946	35.6	
5/3/16 9:30	5/3/2016	9:30 AM	37.72	49132788	49815	35.6	
5/4/16 16:10	5/4/2016	4:10 PM	39.67	49187089	54301	29.5	
5/9/16 9:15	5/9/2016	9:15 AM	33.07	49439550	252461	37.2	
5/10/16 8:58	5/10/2016	8:58 AM	32.89	49491611	52061	36.6	On May 10, 2016; the 4" ductile iron line between the PW-1/LFExS connection and the tie-in at the NCC force main was flushed using NCC equipment and personnel.
5/11/16 9:20	5/11/2016	9:20 AM	40.65	49544064	52453	35.9	
5/12/16 9:19	5/12/2016	9:19 AM	34.22	49592527	48463	33.7	To meet discharge permit flow limitations, the Trust decreased the discharge from well PW-1(U) slightly following clean out of the discharge line on March 23 and May 10, 2016.
5/16/16 10:40	5/16/2016	10:40 AM	33.83	49780776	188249	32.2	
5/19/16 10:58	5/19/2016	10:58 AM	29.50	49918344	137568	31.7	
5/23/16 11:18	5/23/2016	11:18 AM	33.50	50101800	183456	31.7	
5/26/16 10:22	5/26/2016	10:22 AM	33.08	50238299	136499	32.0	
5/31/16 9:40	5/31/2016	9:40 AM	33.08	50466047	227748	31.8	
6/1/16 9:46	6/1/2016	9:46 AM	33.13	50512070	46023	31.8	
6/2/16 11:08	6/2/2016	11:08 AM	29.06	50560328	48258	31.7	
6/6/16 9:20	6/6/2016	9:20 AM	29.07	50739549	179221	31.7	
6/7/16 9:44	6/7/2016	9:44 AM	33.06	50784475	44926	30.7	
6/8/16 9:54	6/8/2016	9:54 AM	32.78	50829416	44941	31.0	
6/9/16 11:59	6/9/2016	11:59 AM	28.73	50877889	48473	31.0	
6/13/16 14:48	6/13/2016	2:48 PM	28.58	51059798	181909	30.7	
6/14/16 10:00	6/14/2016	10:00 AM	28.62	51095345	35547	30.9	
6/16/16 10:38	6/16/2016	10:38 AM	29.10	51185344	89999	30.8	
6/20/16 9:04	6/20/2016	9:04 AM	29.20	51362004	176660	31.2	
6/23/16 9:26	6/23/2016	9:26 AM	33.17	51496513	134509	31.0	
6/27/16 10:14	6/27/2016	10:14 AM	32.57	51676457	179944	31.0	
6/30/16 12:07	6/30/2016	12:07 PM	28.76	51813586	137129	30.9	
7/5/16 11:49	7/5/2016	11:49 AM	33.45	52035254	221668	30.9	
7/6/16 9:15	7/6/2016	9:15 AM	33.13	52075081	39827	31.0	
7/7/16 9:58	7/7/2016	9:58 AM	32.96	52121310	46229	31.2	
7/8/16 8:58	7/8/2016	8:58 AM	32.90	52164002	42692	30.9	
7/11/16 8:41	7/11/2016	8:41 AM	29.09	52296857	132855	30.9	
7/12/16 8:44	7/12/2016	8:44 AM	28.87	52341246	44389	30.8	
7/13/16 9:17	7/13/2016	9:17 AM	28.92	52386408	45162	30.7	
7/14/16 9:01	7/14/2016	9:01 AM	28.87	52429928	43520	30.6	
7/18/16 11:21	7/18/2016	11:21 AM	28.79	52610724	180796	30.6	
7/19/16 9:07	7/19/2016	9:07 AM	28.79	52650703	39979	30.6	
7/21/16 9:15	7/21/2016	9:15 AM	28.86	52738848	88145	30.5	
7/25/16 9:16	7/25/2016	9:16 AM	28.80	52915030	176182	30.6	
7/26/16 8:55	7/26/2016	8:55 AM	28.66	52958451	43421	30.6	
7/27/16 13:31	7/27/2016	1:31 PM	33.22	53012738	54287	31.6	
8/1/16 8:53	8/1/2016	8:53 AM	32.55	53236534	223796	32.3	
8/2/16 9:22	8/2/2016	9:22 AM	32.42	53286038	49504	33.7	
8/3/16 8:52	8/3/2016	8:52 AM	32.34	53334043	48005	34.0	
8/4/16 11:10	8/4/2016	11:10 AM	32.46	53387881	53838	34.1	
8/10/16 11:01	8/10/2016	11:01 AM	36.26	53681719	293838	34.0	
8/11/16 9:12	8/11/2016	9:12 AM	32.20	53726164	44445	33.4	
8/15/16 9:40	8/15/2016	9:40 AM	31.98	53921659	195495	33.8	
8/18/16 9:35	8/18/2016	9:35 AM	31.90	54065421	143762	33.3	
8/24/16 13:21	8/24/2016	1:21 PM	31.89	54364456	299035	33.7	
8/25/16 9:47	8/25/2016	9:47 AM	31.80	54406184	41728	34.0	
8/29/16 14:32	8/29/2016	2:32 PM	31.92	54609506	203322	33.6	
8/31/16 10:34	8/31/2016	10:34 AM	35.62	54697554	88048	33.3	
9/6/16 9:30	9/6/2016	9:30 AM	31.82	54987242	289688	33.8	
9/8/16 12:20	9/8/2016	12:20 PM	31.54	55089263	102021	33.4	
9/12/16 10:00	9/12/2016	10:00 AM	32.77	55270106	180843	32.2	
9/13/16 10:41	9/13/2016	10:41 AM	32.46	55321903	51797	35.0	
9/15/16 10:35	9/15/2016	10:35 AM	32.43	55422879	100976	35.1	
9/19/16 13:14	9/19/2016	1:14 PM	36.38	55627729	204850	34.6	
9/22/16 10:33	9/22/2016	10:33 AM	36.10	55768958	141229	34.0	
9/26/16 9:05	9/26/2016	9:05 AM	31.99	55967590	198632	35.0	
9/27/16 9:25	9/27/2016	9:25 AM	36.29	56004873	37283	25.5	
9/28/16 8:47	9/28/2016	8:47 AM	36.57	56055073	50200	35.8	
9/29/16 12:50	9/29/2016	12:50 PM	36.38	56115498	60425	35.9	
10/3/16 11:24	10/3/2016	11:24 AM	32.31	56313182	197684	34.8	
10/6/16 10:30	10/6/2016	10:30 AM	31.94	56460277	147095	34.5	
10/13/16 9:29	10/13/2016	9:29 AM	31.77	56800299	340022	33.9	
10/17/16 10:34	10/17/2016	10:34 AM	34.86	56998158	197859	34.0	
10/18/16 8:58	10/18/2016	8:58 AM	35.27	57042272	44114	32.8	
10/19/16 8:25	10/19/2016	8:25 AM	35.24	57091907	49635	35.3	
10/20/16 11:04	10/20/2016	11:04 AM	36.35	57097033	5126	3.2	
10/24/16 9:28	10/24/2016	9:28 AM	32.81	57296764	199731	35.3	
10/26/16 9:51	10/26/2016	9:51 AM	36.43	57399078	102314	35.2	
10/27/16 10:54	10/27/2016	10:54 AM	36.33	57452635	53557	35.6	
10/31/16 10:49	10/31/2016	10:49 AM	35.67	57655232	202597	35.2	
11/1/16 13:06	11/1/2016	1:06 PM	32.88	57710440	55208	35.0	
11/2/16 9:05	11/2/2016	9:05 AM	32.82	57751415	40975	34.2	
11/3/16 10:22	11/3/2016	10:22 AM	32.83	57804244	52829	34.8	
11/7/16 13:49	11/7/2016	1:49 PM	35.05	58014023	209779	35.2	
11/9/16 11:00	11/9/2016	11:00 AM	36.11	58107147	93124	34.4	
11/10/16 11:58	11/10/2016	11:58 AM	35.36	58159330	52183	34.8	
11/14/16 11:44	11/14/2016	11:44 AM	32.90	58359757	200427	34.9	

Appendix D-2
Well PW-1(U) Operational History - December 2011 to Present
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

Date and Time	Flow Meas. Date	Flow Meas. Time	Instantaneous Flow Reading (gpm)	Totalizer Reading (gal)	Flow since last reading (gal)	Calculated Flow Rate (gpm)	Notes
11/17/16 11:07	11/17/2016	11:07 AM	32.82	58506368	146611	34.2	
11/21/16 11:13	11/21/2016	11:13 AM	35.76	58704904	198536	34.4	
11/23/16 10:24	11/23/2016	10:24 AM	32.67	58801516	96612	34.1	
11/28/16 11:34	11/28/2016	11:34 AM	35.17	59051578	250062	34.4	
11/29/16 9:50	11/29/2016	9:50 AM	35.01	59097150	45572	34.1	
12/1/16 11:30	12/1/2016	11:30 AM	35.09	59198939	101789	34.2	
12/5/16 9:16	12/5/2016	9:16 AM	31.30	59391312	192373	34.2	
12/8/16 10:48	12/8/2016	10:48 AM	30.73	59541287	149975	34.0	
12/12/16 9:00	12/12/2016	9:00 AM	34.72	59733517	192230	34.0	
12/14/16 10:00	12/14/2016	10:00 AM	34.09	59832546	99029	33.7	
12/15/16 9:40	12/15/2016	9:40 AM	34.84	59879867	47321	33.3	
12/19/16 15:05	12/19/2016	3:05 PM	35.24	60084195	204328	33.6	
12/21/16 9:42	12/21/2016	9:42 AM	34.67	60168288	84093	32.9	
12/23/16 11:33	12/23/2016	11:33 AM	34.10	60267435	99147	33.1	
12/27/16 10:24	12/27/2016	10:24 AM	34.17	60455226	187791	33.0	
1/3/17 10:50	1/3/2017	10:50 AM	33.85	60787783	332557	32.9	
1/5/17 10:18	1/5/2017	10:18 AM	33.15	60880150	92367	32.4	
1/9/17 11:08	1/9/2017	11:08 AM	33.73	61069694	189544	32.6	
1/11/17 9:27	1/11/2017	9:27 AM	34.18	61160600	90906	32.7	
1/12/17 8:47	1/12/2017	8:47 AM	33.89	61206844	46244	33.0	
1/16/17 9:58	1/16/2017	9:58 AM	34.13	61395783	188939	32.4	
1/19/17 10:15	1/19/2017	10:15 AM	30.18	61537428	141645	32.7	
1/23/17 10:03	1/23/2017	10:03 AM	33.77	61724689	187261	32.6	
1/25/17 12:24	1/25/2017	12:24 PM	31.50	61822697	98008	32.4	
1/26/17 11:48	1/26/2017	11:48 AM	34.03	61867848	45151	32.2	
1/30/17 11:04	1/30/2017	11:04 AM	34.18	62053829	185981	32.5	
1/31/17 9:20	1/31/2017	9:20 AM	29.88	62097631	43802	32.8	
2/2/17 10:34	2/2/2017	10:34 AM	33.74	62193515	95884	32.5	
2/6/17 10:19	2/6/2017	10:19 AM	33.51	62381002	187487	32.6	
2/8/17 13:04	2/8/2017	1:04 PM	34.70	62478280	97278	31.9	
2/9/17 12:20	2/9/2017	12:20 PM	33.55	62522961	44681	32.0	
2/13/17 9:36	2/13/2017	9:36 AM	29.93	62706304	183343	32.8	
2/16/17 10:26	2/16/2017	10:26 AM	30.01	62847604	141300	32.3	
2/20/17 9:51	2/20/2017	9:51 AM	31.79	63037961	190357	33.3	
2/23/17 9:25	2/23/2017	9:25 AM	30.34	63178377	140416	32.7	
2/27/17 10:25	2/27/2017	10:25 AM	35.63	63371664	193287	33.2	
2/28/17 13:19	2/28/2017	1:19 PM	32.95	63426182	54518	33.8	
3/1/17 9:00	3/1/2017	9:00 AM	30.67	63465795	39613	33.5	
3/2/17 10:32	3/2/2017	10:32 AM	31.06	63514996	49201	32.1	
3/6/17 11:05	3/6/2017	11:05 AM	30.52	63704952	189956	32.8	
3/9/17 9:10	3/9/2017	9:10 AM	30.96	63841045	136093	32.4	
3/13/17 9:38	3/13/2017	9:38 AM	36.93	64026700	185655	32.1	
3/15/17 9:37	3/15/2017	9:37 AM	35.18	64124969	98269	34.1	
3/16/17 9:45	3/16/2017	9:45 AM	35.18	64174897	49928	34.5	
3/20/17 9:33	3/20/2017	9:33 AM	35.15	64375863	200966	35.0	
3/21/17 9:34	3/21/2017	9:34 AM	35.09	64426433	50570	35.1	
3/22/17 9:54	3/22/2017	9:54 AM	35.04	64477562	51129	35.0	
3/23/17 10:39	3/23/2017	10:39 AM	35.20	64529412	51850	34.9	
3/27/17 9:31	3/27/2017	9:31 AM	35.04	64728222	198810	34.9	
4/3/17 10:58	4/3/2017	10:58 AM	35.19	65084109	355887	35.0	
4/4/17 13:34	4/4/2017	1:34 PM	35.00	65139862	55753	34.9	
4/5/17 11:27	4/5/2017	11:27 AM	35.10	65185540	45678	34.8	
4/10/17 9:40	4/10/2017	9:40 AM	35.18	65431332	245792	34.7	
4/11/17 10:29	4/11/2017	10:29 AM	35.77	65482679	51347	34.5	
4/12/17 9:55	4/12/2017	9:55 AM	34.76	65531160	48481	34.5	
4/13/17 12:44	4/13/2017	12:44 PM	35.00	65586700	55540	34.5	
4/17/17 9:15	4/17/2017	9:15 AM	34.74	65779660	192960	34.8	
4/18/17 11:52	4/18/2017	11:52 AM	35.83	65835041	55381	34.7	
4/19/17 10:40	4/19/2017	10:40 AM	34.16	65882763	47722	34.9	
4/20/17 11:30	4/20/2017	11:30 AM	34.48	65934135	51372	34.5	
4/24/17 9:26	4/24/2017	9:26 AM	34.45	66129131	194996	34.6	
4/27/17 11:25	4/27/2017	11:25 AM	36.22	66282757	153626	34.6	
5/1/17 9:14	5/1/2017	9:14 AM	34.63	66476953	194196	34.5	
5/3/17 10:33	5/3/2017	10:33 AM	34.32	66578725	101772	34.4	
5/8/17 12:56	5/8/2017	12:56 PM	34.21	66831694	252969	34.5	
5/9/17 10:02	5/9/2017	10:02 AM	35.65	66875207	43513	34.4	
5/10/17 9:15	5/10/2017	9:15 AM	35.63	66923283	48076	34.5	
5/11/17 11:47	5/11/2017	11:47 AM	34.33	66978100	54817	34.4	
5/15/17 9:45	5/15/2017	9:45 AM	35.04	67172391	194291	34.5	
5/17/17 10:57	5/17/2017	10:57 AM	33.78	67272753	100362	34.0	
5/18/17 11:51	5/18/2017	11:51 AM	33.66	67323849	51096	34.2	
5/22/17 12:59	5/22/2017	12:59 PM	33.85	67522105	198256	34.0	
5/25/17 9:42	5/25/2017	9:42 AM	35.28	67662861	140756	34.1	
5/30/17 14:46	5/30/2017	2:46 PM	33.51	67918964	256103	34.1	
6/1/17 9:43	6/1/2017	9:43 AM	33.61	68006328	87364	33.9	
6/5/17 9:00	6/5/2017	9:00 AM	33.67	68200702	194374	34.0	
6/6/17 9:44	6/6/2017	9:44 AM	34.19	68250968	50266	33.9	
6/7/17 11:32	6/7/2017	11:32 AM	33.88	68303751	52783	34.1	
6/8/17 10:32	6/8/2017	10:32 AM	34.07	68350852	47101	34.1	
6/13/17 9:36	6/13/2017	9:36 AM	34.12	68593467	242615	34.0	
6/14/17 9:46	6/14/2017	9:46 AM	35.18	68642658	49191	33.9	
6/15/17 15:34	6/15/2017	3:34 PM	36.70	68647326	4668	2.6	
6/19/17 9:27	6/19/2017	9:27 AM	36.63	68842707	195381	36.2	
6/20/17 10:48	6/20/2017	10:48 AM	35.82	68897211	54504	35.8	
6/21/17 9:09	6/21/2017	9:09 AM	35.32	68945374	48163	35.9	
6/22/17 12:46	6/22/2017	12:46 PM	36.02	69004560	59186	35.7	
6/26/17 9:54	6/26/2017	9:54 AM	36.21	69204160	199600	35.7	
6/27/17 10:22	6/27/2017	10:22 AM	36.18	69256223	52063	35.5	
6/29/17 9:28	6/29/2017	9:28 AM	35.47	69356066	99843	35.3	
7/6/17 10:32	7/6/2017	10:32 AM	34.58	69712851	356785	35.2	
7/10/17 10:53	7/10/2017	10:53 AM	35.17	69915147	202296	35.0	
7/12/17 10:15	7/12/2017	10:15 AM	34.03	70013566	98419	34.6	
7/13/17 9:57	7/13/2017	9:57 AM	34.15	70062390	48824	34.3	

Appendix D-2
Well PW-1(U) Operational History - December 2011 to Present
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

Date and Time	Flow Meas. Date	Flow Meas. Time	Instantaneous Flow Reading (gpm)	Totalizer Reading (gal)	Flow since last reading (gal)	Calculated Flow Rate (gpm)	Notes
7/17/17 9:41	7/17/2017	9:41 AM	34.49	70258075	195685	34.1	
7/19/17 14:56	7/19/2017	2:56 PM	36.21	70366892	108817	34.1	
7/20/17 9:34	7/20/2017	9:34 AM	34.26	70404697	37805	33.8	
7/24/17 9:08	7/24/2017	9:08 AM	35.20	70596464	191767	33.4	
7/25/17 10:10	7/25/2017	10:10 AM	33.70	70646728	50264	33.5	
7/27/17 9:45	7/27/2017	9:45 AM	33.15	70742261	95533	33.5	
7/31/17 9:29	7/31/2017	9:29 AM	33.59	70934032	191771	33.4	
8/1/17 9:18	8/1/2017	9:18 AM	34.43	70981541	47509	33.2	
8/2/17 13:10	8/2/2017	1:10 PM	33.65	71037018	55477	33.2	
8/3/17 9:28	8/3/2017	9:28 AM	33.58	71077375	40357	33.1	
8/7/17 9:46	8/7/2017	9:46 AM	35.51	71268576	191201	33.1	
8/8/17 10:27	8/8/2017	10:27 AM	34.11	71311463	42887	29.0	
8/9/17 9:32	8/9/2017	9:32 AM	33.44	71363002	51539	37.2	
8/10/17 8:57	8/10/2017	8:57 AM	33.03	71408952	45950	32.7	
8/14/17 11:26	8/14/2017	11:26 AM	34.30	71601121	192169	32.5	
8/15/17 9:26	8/15/2017	9:26 AM	32.77	71643712	42591	32.3	
8/16/17 14:13	8/16/2017	2:13 PM	35.21	71699571	55859	32.3	
8/17/17 10:47	8/17/2017	10:47 AM	32.14	71739188	39617	32.1	
8/21/17 10:27	8/21/2017	10:27 AM	33.34	71923180	183992	32.1	
8/22/17 8:38	8/22/2017	8:38 AM	32.14	71965536	42356	31.8	
8/23/17 10:22	8/23/2017	10:22 AM	36.39	72005752	40216	26.0	
8/24/17 13:28	8/24/2017	1:28 PM	34.16	72060261	54509	33.5	
8/28/17 9:36	8/28/2017	9:36 AM	33.18	72240784	180523	32.7	
8/30/17 10:53	8/30/2017	10:53 AM	32.44	72336600	95816	32.4	
8/31/17 9:31	8/31/2017	9:31 AM	32.67	72380644	44044	32.4	
9/5/17 9:42	9/5/2017	9:42 AM	32.01	72612043	231399	32.1	
9/6/17 9:32	9/6/2017	9:32 AM	32.03	72657641	45598	31.9	
9/7/17 13:26	9/7/2017	1:26 PM	31.96	72710860	53219	31.8	
9/11/17 9:57	9/11/2017	9:57 AM	33.10	72885719	174859	31.5	
9/12/17 8:36	9/12/2017	8:36 AM	31.52	72928468	42749	31.5	
9/13/17 10:13	9/13/2017	10:13 AM	31.68	72976956	48488	31.5	
9/14/17 9:32	9/14/2017	9:32 AM	31.37	73021037	44081	31.5	
9/18/17 9:42	9/18/2017	9:42 AM	30.68	73199413	178376	30.9	
9/19/17 10:43	9/19/2017	10:43 AM	31.73	73245194	45781	30.5	
9/21/17 9:40	9/21/2017	9:40 AM	30.65	73331240	86046	30.5	
9/25/17 9:50	9/25/2017	9:50 AM	31.19	73507310	176070	30.5	
9/26/17 10:14	9/26/2017	10:14 AM	30.19	73551853	44543	30.4	
9/27/17 9:39	9/27/2017	9:39 AM	33.60	73594478	42625	30.3	
9/28/17 10:00	9/28/2017	10:00 AM	30.54	73638621	44143	30.2	
10/2/17 10:50	10/2/2017	10:50 AM	30.88	73813230	174609	30.1	
10/3/17 9:49	10/3/2017	9:49 AM	31.77	73854401	41171	29.9	
10/5/17 9:43	10/5/2017	9:43 AM	31.21	73940315	85914	29.9	
10/9/17 10:43	10/9/2017	10:43 AM	29.96	74114433	174118	29.9	
10/10/17 10:00	10/10/2017	10:00 AM	32.60	74156080	41647	29.8	
10/11/17 13:20	10/11/2017	1:20 PM	30.36	74204894	48814	29.8	
10/12/17 12:46	10/12/2017	12:46 PM	29.81	74246823	41929	29.8	
10/16/17 9:30	10/16/2017	9:30 AM	29.99	74412035	165212	29.7	
10/18/17 9:20	10/18/2017	9:20 AM	30.83	74496929	84894	29.6	
10/19/17 10:54	10/19/2017	10:54 AM	30.59	74542243	45314	29.5	
10/23/17 9:28	10/23/2017	9:28 AM	30.30	74710161	167918	29.6	
10/25/17 10:26	10/25/2017	10:26 AM	29.96	74797315	87154	29.7	
10/26/17 10:20	10/26/2017	10:20 AM	30.12	74839622	42307	29.5	
10/30/17 10:20	10/30/2017	10:20 AM	30.52	75010611	170989	29.7	
10/31/17 10:07	10/31/2017	10:07 AM	31.11	75053084	42473	29.8	
11/2/17 10:35	11/2/2017	10:35 AM	30.01	75139900	86816	29.9	
11/6/17 9:45	11/6/2017	9:45 AM	30.60	75312031	172131	30.1	
11/7/17 10:03	11/7/2017	10:03 AM	30.19	75355510	43479	29.8	
11/9/17 11:50	11/9/2017	11:50 AM	30.08	75444980	89470	30.0	
11/13/17 11:16	11/13/2017	11:16 AM	31.40	75616822	171842	30.0	
11/14/17 8:13	11/14/2017	8:13 AM	30.35	75654748	37926	30.2	
11/15/17 11:10	11/15/2017	11:10 AM	30.21	75703295	48547	30.0	
11/16/17 9:51	11/16/2017	9:51 AM	30.08	75744166	40871	30.0	
11/20/17 9:57	11/20/2017	9:57 AM	29.68	75945252	201086	34.9	
11/21/17 9:33	11/21/2017	9:33 AM	29.63	75956900	11648	8.2	
11/27/17 10:50	11/27/2017	10:50 AM	30.13	76214600	257700	29.6	
11/28/17 9:40	11/28/2017	9:40 AM	29.95	76254940	40340	29.4	
11/30/17 9:57	11/30/2017	9:57 AM	29.90	76340620	85680	29.6	
12/4/17 13:09	12/4/2017	1:09 PM	29.28	76515552	174932	29.4	
12/6/17 9:27	12/6/2017	9:27 AM	29.30	76593752	78200	29.4	
12/7/17 9:58	12/7/2017	9:58 AM	32.73	76629508	35756	24.3	
12/11/17 10:03	12/11/2017	10:03 AM	31.03	76805984	176476	30.6	
12/12/17 10:17	12/12/2017	10:17 AM	30.96	76850512	44528	30.6	
12/13/17 9:28	12/13/2017	9:28 AM	30.16	76892349	41837	30.1	
12/14/17 12:50	12/14/2017	12:50 PM	30.59	76941606	49257	30.0	
12/18/17 9:55	12/18/2017	9:55 AM	30.77	77110916	169310	30.3	
12/19/17 9:30	12/19/2017	9:30 AM	30.71	77154215	43299	30.6	
12/21/17 10:10	12/21/2017	10:10 AM	30.51	77243546	89331	30.6	
12/27/17 10:10	12/27/2017	10:10 AM	30.34	77507792	264246	30.6	
12/28/17 10:26	12/28/2017	10:26 AM	30.51	77552199	44407	30.5	
1/2/18 10:29	1/2/2018	10:29 AM	31.16	77773360	221161	30.7	
1/3/18 9:22	1/3/2018	9:22 AM	31.12	77815436	42076	30.6	
1/8/18 9:20	1/8/2018	9:20 AM	31.28	78033026	217590	30.2	
1/9/18 11:20	1/9/2018	11:20 AM	31.38	78080271	47245	30.3	
1/11/18 10:46	1/11/2018	10:46 AM	31.12	78165804	85533	30.1	
1/15/18 14:21	1/15/2018	2:21 PM	30.56	78344858	179054	30.0	
1/18/18 10:18	1/18/2018	10:18 AM	30.52	78468540	123682	30.3	
1/22/18 12:54	1/22/2018	12:54 PM	30.84	78648869	180329	30.5	
1/25/18 10:26	1/25/2018	10:26 AM	31.25	78776504	127635	30.6	
1/29/18 9:44	1/29/2018	9:44 AM	30.85	78949999	173495	30.3	
1/31/18 10:20	1/31/2018	10:20 AM	29.57	79037293	87294	29.9	
2/1/18 8:52	2/1/2018	8:52 AM	29.85	79077641	40348	29.8	
2/5/18 12:06	2/5/2018	12:06 PM	30.09	79253787	176146	29.6	
2/8/18 11:13	2/8/2018	11:13 AM	29.51	79379857	126070	29.5	

Appendix D-2
Well PW-1(U) Operational History - December 2011 to Present
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

Date and Time	Flow Meas. Date	Flow Meas. Time	Instantaneous Flow Reading (gpm)	Totalizer Reading (gal)	Flow since last reading (gal)	Calculated Flow Rate (gpm)	Notes
2/12/18 9:52	2/12/2018	9:52 AM	29.94	79549664	169807	29.9	
2/14/18 10:25	2/14/2018	10:25 AM	30.83	79636642	86978	29.9	
2/15/18 9:42	2/15/2018	9:42 AM	30.90	79678593	41951	30.0	
2/19/18 9:47	2/19/2018	9:47 AM	30.02	79851710	173117	30.0	
2/20/18 9:42	2/20/2018	9:42 AM	30.13	79894827	43117	30.0	
2/22/18 10:48	2/22/2018	10:48 AM	30.31	79983569	88742	30.1	
2/26/18 10:14	2/26/2018	10:14 AM	30.64	80156123	172554	30.1	
2/27/18 11:24	2/27/2018	11:24 AM	30.10	80201746	45623	30.2	
2/28/18 8:56	2/28/2018	8:56 AM	31.24	80240669	38923	30.1	
3/1/18 14:23	3/1/2018	2:23 PM	33.53	80292222	51553	29.2	Pump was pulled and cleaned
3/5/18 9:58	3/5/2018	9:58 AM	34.02	80471872	179650	32.7	
3/8/18 10:26	3/8/2018	10:26 AM	34.23	80614387	142515	32.8	
3/12/18 13:30	3/12/2018	1:30 PM	32.21	80805125	190738	32.1	
3/13/18 9:53	3/13/2018	9:53 AM	32.18	80844585	39460	32.3	PW-1(U) was redeveloped and chemically swabbed 3/13/18 - 3/15/18
3/15/18 15:39	3/15/2018	3:39 PM	35.28	80848038	3453	1.1	
3/19/18 9:45	3/19/2018	9:45 AM	34.32	81037103	189065	35.0	
3/20/18 11:11	3/20/2018	11:11 AM	34.44	81089575	52472	34.4	
3/22/18 11:48	3/22/2018	11:48 AM	34.12	81190181	100606	34.5	
3/26/18 10:09	3/26/2018	10:09 AM	33.53	81383665	193484	34.2	
3/29/18 10:10	3/29/2018	10:10 AM	34.17	81529217	145552	33.7	
4/2/18 9:30	4/2/2018	9:30 AM	33.60	81721559	192342	33.6	
4/3/18 9:32	4/3/2018	9:32 AM	35.01	81770138	48579	33.7	
4/4/18 10:18	4/4/2018	10:18 AM	33.48	81819958	49820	33.5	
4/5/18 9:49	4/5/2018	9:49 AM	33.42	81867083	47125	33.4	
4/9/18 9:51	4/9/2018	9:51 AM	35.03	82059300	192217	33.4	
4/11/18 11:08	4/11/2018	11:08 AM	32.50	82156800	97500	33.0	
4/12/18 12:08	4/12/2018	12:08 PM	35.20	82206929	50129	33.4	
4/16/18 10:07	4/16/2018	10:07 AM	32.92	82394154	187225	33.2	
4/17/18 9:32	4/17/2018	9:32 AM	32.48	82440052	45898	32.7	
4/18/18 9:30	4/18/2018	9:30 AM	35.09	82487183	47131	32.8	
4/19/18 8:57	4/19/2018	8:57 AM	35.40	82532855	45672	32.5	
4/23/18 10:03	4/23/2018	10:03 AM	32.77	82724180	191325	32.8	
4/26/18 13:53	4/26/2018	1:53 PM	35.18	82874029	149849	32.9	
4/30/18 9:35	4/30/2018	9:35 AM	32.12	83054078	180049	32.7	
5/3/18 10:50	5/3/2018	10:50 AM	32.27	83197348	143270	32.6	
5/7/18 9:58	5/7/2018	9:58 AM	35.10	83384682	187334	32.8	
5/9/18 9:47	5/9/2018	9:47 AM	32.05	83477710	93028	32.4	
5/10/18 9:27	5/10/2018	9:27 AM	32.06	83523581	45871	32.3	
5/14/18 10:30	5/14/2018	10:30 AM	35.65	83720709	197128	33.9	
5/15/18 13:17	5/15/2018	1:17 PM	32.54	83772591	51882	32.3	
5/16/18 10:43	5/16/2018	10:43 AM	32.55	83814507	41916	32.6	
5/17/18 11:04	5/17/2018	11:04 AM	35.18	83862724	48217	33.0	
5/21/18 9:32	5/21/2018	9:32 AM	32.60	84048622	185898	32.8	
5/22/18 9:03	5/22/2018	9:03 AM	37.54	84091206	42584	30.2	
5/23/18 9:46	5/23/2018	9:46 AM	36.33	84144985	53779	36.3	
5/24/18 9:30	5/24/2018	9:30 AM	36.16	84194414	49429	34.7	
5/29/18 9:17	5/29/2018	9:17 AM	32.60	84436235	241821	33.6	
5/30/18 9:15	5/30/2018	9:15 AM	35.61	84484541	48306	33.6	
5/31/18 9:27	5/31/2018	9:27 AM	33.17	84533613	49072	33.8	
6/4/18 9:57	6/4/2018	9:57 AM	35.90	84731156	197543	34.1	
6/5/18 13:42	6/5/2018	1:42 PM	32.61	84786947	55791	33.5	
6/6/18 10:30	6/6/2018	10:30 AM	32.69	84829296	42349	33.9	
6/11/18 10:53	6/11/2018	10:53 AM	32.45	85070396	241100	33.4	
6/14/18 9:13	6/14/2018	9:13 AM	34.72	85209311	138915	32.9	
6/18/18 9:30	6/18/2018	9:30 AM	35.25	85400764	191453	33.1	
6/21/18 10:50	6/21/2018	10:50 AM	34.53	85546760	145996	33.2	
6/25/18 9:32	6/25/2018	9:32 AM	34.20	85734817	188057	33.1	
6/26/18 9:18	6/26/2018	9:18 AM	32.87	85781469	46652	32.7	
6/28/18 9:35	6/28/2018	9:35 AM	33.08	85876578	95109	32.8	
7/2/18 9:53	7/2/2018	9:53 AM	33.21	86066706	190128	32.9	
7/5/18 9:14	7/5/2018	9:14 AM	33.13	86206980	140274	32.8	
7/9/18 9:48	7/9/2018	9:48 AM	32.23	86396111	189131	32.6	
7/10/18 8:47	7/10/2018	8:47 AM	33.40	86440903	44792	32.5	
7/11/18 9:39	7/11/2018	9:39 AM	32.28	86489129	48226	32.3	
7/16/18 8:57	7/16/2018	8:57 AM	31.58	86716429	227300	31.8	
7/17/18 9:35	7/17/2018	9:35 AM	31.44	86762786	46357	31.4	
7/19/18 10:01	7/19/2018	10:01 AM	31.41	86853386	90600	31.2	
7/23/18 8:51	7/23/2018	8:51 AM	31.31	87029775	176389	31.0	
7/24/18 10:21	7/24/2018	10:21 AM	31.61	87077093	47318	30.9	
7/26/18 12:33	7/26/2018	12:33 PM	31.40	87170297	93204	30.9	
8/6/18 10:23	8/6/2018	10:23 AM	30.71	87652179	481882	30.7	
8/7/18 10:13	8/7/2018	10:13 AM	30.73	87695669	43490	30.4	
8/9/18 9:32	8/9/2018	9:32 AM	30.43	87781777	86108	30.3	
8/13/18 9:54	8/13/2018	9:54 AM	31.05	87956149	174372	30.2	
8/16/18 10:25	8/16/2018	10:25 AM	11gpm-60gpm	87996440	40291	9.3	Pump and pipe cleaned
8/20/18 9:06	8/20/2018	9:06 AM	17 gpm-43 gpm	88166543	170103	29.9	
8/21/18 9:11	8/21/2018	9:11 AM	26.00	88205544	39001	27.0	
8/23/18 9:17	8/23/2018	9:17 AM	26.30	88283366	77822	27.0	
8/29/18 9:03	8/29/2018	9:03 AM	26.06	88517446	234080	27.1	
8/30/18 10:22	8/30/2018	10:22 AM	29.17	88558452	41006	27.0	
9/4/18 9:29	9/4/2018	9:29 AM	26.42	88753061	194609	27.2	
9/5/18 9:33	9/5/2018	9:33 AM	26.69	88793671	40610	28.1	
9/6/18 13:22	9/6/2018	1:22 PM	27.99	88841615	47944	28.7	
9/10/18 10:07	9/10/2018	10:07 AM	30.51	89005721	164106	29.5	
9/12/18 10:10	9/12/2018	10:10 AM	30.21	89091528	85807	29.8	
9/13/18 11:39	9/13/2018	11:39 AM	30.81	89136838	45310	29.6	
9/17/18 9:40	9/17/2018	9:40 AM	30.28	89303754	166916	29.6	
9/19/18 9:01	9/19/2018	9:01 AM	30.21	89387456	83702	29.5	
9/20/18 9:37	9/20/2018	9:37 AM	30.60	89430911	43455	29.4	
9/28/18 11:14	9/28/2018	11:14 AM	31.36	89780086	349175	30.1	
10/1/18 9:52	10/1/2018	9:52 AM	31.06	89909740	129654	30.6	
10/2/18 15:52	10/2/2018	3:52 PM	30.34	89964686	54946	30.5	
10/3/18 14:28	10/3/2018	2:28 PM	31.48	90005970	41284	30.4	

Appendix D-2
Well PW-1(U) Operational History - December 2011 to Present
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

Date and Time	Flow Meas. Date	Flow Meas. Time	Instantaneous Flow Reading (gpm)	Totalizer Reading (gal)	Flow since last reading (gal)	Calculated Flow Rate (gpm)	Notes
10/4/18 10:41	10/4/2018	10:41 AM	31.00	90042875	36905	30.4	
10/8/18 9:45	10/8/2018	9:45 AM	30.67	90216280	173405	30.4	
10/9/18 9:31	10/9/2018	9:31 AM	31.75	90259507	43227	30.3	
10/11/18 10:00	10/11/2018	10:00 AM	31.33	90347695	88188	30.3	
10/15/18 11:04	10/15/2018	11:04 AM	31.17	90523859	176164	30.2	
10/16/18 9:27	10/16/2018	9:27 AM	31.31	90564340	40481	30.1	
10/17/18 9:15	10/17/2018	9:15 AM	30.52	90607483	43143	30.2	
10/18/18 10:27	10/18/2018	10:27 AM	30.61	90653075	45592	30.2	
10/22/18 10:22	10/22/2018	10:22 AM	30.20	90825154	172079	29.9	
10/25/18 11:55	10/25/2018	11:55 AM	29.72	90956058	130904	29.7	
10/29/18 10:26	10/29/2018	10:26 AM	29.19	91123490	167432	29.5	
10/30/18 10:25	10/30/2018	10:25 AM	29.77	91165088	41598	28.9	
11/1/18 7:50	11/1/2018	7:50 AM	29.48	91246394	81306	29.8	
11/5/18 10:57	11/5/2018	10:57 AM	29.80	91424317	177923	29.9	
11/8/18 11:18	11/8/2018	11:18 AM	30.16	91543160	118843	27.4	
11/12/18 9:55	11/12/2018	9:55 AM	30.01	91713909	170749	30.1	
11/14/18 10:26	11/14/2018	10:26 AM	29.92	91800853	86944	29.9	
11/19/18 9:19	11/19/2018	9:19 AM	29.26	92011920	211067	29.6	
11/20/18 11:29	11/20/2018	11:29 AM	30.29	92057963	46043	29.3	
11/21/18 9:52	11/21/2018	9:52 AM	30.51	92097900	39937	29.7	
11/26/18 12:26	11/26/2018	12:26 PM	29.21	92315100	217200	29.5	
11/27/18 9:05	11/27/2018	9:05 AM	29.24	92351330	36230	29.2	
11/28/18 9:46	11/28/2018	9:46 AM	33.63	92394577	43247	29.2	
11/29/18 9:20	11/29/2018	9:20 AM	29.58	92436324	41747	29.5	
12/3/18 11:22	12/3/2018	11:22 AM	30.43	92611105	174781	29.7	
12/4/18 9:17	12/4/2018	9:17 AM	30.31	92650177	39072	29.7	
12/6/18 13:25	12/6/2018	1:25 PM	31.25	92741827	91650	29.3	
12/10/18 9:56	12/10/2018	9:56 AM	31.35	92915445	173618	31.3	
12/12/18 11:49	12/12/2018	11:49 AM	31.77	93007892	92447	30.9	
12/13/18 9:39	12/13/2018	9:39 AM	30.84	93048036	40144	30.6	
12/17/18 9:52	12/17/2018	9:52 AM	31.14	93224930	176894	30.6	
12/18/18 9:41	12/18/2018	9:41 AM	31.30	93268747	43817	30.7	
12/19/18 8:36	12/19/2018	8:36 AM	31.00	93310866	42119	30.6	
12/20/18 13:12	12/20/2018	1:12 PM	33.08	93365575	54709	31.9	
12/26/18 13:42	12/26/2018	1:42 PM	32.36	93643388	277813	32.0	
12/27/18 10:06	12/27/2018	10:06 AM	31.60	93682183	38795	31.7	
12/31/18 11:59	12/31/2018	11:59 AM	32.25	93868713	186530	31.8	
1/3/19 9:22	1/3/2019	9:22 AM	31.43	94000649	131936	30.5	
1/7/19 9:40	1/7/2019	9:40 AM	31.81	94183356	182707	31.7	
1/10/19 10:38	1/10/2019	10:38 AM	31.83	94320890	137534	31.8	
1/14/19 10:44	1/14/2019	10:44 AM	31.70	94502035	181145	31.4	
1/16/19 9:14	1/16/2019	9:14 AM	31.92	94590281	88246	30.6	
1/17/19 9:48	1/17/2019	9:48 AM	31.96	94636767	46486	32.3	
1/21/19 12:48	1/21/2019	12:48 PM	32.27	94824469	187702	32.6	
1/23/19 9:51	1/23/2019	9:51 AM	32.56	94909503	85034	29.5	
1/28/19 10:49	1/28/2019	10:49 AM	31.55	95136044	226541	31.5	
1/30/19 10:30	1/30/2019	10:30 AM	31.49	95224579	88535	30.7	
1/31/19 10:37	1/31/2019	10:37 AM	31.27	95269110	44531	30.9	
2/4/19 10:32	2/4/2019	10:32 AM	31.25	95446289	177179	30.8	
2/6/19 14:32	2/6/2019	2:32 PM	31.66	95542893	96604	33.5	
2/7/19 10:07	2/7/2019	10:07 AM	31.53	95583349	40456	28.1	
2/19/19 13:45	2/19/2019	1:45 PM	31.89	96127405	544056	31.5	
2/21/19 9:45	2/21/2019	9:45 AM	32.29	96209495	82090	28.5	
2/25/19 9:45	2/25/2019	9:45 AM	31.89	96387814	178319	31.0	
2/26/19 11:16	2/26/2019	11:16 AM	31.29	96434896	47082	32.7	
2/27/19 11:18	2/27/2019	11:18 AM	32.79	96479188	44292	30.8	
2/28/19 10:06	2/28/2019	10:06 AM	31.92	96521396	42208	29.3	
3/4/19 11:03	3/4/2019	11:03 AM	31.09	96700290	178894	31.1	
3/5/19 10:06	3/5/2019	10:06 AM	31.34	96742874	42584	29.6	
3/6/19 10:56	3/6/2019	10:56 AM	30.73	96788759	45885	31.9	
3/7/19 9:24	3/7/2019	9:24 AM	31.17	96829892	41133	28.6	
3/11/19 10:55	3/11/2019	10:55 AM	31.27	97005644	175752	30.5	
3/12/19 11:46	3/12/2019	11:46 AM	30.21	97050525	44881	31.2	
3/14/19 10:48	3/14/2019	10:48 AM	31.19	97135258	84733	29.4	
3/18/19 10:05	3/18/2019	10:05 AM	29.87	97306100	170842	29.7	
3/20/19 12:53	3/20/2019	12:53 PM	30.68	97396245	90145	31.3	
3/21/19 11:31	3/21/2019	11:31 AM	30.73	97436721	40476	28.1	
3/25/19 9:43	3/25/2019	9:43 AM	30.65	97606498	169777	29.5	
3/28/19 10:59	3/28/2019	10:59 AM	31.83	97737433	130935	30.3	
4/1/19 10:28	4/1/2019	10:28 AM	29.83	97907627	170194	29.5	
4/2/19 11:28	4/2/2019	11:28 AM	30.11	97951938	44311	30.8	
4/4/19 10:23	4/4/2019	10:23 AM	30.12	98035328	83390	29.0	
4/8/19 9:52	4/8/2019	9:52 AM	30.26	98204110	168782	29.3	
4/10/19 11:19	4/10/2019	11:19 AM	30.51	98291465	87355	30.3	
4/11/19 10:40	4/11/2019	10:40 AM	30.21	98332630	41165	28.6	
4/15/19 12:14	4/15/2019	12:14 PM	29.90	98504128	171498	29.8	
4/16/19 8:25	4/16/2019	8:25 AM	29.77	98539547	35419	24.6	
4/17/19 8:26	4/17/2019	8:26 AM	29.17	98581890	42343	29.4	
4/18/19 9:59	4/18/2019	9:59 AM	29.84	98627218	45328	31.5	
4/22/19 13:25	4/22/2019	1:25 PM	29.71	98802594	175376	30.4	
4/23/19 9:45	4/23/2019	9:45 AM	29.91	98837916	35322	24.5	
4/24/19 10:53	4/24/2019	10:53 AM	29.50	98882018	44102	30.6	
4/25/19 9:54	4/25/2019	9:54 AM	27.34	98921183	39165	27.2	
4/29/19 10:00	4/29/2019	10:00 AM	30.20	99090552	169369	29.4	
4/30/19 9:51	4/30/2019	9:51 AM	30.44	99132741	42189	29.3	
5/2/19 10:51	5/2/2019	10:51 AM	30.04	99219390	86649	30.1	
5/6/19 11:08	5/6/2019	11:08 AM	29.88	99389398	170008	29.5	
5/7/19 11:14	5/7/2019	11:14 AM	30.15	99431899	42501	29.5	
5/8/19 9:58	5/8/2019	9:58 AM	29.41	99431899	0	0.0	
5/9/19 12:58	5/9/2019	12:58 PM	30.89	99519584	87685	60.9	
5/14/19 11:22	5/14/2019	11:22 AM	30.63	99728955	209371	29.1	
5/15/19 9:39	5/15/2019	9:39 AM	30.64	99768457	39502	27.4	
5/16/19 10:09	5/16/2019	10:09 AM	30.82	99811889	43432	30.2	

Appendix D-2
Well PW-1(U) Operational History - December 2011 to Present
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

Date and Time	Flow Meas. Date	Flow Meas. Time	Instantaneous Flow Reading (gpm)	Totalizer Reading (gal)	Flow since last reading (gal)	Calculated Flow Rate (gpm)	Notes
5/20/19 10:39	5/20/2019	10:39 AM	30.74	99982850	170961	29.7	
5/21/19 10:06	5/21/2019	10:06 AM	30.38	100024179	41329	28.7	
5/23/19 10:39	5/23/2019	10:39 AM	29.82	100109025	84846	29.5	
5/28/19 9:24	5/28/2019	9:24 AM	30.30	100316680	207655	28.8	
5/29/19 14:17	5/29/2019	2:17 PM	32.45	100359994	43314	30.1	
5/30/19 10:11	5/30/2019	10:11 AM	30.31	100397686	37692	26.2	
6/3/19 10:29	6/3/2019	10:29 AM	31.36	100570908	173222	30.1	
6/4/19 11:03	6/4/2019	11:03 AM	30.59	100615241	44333	30.8	
6/5/19 13:43	6/5/2019	1:43 PM	31.83	100663554	48313	33.6	
6/6/19 11:11	6/6/2019	11:11 AM	31.13	100703100	39546	27.5	
6/10/19 10:52	6/10/2019	10:52 AM	31.33	100878285	175185	30.4	
6/11/19 11:42	6/11/2019	11:42 AM	31.41	100923756	45471	31.6	
6/12/19 11:01	6/12/2019	11:01 AM	31.86	100966290	42534	29.5	
6/13/19 12:46	6/13/2019	12:46 PM	31.39	101013310	47020	32.7	
6/17/19 10:15	6/17/2019	10:15 AM	31.26	101183899	170589	29.6	
6/18/19 10:46	6/18/2019	10:46 AM	30.75	101228403	44504	30.9	
6/20/19 14:18	6/20/2019	2:18 PM	29.15	101318993	90590	31.5	
6/24/19 11:22	6/24/2019	11:22 AM	28.23	101478116	159123	27.6	
6/25/19 10:41	6/25/2019	10:41 AM	31.16	101520264	42148	29.3	
6/27/19 10:06	6/27/2019	10:06 AM	30.22	101604762	84498	29.3	
7/1/19 14:18	7/1/2019	2:18 PM	30.78	101780350	175588	30.5	
7/2/19 13:09	7/2/2019	1:09 PM	30.43	101821277	40927	28.4	
7/3/19 8:50	7/3/2019	8:50 AM	30.56	101856568	35291	24.5	
7/8/19 10:52	7/8/2019	10:52 AM	30.30	102075189	218621	30.4	
7/11/19 10:23	7/11/2019	10:23 AM	34.57	102201253	126064	29.2	
7/15/19 9:48	7/15/2019	9:48 AM	30.57	102372117	170864	29.7	
7/18/19 11:07	7/18/2019	11:07 AM	35.26	102379111	6994	1.6	
7/22/19 9:48	7/22/2019	9:48 AM	28.05	102544767	165656	28.8	
7/24/19 10:00	7/24/2019	10:00 AM	32.36	102635016	90249	31.3	
7/25/19 9:11	7/25/2019	9:11 AM	33.01	102680277	45261	31.4	
8/1/19 10:44	8/1/2019	10:44 AM	30.07	102999673	319396	31.7	
8/5/19 9:54	8/5/2019	9:54 AM	29.30	103166248	166575	28.9	
8/6/19 10:30	8/6/2019	10:30 AM	29.84	103251390	85142	59.1	
8/7/19 10:30	8/7/2019	10:30 AM	29.84	103251390	0	0.0	
8/8/19 10:06	8/8/2019	10:06 AM	32.21	103295854	44464	30.9	
8/12/19 15:05	8/12/2019	3:05 PM	30.02	103477485	181631	31.5	
8/13/19 9:32	8/13/2019	9:32 AM	29.69	103510254	32769	22.8	
8/14/19 11:12	8/14/2019	11:12 AM	29.62	103555545	45291	31.5	
8/15/19 11:17	8/15/2019	11:17 AM	29.13	103599694	44149	30.7	
8/19/19 8:48	8/19/2019	8:48 AM	29.20	103760270	160576	27.9	
8/20/19 8:30	8/20/2019	8:30 AM	30.70	103802789	42519	29.5	
8/21/19 10:30	8/21/2019	10:30 AM	32.69	103844411	41622	28.9	
8/22/19 10:48	8/22/2019	10:48 AM	33.21	103890859	46448	32.3	
8/28/19 9:25	8/28/2019	9:25 AM	30.56	104153454	262595	30.4	
8/29/19 10:36	8/29/2019	10:36 AM	30.83	104199240	45786	31.8	
9/3/19 11:18	9/3/2019	11:18 AM	31.82	104427027	227787	31.6	
9/4/19 11:04	9/4/2019	11:04 AM	32.15	104472117	45090	31.3	
9/5/19 10:59	9/5/2019	10:59 AM	32.25	104517282	45165	31.4	
9/9/19 11:39	9/9/2019	11:39 AM	31.51	104697965	180683	31.4	
9/12/19 10:47	9/12/2019	10:47 AM	31.29	104829669	131704	30.5	
9/16/19 9:59	9/16/2019	9:59 AM	31.58	105005253	175584	30.5	
9/18/19 10:11	9/18/2019	10:11 AM	31.00	105093947	88694	30.8	
9/19/19 10:34	9/19/2019	10:34 AM	30.71	105138107	44160	30.7	
9/23/19 9:23	9/23/2019	9:23 AM	30.56	105308121	170014	29.5	
9/24/19 13:48	9/24/2019	1:48 PM	30.55	105359423	51302	35.6	
9/25/19 10:07	9/25/2019	10:07 AM	30.18	105395968	36545	25.4	
9/26/19 12:25	9/26/2019	12:25 PM	30.50	105443243	47275	32.8	
9/30/19 13:57	9/30/2019	1:57 PM	30.55	105619906	176663	30.7	
10/1/19 9:35	10/1/2019	9:35 AM	30.92	105655592	35686	24.8	
10/2/19 10:13	10/2/2019	10:13 AM	30.76	105700487	44895	31.2	
10/3/19 12:37	10/3/2019	12:37 PM	30.43	105748588	48101	33.4	
10/7/19 9:54	10/7/2019	9:54 AM	30.18	105917873	169285	29.4	
10/8/19 13:52	10/8/2019	1:52 PM	30.51	105968577	50704	35.2	
10/9/19 12:30	10/9/2019	12:30 PM	30.31	106009252	40675	28.2	
10/10/19 10:46	10/10/2019	10:46 AM	30.10	106049200	39948	27.7	
10/15/19 11:38	10/15/2019	11:38 AM	28.55	106261531	212331	29.5	
10/16/19 9:32	10/16/2019	9:32 AM	30.05	106300812	39281	27.3	
10/17/19 13:07	10/17/2019	1:07 PM	29.07	106349811	48999	34.0	
10/21/19 12:53	10/21/2019	12:53 PM	30.64	106515793	165982	28.8	
10/22/19 9:23	10/22/2019	9:23 AM	30.57	106552611	36818	25.6	
10/23/19 11:52	10/23/2019	11:52 AM	30.34	106600056	47445	32.9	
10/24/19 11:15	10/24/2019	11:15 AM	29.65	106641923	41867	29.1	
10/28/19 11:42	10/28/2019	11:42 AM	29.93	106813876	171953	29.9	
10/29/19 9:36	10/29/2019	9:36 AM	31.21	106853535	39659	27.5	
10/30/19 10:32	10/30/2019	10:32 AM	30.12	106898885	45350	31.5	
10/31/19 10:53	10/31/2019	10:53 AM	29.40	106942708	43823	30.4	
11/4/19 9:54	11/4/2019	9:54 AM	29.60	107114463	171755	29.8	
11/5/19 9:02	11/5/2019	9:02 AM	29.88	107155738	41275	28.7	
11/7/19 11:30	11/7/2019	11:30 AM	0.00	107156336	598	0.2	
11/11/19 9:19	11/11/2019	9:19 AM	7.03	107178603	22267	3.9	
11/14/19 14:21	11/14/2019	2:21 PM	4.27	107208340	29737	6.9	
11/18/19 10:27	11/18/2019	10:27 AM	11.53	107255794	47454	8.2	
11/19/19 10:52	11/19/2019	10:52 AM	12.07	107273283	17489	12.1	

Appendix D-2
Well PW-1(U) Operational History - December 2011 to Present
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

Date and Time	Flow Meas. Date	Flow Meas. Time	Instantaneous Flow Reading (gpm)	Totalizer Reading (gal)	Flow since last reading (gal)	Calculated Flow Rate (gpm)	Notes
11/20/19 10:18	11/20/2019	10:18 AM	11.61	107289055	15772	11.0	
11/21/19 11:40	11/21/2019	11:40 AM	11.44	107306513	17458	12.1	
11/25/19 11:21	11/25/2019	11:21 AM	15.21	107370544	64031	11.1	
12/2/19 9:06	12/2/2019	9:06 AM	11.72	107508478	137934	13.7	
12/3/19 13:35	12/3/2019	1:35 PM	19.44	107542350	33872	23.5	
12/4/19 13:48	12/4/2019	1:48 PM	16.53	107569969	27619	19.2	
12/5/19 11:00	12/5/2019	11:00 AM	17.16	107593670	23701	16.5	
12/9/19 11:41	12/9/2019	11:41 AM	17.10	107697224	103554	18.0	
12/10/19 11:05	12/10/2019	11:05 AM	16.82	107721322	24098	16.7	
12/12/19 11:41	12/12/2019	11:41 AM	13.99	107767269	45947	16.0	
12/17/19 10:23	12/17/2019	10:23 AM	18.12	107901025	133756	18.6	
12/23/19 10:36	12/23/2019	10:36 AM	24.12	108045362	144337	16.7	
12/26/19 10:30	12/26/2019	10:30 AM	23.63	108149873	104511	24.2	
12/30/19 10:53	12/30/2019	10:53 AM	21.27	108286889	137016	23.8	

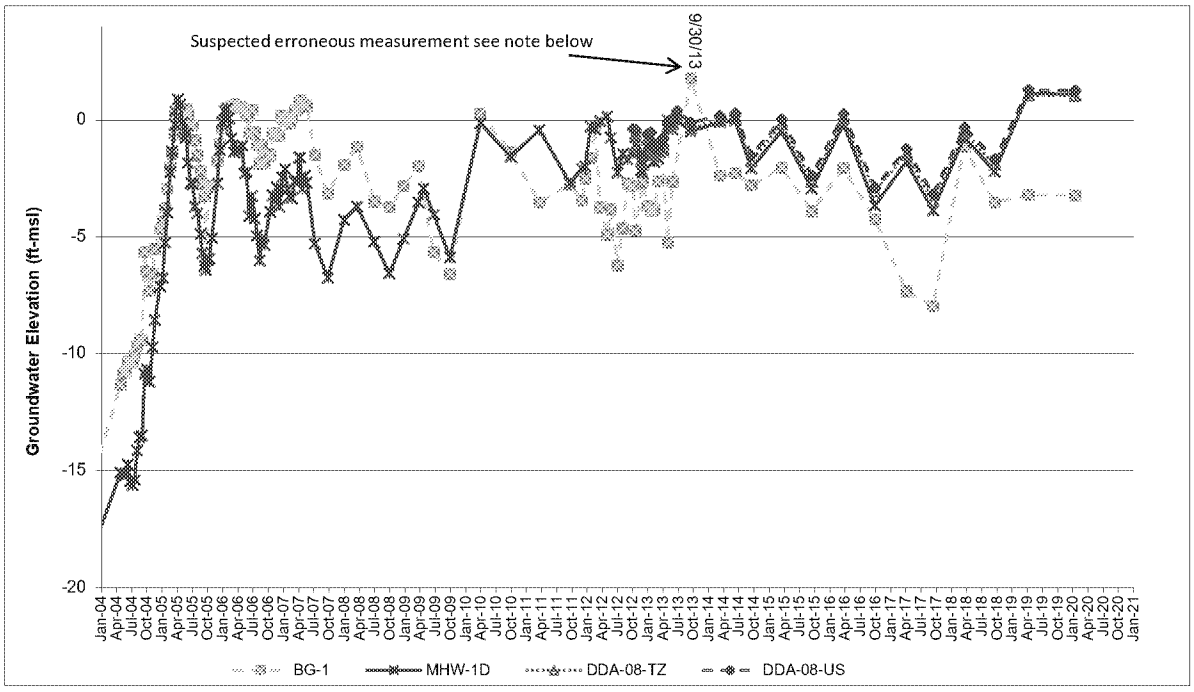
1) Flow readings and rates based on flow logs provided by DS&G Remedial Trust
2) gpm = gallons per minute
3) gal = gallons
4) OM&M = Operating, Maintenance, and Monitoring

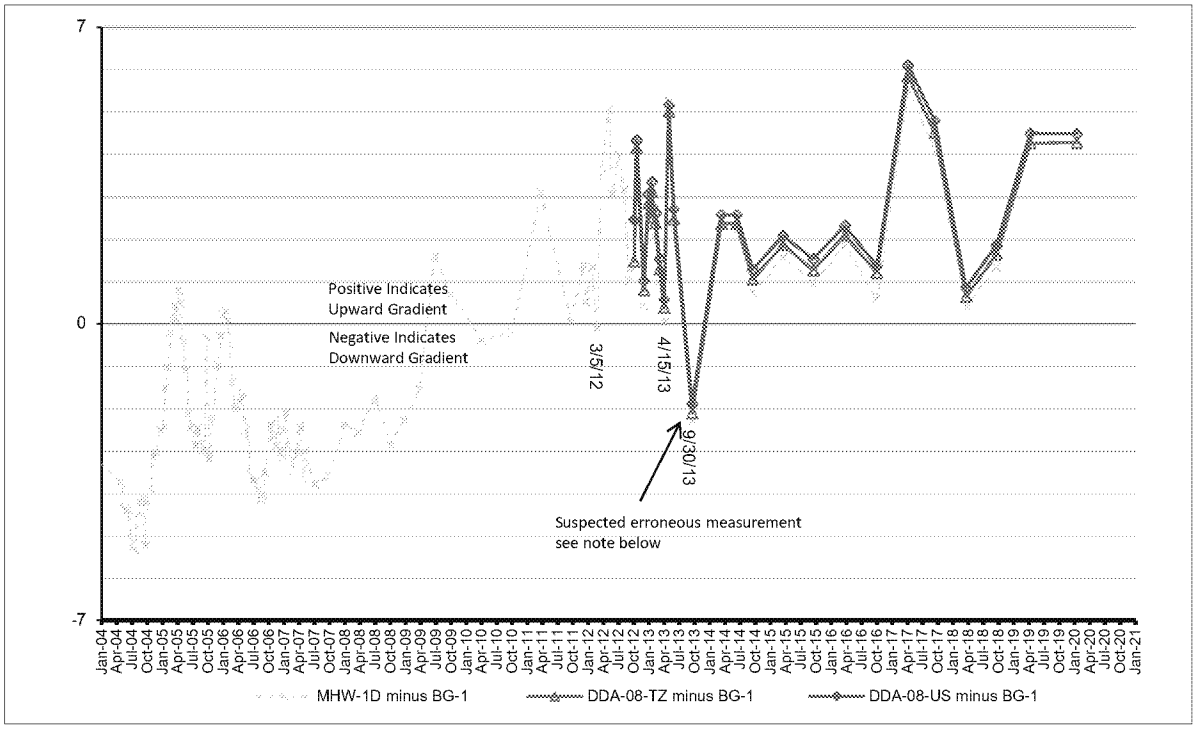
Prepared by: BPC
Checked by: ERW
Reviewed by: TAM

GOLDER

APPENDIX E

Groundwater Gradient Trend Plots





Notes:

Elevations revised based on December 2012 re-survey

Reduced positive gradients or slightly negative gradients are generally associated with water level events conducted:

- During brief well, pump, or system performance declines between quarterly events due to iron fouling. The duration of these issues has been reduced due to routine, quarterly maintenance, addition of Redux 620 to wells B-4DR and C-2D, and maintaining spare parts for pumps.
- Before, during, or soon after routine, quarterly maintenance of the LFExS.

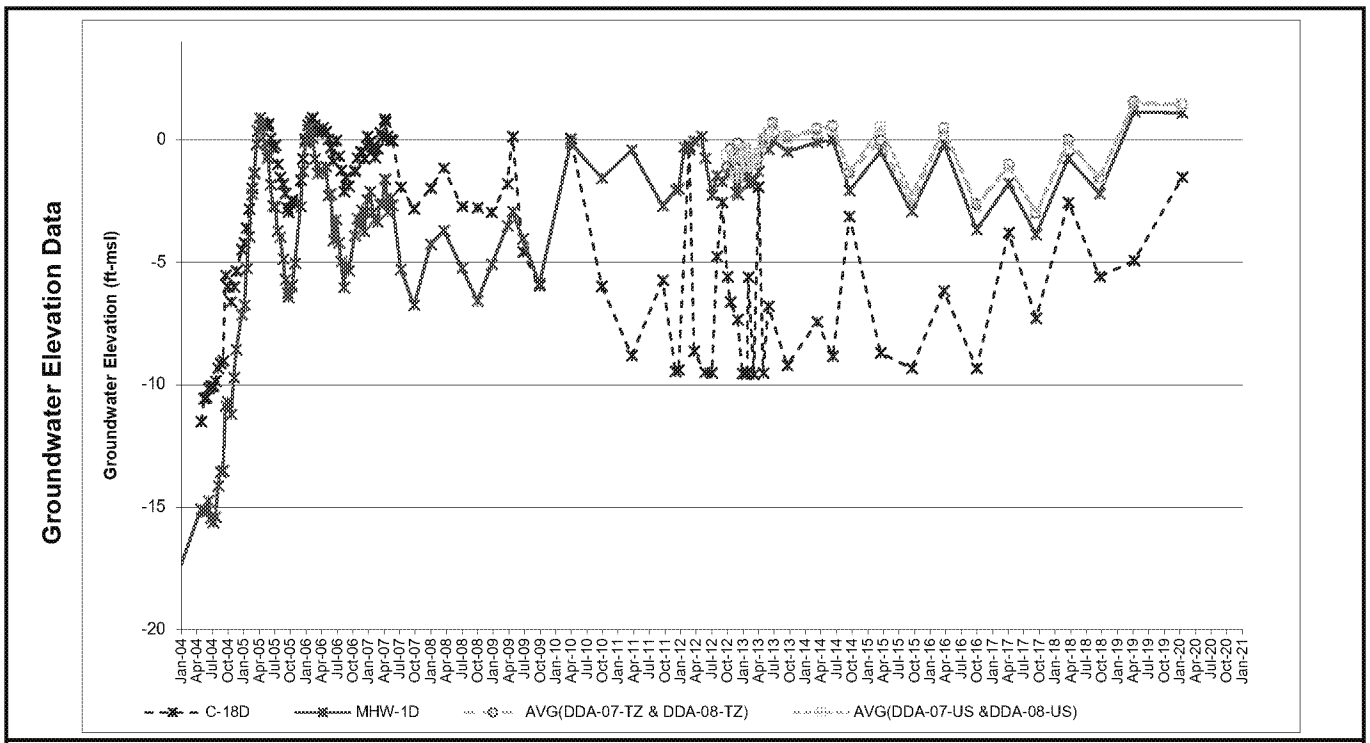
Specific events with reduced positive gradients or slightly negative gradients include:

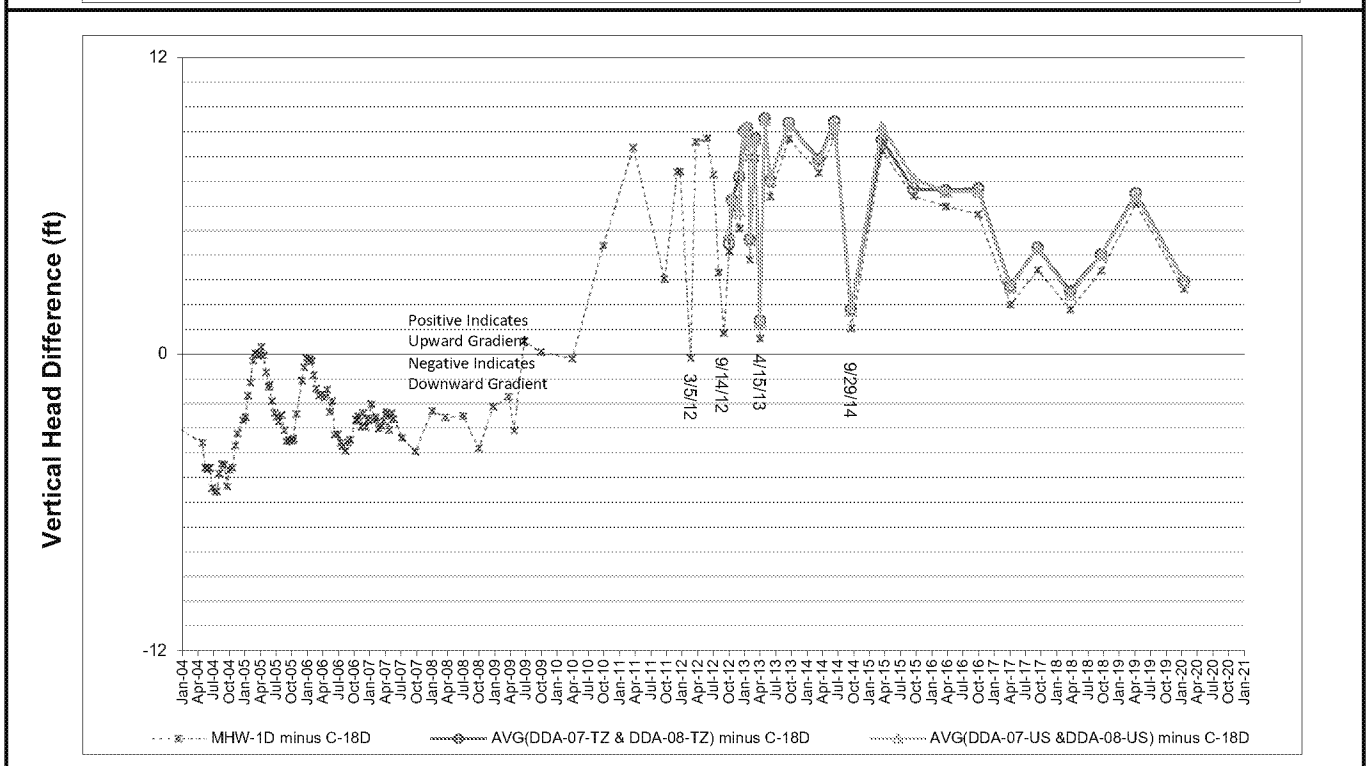
- March 5, 2012: System off for maintenance and well B-4DR connection (March 2-6, 2012)
- April 15, 2013: System off for quarterly maintenance (April 9-11, 2013) and running at reduced rates until discharge pump repair on April 15, 2013.
- September 30, 2013: Suspected erroneous measurement. Well BG-1 extracting at the time of measurement and the calculated groundwater elevation in well BG-1 (+1.78 ft-msl) was several feet higher than the groundwater elevations observed in nearby DDA monitoring wells (-1.57 to -1.82 ft-msl in wells B-2D, B-3D, and C-3D).

Vertical Head Difference - BG-1

Golder Associates	Project Number:	013-6052		FIGURE E-1
	Prepared by:	BPC	02/20/20	
	Checked by:	TK	02/20/20	Notes:
	Reviewed by:	TAM	02/25/20	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.11 Semi-Annual .xlsx
2/26/2020





Notes:

Elevations revised based on December 2012 re-survey

Reduced positive gradients or slightly negative gradients are generally associated with water level events conducted:

- During brief well, pump, or system performance declines between quarterly events due to iron fouling. The duration of these issues has been reduced due to routine, quarterly maintenance, addition of Redux 620 to wells B-4DR and C-2D, and maintaining spare parts for pumps.
- Before, during, or soon after routine, quarterly maintenance of the LFExS.

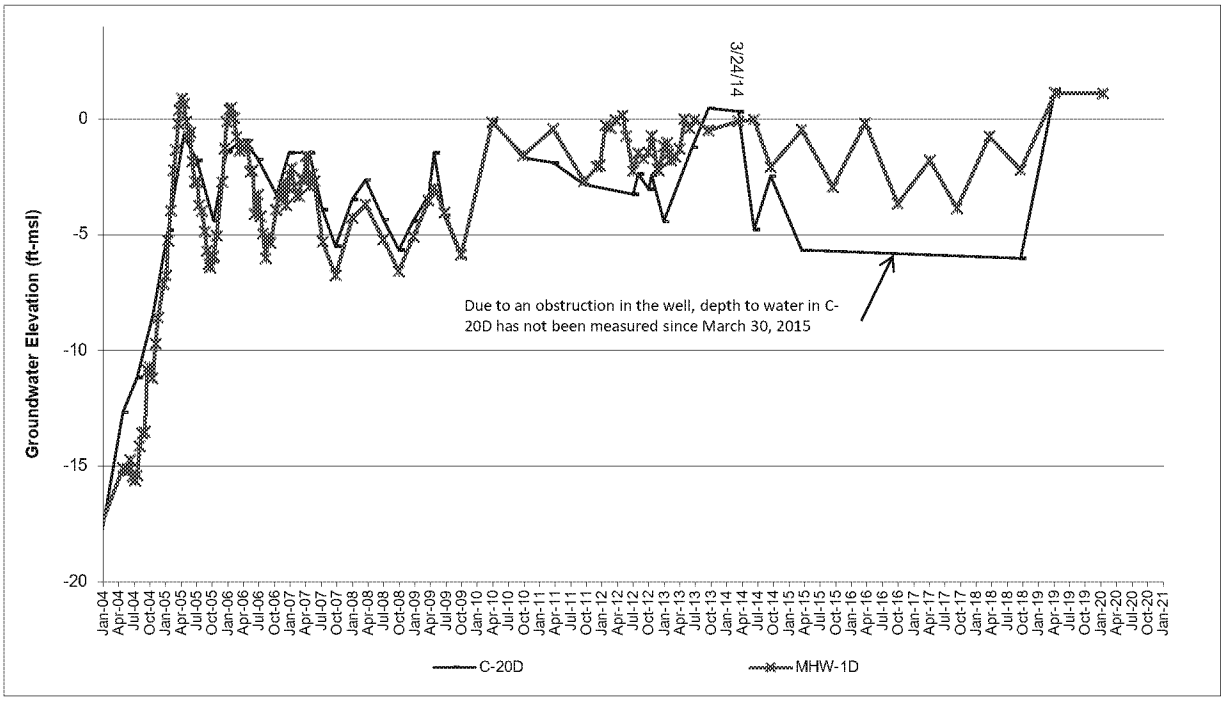
Specific events with reduced positive gradients or slightly negative gradients include:

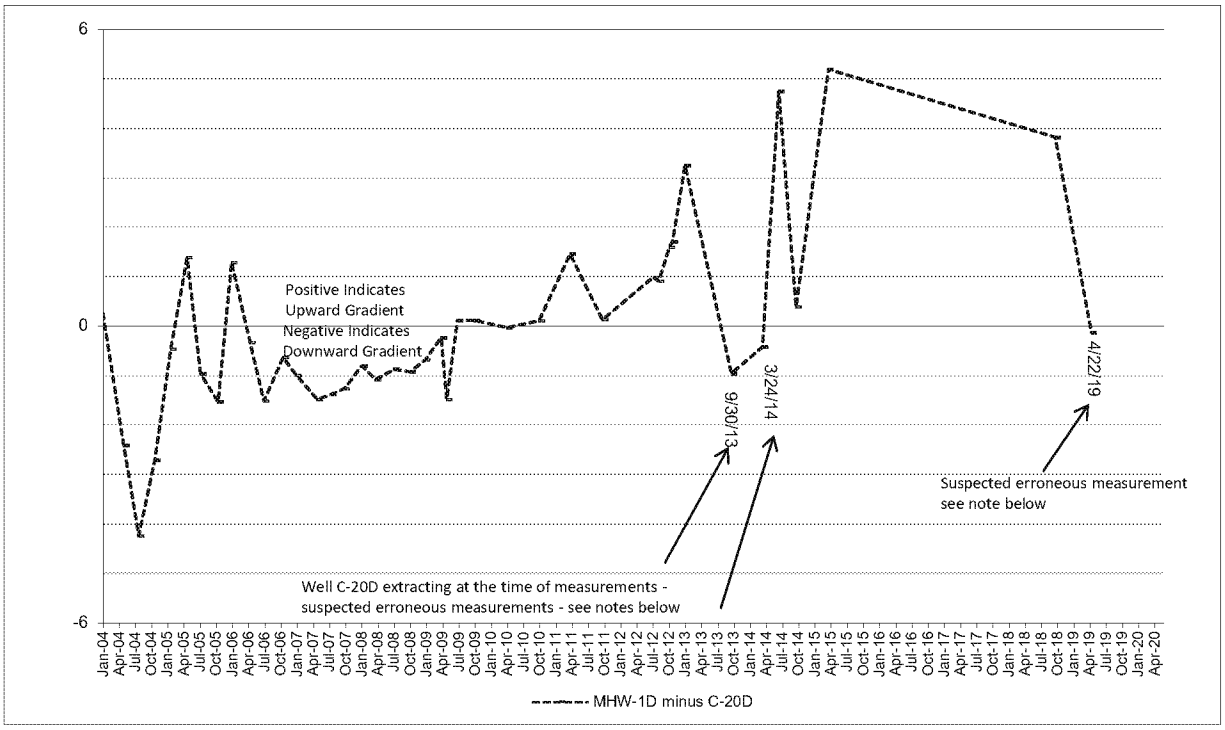
- March 5, 2012: System off for maintenance and well B-4DR connection (March 2-6, 2012)
- September 14, 2012: System off intermittently for quarterly maintenance (September 9, 2012 - September 13, 2012)
- April 15, 2013: System off for quarterly maintenance (April 9-11, 2013) and running at reduced rates until discharge pump repair on April 15, 2013.

Vertical Head Difference - C-18D

Golder Associates	Project Number:	013-6052		FIGURE E-2
	Prepared by:	BPC	02/20/20	
	Checked by:	TK	02/20/20	Notes:
	Reviewed by:	TAM	02/25/20	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.11 Semi-Annual .xlsx
2/26/2020





Notes:

Elevations revised based on December 2012 re-survey

Reduced positive gradients or slightly negative gradients are generally associated with water level events conducted:

- During brief well, pump, or system performance declines between quarterly events due to iron fouling. The duration of these issues has been reduced due to routine, quarterly maintenance, addition of Redux 620 to wells B-4DR and C-2D, and maintaining spare parts for pumps.
- Before, during, or soon after routine, quarterly maintenance of the LFExS.

C-20D connected to LFExS in December 2012

Specific events with reduced positive gradients or slightly negative gradients include:

September 30,2013: Suspected erroneous measurement. Well C-20D extracting at the time of measurement and the calculated groundwater elevation in well C-20D (+0.47 ft-msl) was over one foot higher than the groundwater elevations observed in nearby DDA monitoring wells (-0.97 to -2.00 ft-msl in wells B-2D, C-21D, MHW-1S, or MHW-1M).

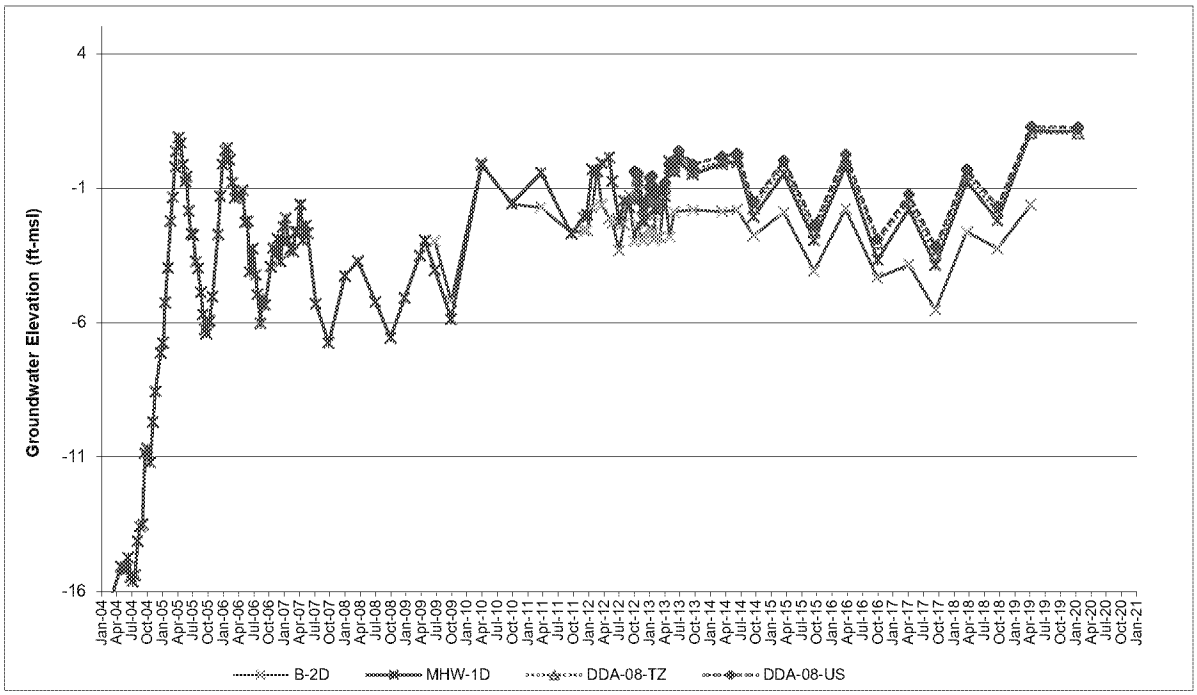
March 24, 2014: Suspected erroneous measurement. Well C-20D extracting at the time of measurement and the calculated groundwater elevation in well C-20D (+0.32 ft-msl) was almost one foot higher than the groundwater elevations observed in nearby DDA monitoring wells (-0.49 to -2.14 ft-msl in wells B-2D, C-21D, MHW-1S, or MHW-1M).

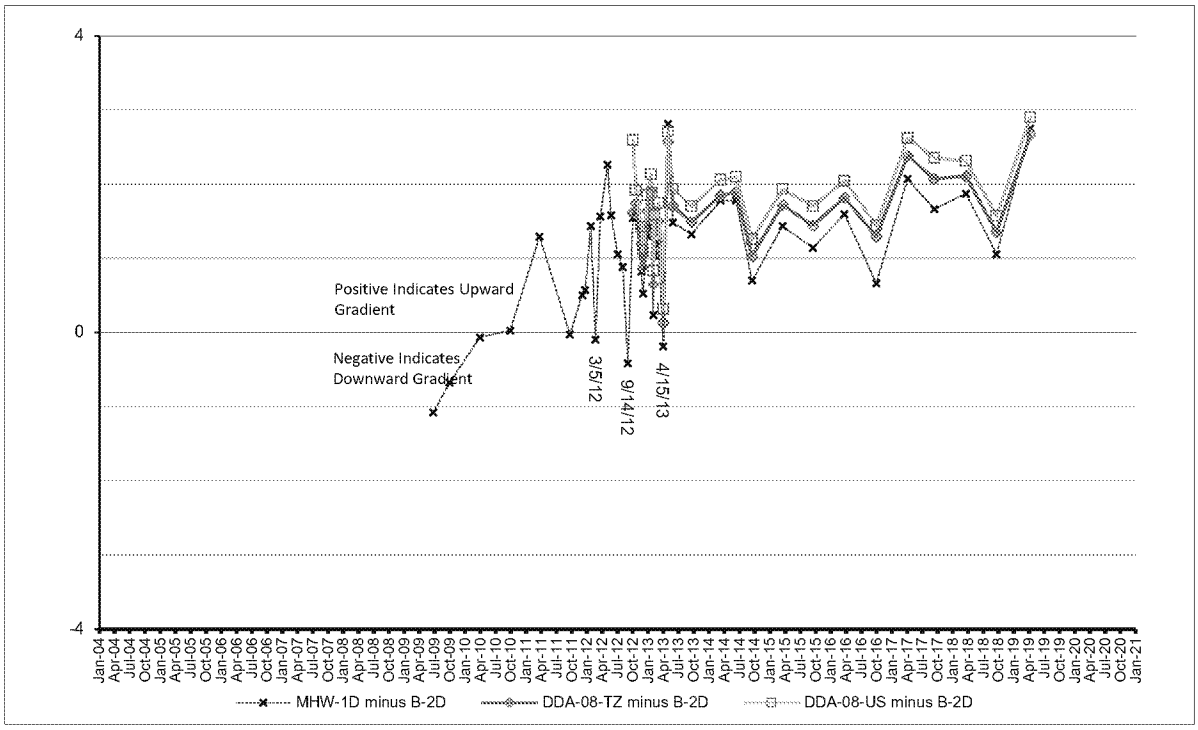
April 22, 2019: Suspected erroneous measurement. Well C-20D extracting at the time of measurement and the calculated groundwater elevation in well C-20D (+1.27 ft-msl) was more than one foot higher than the groundwater elevations observed in nearby DDA monitoring wells (-0.048 to -2.39 ft-msl in wells B-2D, C-21D, MHW-1S, or MHW-1M).

Vertical Head Difference - C-20D

Golder Associates	Project Number:	013-6052	FIGURE E-3
	Prepared by:	BPC 02/20/20	
	Checked by:	TK 02/20/20	Notes:
	Reviewed by:	TAM 02/25/20	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.11 Semi-Annual .xlsx
2/26/2020





Notes:

Elevations revised based on December 2012 re-survey

Reduced positive gradients or slightly negative gradients are generally associated with water level events conducted:

- During brief well, pump, or system performance declines between quarterly events due to iron fouling. The duration of these issues has been reduced due to routine, quarterly maintenance, addition of Redux 620 to wells B-4DR and C-2D, and maintaining spare parts for pumps.
- Before, during, or soon after routine, quarterly maintenance of the LFExS.

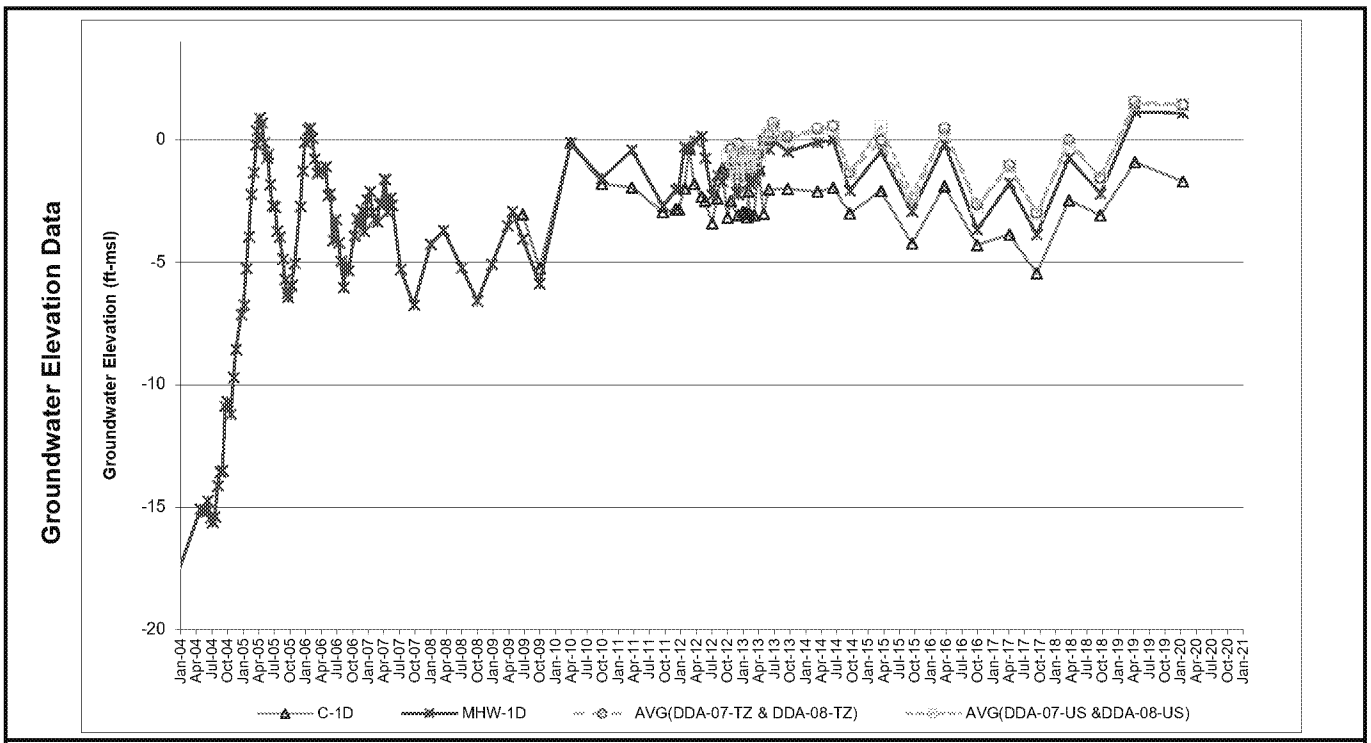
Specific events with reduced positive gradients or slightly negative gradients include:

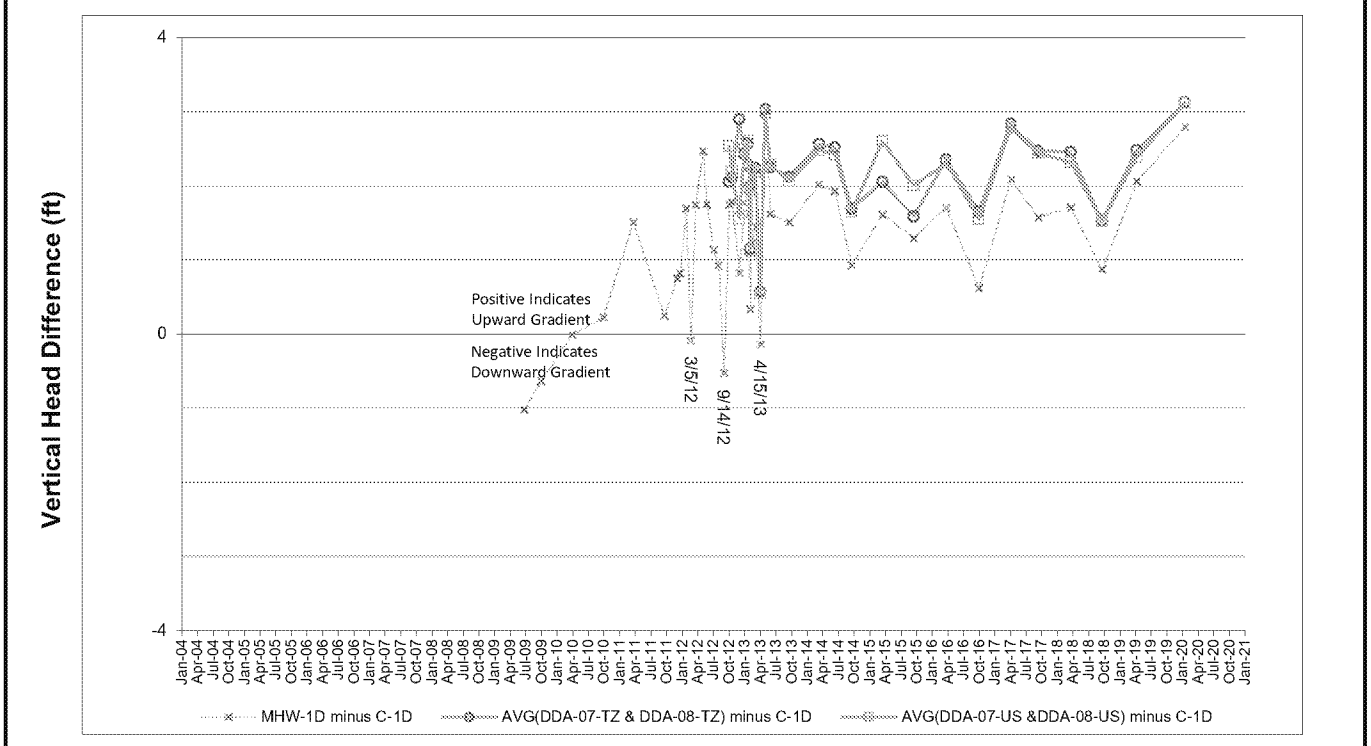
- March 5, 2012: System off for maintenance and well B-4DR connection (March 2-6, 2012)
- September 14, 2012: System off intermittently for quarterly maintenance (September 9, 2012 - September 13, 2012)
- April 15, 2013: System off for quarterly maintenance (April 9-11, 2013) and running at reduced rates until discharge pump repair on April 15, 2013.

Vertical Head Difference - B-2D

Golder Associates	Project Number:	013-6052	FIGURE E-4
	Prepared by:	BPC 02/20/20	
	Checked by:	TK 02/20/20	Notes:
	Reviewed by:	TAM 02/25/20	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.11 Semi-Annual .xlsx
2/26/2020





Notes:

Elevations revised based on December 2012 re-survey

Reduced positive gradients or slightly negative gradients are generally associated with water level events conducted:

- During brief well, pump, or system performance declines between quarterly events due to iron fouling. The duration of these issues has been reduced due to routine, quarterly maintenance, addition of Redux 620 to wells B-4DR and C-2D, and maintaining spare parts for pumps.
- Before, during, or soon after routine, quarterly maintenance of the LFExS.

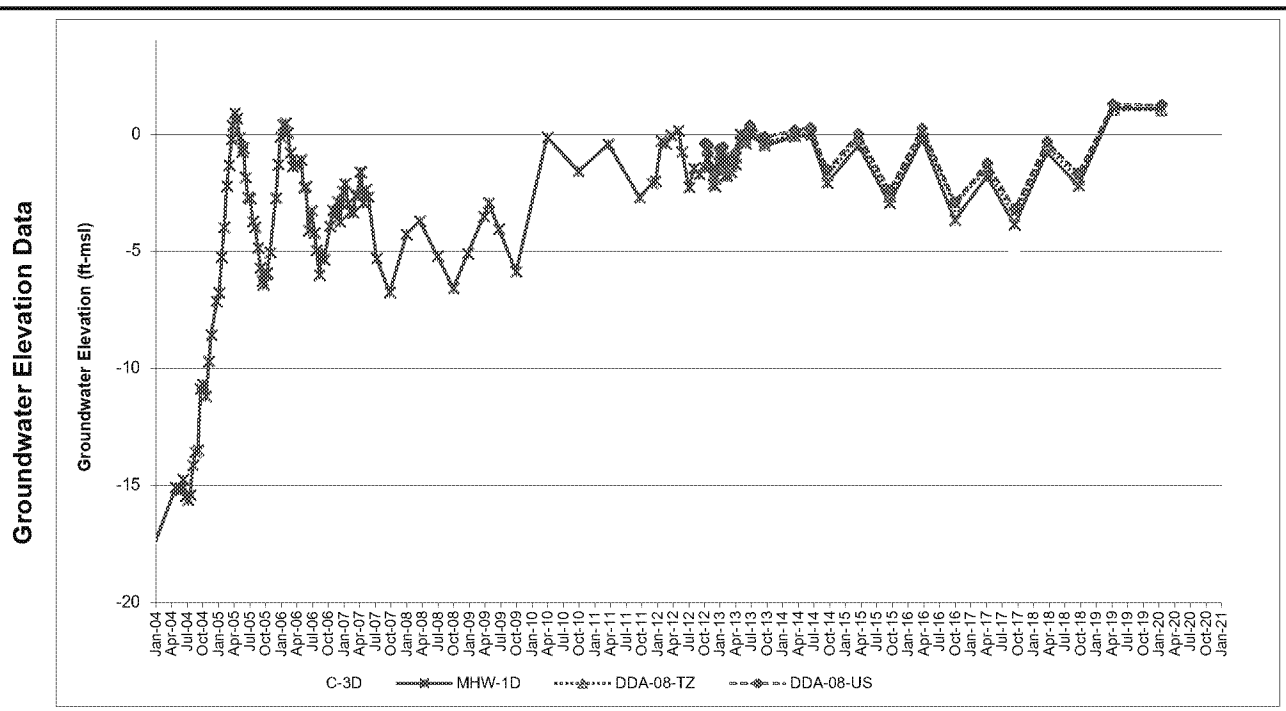
Specific events with reduced positive gradients or slightly negative gradients include:

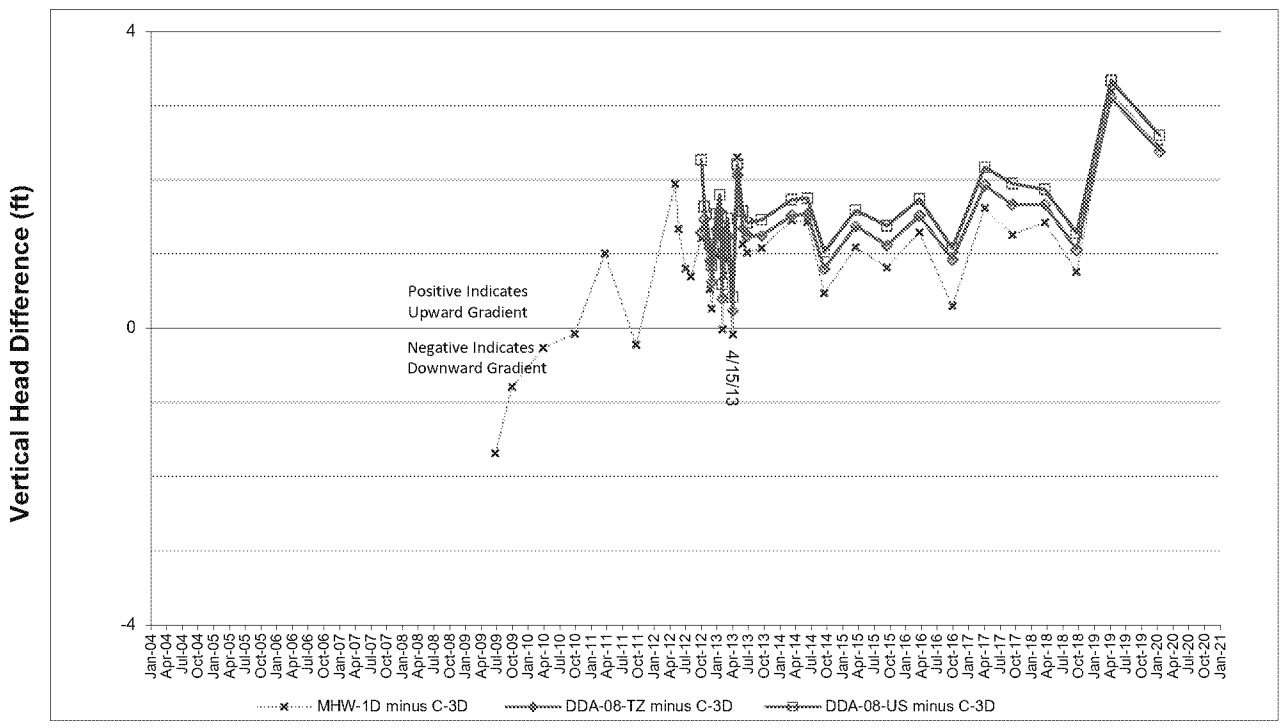
- March 5, 2012: System off for maintenance and well B-4DR connection (March 2-6, 2012)
- September 15, 2012: System off intermittently for quarterly maintenance (September 9, 2012 - September 13, 2012)
- April 15, 2013: System off for quarterly maintenance (April 9-11, 2013) and running at reduced rates until discharge pump repair on April 15, 2013.

Vertical Head Difference - C-1D

Golder Associates	Project Number:	013-6052		FIGURE E-5
	Prepared by:	BPC	02/20/20	
	Checked by:	TK	02/20/20	Notes:
	Reviewed by:	TAM	02/25/20	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.11 Semi-Annual .xlsx
2/26/2020





Notes:

Elevations revised based on December 2012 re-survey

Reduced positive gradients or slightly negative gradients are generally associated with water level events conducted:

- During brief well, pump, or system performance declines between quarterly events due to iron fouling. The duration of these issues has been reduced due to routine, quarterly maintenance, addition of Redux 620 to wells B-4DR and C-2D, and maintaining spare parts for pumps.
- Before, during, or soon after routine, quarterly maintenance of the LFExS.

Specific events with reduced positive gradients or slightly negative gradients include:

- April 15, 2013: System off for quarterly maintenance (April 9-11, 2013) and running at reduced rates until discharge pump repair on April 15, 2013.

Vertical Head Difference - C-3D

Golder Associates	Project Number:	013-6052		FIGURE E-6
	Prepared by:	BPC	02/20/20	
	Checked by:	TK	02/20/20	Notes:
	Reviewed by:	TAM	02/25/20	

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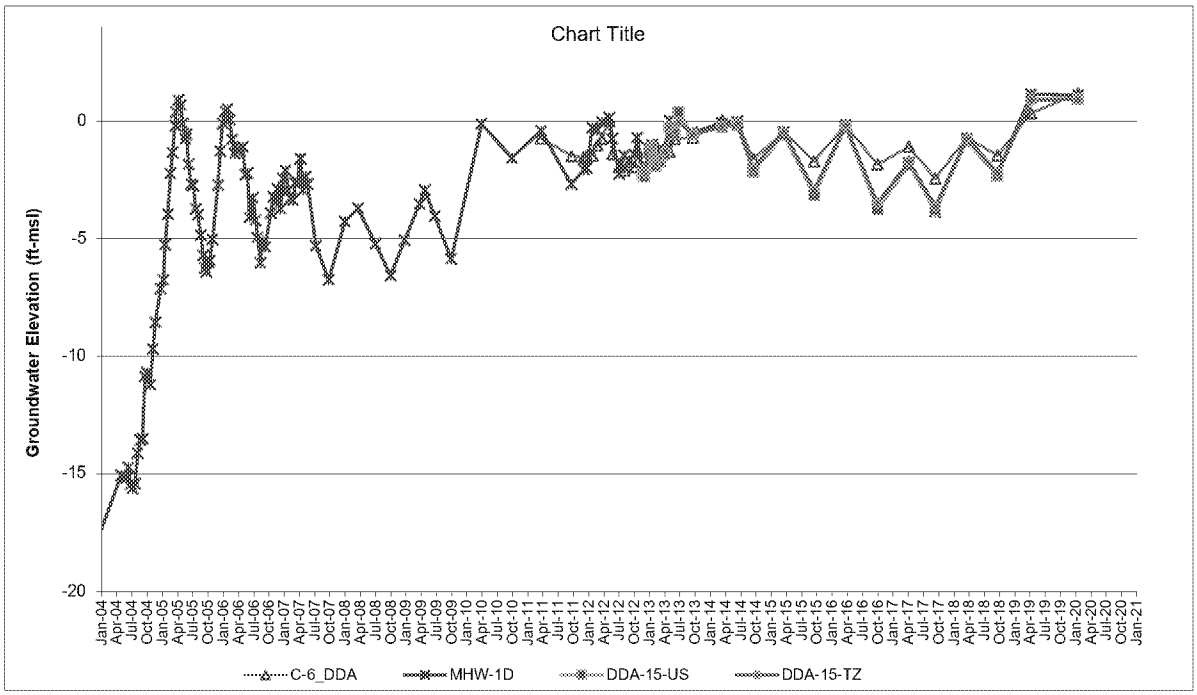
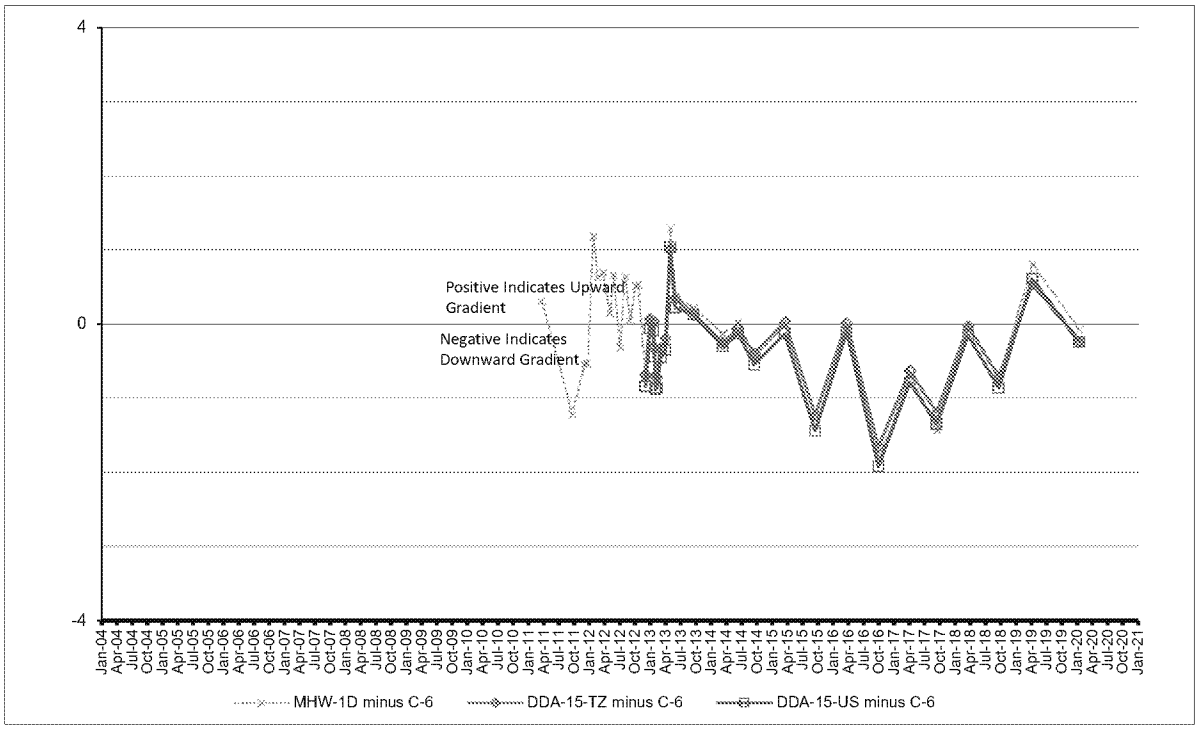




Notes:

Elevations revised based on December 2012 re-survey

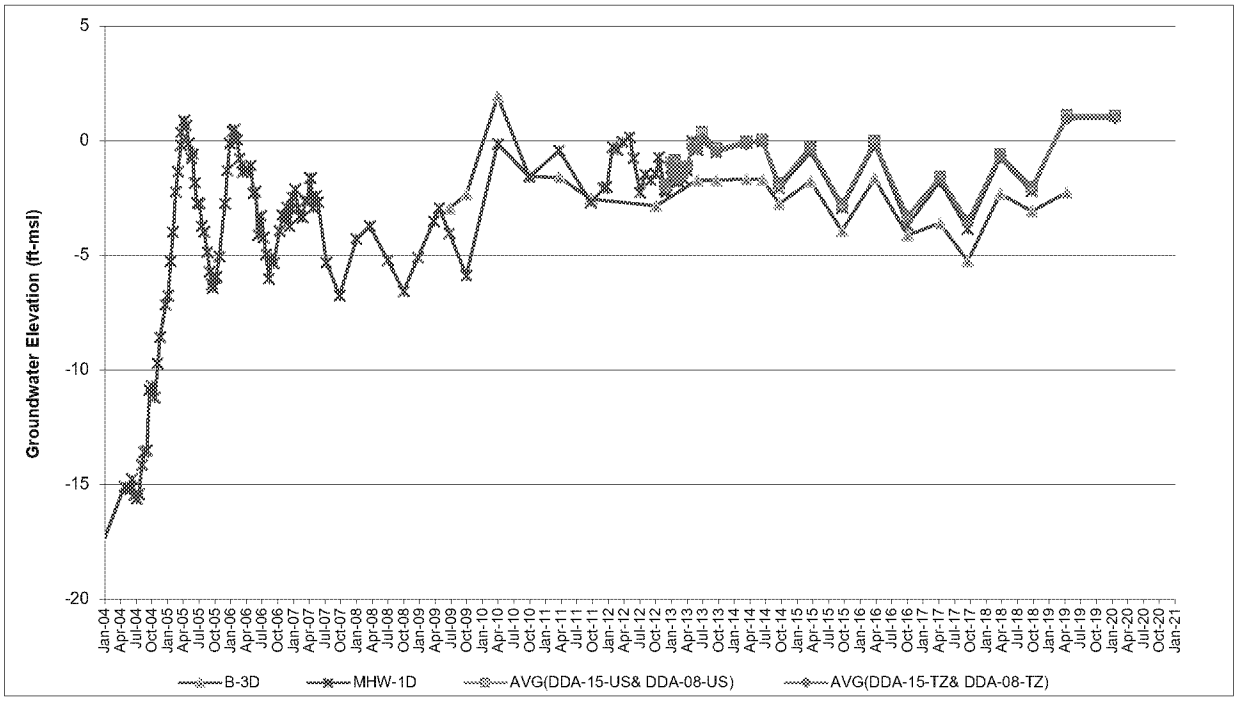
Reduced positive gradients or slightly negative gradients are generally associated with water level events conducted:

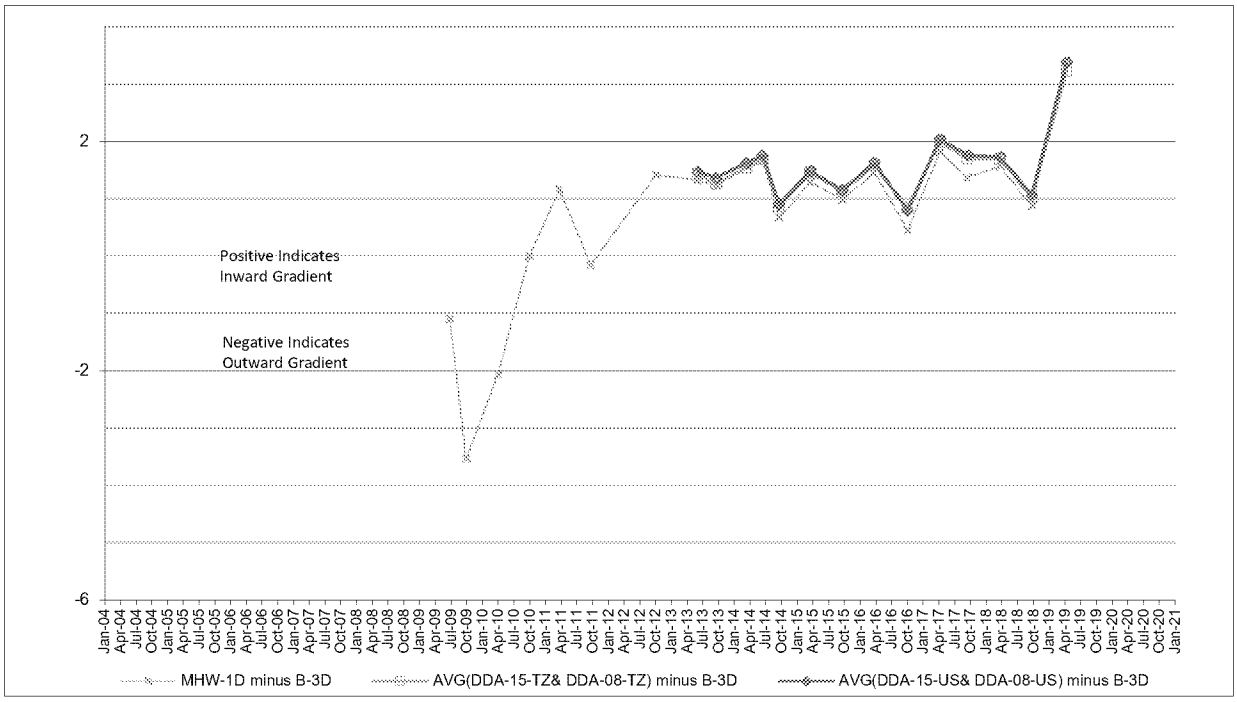
- During brief well, pump, or system performance declines between quarterly events due to iron fouling. The duration of these issues has been reduced due to routine, quarterly maintenance, addition of Redux 620 to wells B-4DR and C-2D, and maintaining spare parts for pumps.
- Before, during, or soon after routine, quarterly maintenance of the LFExS.
- The fluctuating vertical head differences calculated for well C-6 since 2011 are related to performance/operational issues associated with extraction well B-4DR, and indicate that well C-6 is at the eastern periphery of the well B-4DR and LFExS influence. Well C-6 is located in a portion of the containment area where thick UPCU is present and VOC and SVOC concentrations are low (e.g., BCEE was detected at 0.021 micrograms per liter [ug/l] in 2008, prior to LFExS startup).

Vertical Head Difference - C-6

Golder Associates	Project Number:	013-6052		FIGURE E-7
	Prepared by:	BPC	02/20/20	
	Checked by:	TK	02/20/20	Notes:
	Reviewed by:	TAM	02/25/20	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.11 Semi-Annual .xlsx
2/26/2020





Notes:

Elevations revised based on December 2012 re-survey

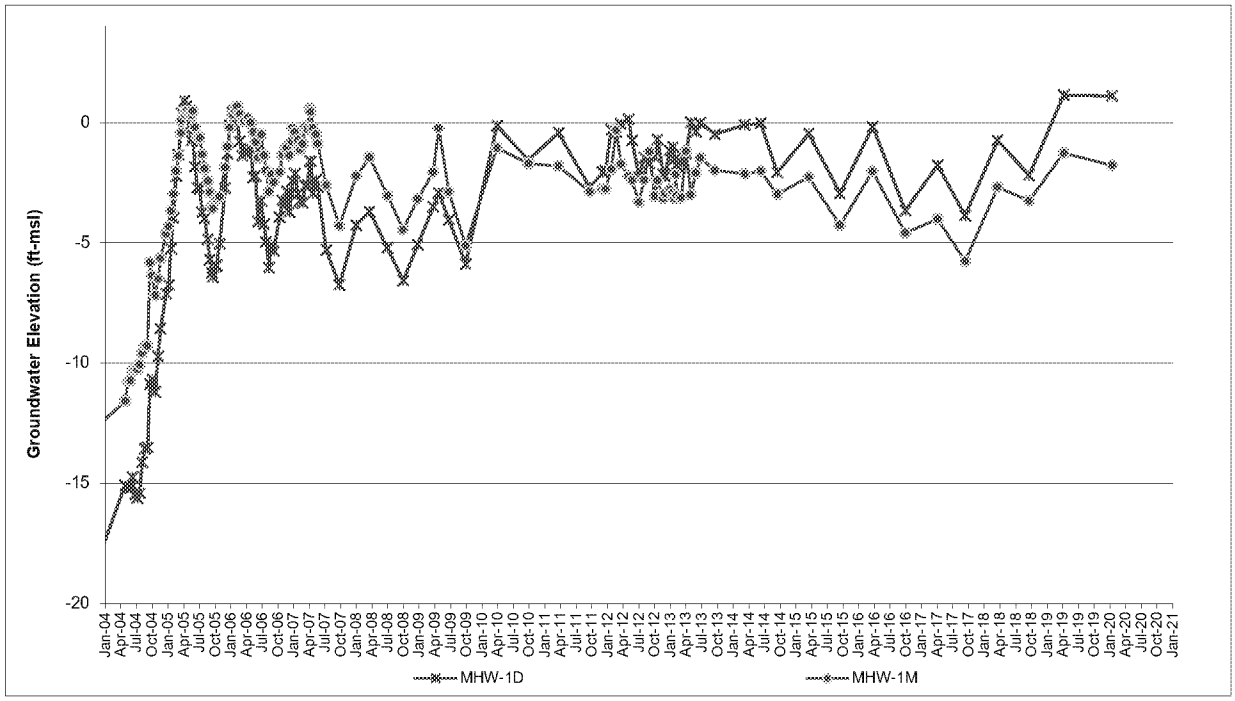
Reduced positive gradients or slightly negative gradients are generally associated with water level events conducted:

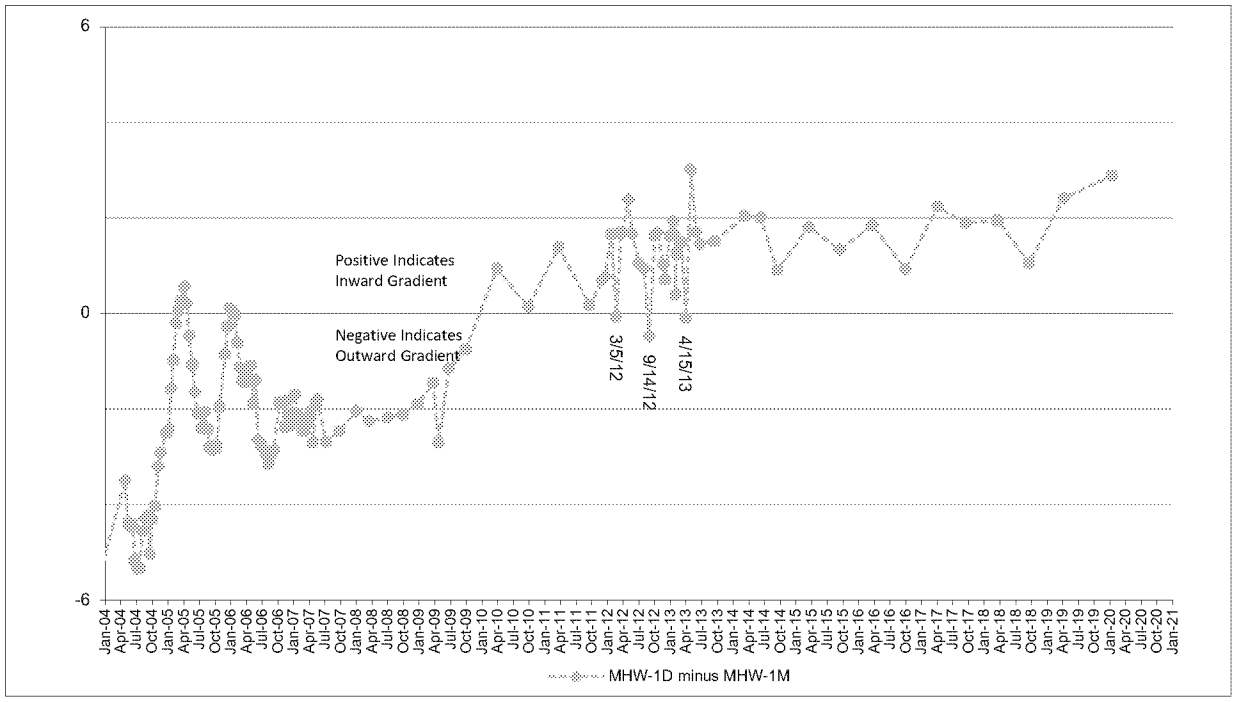
- During brief well, pump, or system performance declines between quarterly events due to iron fouling. The duration of these issues has been reduced due to routine, quarterly maintenance, addition of Redux 620 to wells B-4DR and C-2D, and maintaining spare parts for pumps.
- Before, during, or soon after routine, quarterly maintenance of the LFExS.

Vertical Head Difference - B-3D

Golder Associates	Project Number:	013-6052		FIGURE E-8
	Prepared by:	BPC	02/20/20	
	Checked by:	TK	02/20/20	Notes:
	Reviewed by:	TAM	02/25/20	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.11 Semi-Annual .xlsx
2/26/2020





Notes:

Elevations revised based on December 2012 re-survey

Reduced positive gradients or slightly negative gradients are generally associated with water level events conducted:

- During brief well, pump, or system performance declines between quarterly events due to iron fouling. The duration of these issues has been reduced due to routine, quarterly maintenance, addition of Redux 620 to wells B-4DR and C-2D, and maintaining spare parts for pumps.
- Before, during, or soon after routine, quarterly maintenance of the LFExS.

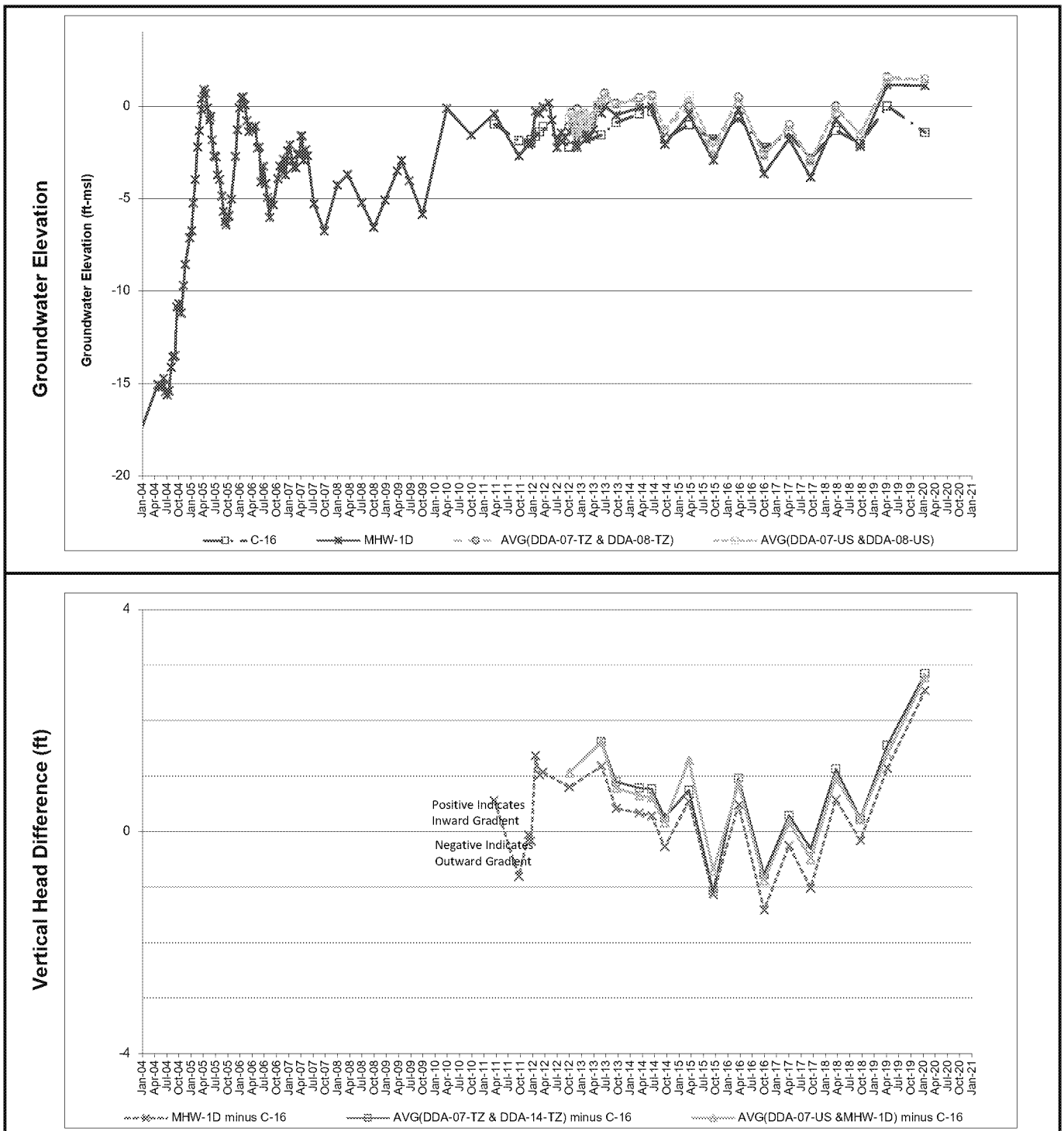
Specific events with reduced positive gradients or slightly negative gradients include:

- March 5, 2012: System off for maintenance and well B-4DR connection (March 2-6, 2012)
- September 14, 2012: System off intermittently for quarterly maintenance (September 9, 2012 - September 13, 2012)
- April 15, 2013: System off for quarterly maintenance (April 9-11, 2013) and running at reduced rates until discharge pump repair on April 15, 2013.

Vertical Head Difference - MHW-1M

Golder Associates	Project Number:	013-6052		FIGURE E-9
	Prepared by:	BPC	02/20/20	
	Checked by:	TK	02/20/20	Notes:
	Reviewed by:	TAM	02/25/20	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.11 Semi-Annual .xlsx
2/26/2020



Notes:

Elevations revised based on December 2012 re-survey

Reduced positive gradients or slightly negative gradients are generally associated with water level events conducted:

- During brief well, pump, or system performance declines between quarterly events due to iron fouling. The duration of these issues has been reduced due to routine, quarterly maintenance, addition of Redux 620 to wells B-4DR and C-2D, and maintaining spare parts for pumps.
- Before, during, or soon after routine, quarterly maintenance of the LFExS.

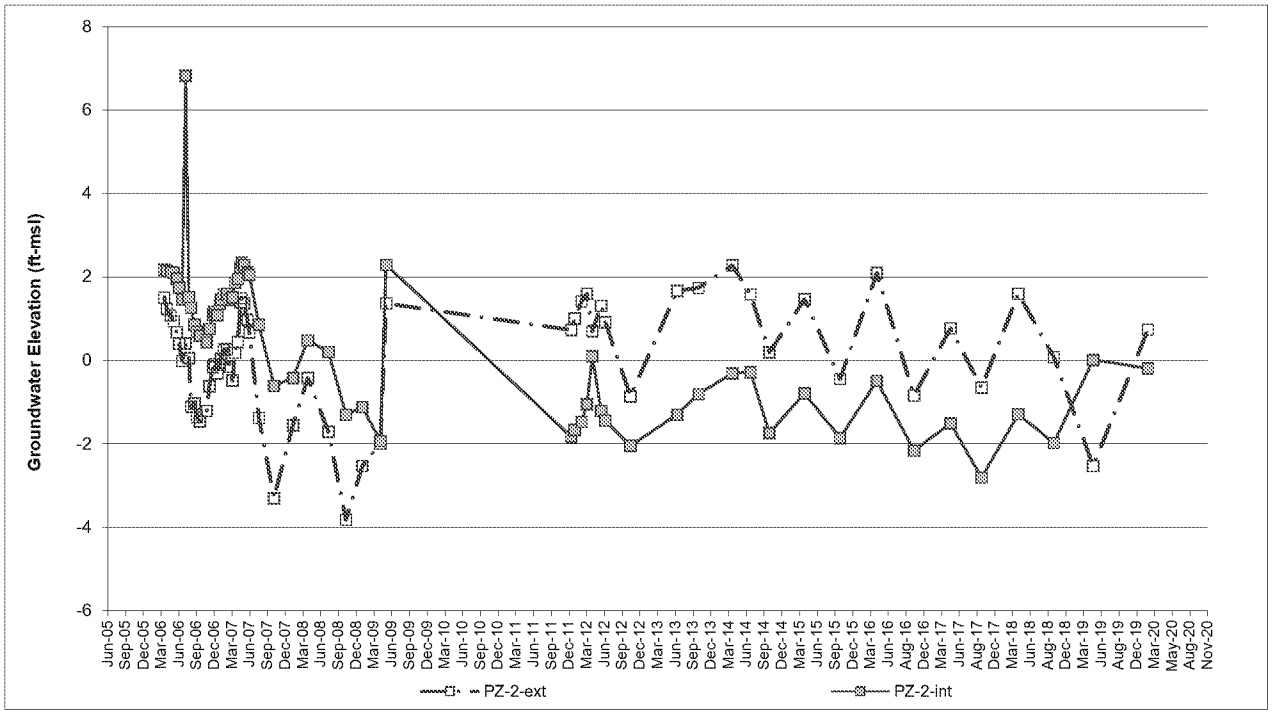
Specific events with reduced positive gradients or slightly negative gradients include:

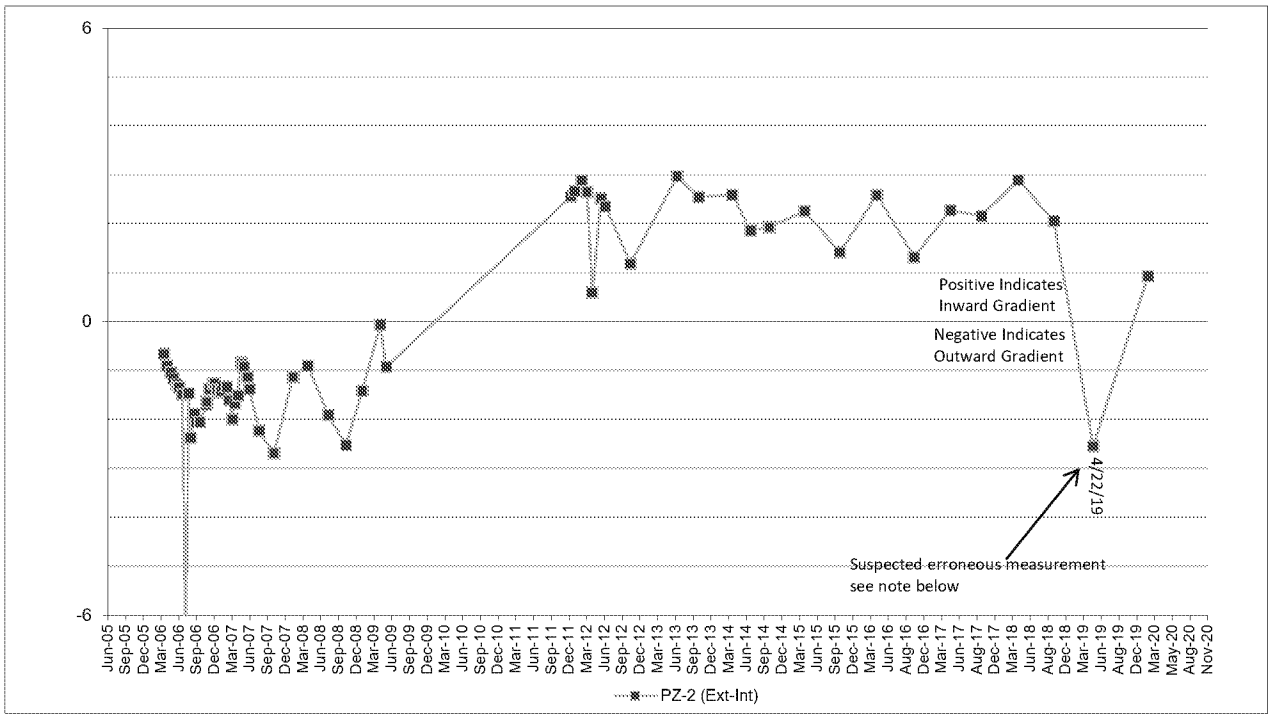
- The fluctuating vertical head differences calculated for well C-16 since 2011 indicate that well C-16 suggesting that well C-16 is at the periphery of the LFExS influence and that gradients can temporarily reverse when UPA groundwater elevations are low. Well C-16 is located in a portion of the containment area where thick UPCU is present and VOC and SVOC concentrations are low (e.g., VOCs were non-detect and BCEE was detected at 0.053 micrograms per liter [ug/l] in 2008, prior to LFExS startup).

Vertical Head Difference - C-16

Golder Associates	Project Number:	013-6052		FIGURE E-10
	Prepared by:	BPC	02/20/20	
	Checked by:	TK	02/20/20	Notes:
	Reviewed by:	TAM	02/25/20	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.11 Semi-Annual .xlsx
2/26/2020





Notes:

Elevations revised based on December 2012 re-survey

Reduced positive gradients or slightly negative gradients are generally associated with water level events conducted:

- During brief well, pump, or system performance declines between quarterly events due to iron fouling. The duration of these issues has been reduced due to routine, quarterly maintenance, addition of Redux 620 to wells B-4DR and C-2D, and maintaining spare parts for pumps.
- Before, during, or soon after routine, quarterly maintenance of the LFExS.
- April 22, 2019 - Suspected erroneous measurement: The groundwater elevation in well PZ-2-EXT is typically greater than -1 ft-msl. In April 2019, the calculated groundwater elevation in PZ-2-EXT was -2.53 ft-msl.

Horizontal Head Difference - PZ-2

Golder Associates	Project Number:	013-6052		FIGURE E-11
	Prepared by:	BPC	02/20/20	
	Checked by:	TK	02/20/20	Notes:
	Reviewed by:	TAM	02/25/20	

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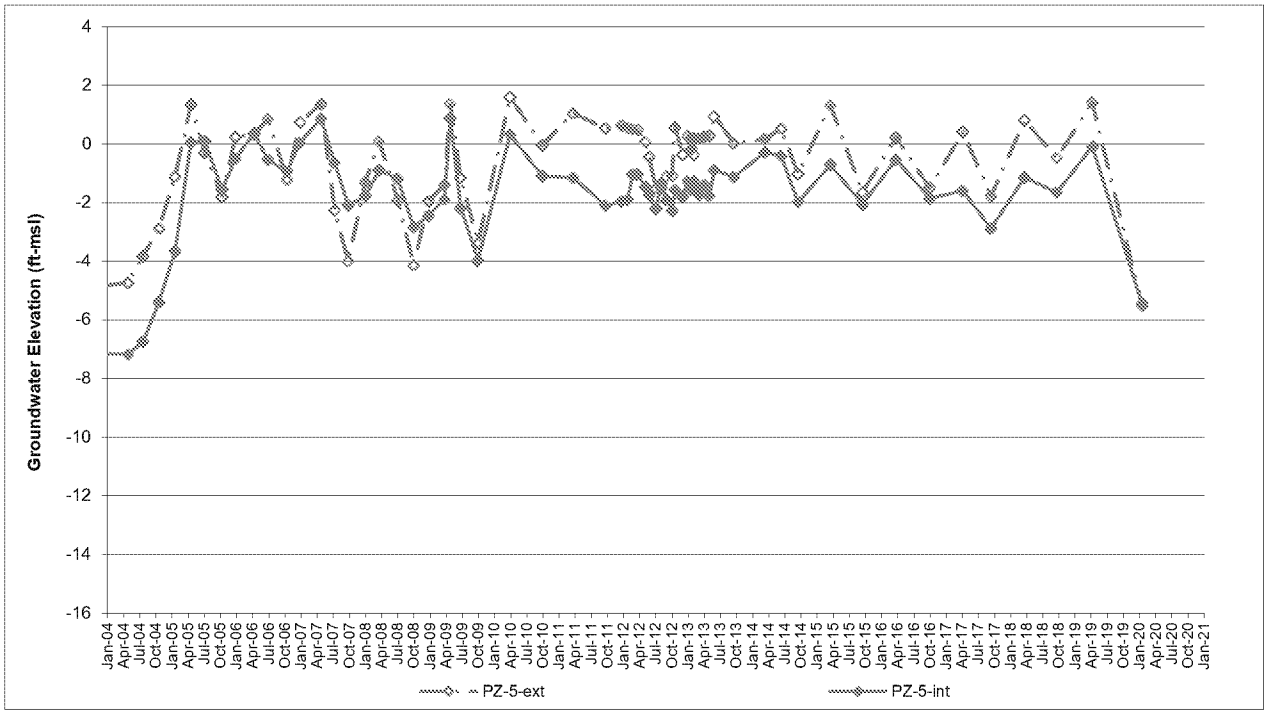
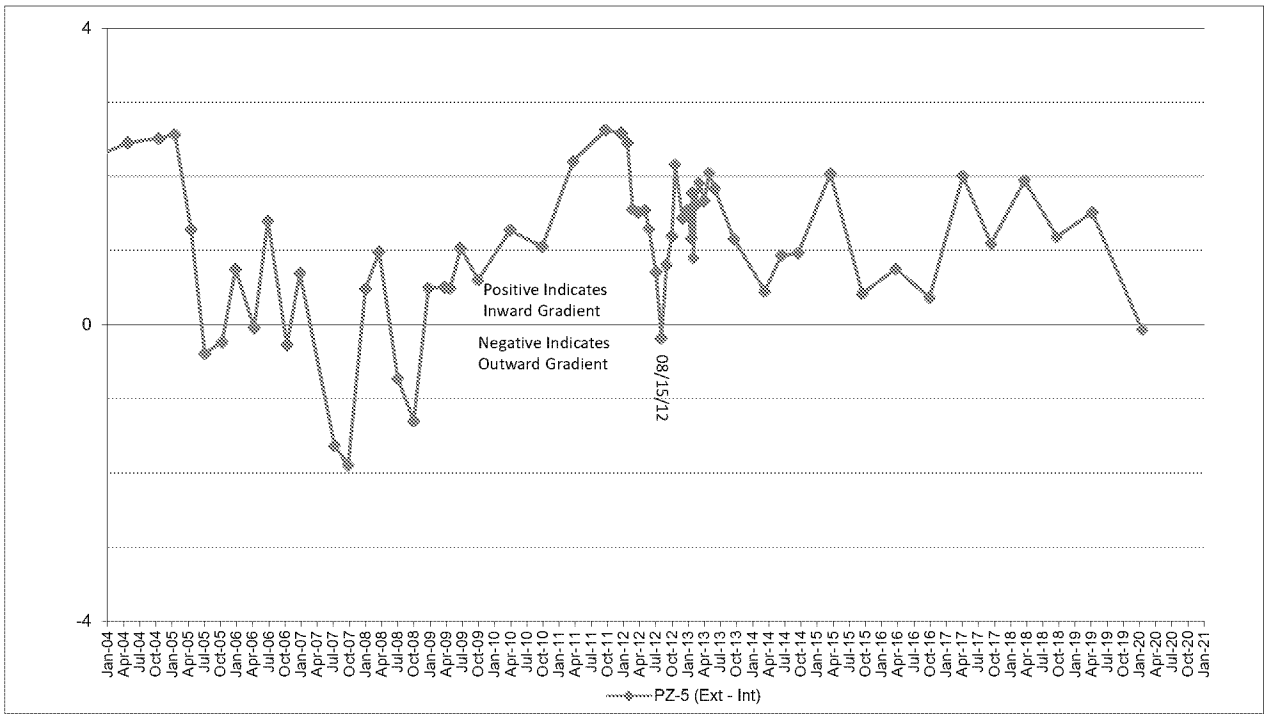
2/26/2020





Notes:

Elevations revised based on December 2012 re-survey

Reduced positive gradients or slightly negative gradients are generally associated with water level events conducted:

- During brief well, pump, or system performance declines between quarterly events due to iron fouling. The duration of these issues has been reduced due to routine, quarterly maintenance, addition of Redux 620 to wells B-4DR and C-2D, and maintaining spare parts for pumps.
- Before, during, or soon after routine, quarterly maintenance of the LFExS.
- August 2012: Decreased extraction from nearby well C-4D due to restricted discharge capacity of the line.

Horizontal Head Difference - PZ-5

Golder Associates	Project Number:	013-6052		FIGURE E-12
	Prepared by:	BPC	02/20/20	
	Checked by:	TK	02/20/20	Notes:
	Reviewed by:	TAM	02/25/20	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.11 Semi-Annual .xlsx
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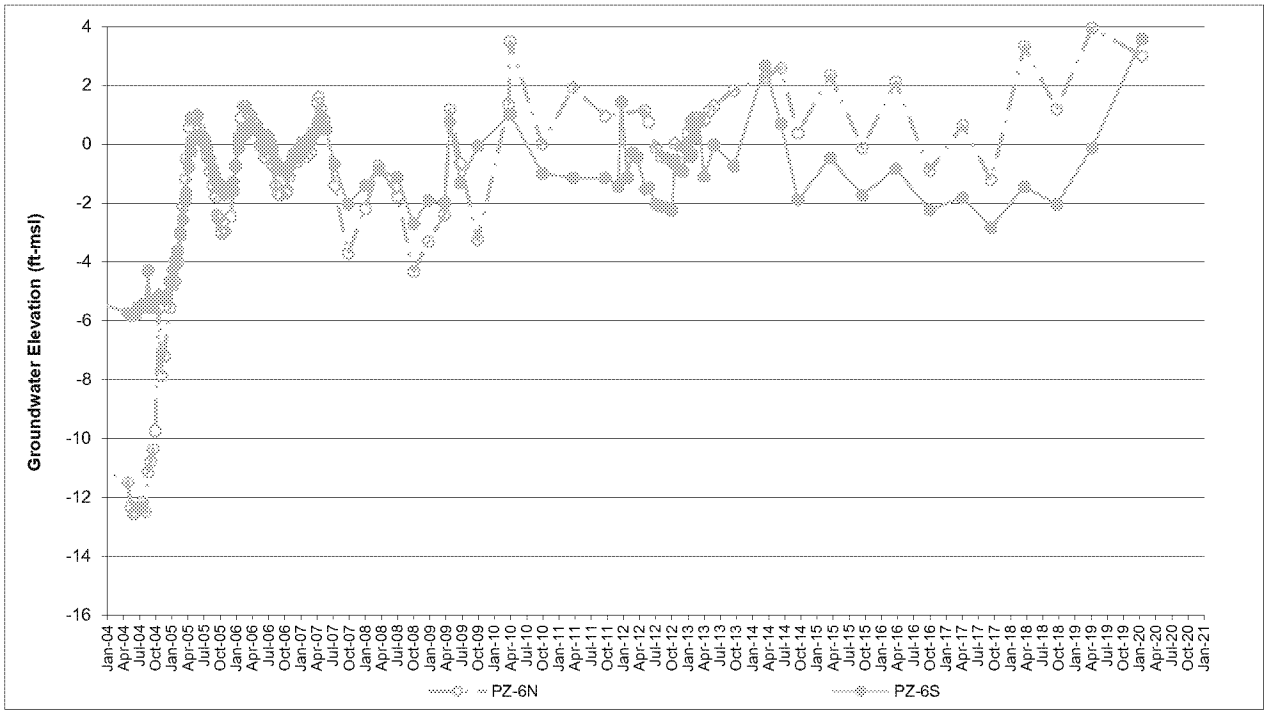

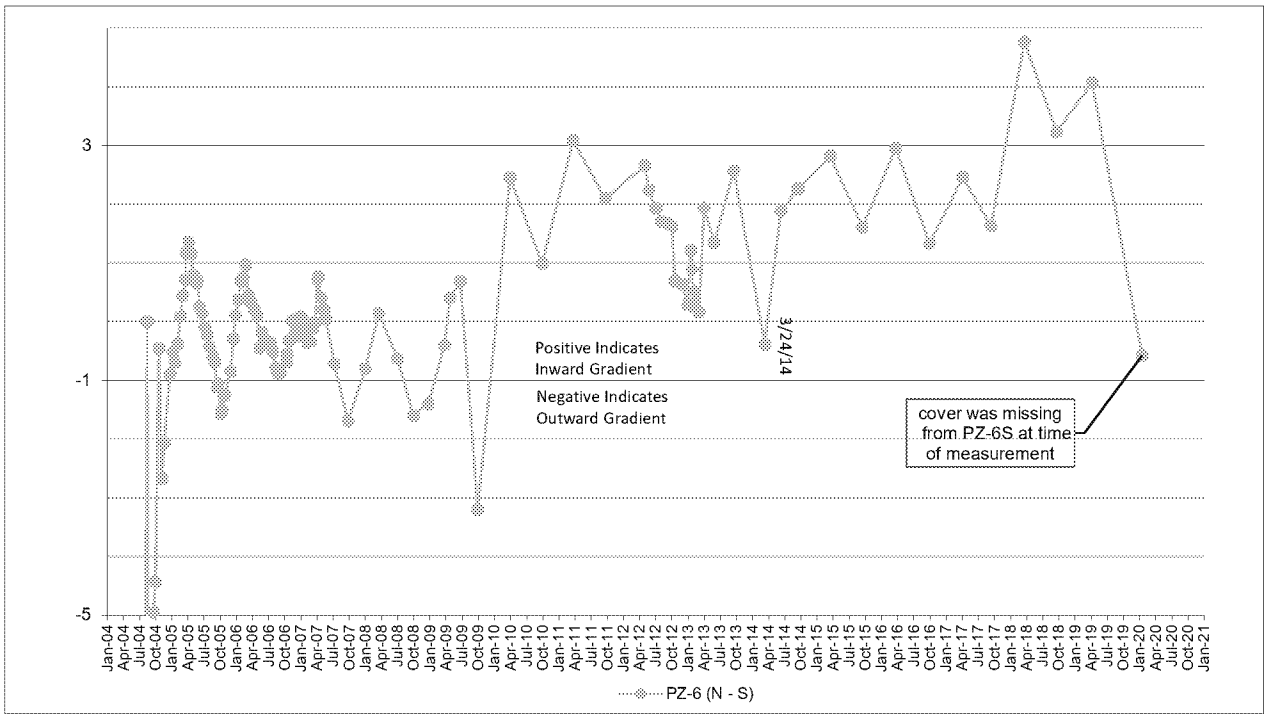

Notes:

Elevations revised based on December 2012 re-survey

Reduced positive gradients or slightly negative gradients are generally associated with water level events conducted:

- During brief well, pump, or system performance declines between quarterly events due to iron fouling. The duration of these issues has been reduced due to routine, quarterly maintenance, addition of Redux 620 to wells B-4DR and C-2D, and maintaining spare parts for pumps.
- Before, during, or soon after routine, quarterly maintenance of the LFExS.
- March 24, 2014: Decreased extraction from nearby well C-30 due to restricted discharge capacity of the line.

Horizontal Head Difference - PZ-6

Golder Associates	Project Number:	013-6052		FIGURE E-13
	Prepared by:	BPC	02/20/20	
	Checked by:	TK	02/20/20	Notes:
	Reviewed by:	TAM	02/25/20	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.11 Semi-Annual .xlsx
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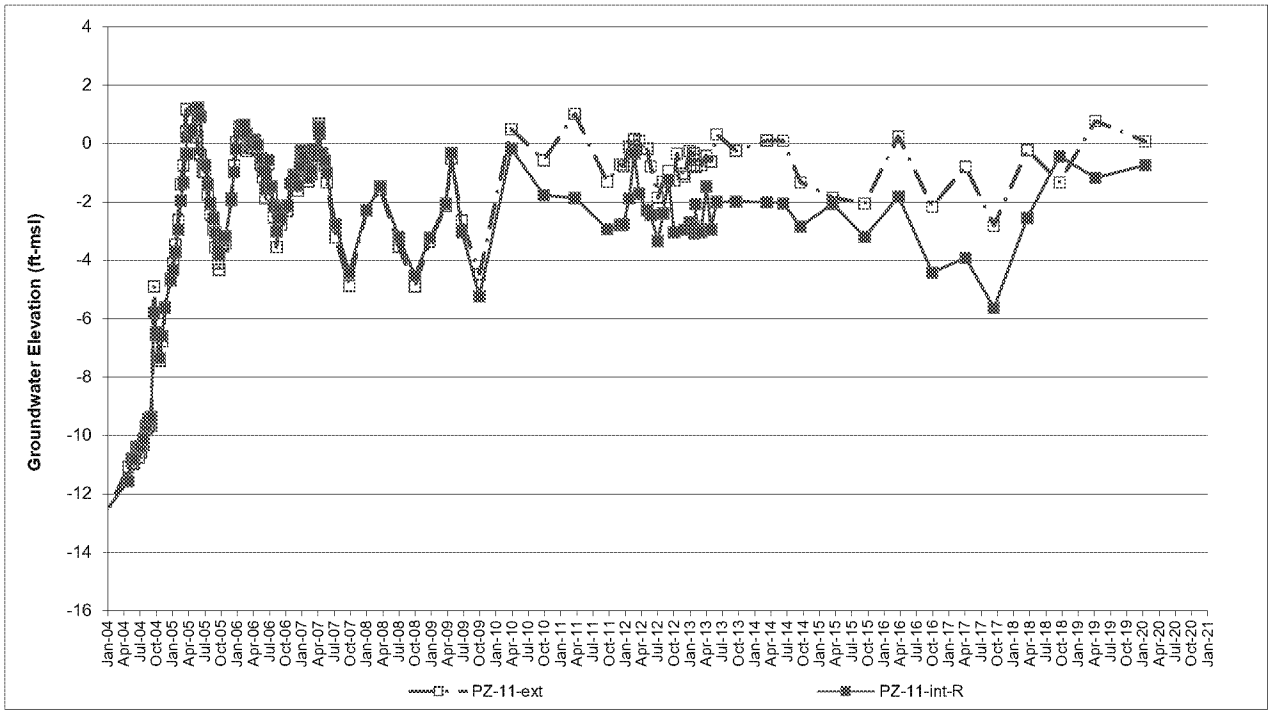

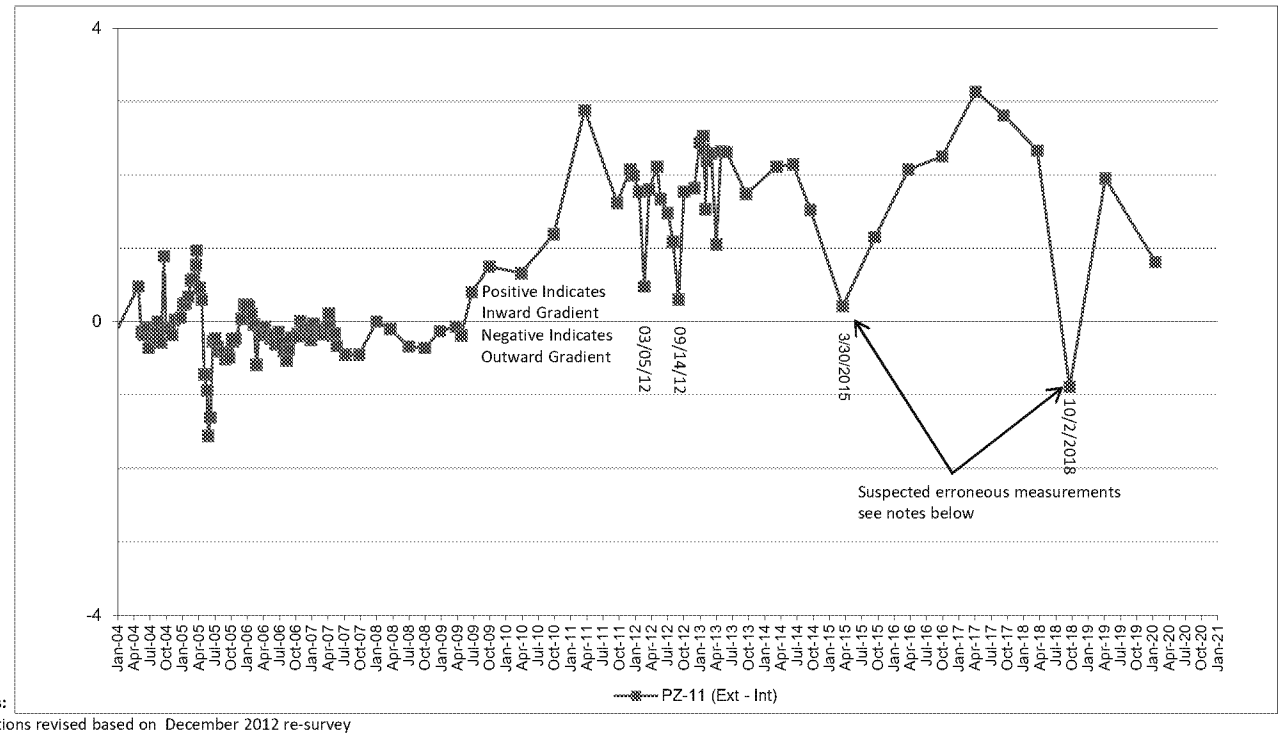

Notes:

Elevations revised based on December 2012 re-survey

Reduced positive gradients or slightly negative gradients are generally associated with water level events conducted:

- During brief well, pump, or system performance declines between quarterly events due to iron fouling. The duration of these issues has been reduced due to routine, quarterly maintenance, addition of Redux 620 to wells B-4DR and C-2D, and maintaining spare parts for pumps.
- Before, during, or soon after routine, quarterly maintenance of the LFExS.
- March 5, 2012: System off for maintenance and well B-4DR connection (March 2-6, 2012)
- September 14, 2012: System off intermittently for quarterly maintenance (September 9, 2012 - September 13, 2012)
- March 30, 2015 - Suspected erroneous measurement: the groundwater elevation in well PZ-11-EXT is typically less than one foot different from nearby well GA-101. In March 2015, the calculated groundwater elevation in PZ-11-EXT (-1.81 ft-msl) was more than two feet lower than well GA-101 (+0.63 ft-msl).
- October 2, 2018 - Suspected erroneous measurement: the groundwater elevation in well PZ-11-INT is typically less than 0.2 ft different from nearby well C-1D. In October 2018, the calculated groundwater elevation in PZ-11-INT (-0.44 ft-msl) was more than two feet higher than well C-1D (-3.08 ft-msl).

Horizontal Head Difference - PZ-11

Golder Associates	Project Number:	013-6052		FIGURE E-14
	Prepared by:	BPC	02/20/20	
	Checked by:	TK	02/20/20	Notes:
	Reviewed by:	TAM	02/25/20	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.11 Semi-Annual .xlsx
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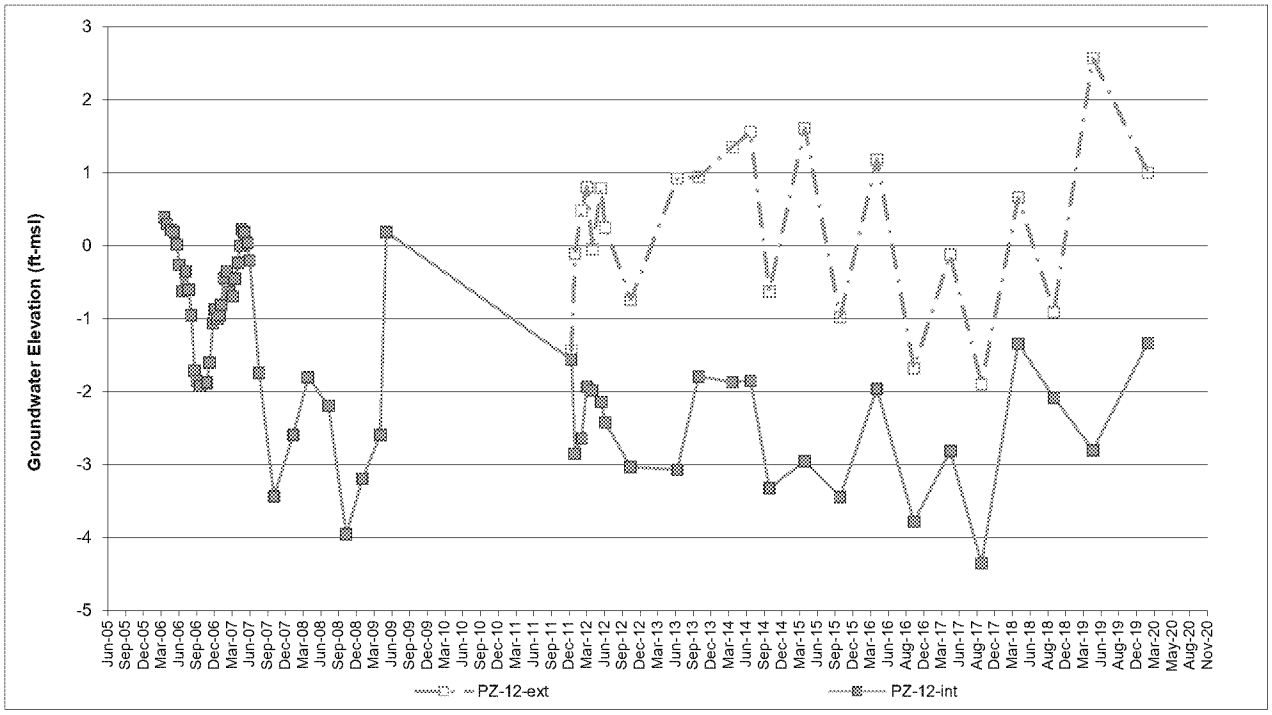

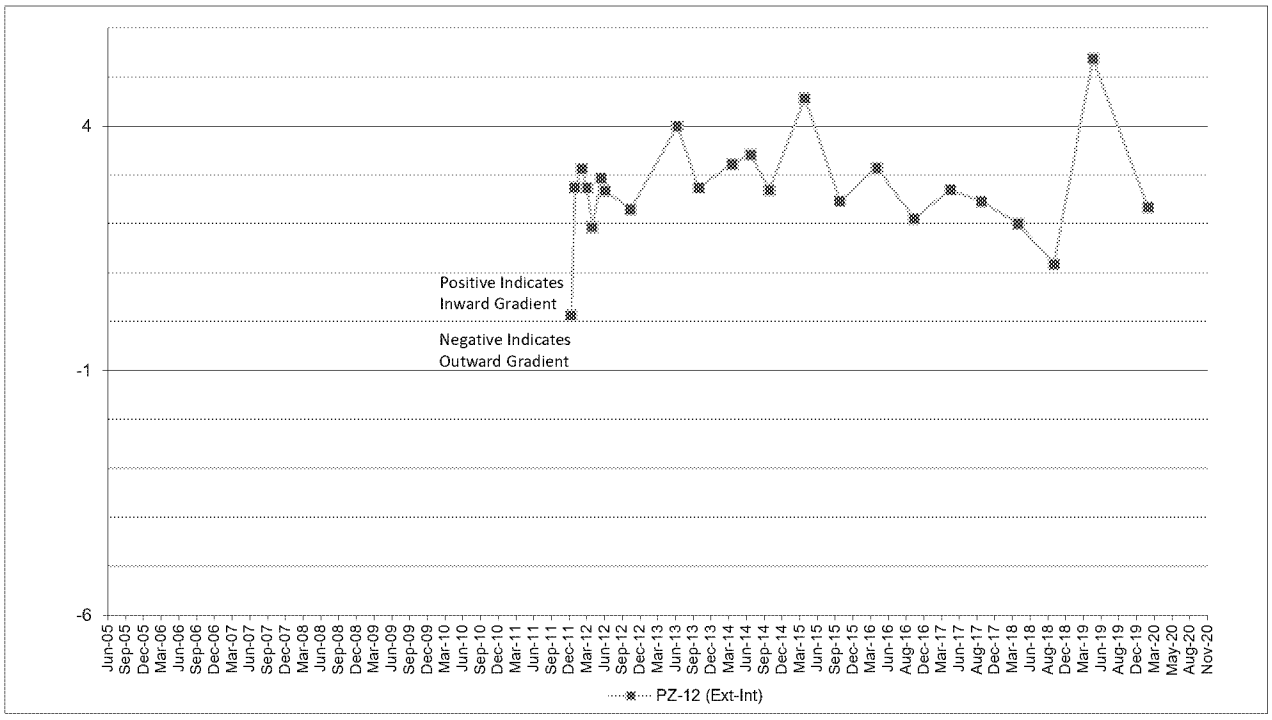

Notes:

Elevations revised based on December 2012 re-survey

Reduced positive gradients or slightly negative gradients are generally associated with water level events conducted:

- During brief well, pump, or system performance declines between quarterly events due to iron fouling. The duration of these issues has been reduced due to routine, quarterly maintenance, addition of Redux 620 to wells B-4DR and C-2D, and maintaining spare parts for pumps.
- Before, during, or soon after routine, quarterly maintenance of the LFExS.

Horizontal Head Difference - PZ-12

Golder Associates	Project Number:	013-6052		FIGURE E-15
	Prepared by:	BPC	02/20/20	
	Checked by:	TK	02/20/20	Notes:
	Reviewed by:	TAM	02/25/20	

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2/26/2020

APPENDIX F

Analytical Chemistry Trend Plots

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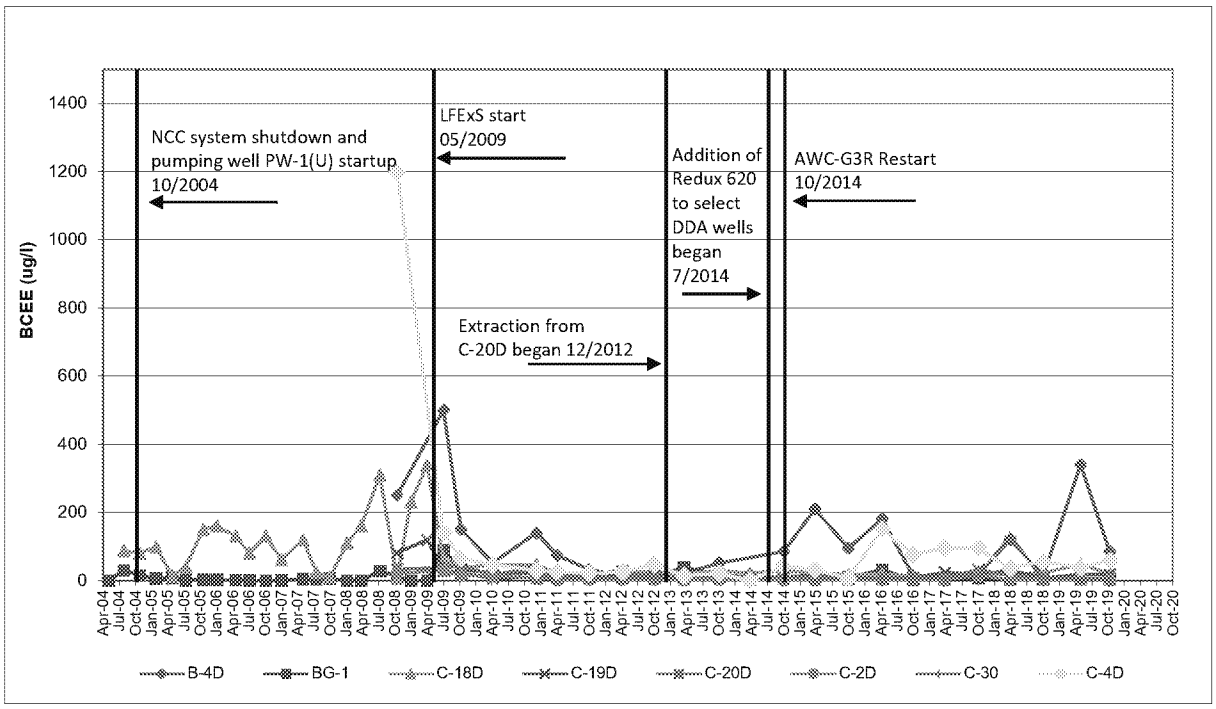

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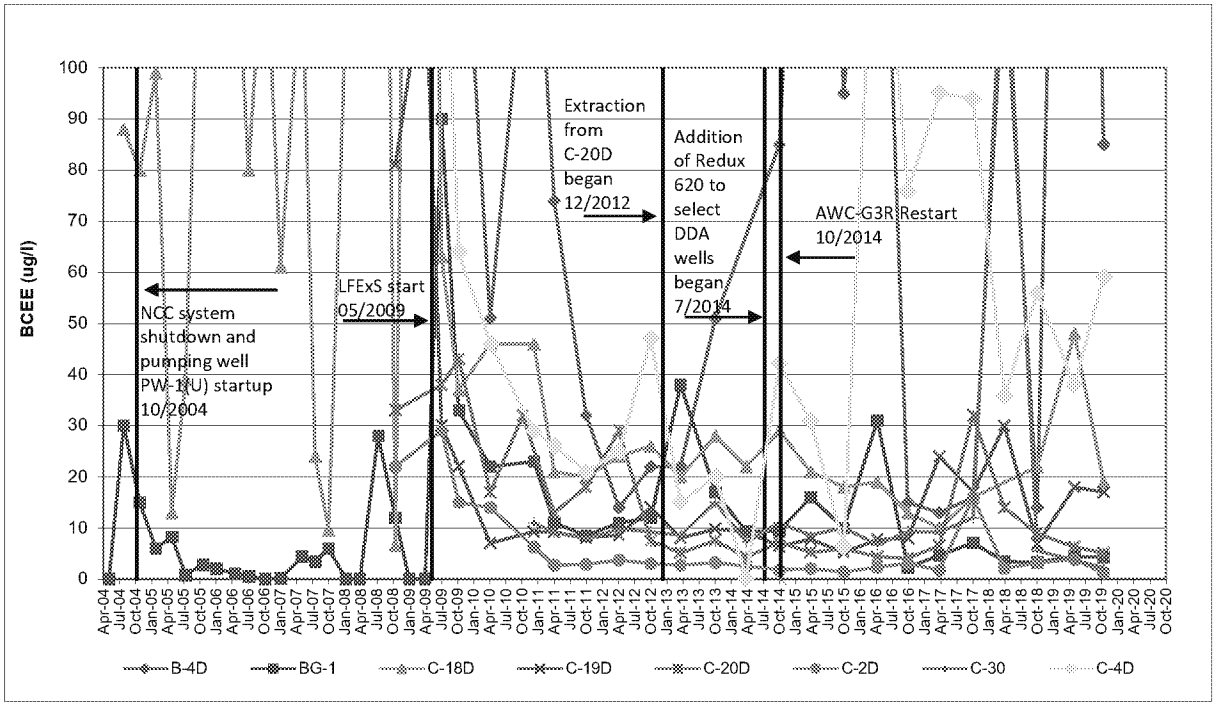

BCEE - DDA Groundwater - LFExS Extraction Wells

Golder Associates	Project Number:	013-6052	FIGURE F-1A
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

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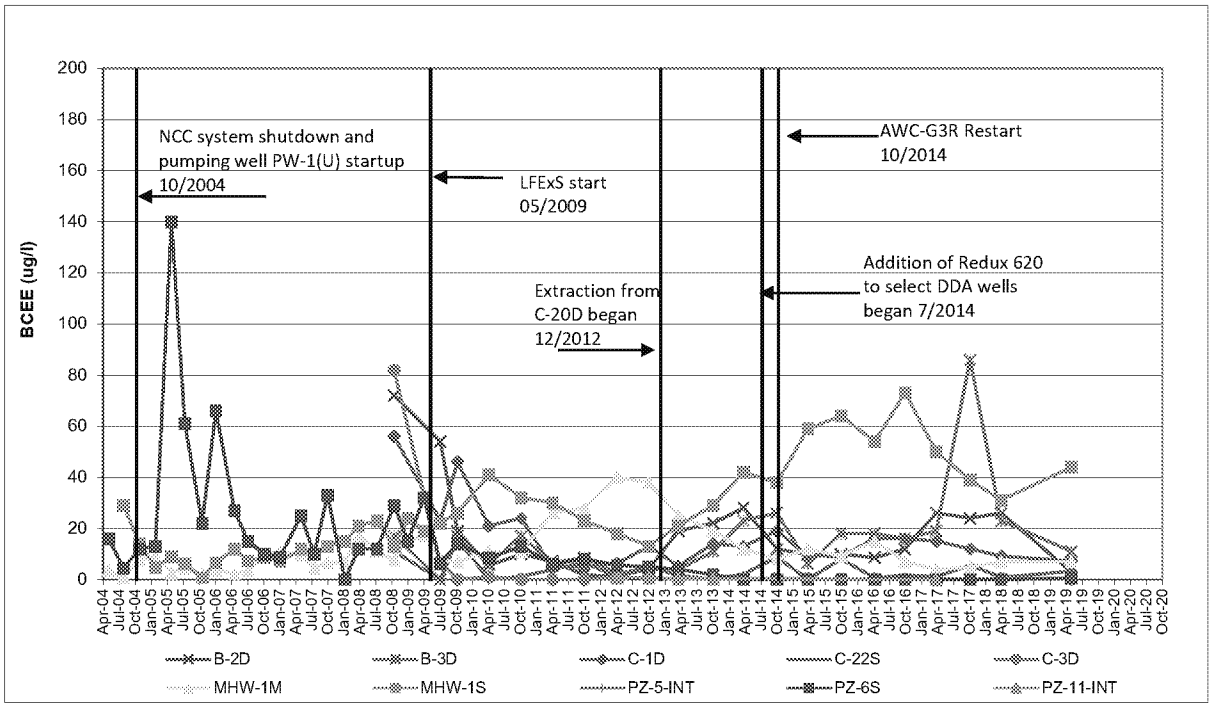

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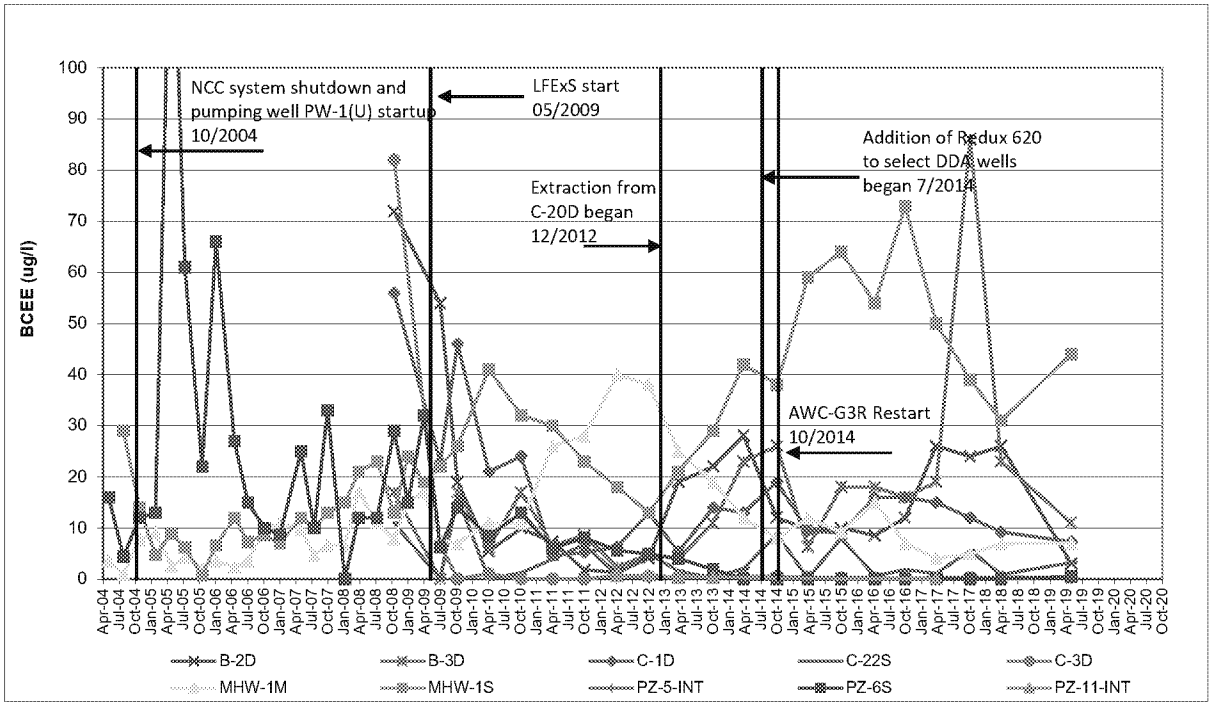

BCEE - DDA Groundwater - LFExS Monitoring Wells

Golder Associates

Project Number:	013-6052		FIGURE F-2A
Prepared by:	TK	1/8/2020	
Checked by:	BPC	1/8/2020	Delaware Sand and Gravel Superfund Site
Reviewed by:	TAM	2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

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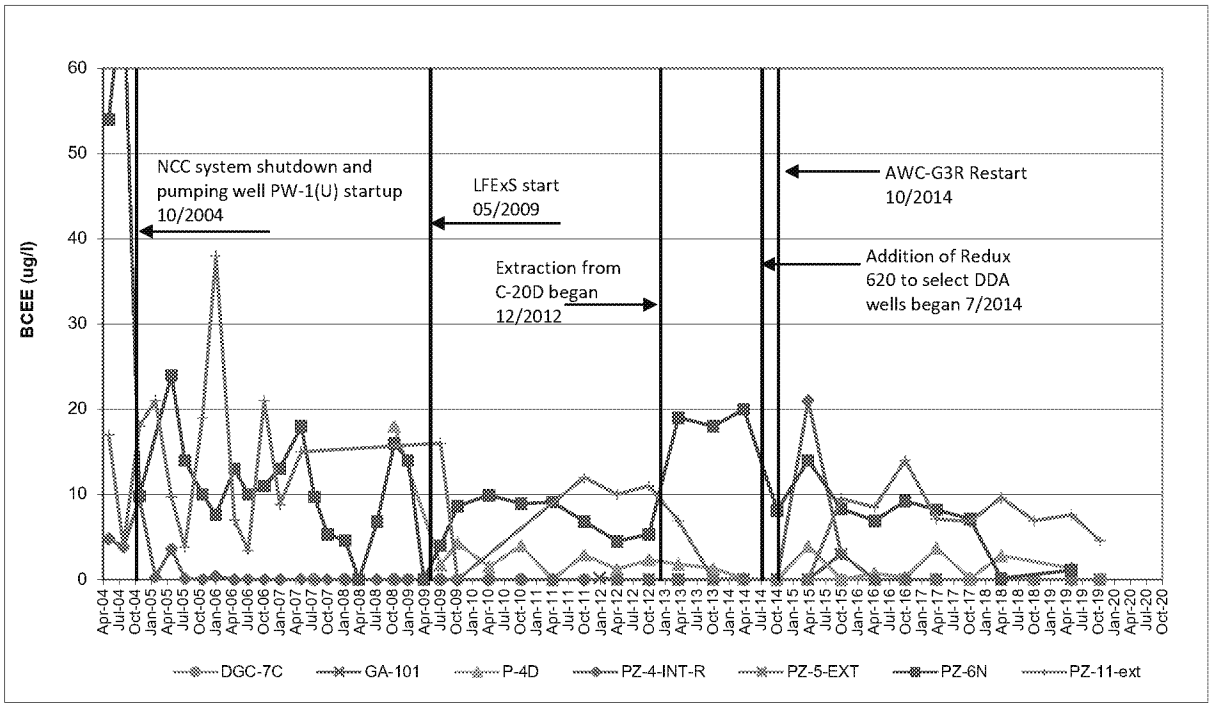

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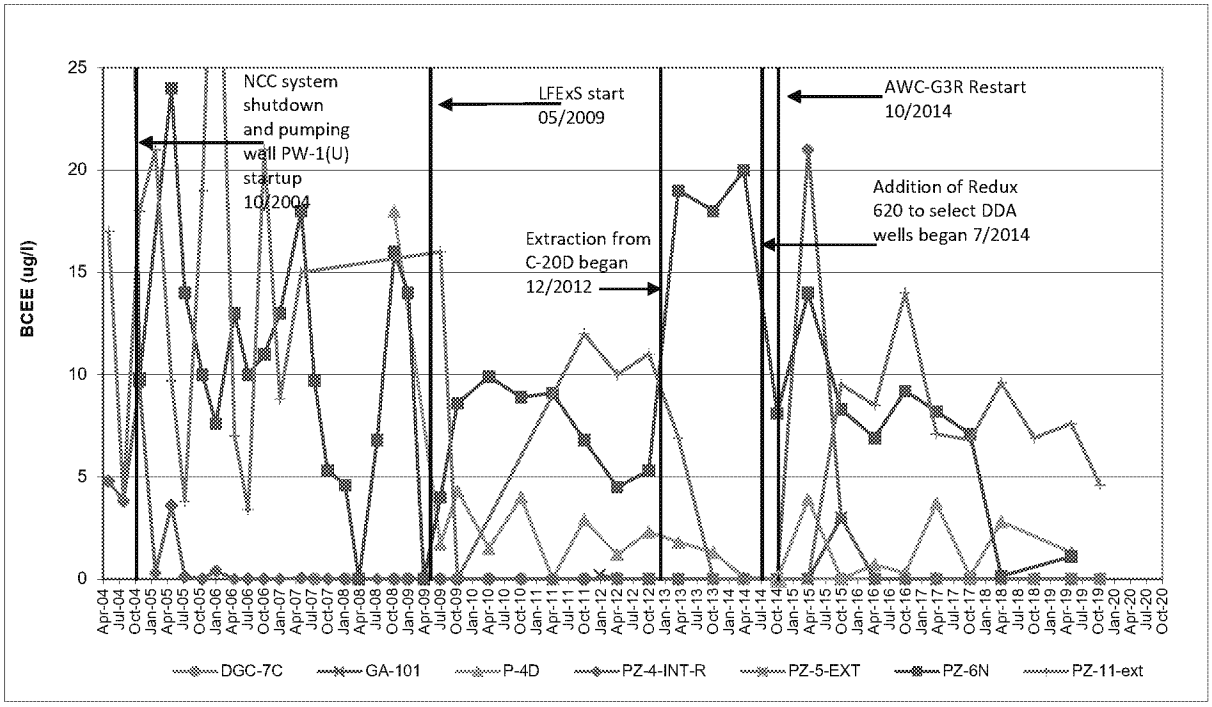

BCEE - DDA Groundwater - Columbia Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-3A
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

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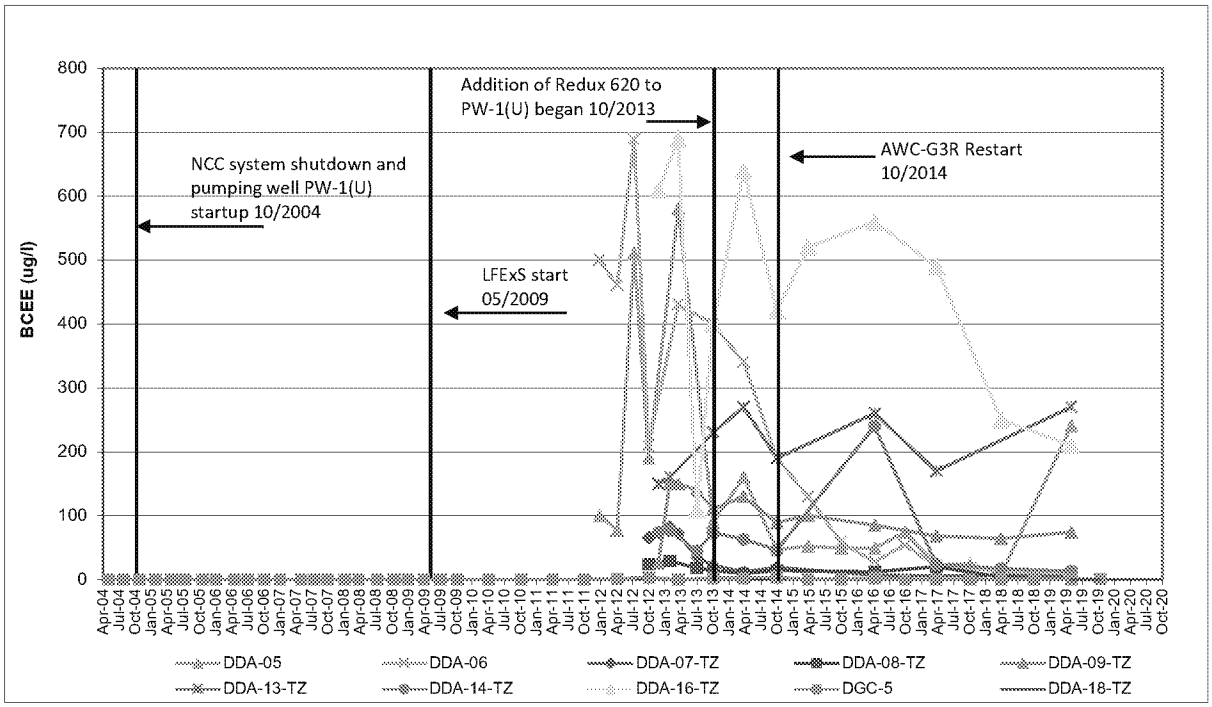

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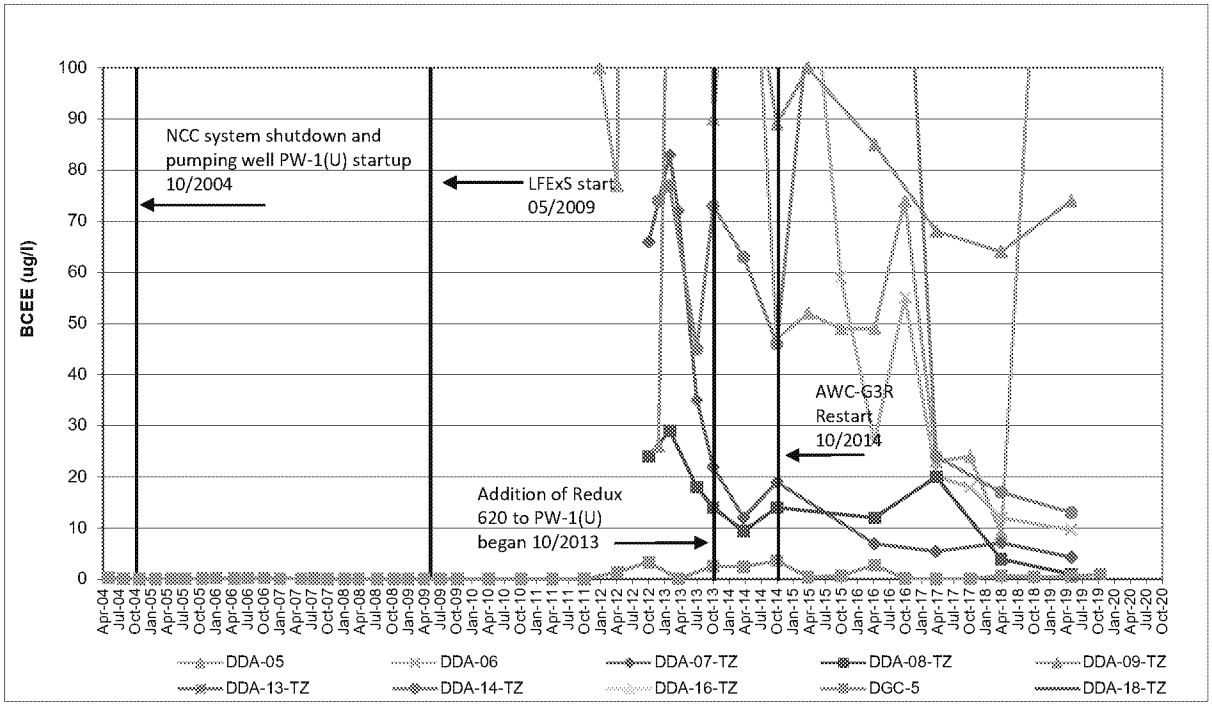

BCEE - DDA to Well PW-1(U) UPCUTZ - Western and Central Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-4.1A
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

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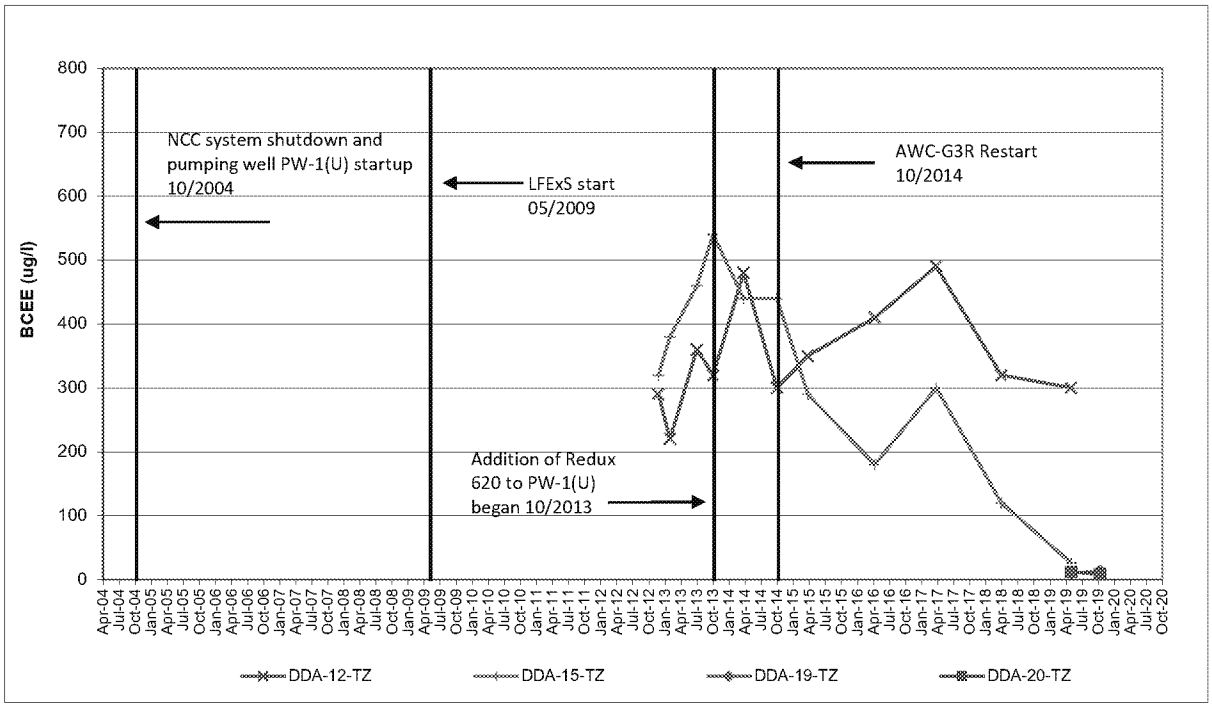

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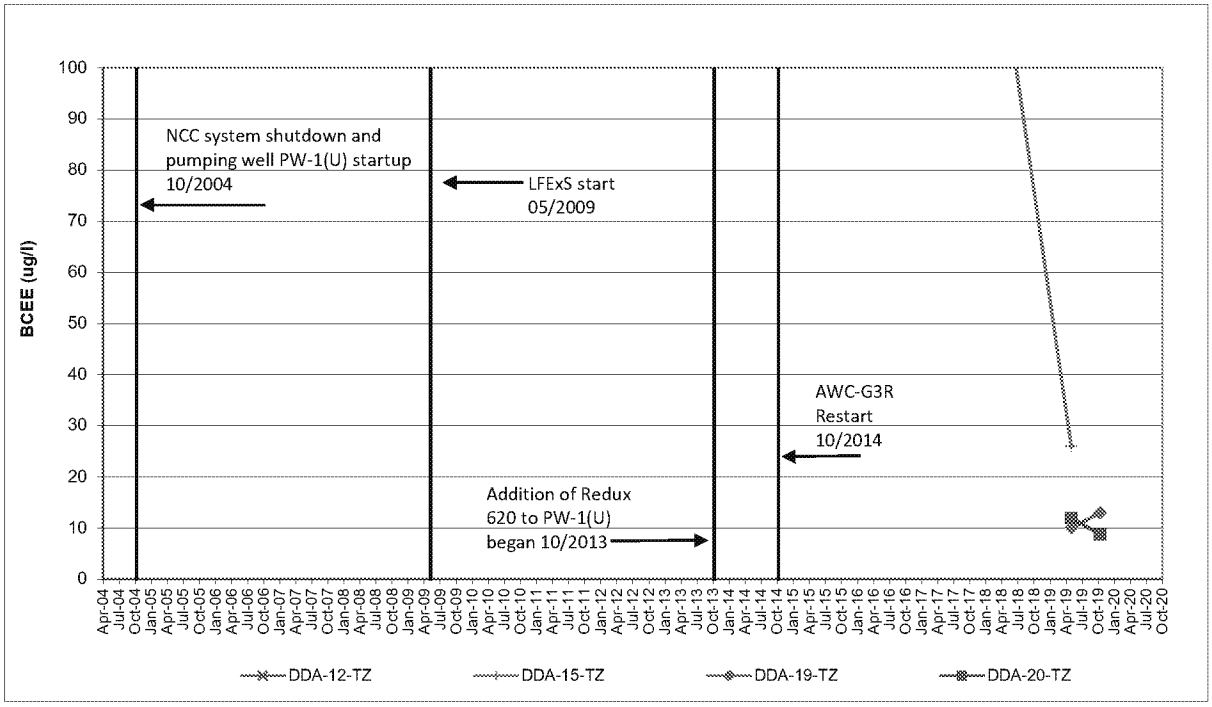

BCEE - DDA to Well PW-1(U) UPCUTZ - Eastern Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-4.2A
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

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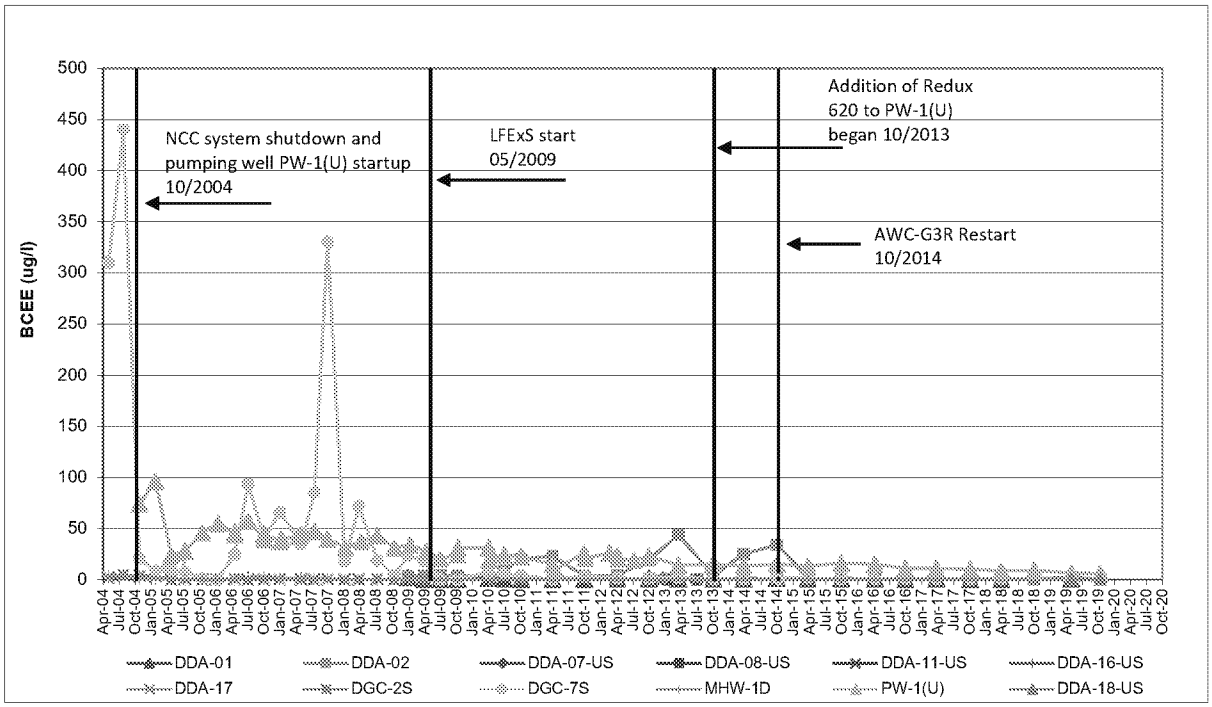

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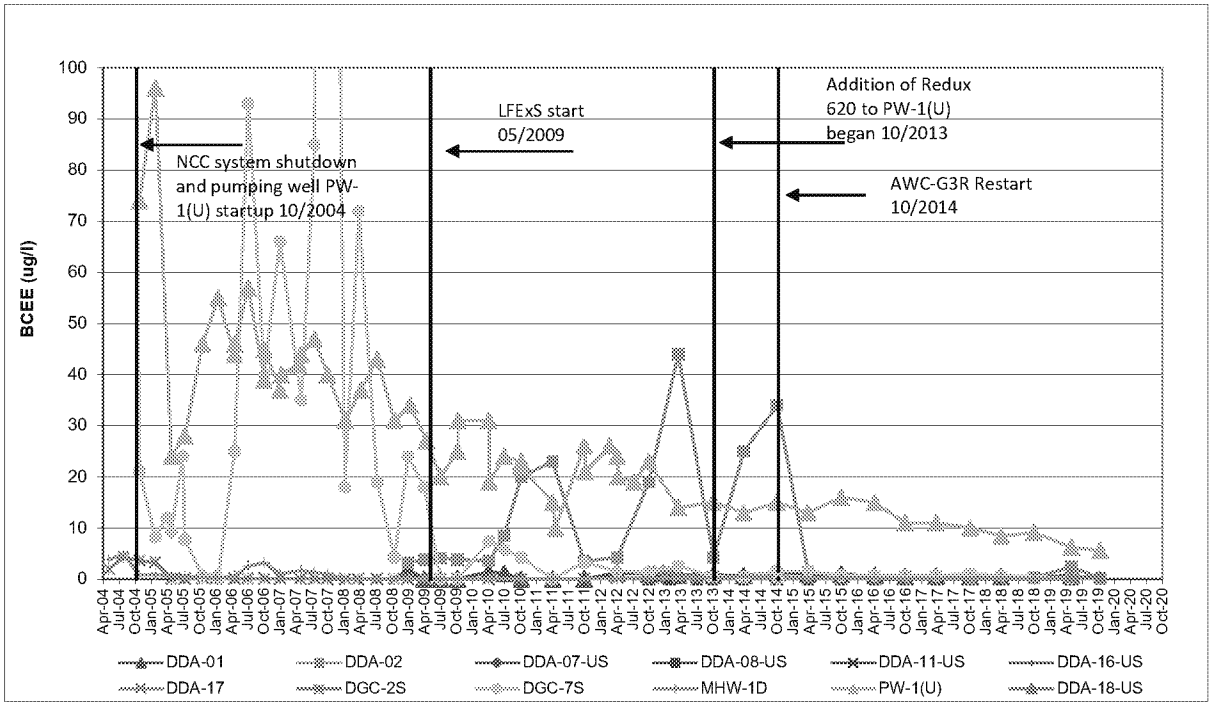

BCEE - DDA to Well PW-1(U) UPA - Western and Central Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-5.1A
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

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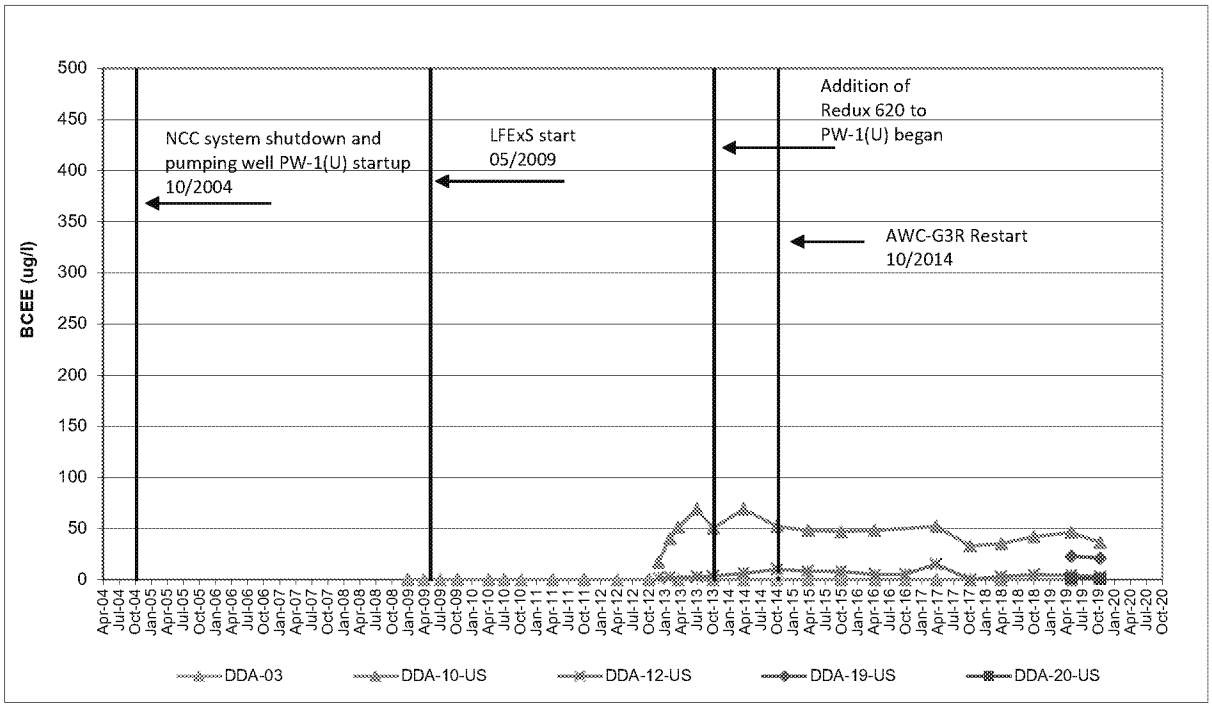

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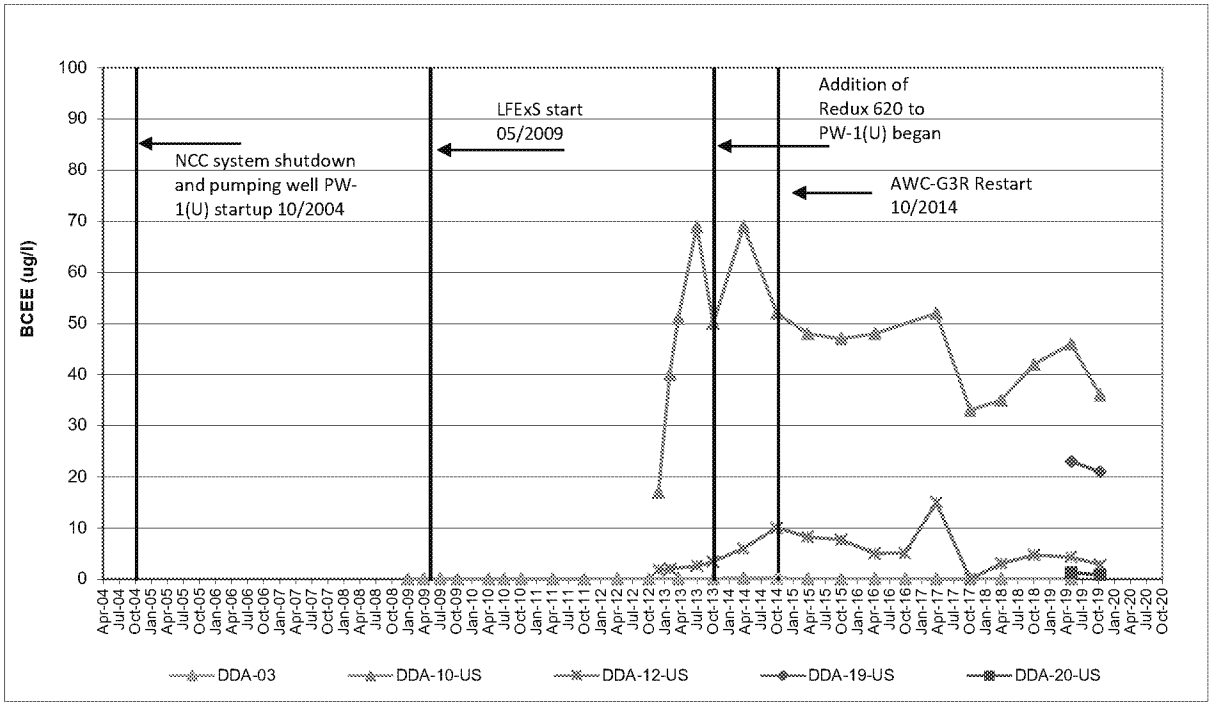

BCEE - DDA to Well PW-1(U) UPA - Eastern Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-5.2A
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

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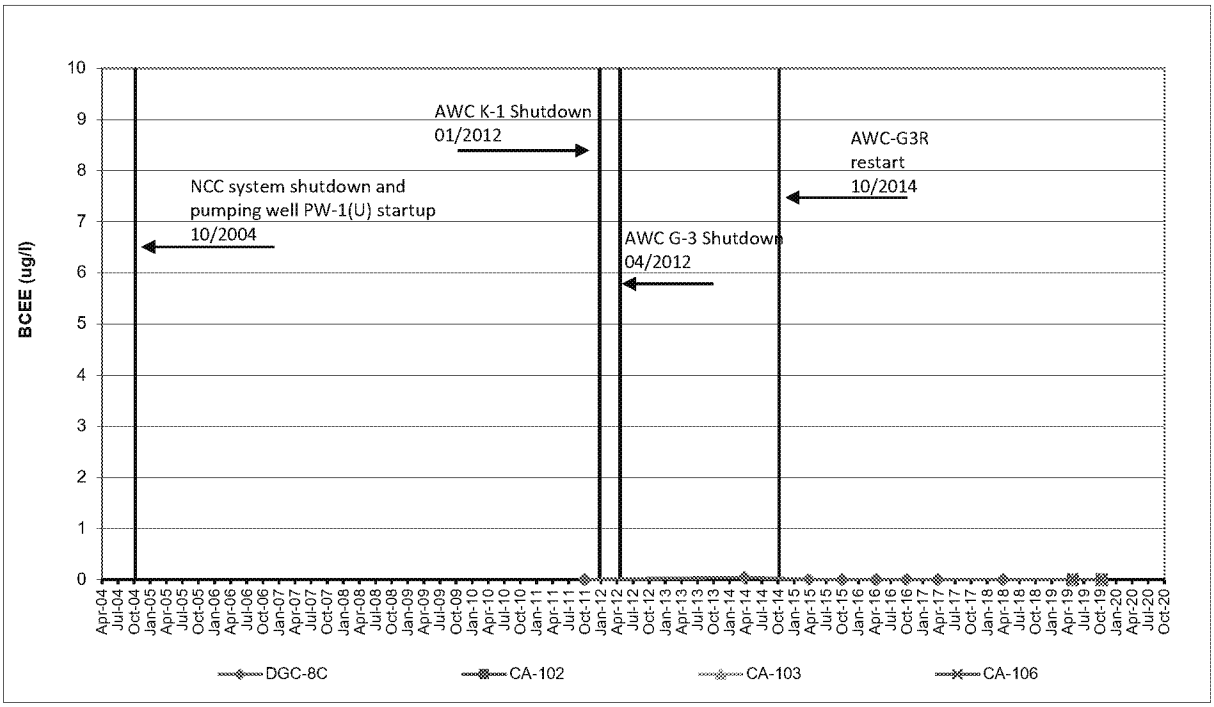

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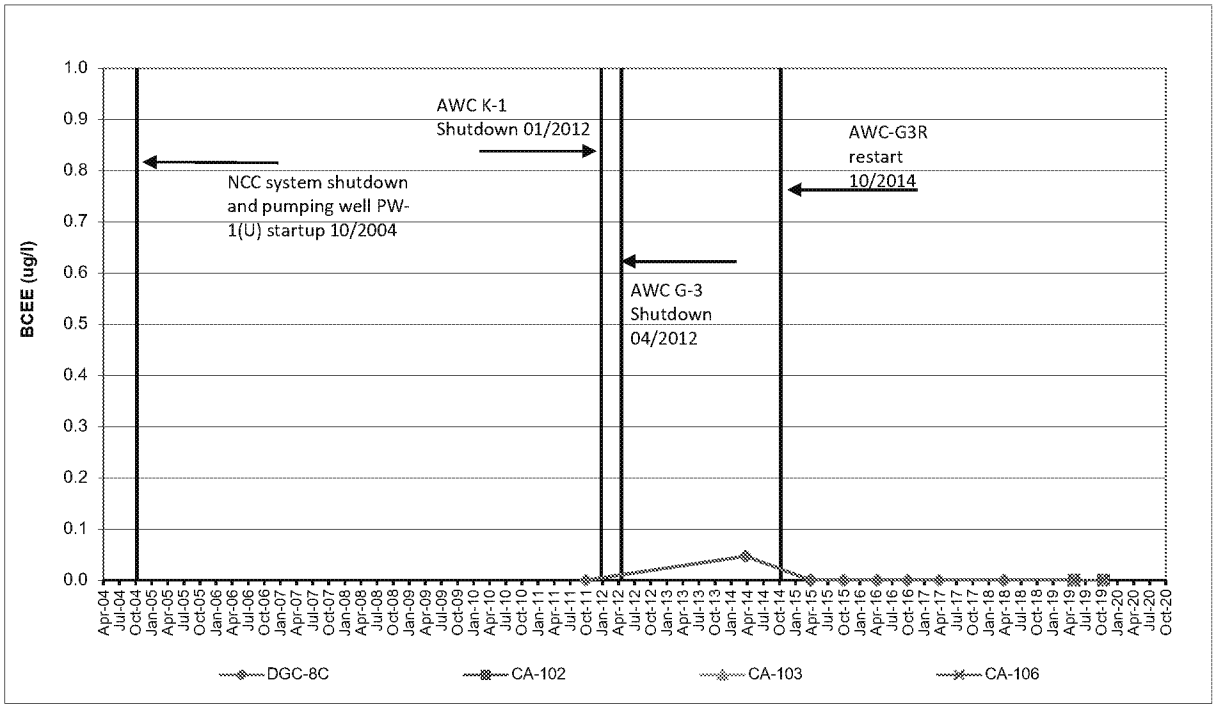

BCEE - Downgradient of Well PW-1(U) - Columbia Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-6.1A
	Prepared by:	TK	1/8/2020
	Checked by:	BPC	1/8/2020
	Reviewed by:	TAM	2/24/2020

Delaware Sand and Gravel Superfund Site

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

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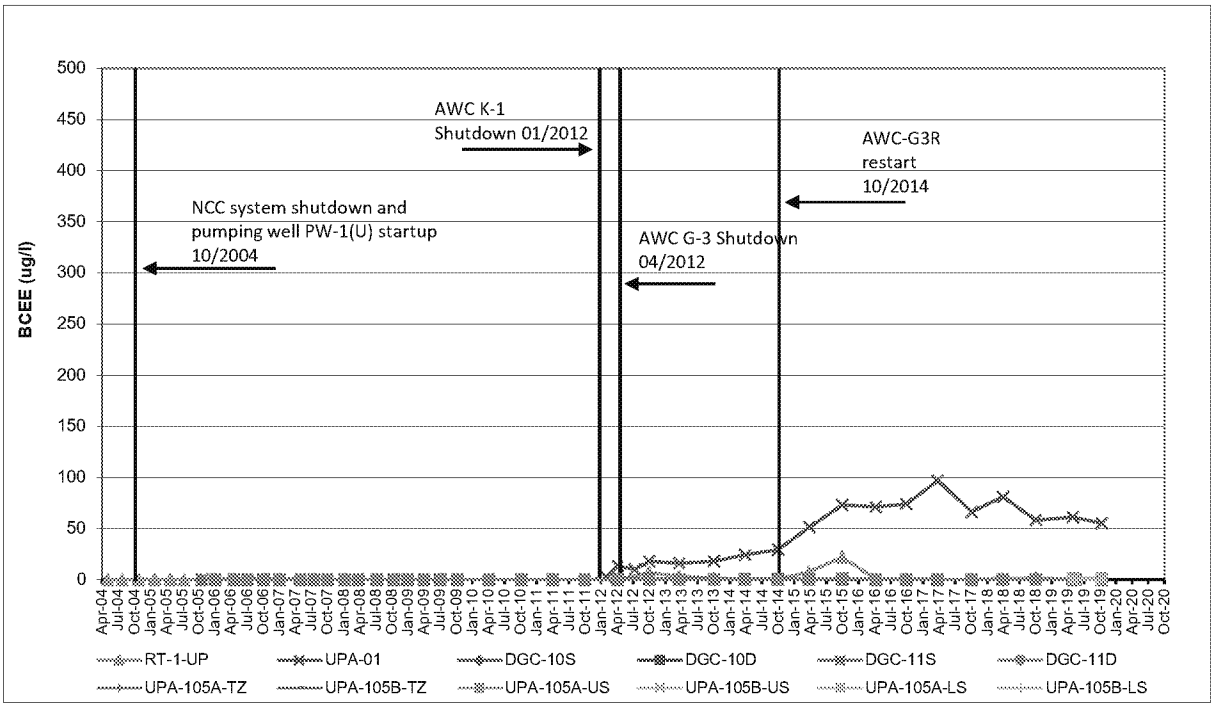

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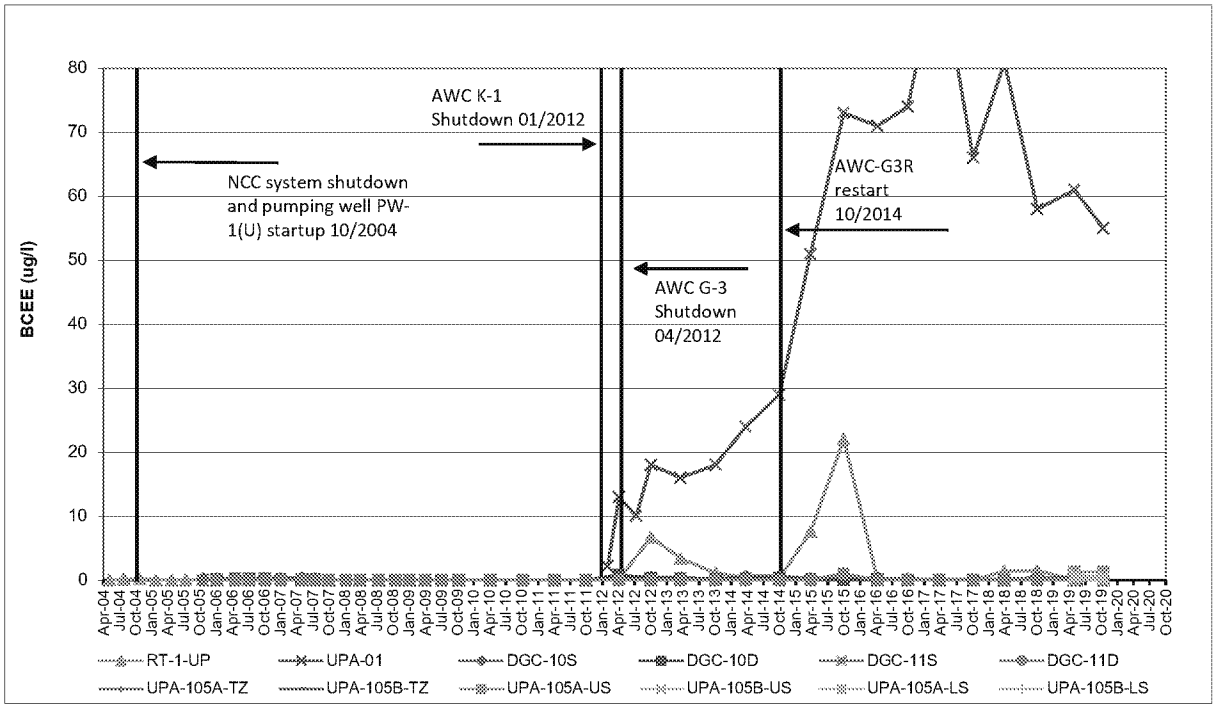

BCEE - Downgradient of Well PW-1(U) - UPCUTZ and UPA - UPA-01 Area Monitoring Wells

Golder Associates

Project Number:	013-6052		FIGURE F-6.2A
Prepared by:	TK	1/8/2020	
Checked by:	BPC	1/8/2020	Delaware Sand and Gravel Superfund Site
Reviewed by:	TAM	2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

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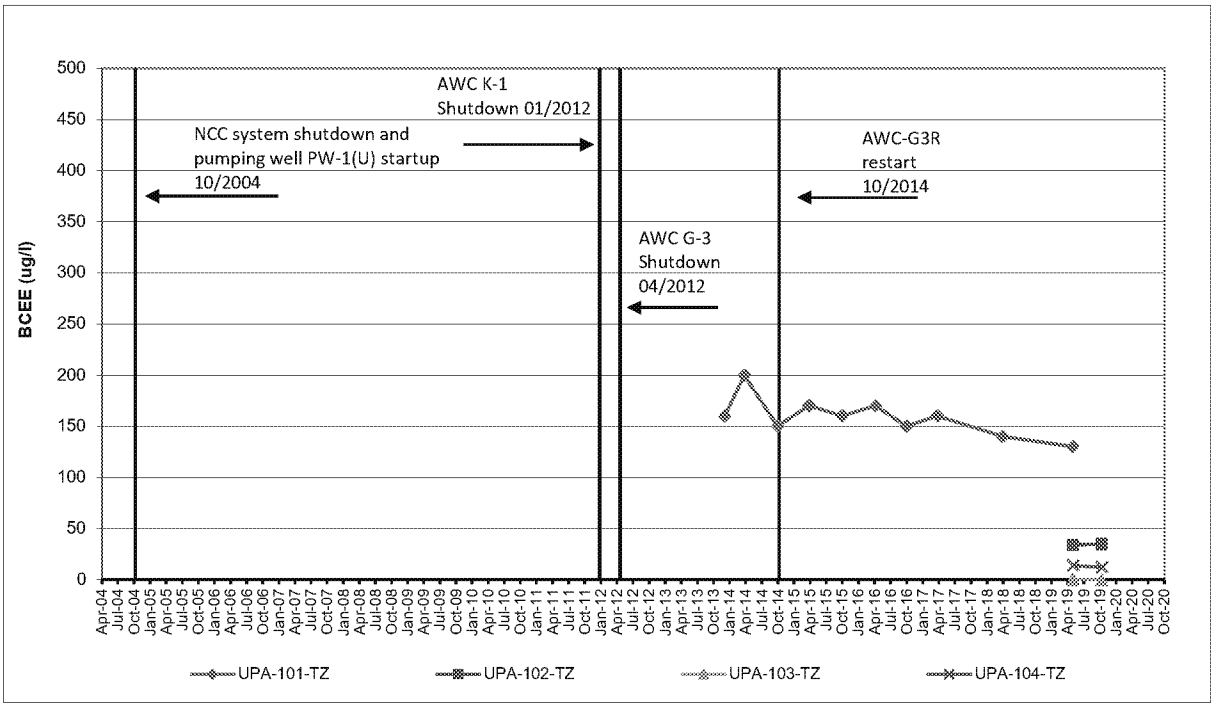

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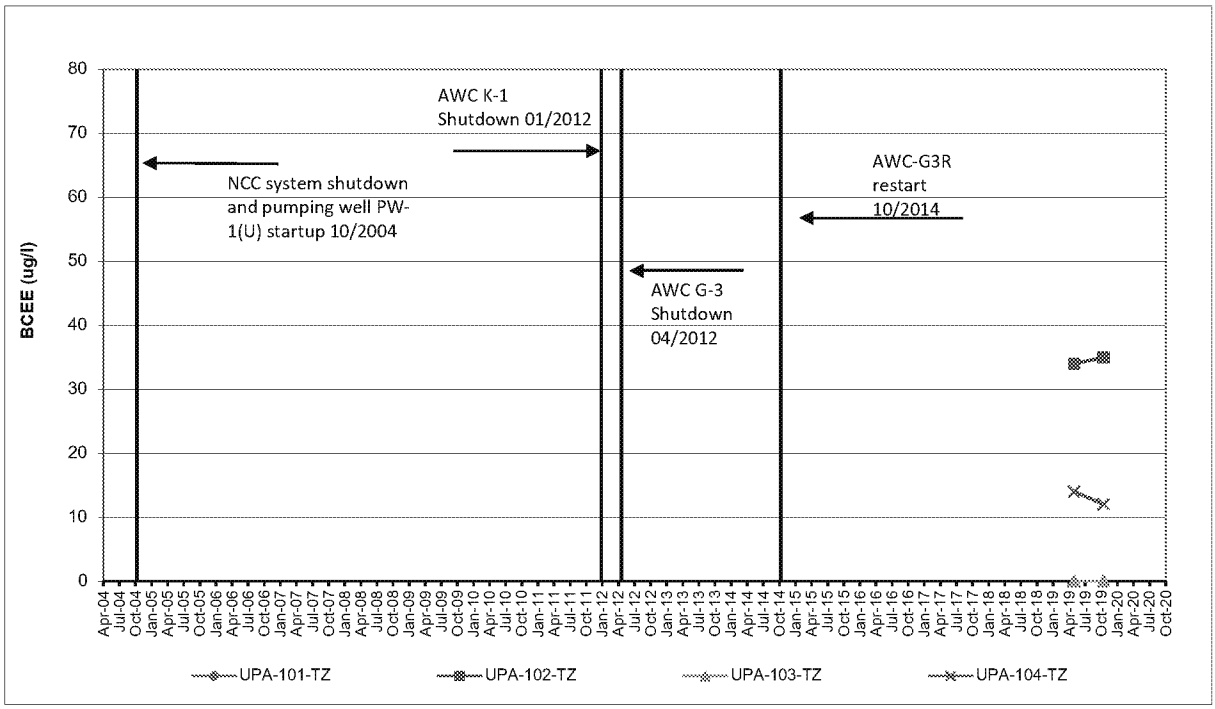

BCEE - Downgradient of Well PW-1(U) - UPCUTZ - P-6 Area Monitoring Wells

Golder Associates

Project Number:	013-6052		FIGURE F-6.3A
Prepared by:	TK	1/8/2020	
Checked by:	BPC	1/8/2020	Delaware Sand and Gravel Superfund Site
Reviewed by:	TAM	2/24/2020	

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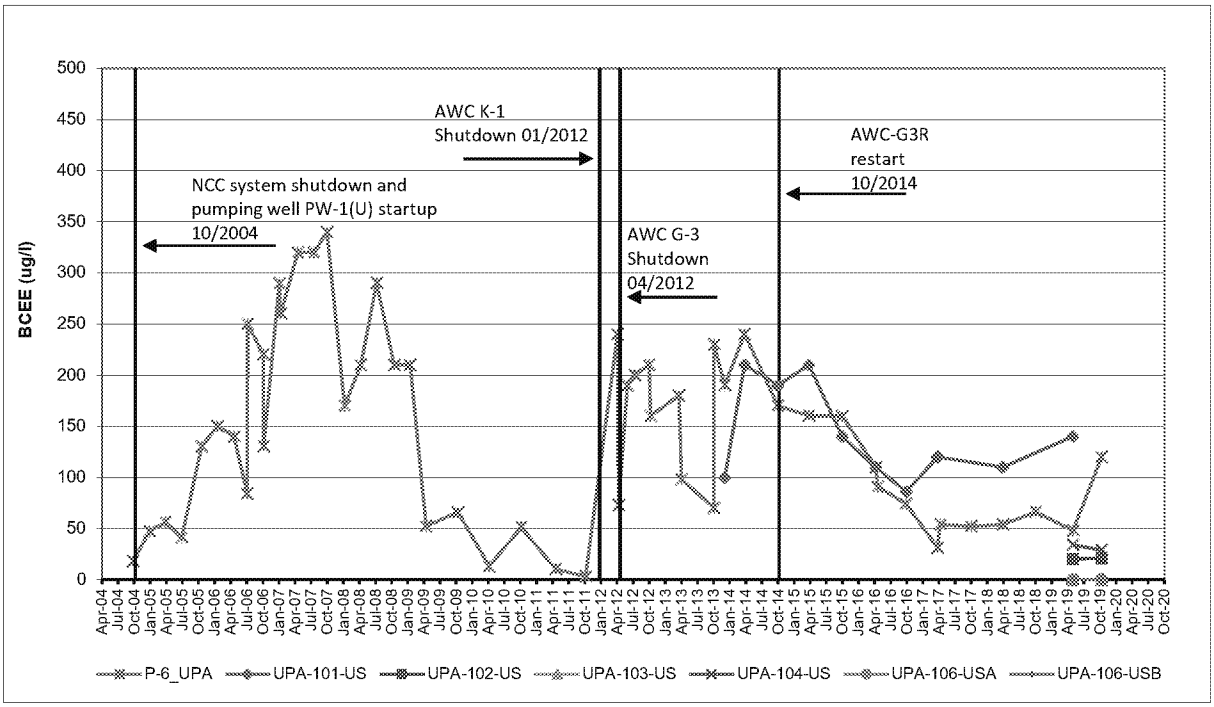

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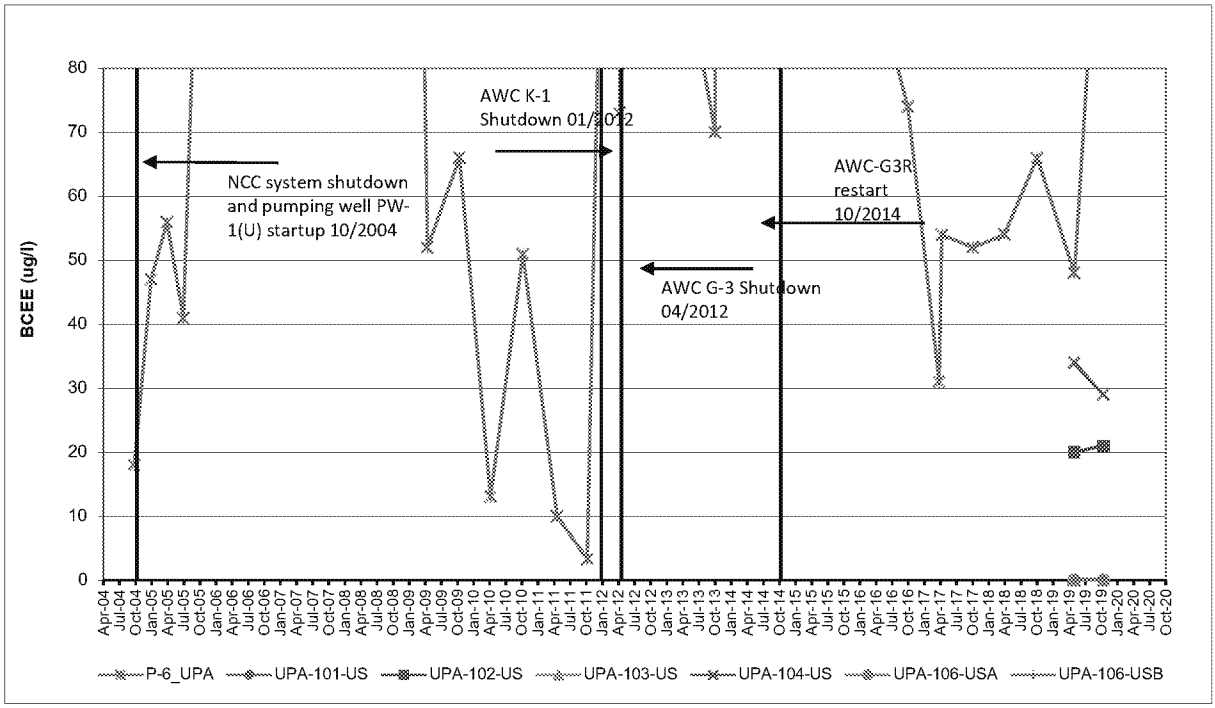

BCEE - Downgradient of Well PW-1(U) - UPA Upper Sand - P-6 Area Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-6.4A
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

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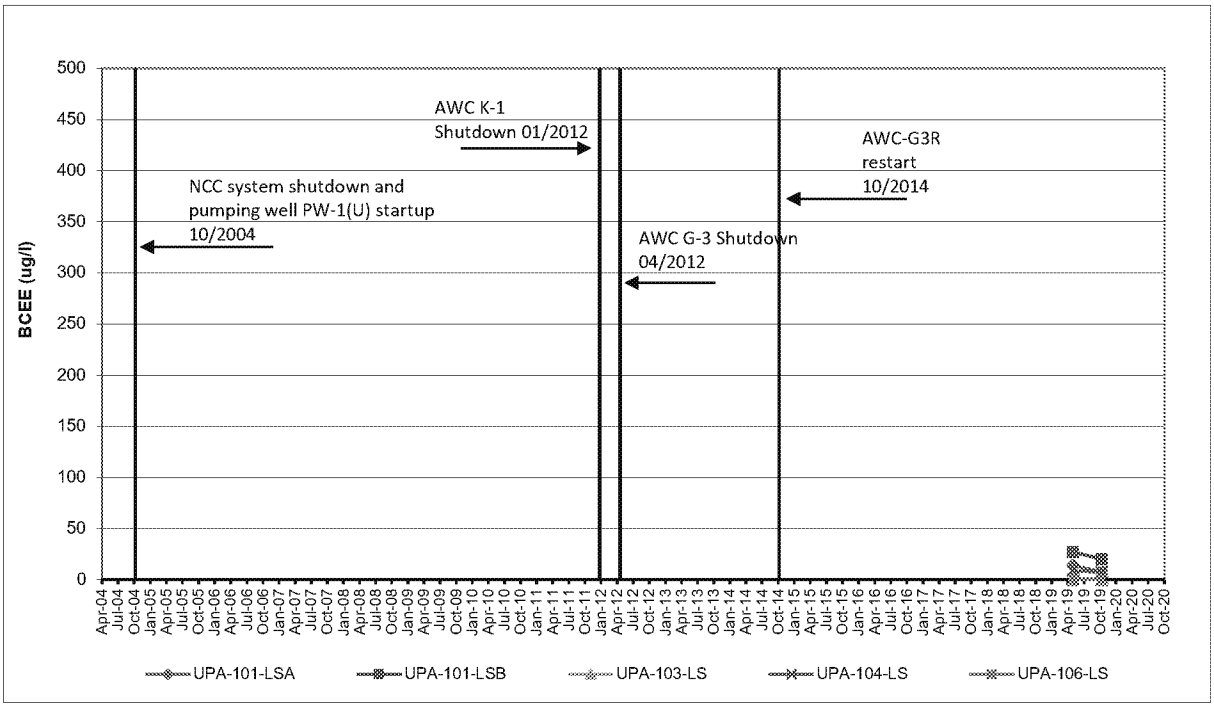

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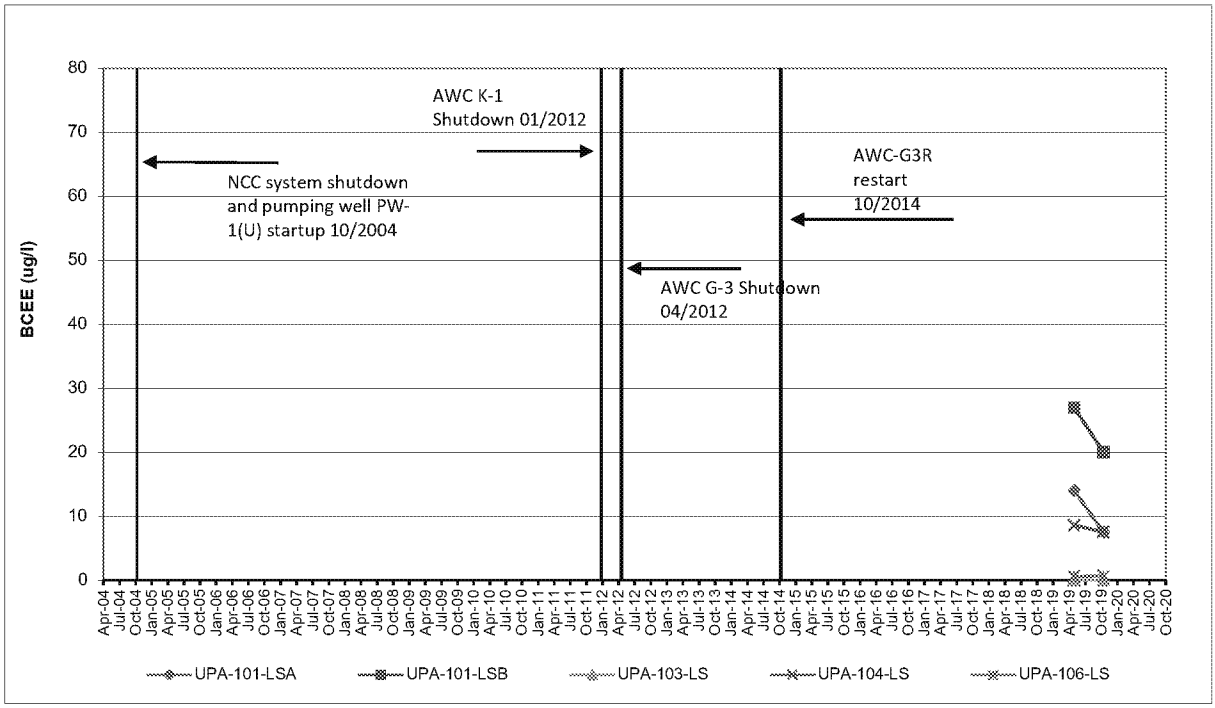

BCEE - Downgradient of Well PW-1(U) - UPA Lower Sand - P-6 Area Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-6.5A
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

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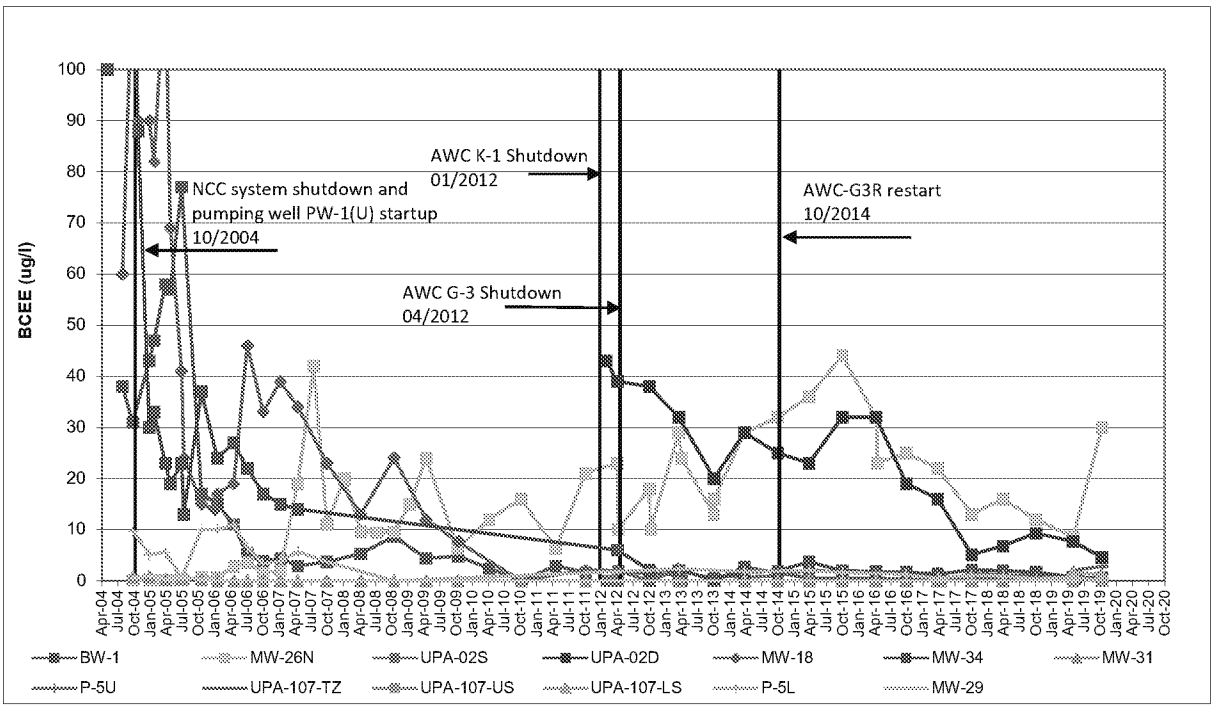

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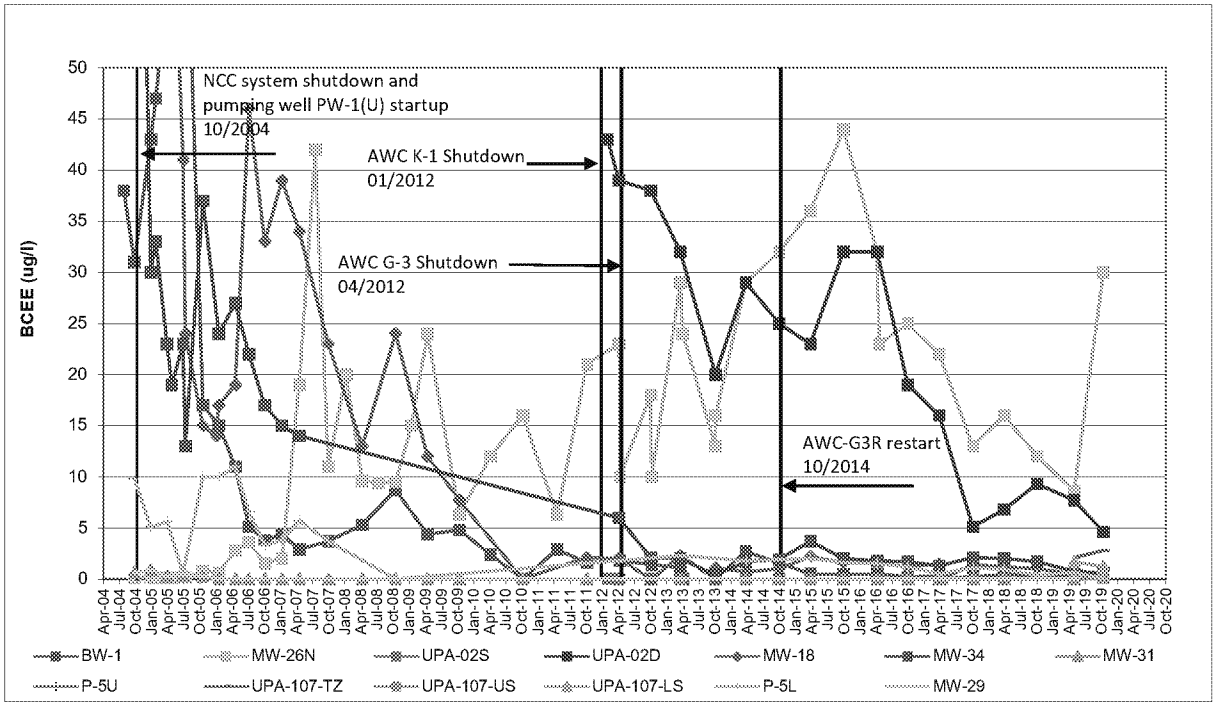

BCEE - Downgradient of Well PW-1(U) - UPA - MW-18/34 Area Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-7.1A
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	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

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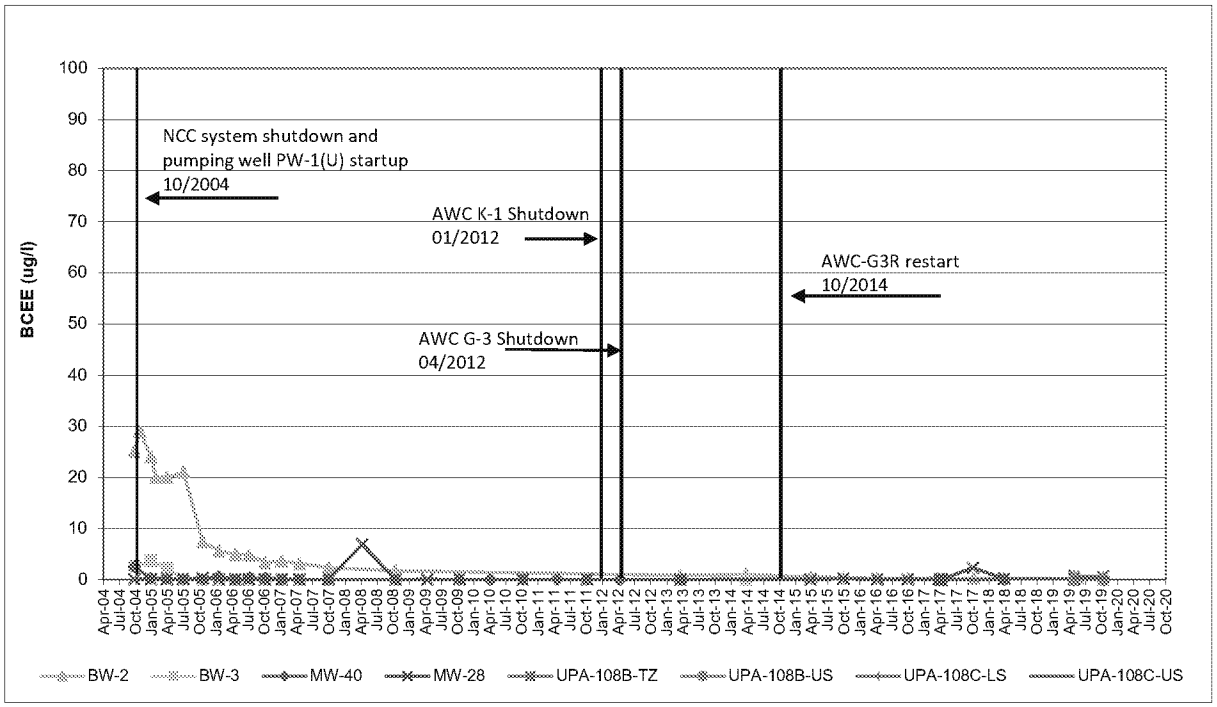

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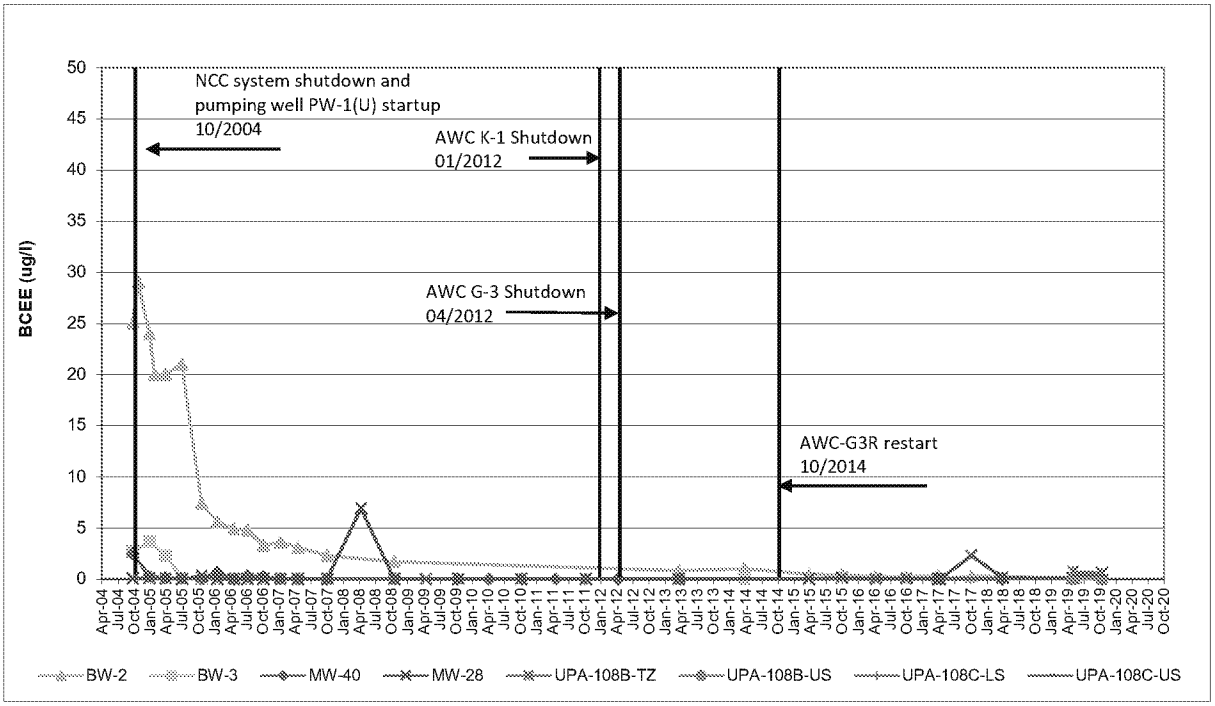

BCEE - Downgradient of Well PW-1(U) - UPA - BW-2 Area Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-7.2A
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

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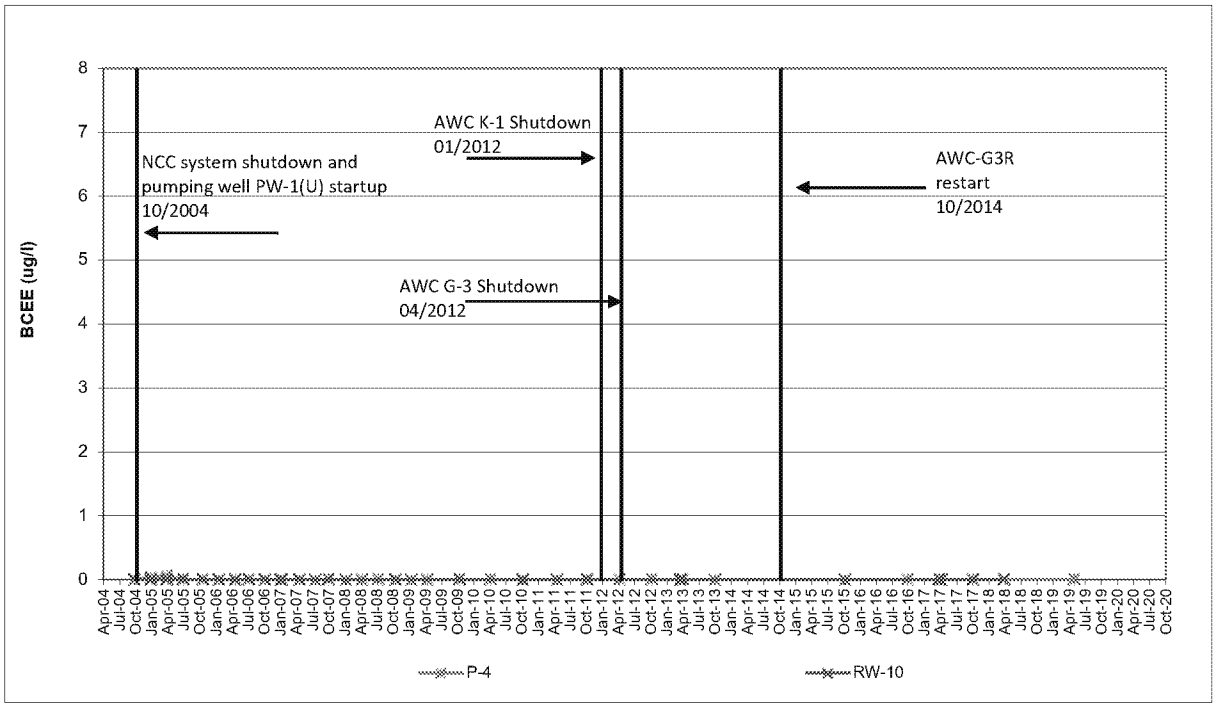
NORMAL SCALE



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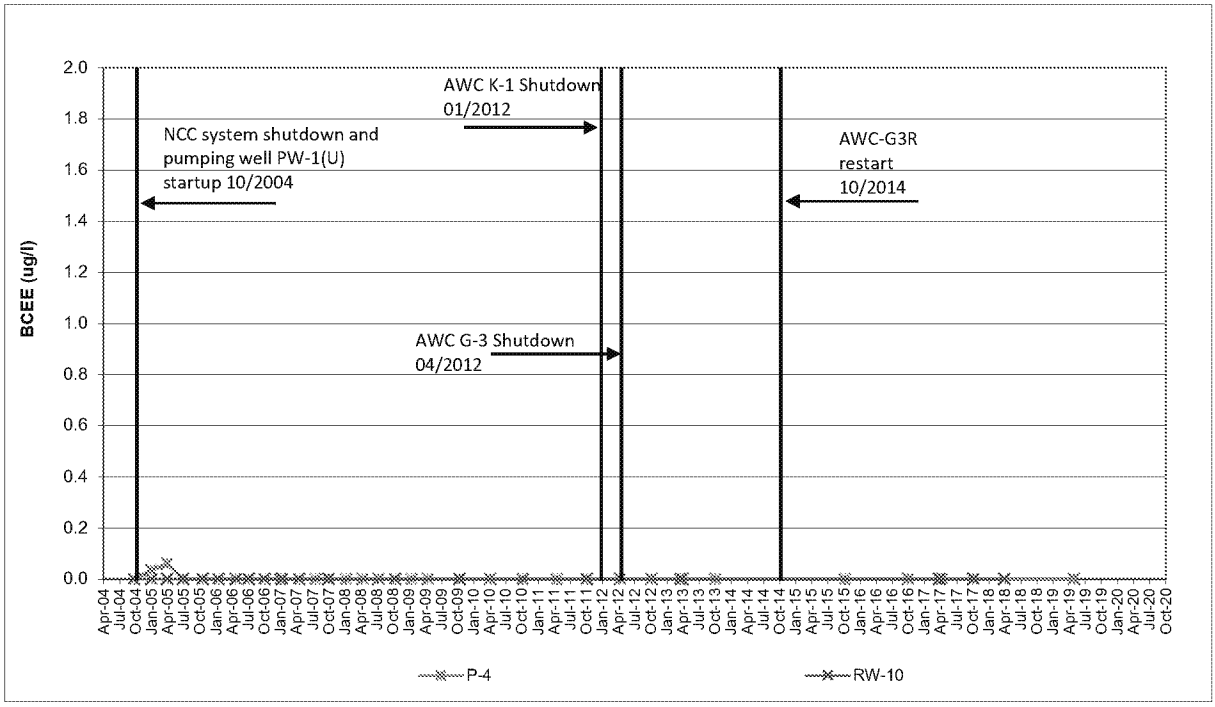
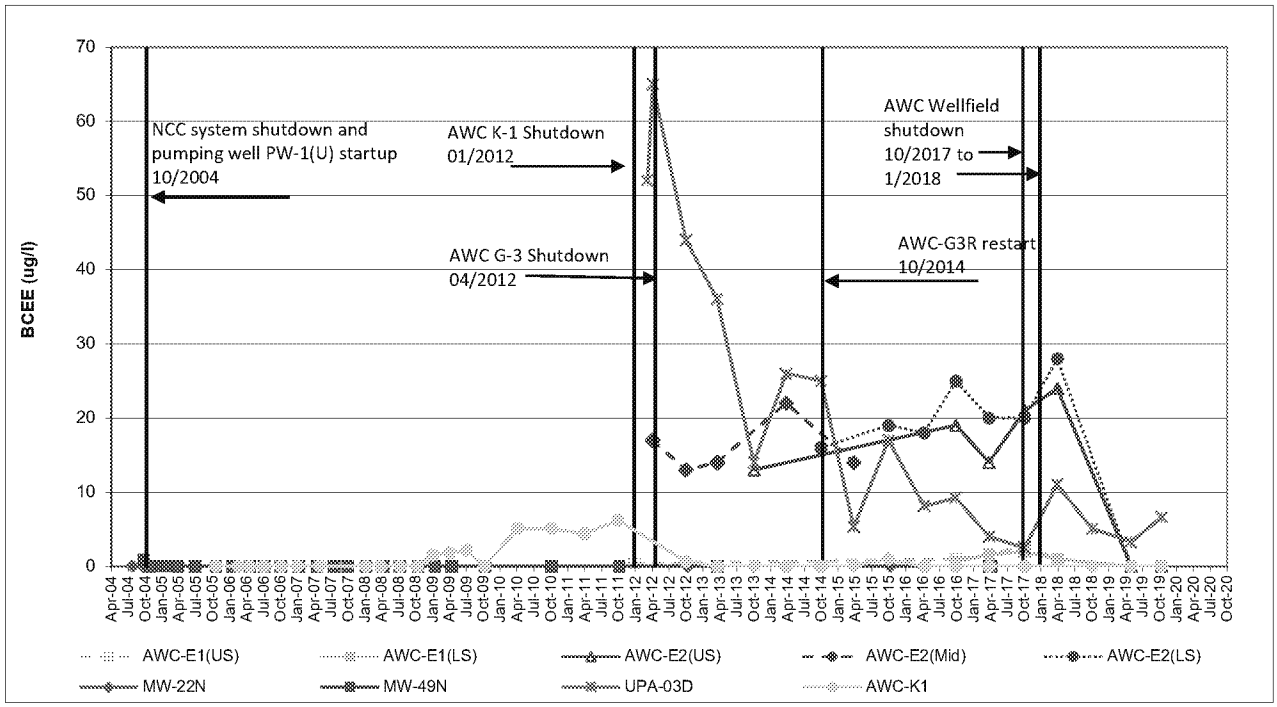
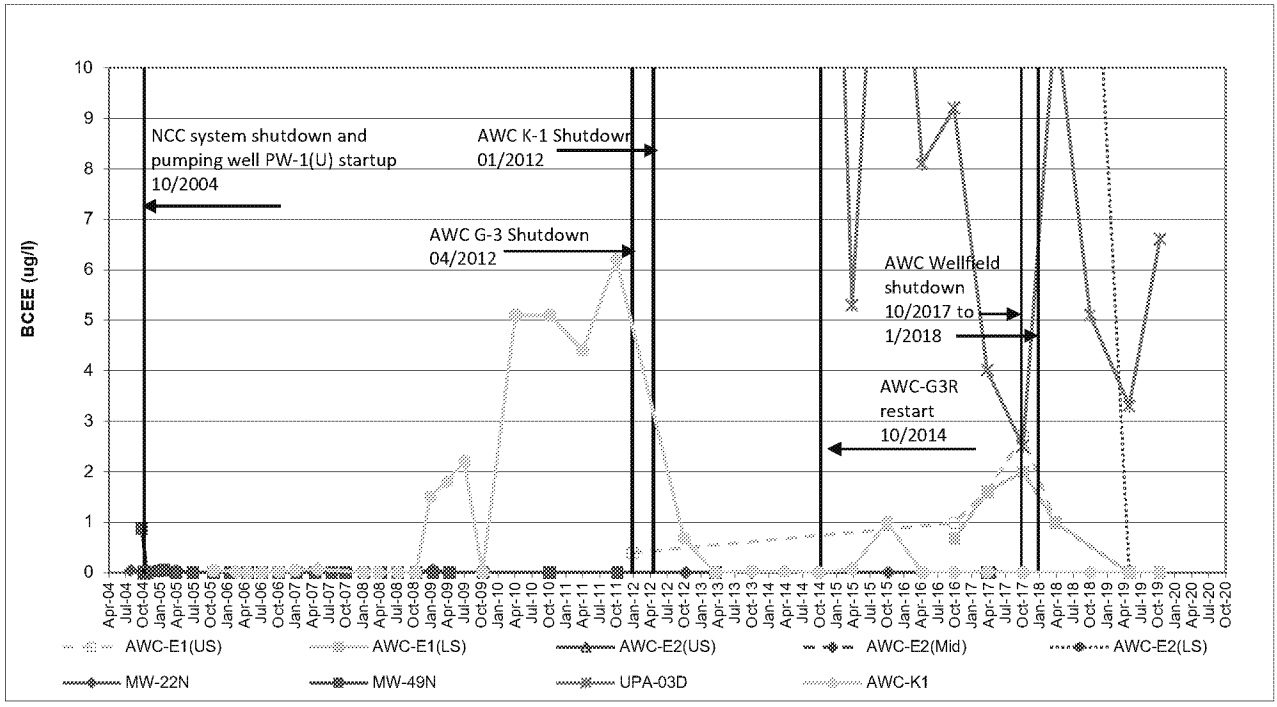


BCEE - UPA Downgradient - Western Lobe NCC Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-8A
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx



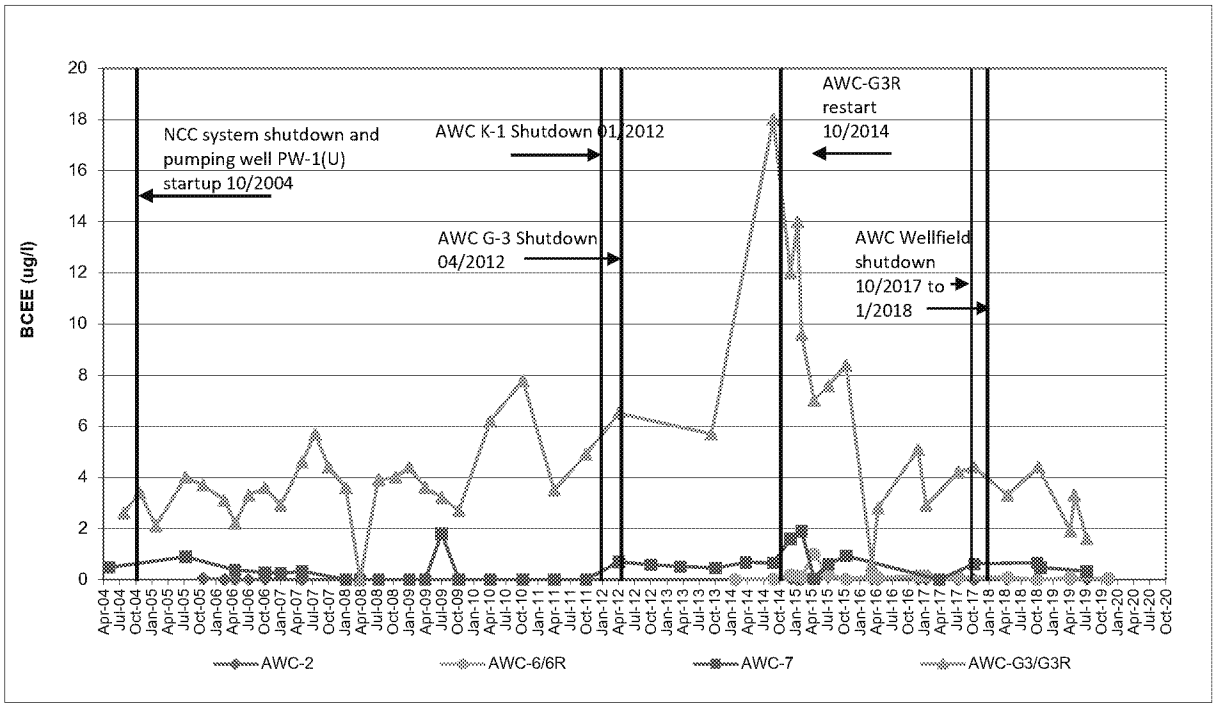


BCEE - UPA Downgradient - Well Trends in Front of AWC Wellfield

Golder Associates	Project Number:	013-6052	FIGURE F-9A
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



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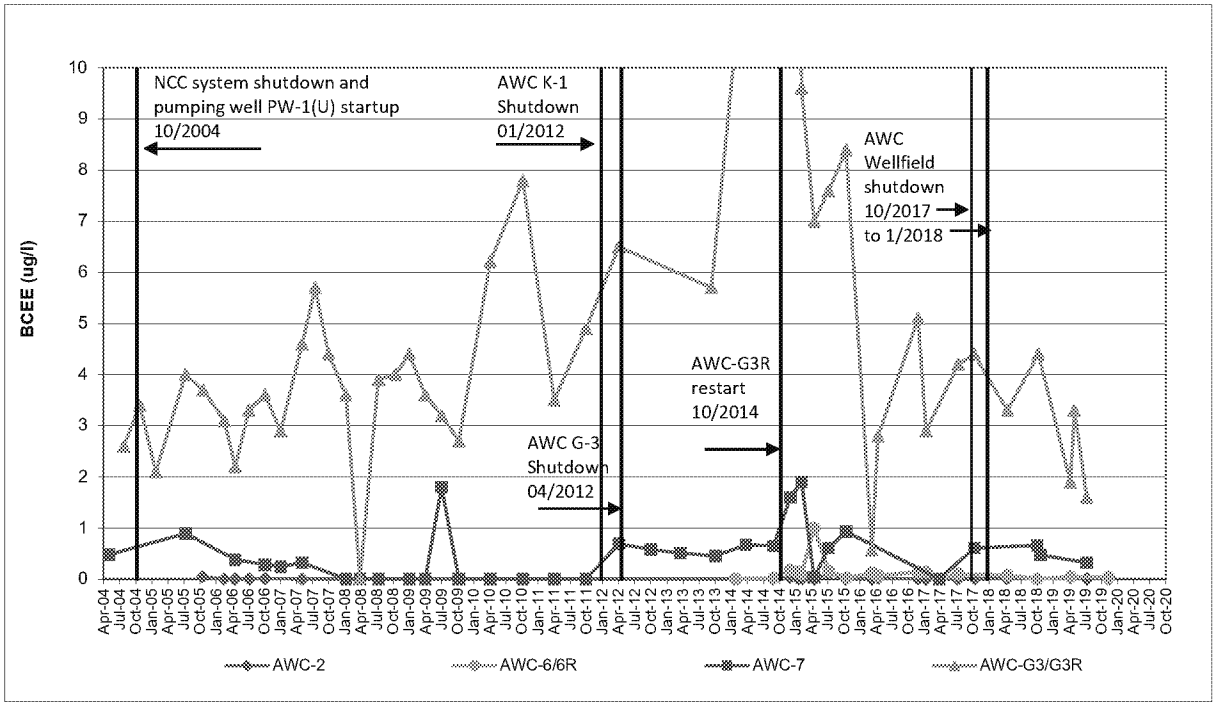

BCEE - UPA Downgradient - AWC Well Trends

Golder Associates	Project Number:	013-6052	FIGURE F-10A
	Prepared by:	TK	1/8/2020
	Checked by:	BPC	1/8/2020
	Reviewed by:	TAM	2/24/2020

Delaware Sand and Gravel Superfund Site

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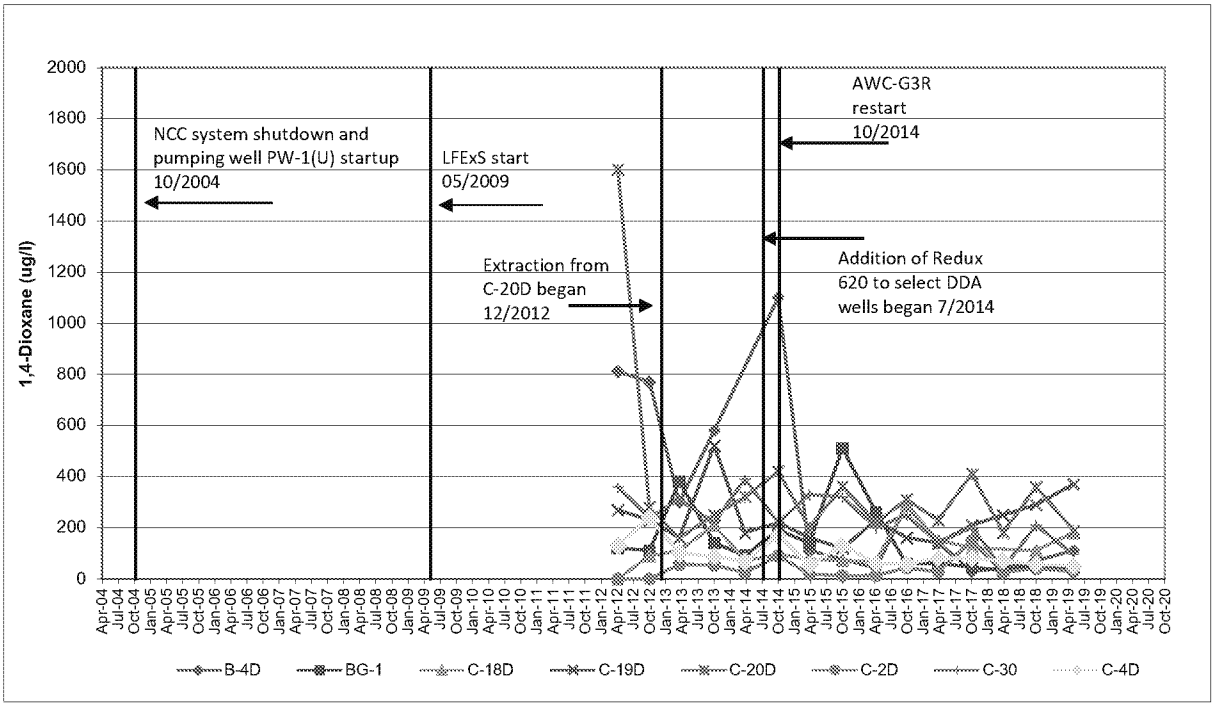

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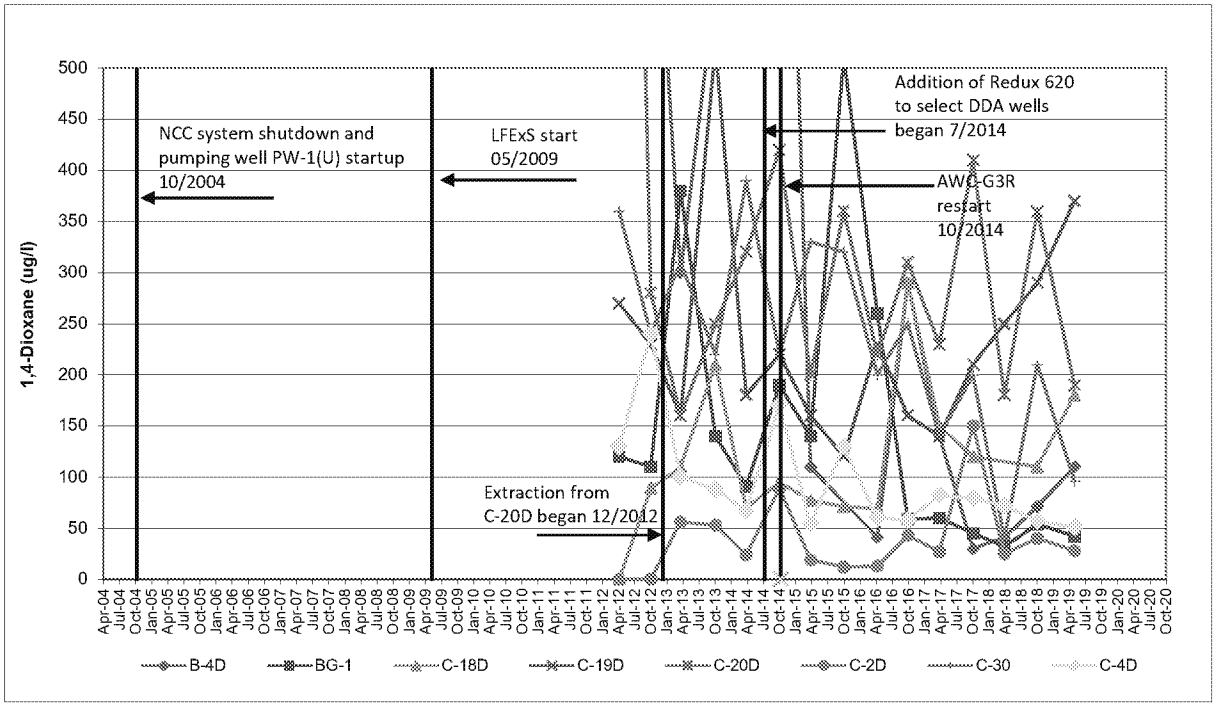

1,4-Dioxane - DDA Groundwater - LFExS Extraction Wells

Golder Associates	Project Number:	013-6052	FIGURE F-1B
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

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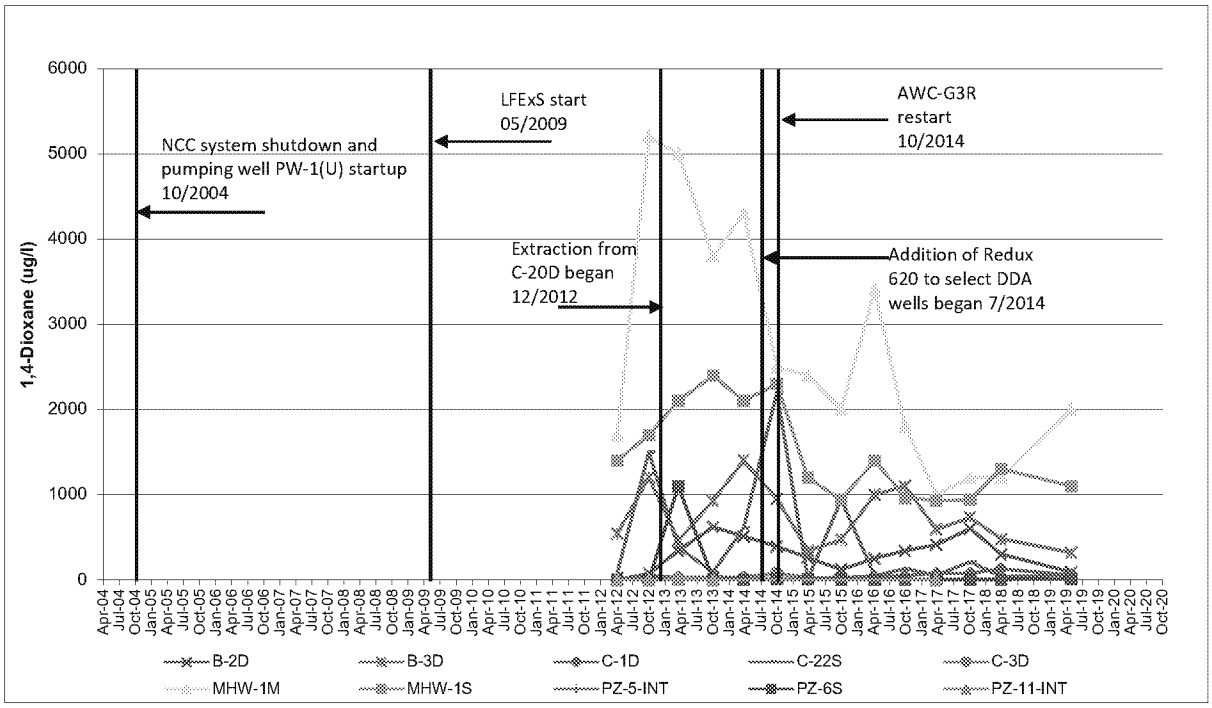

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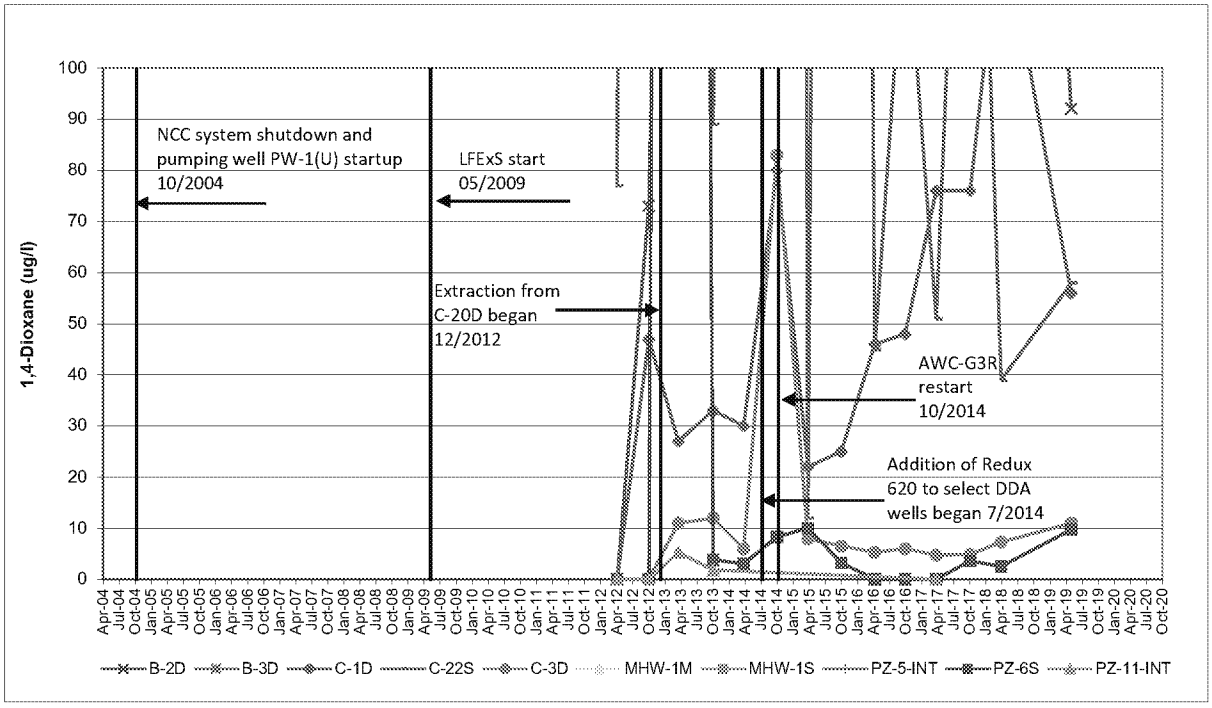

1,4-Dioxane - DDA Groundwater - LFExS Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-2B
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

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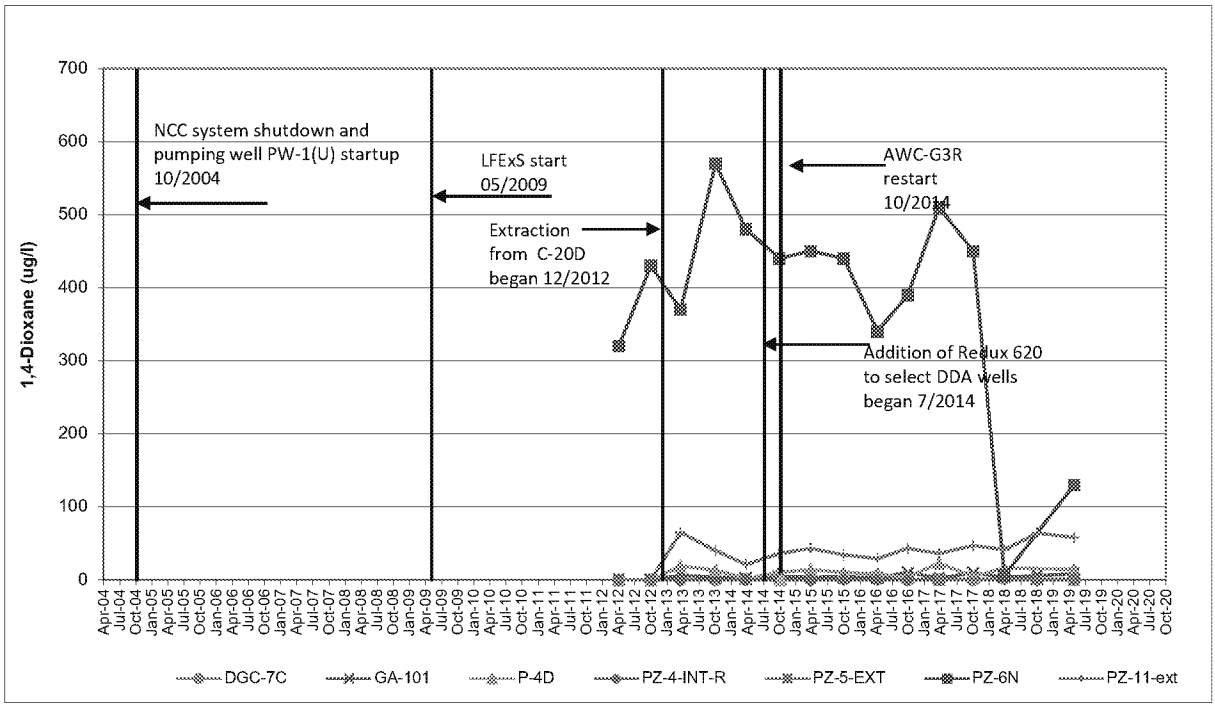

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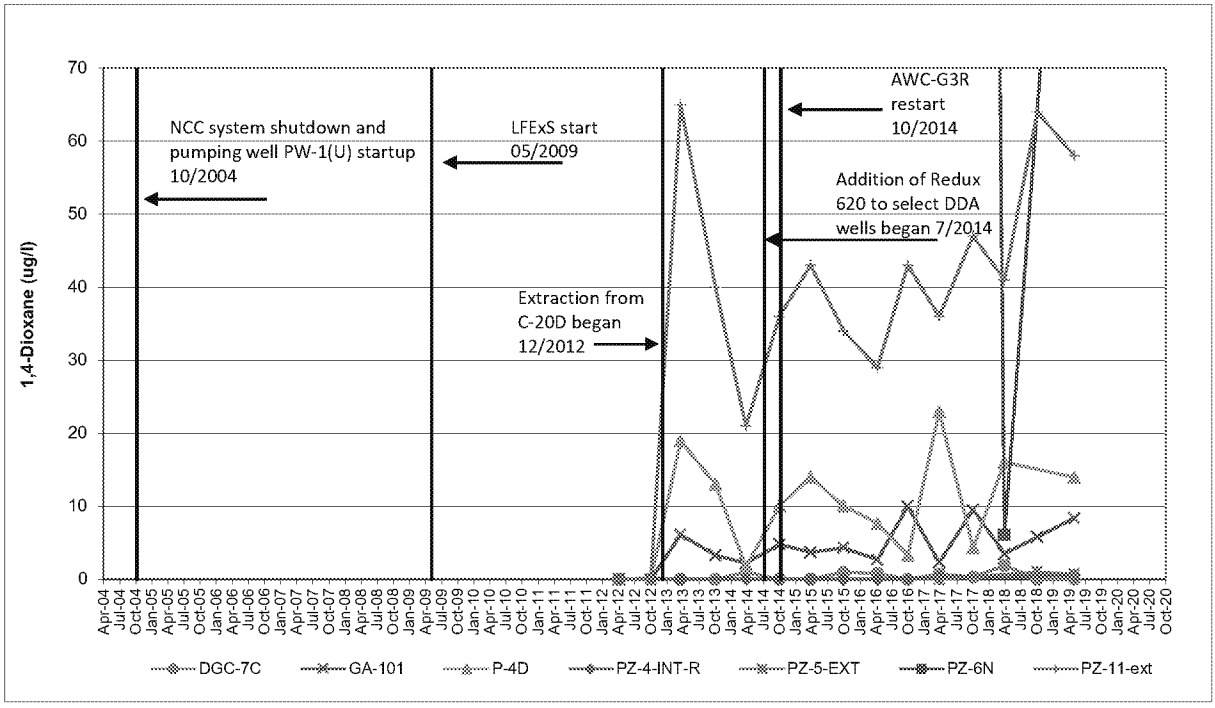

1,4-Dioxane - DDA Groundwater - Columbia Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-3B
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

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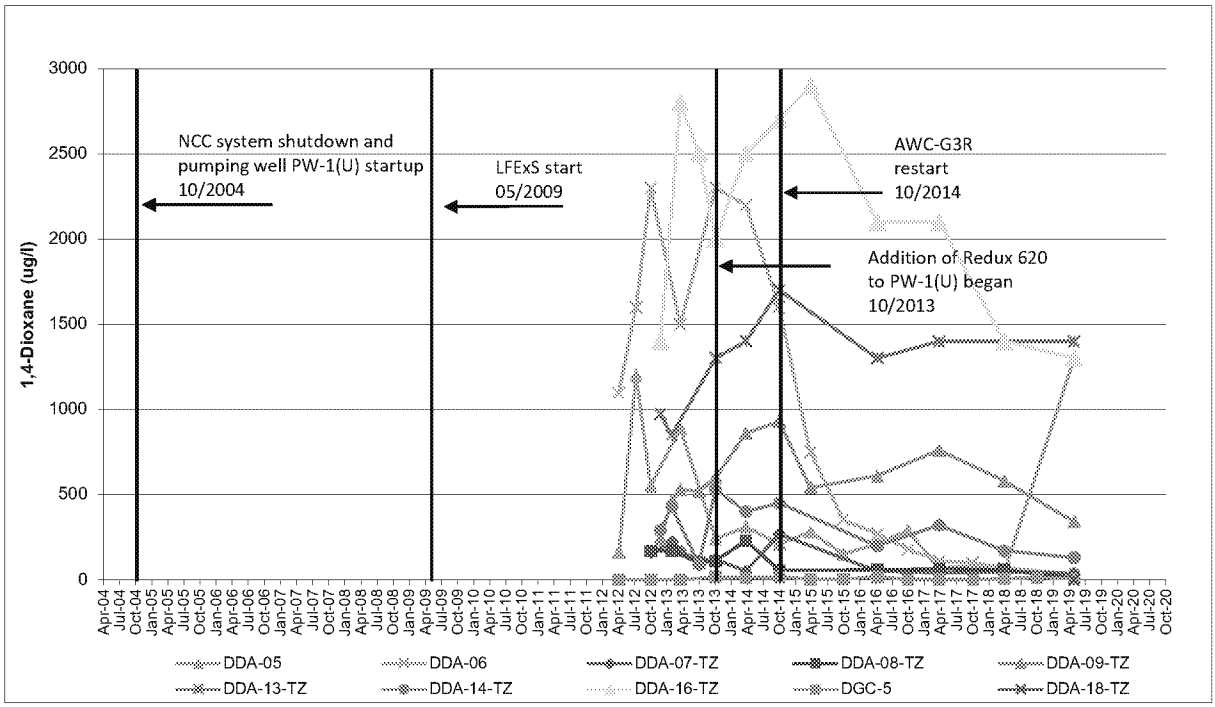

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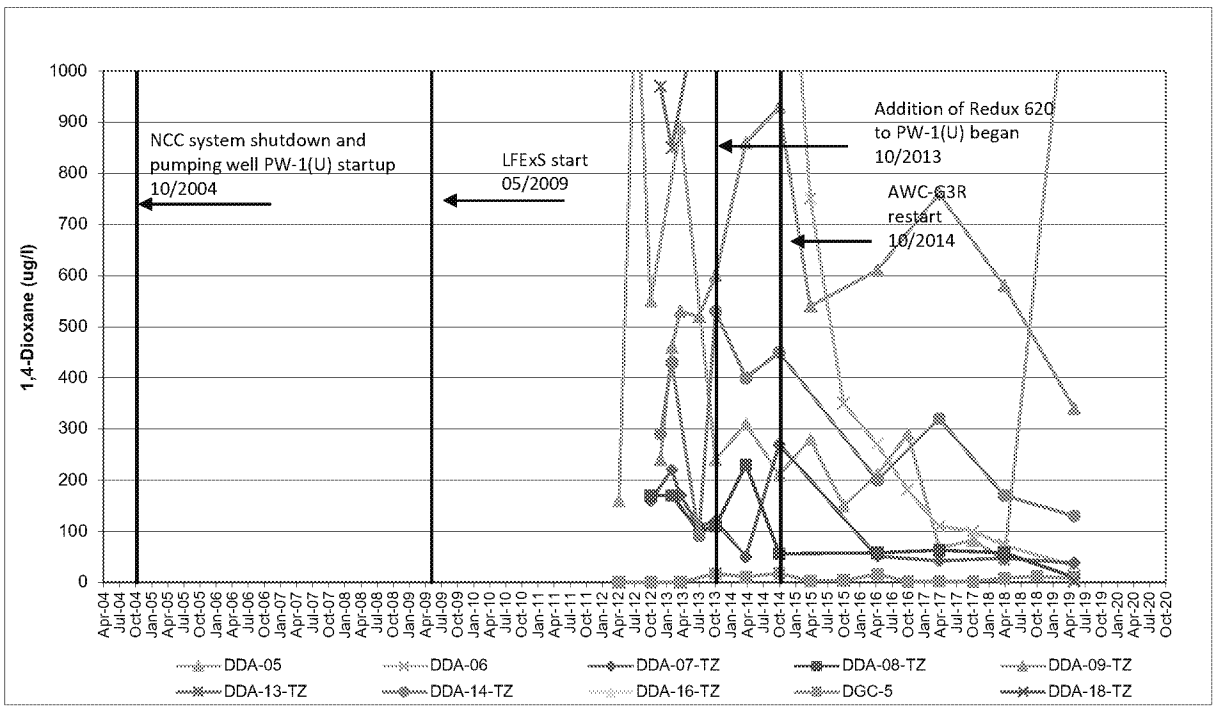

1,4-Dioxane - DDA to Well PW-1(U) UPCUTZ - Western and Central Monitoring Wells

Golder Associates	Project Number:	013-6052		**FIGURE F-4.1B**
	Prepared by:	TK	1/8/2020	
	Checked by:	BPC	1/8/2020	**Delaware Sand and Gravel Superfund Site**
	Reviewed by:	TAM	2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

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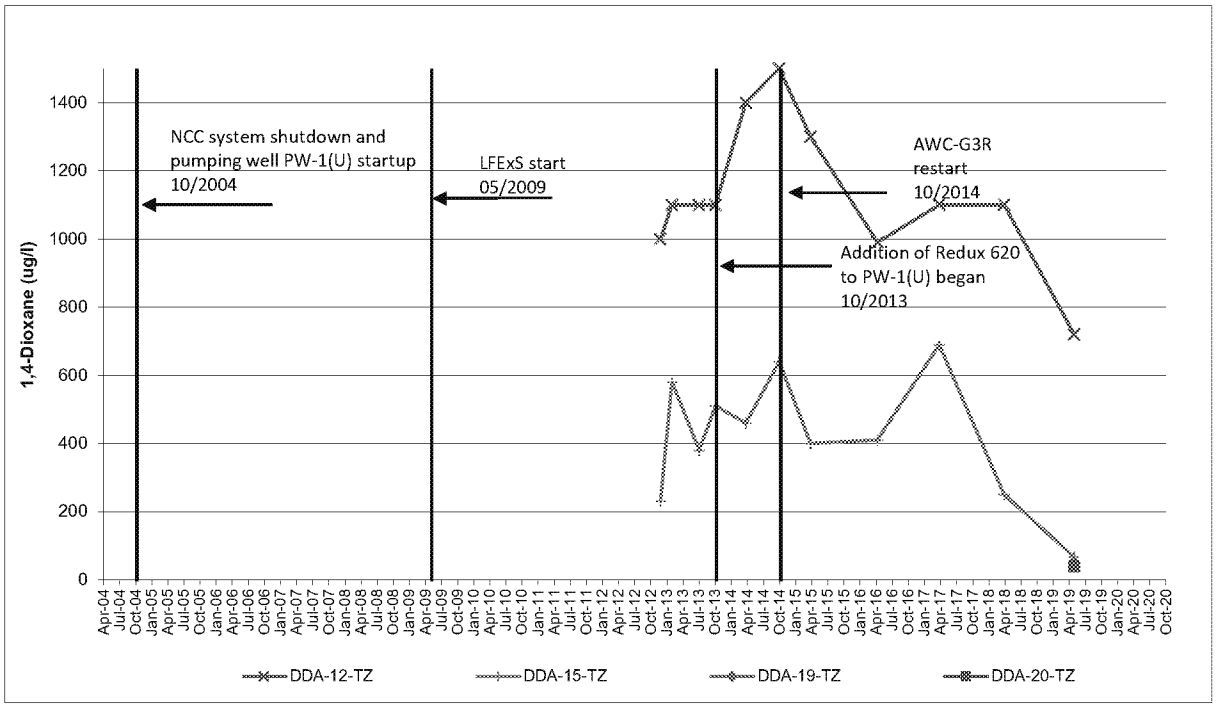
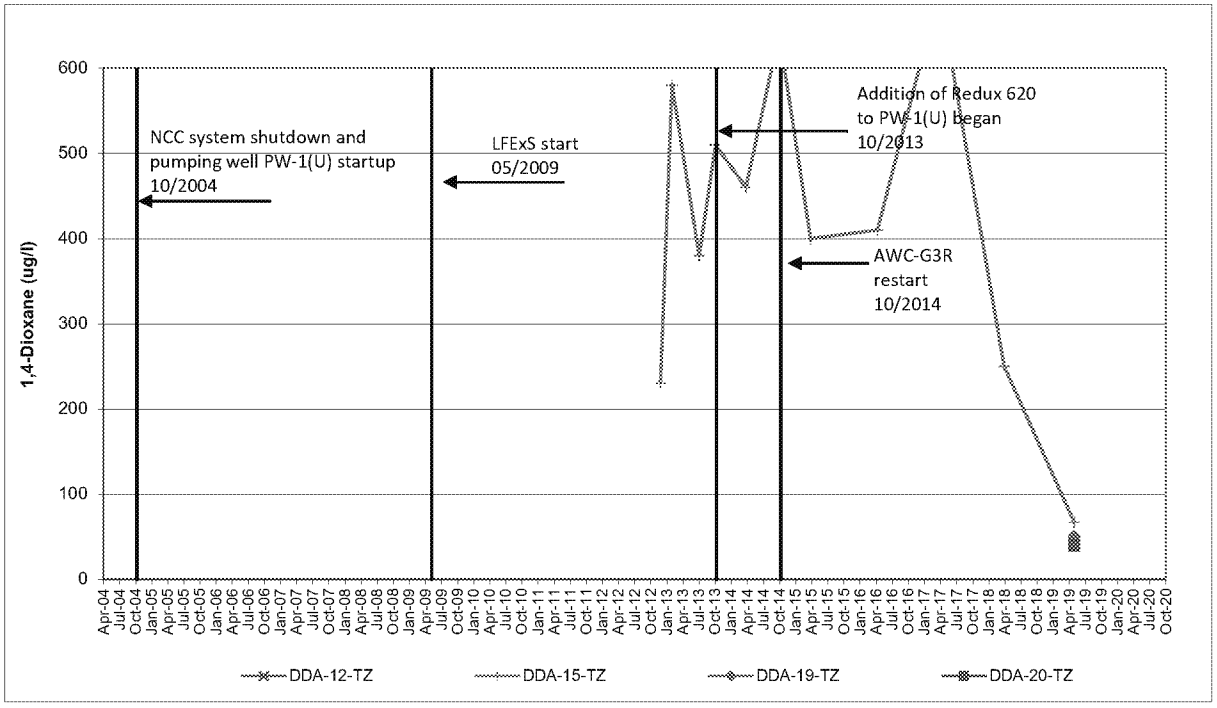


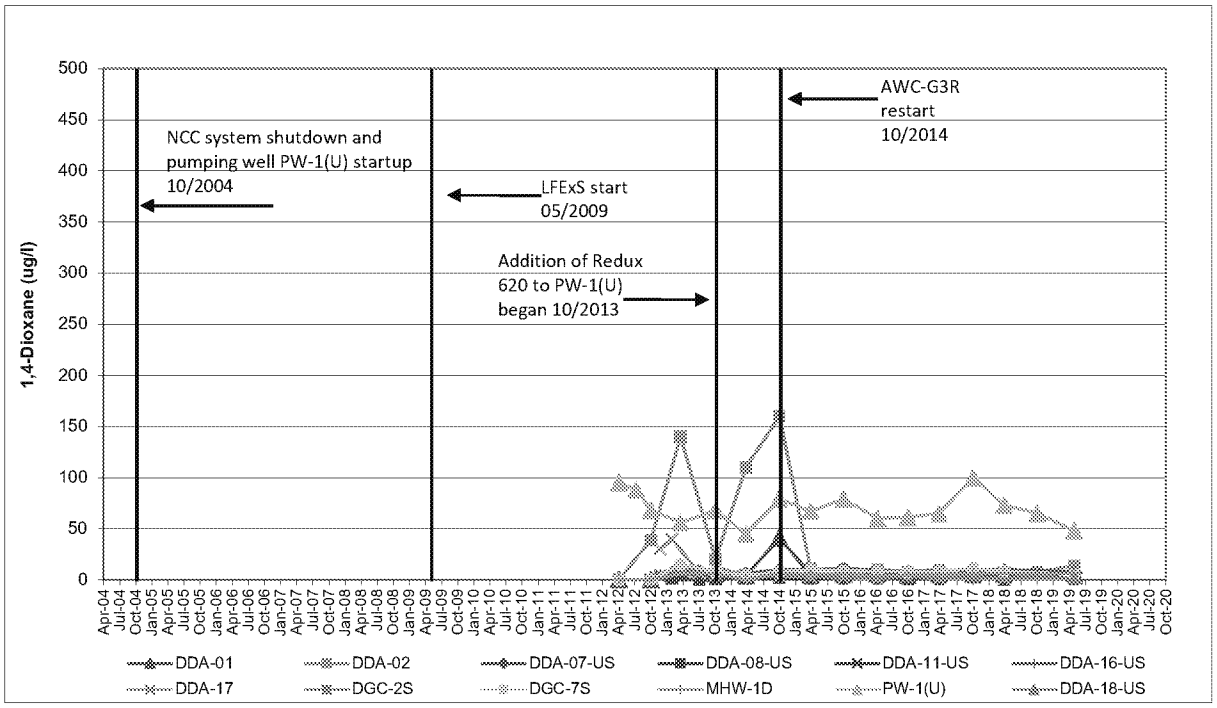
NORMAL SCALE, <1000 ug/l

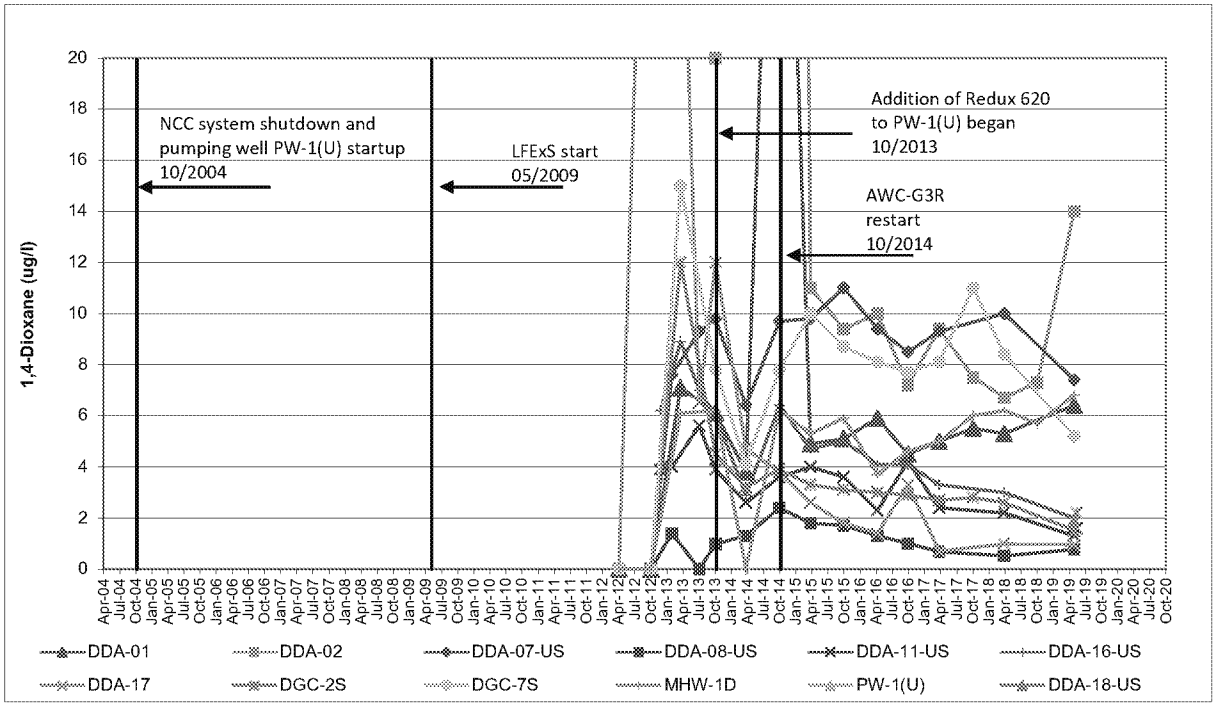


1,4-Dioxane - DDA to Well PW-1(U) UPCUTZ - Eastern Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-4.2B
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx





1,4-Dioxane - DDA to Well PW-1(U) UPA - Western and Central Monitoring Wells

Golder Associates

Project Number:	013-6052		FIGURE F-5.1A
Prepared by:	TK	1/8/2020	
Checked by:	BPC	1/8/2020	Delaware Sand and Gravel Superfund Site
Reviewed by:	TAM	2/24/2020	

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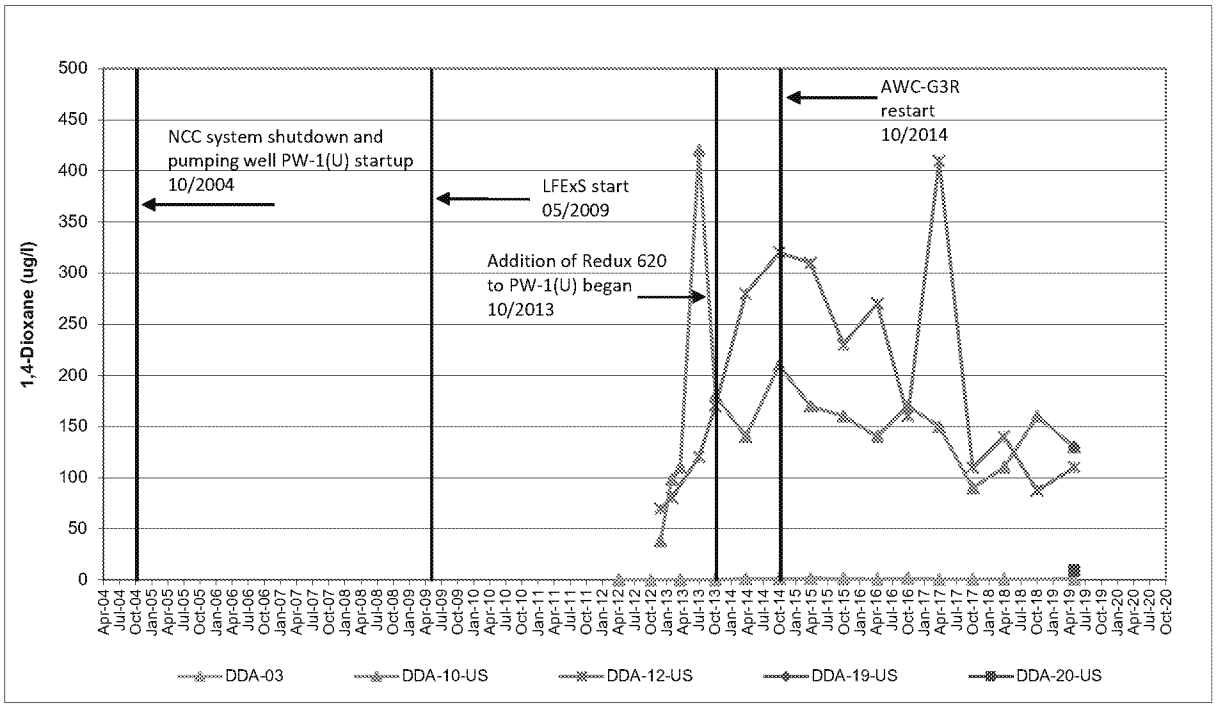
NORMAL SCALE



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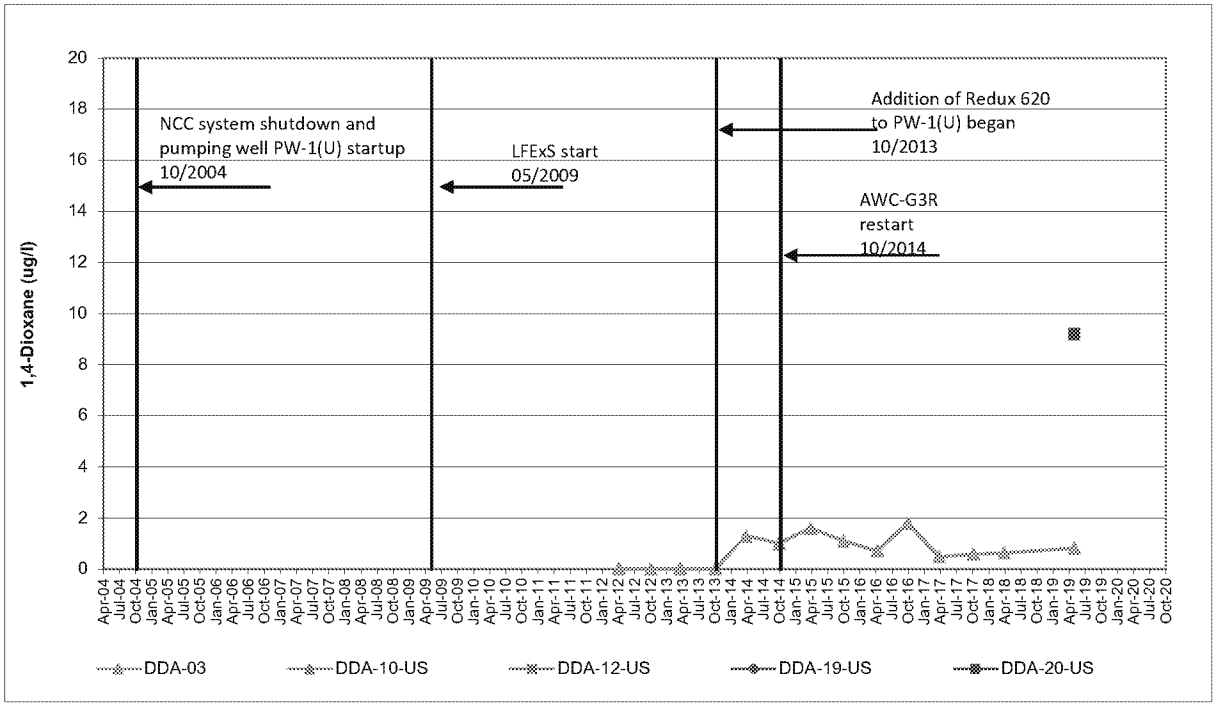


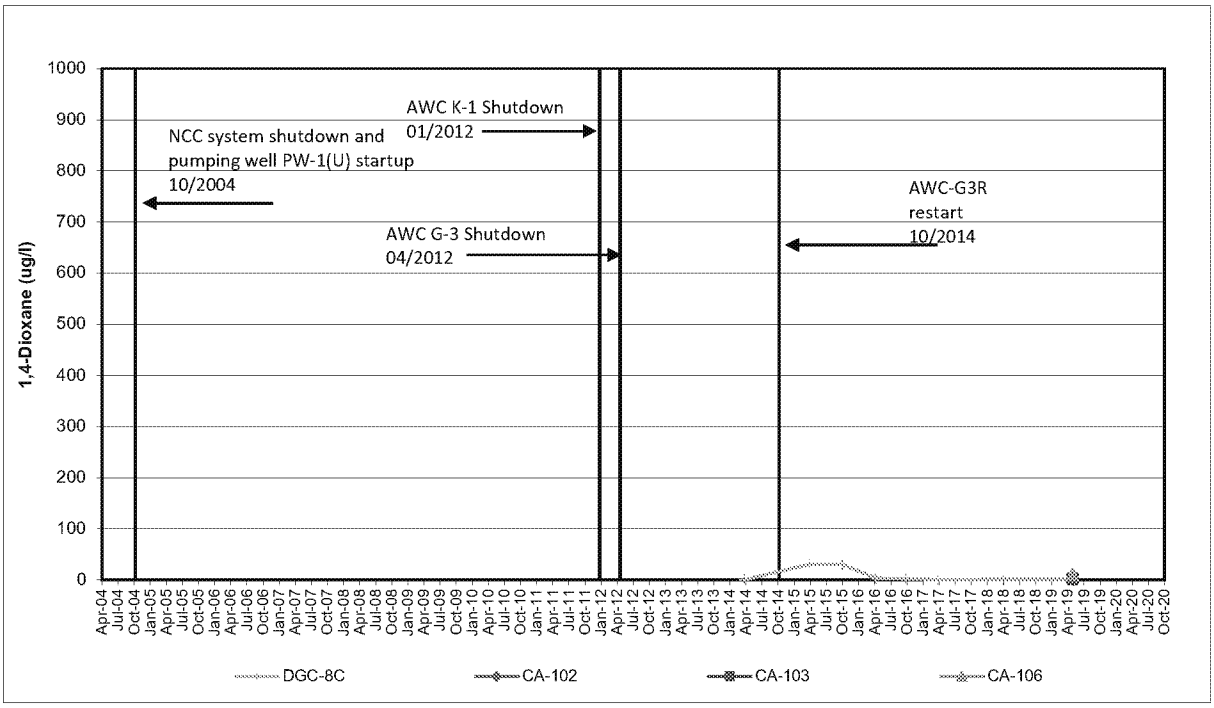
1,4-Dioxane - DDA to Well PW-1(U) UPA - Eastern Monitoring Wells

Golder Associates

Project Number:	013-6052		FIGURE F-5.2B
Prepared by:	TK	1/8/2020	
Checked by:	BPC	1/8/2020	Delaware Sand and Gravel Superfund Site
Reviewed by:	TAM	2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



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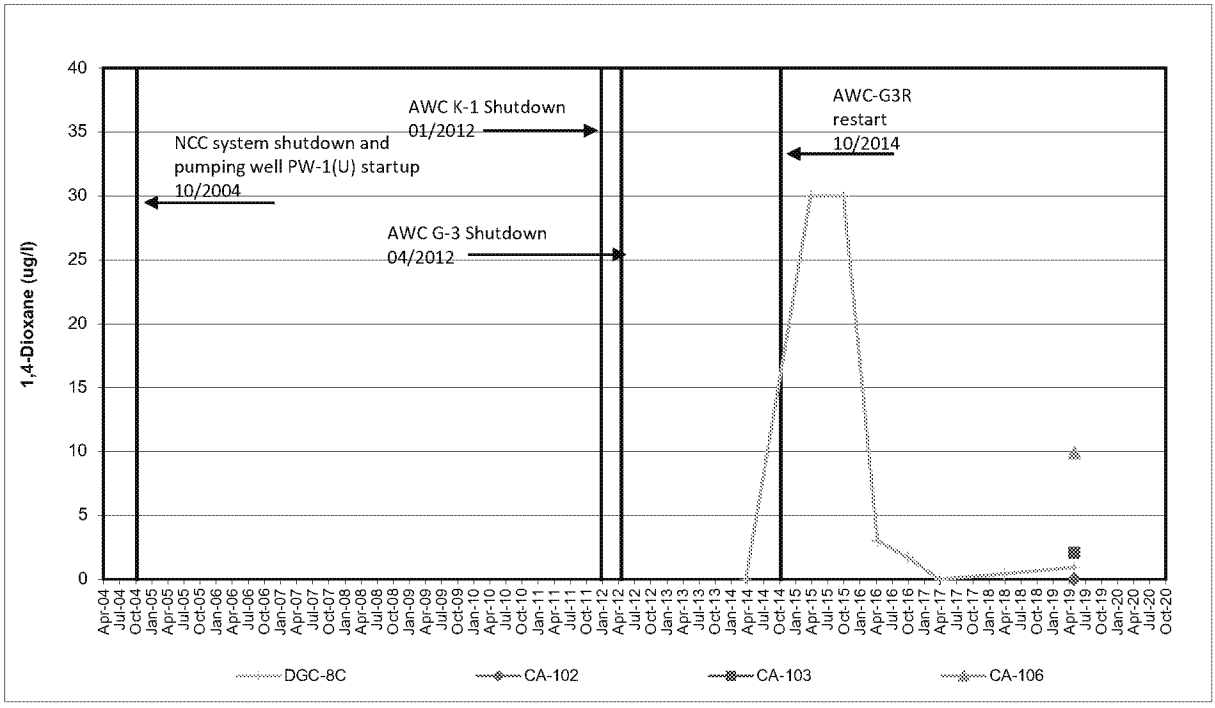


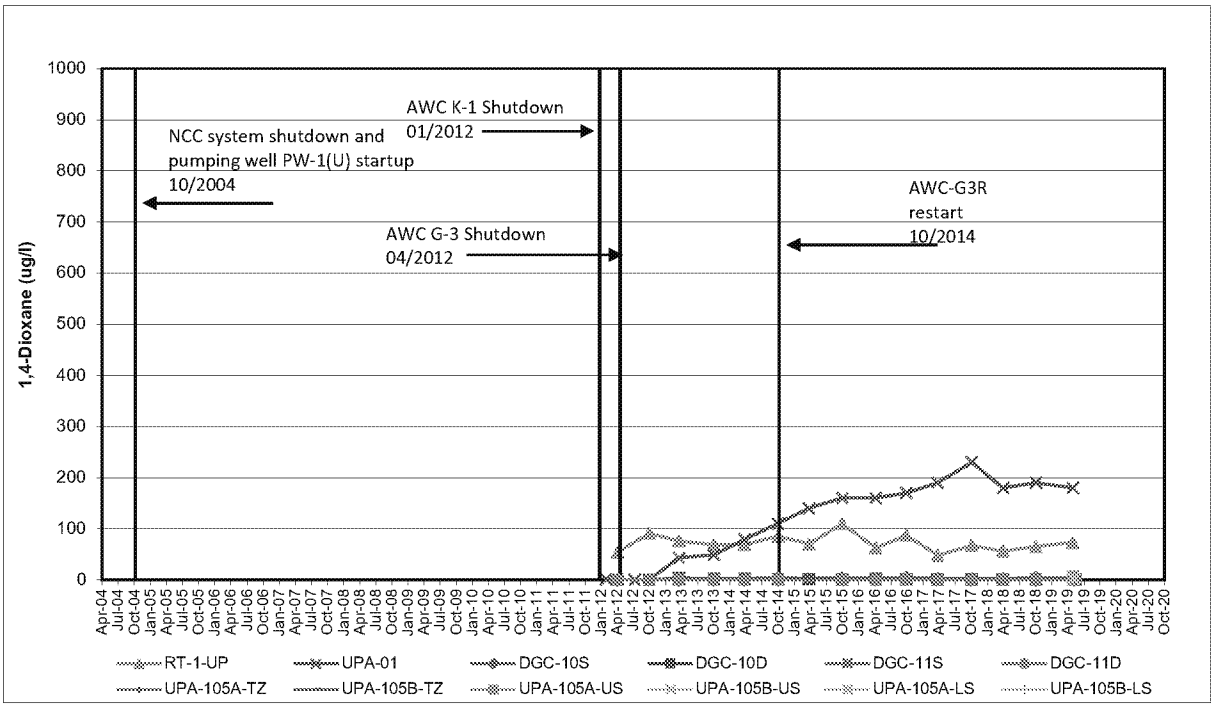
1,4-Dioxane - UPA Downgradient of Well PW-1(U) Trends - Well P-6 Area

Golder Associates

Project Number:	013-6052		FIGURE F-6.1B
Prepared by:	TK	1/8/2020	
Checked by:	BPC	1/8/2020	Delaware Sand and Gravel Superfund Site
Reviewed by:	TAM	2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



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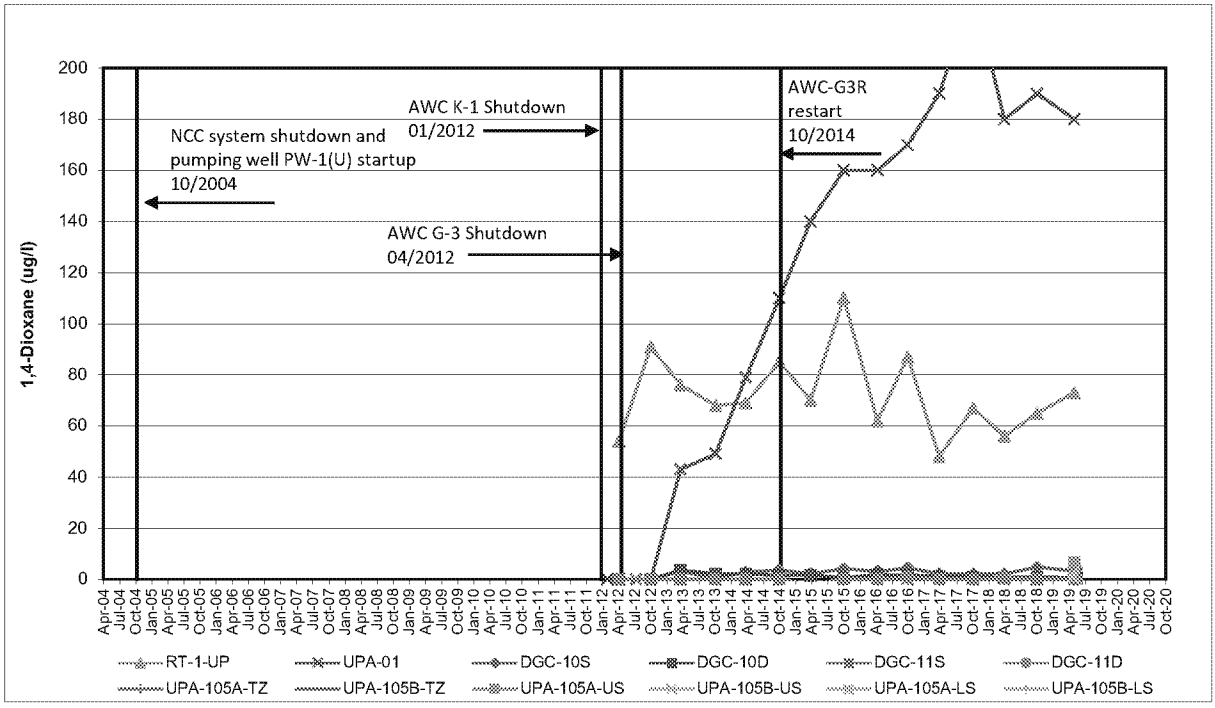
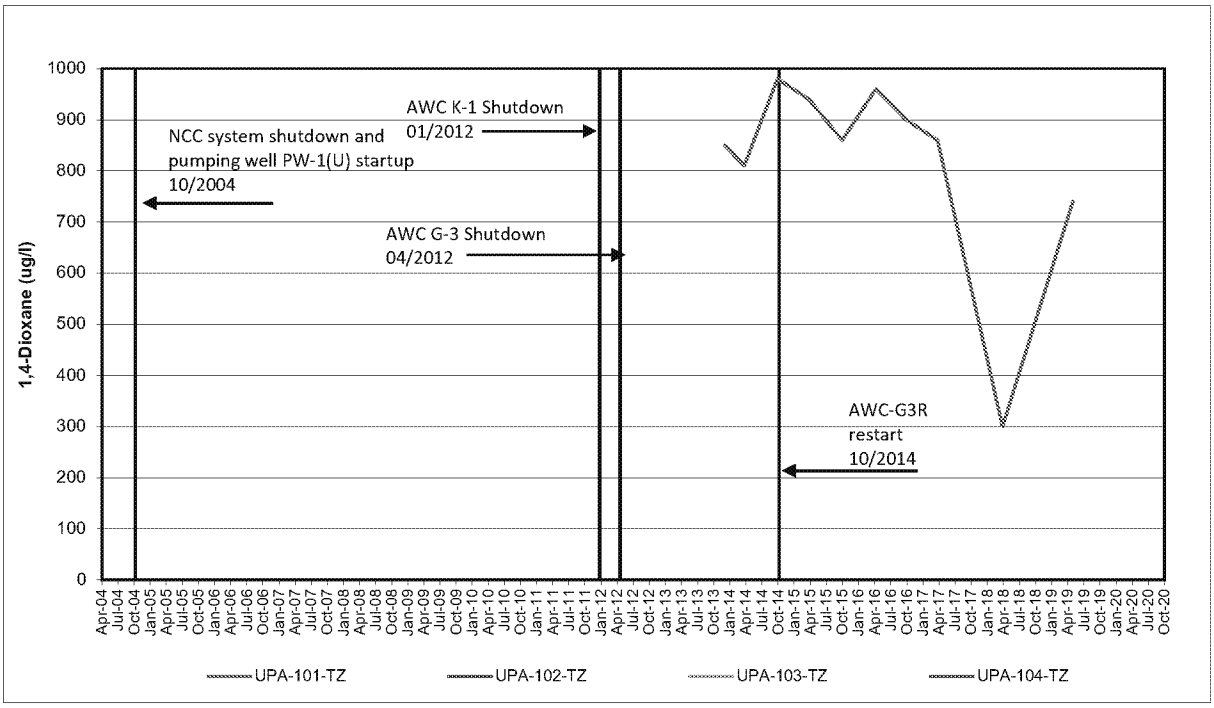


1,4-Dioxane - Downgradient of Well PW-1(U) - UPCUTZ and UPA - UPA-01 Area Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-6.2B
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



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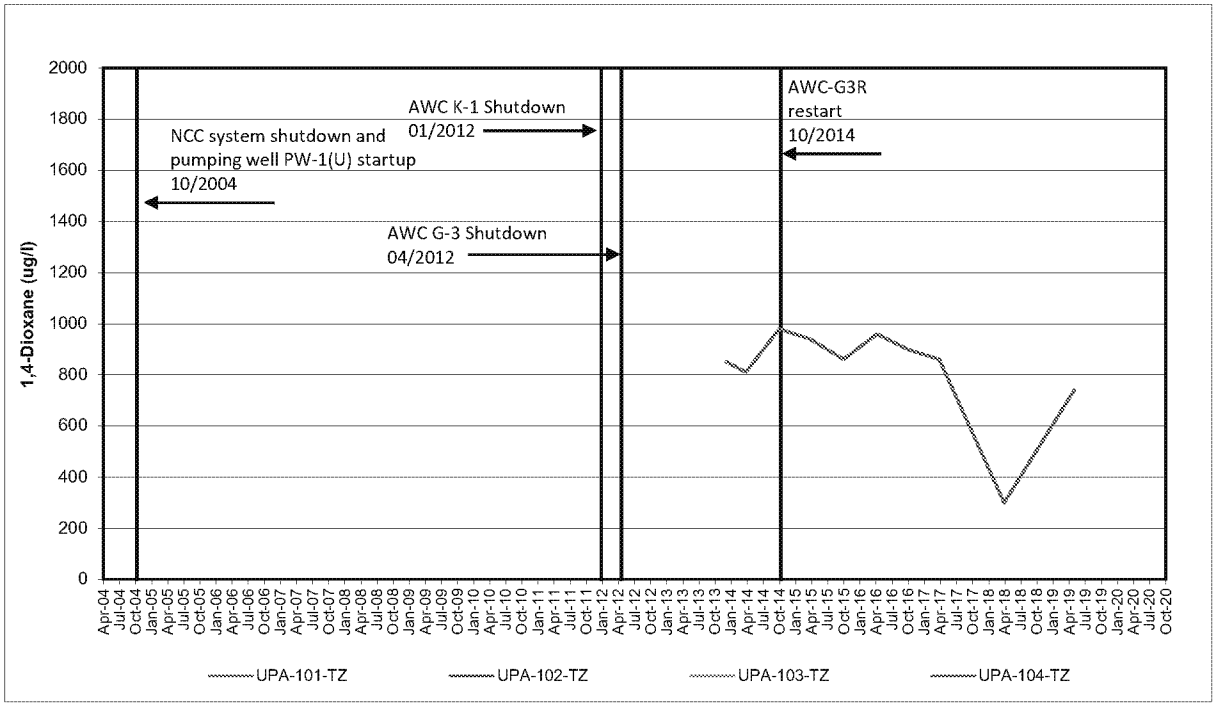

1,4-Dioxane - Downgradient of Well PW-1(U) - UPCUTZ - P-6 Area Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-6.3B
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

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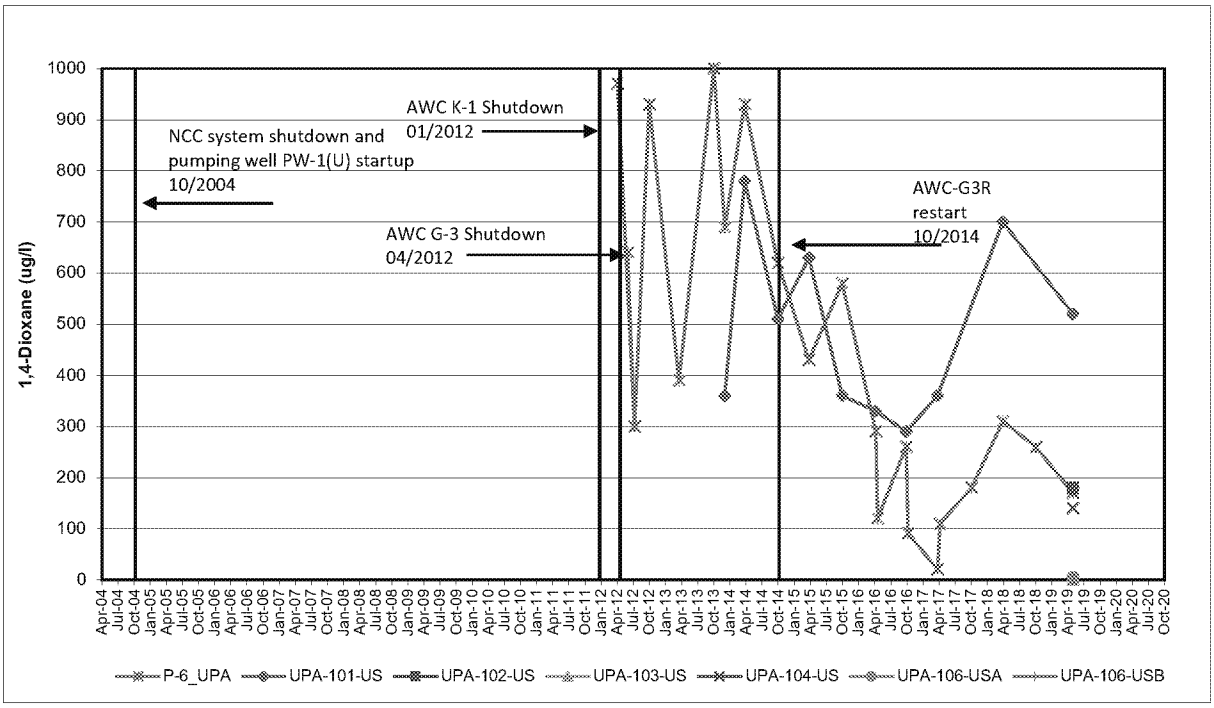
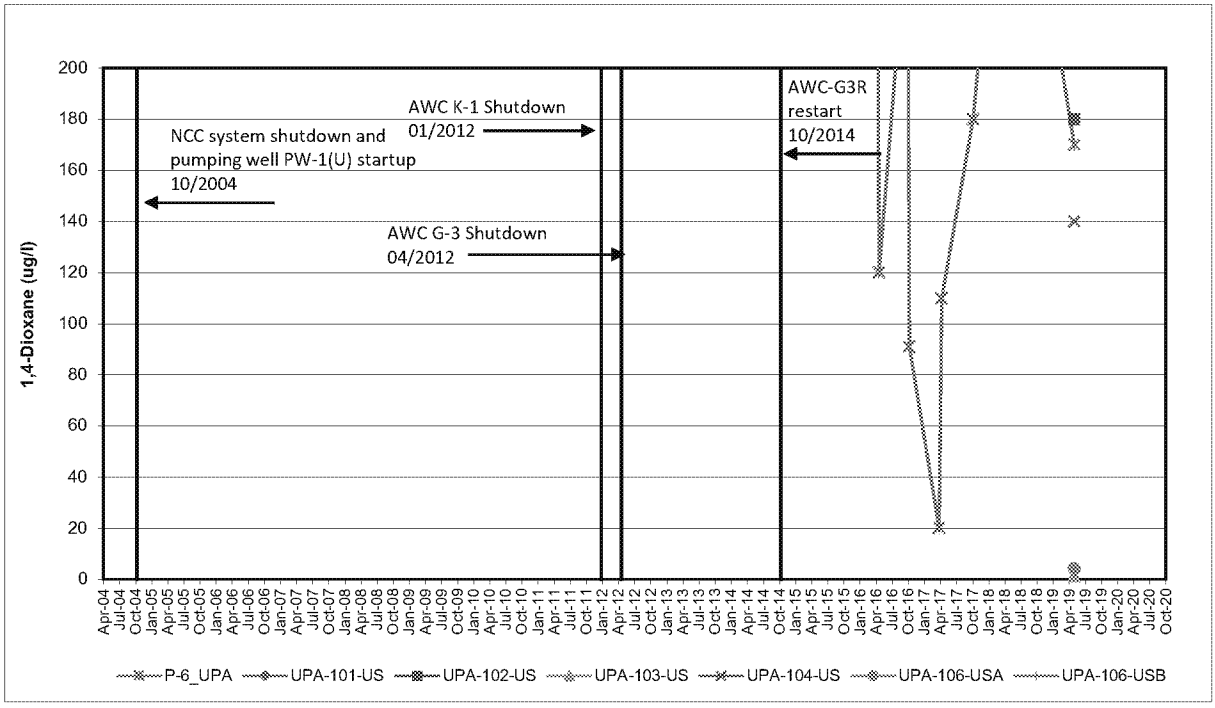


NORMAL SCALE, <200 ug/l

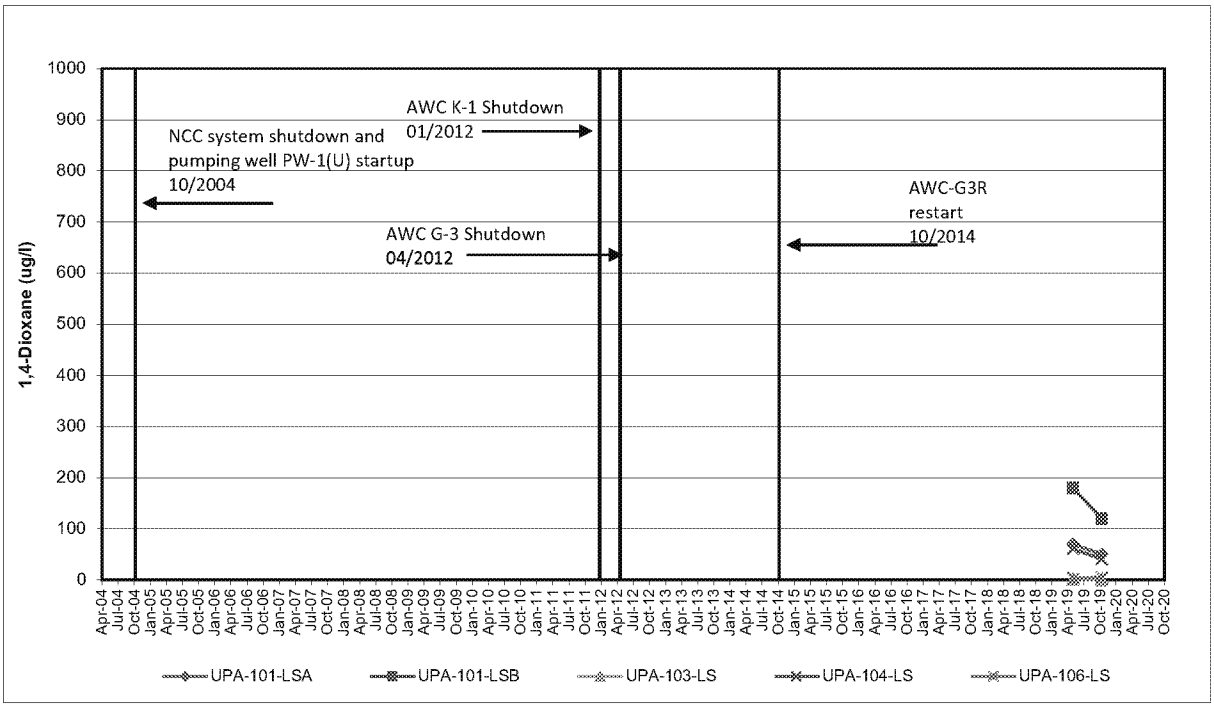


1,4-Dioxane - Downgradient of Well PW-1(U) - UPA Upper Sand - P-6 Area Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-6.4B
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



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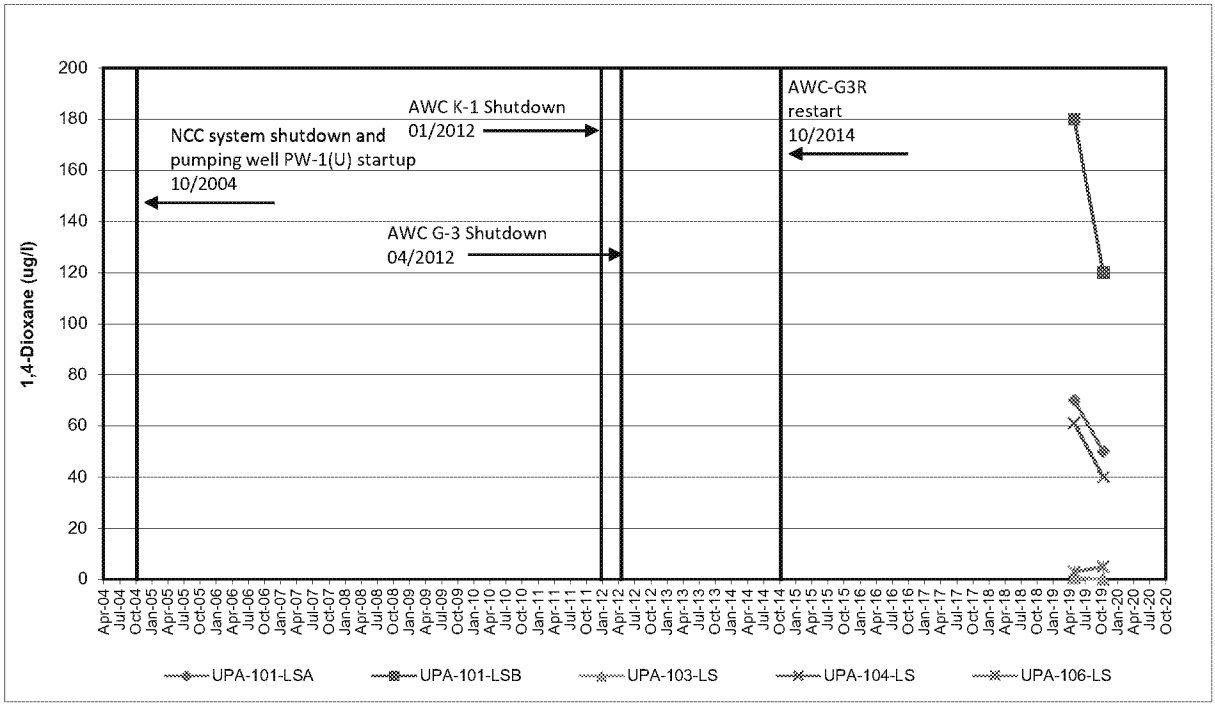

1,4-Dioxane - Downgradient of Well PW-1(U) - UPA Lower Sand - P-6 Area Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-6.5B
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

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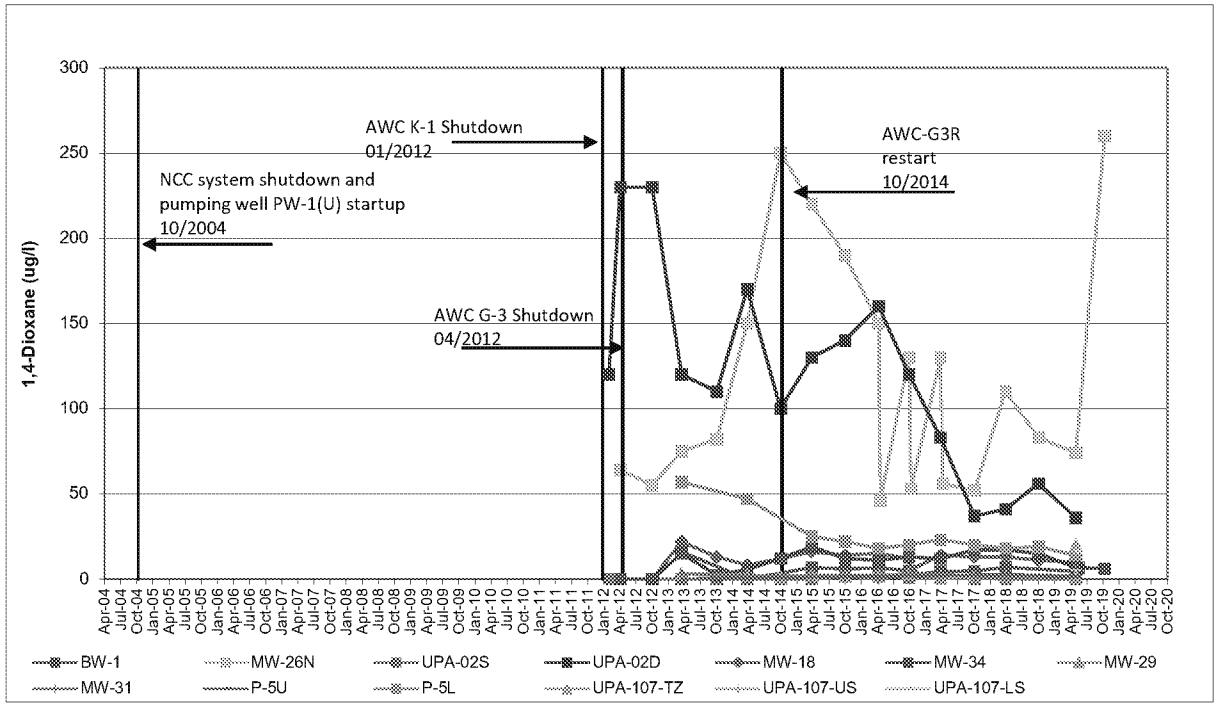

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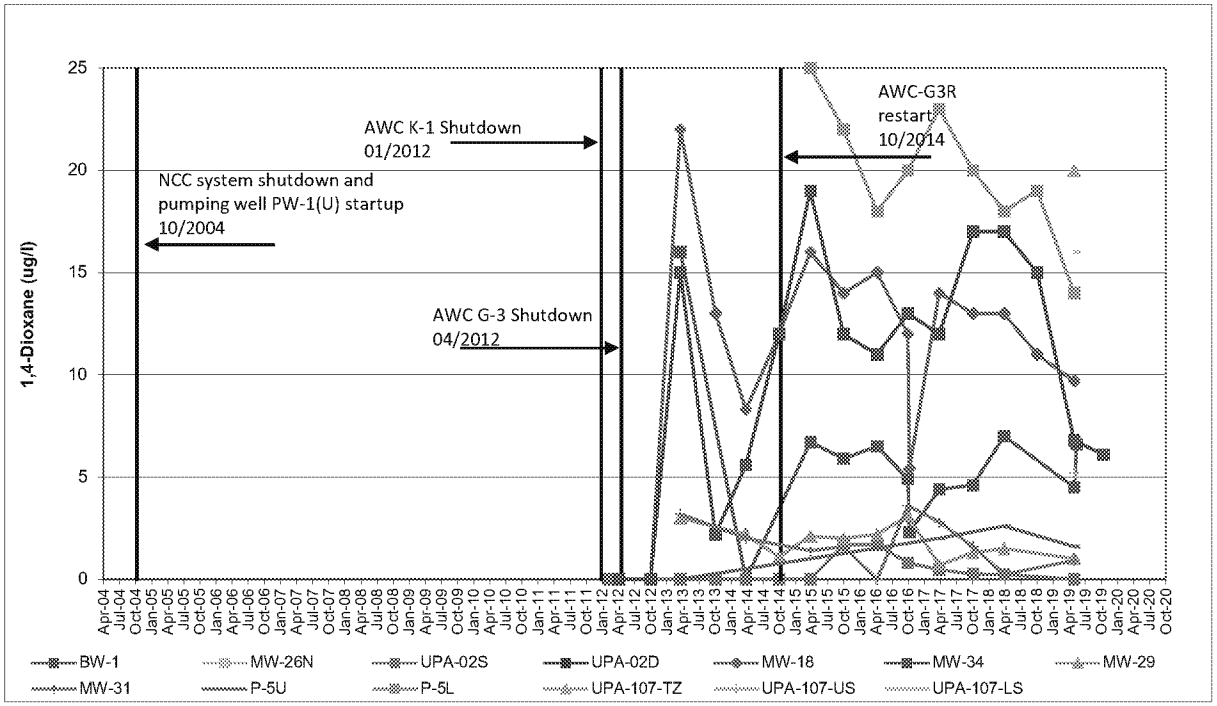

1,4-Dioxane - Downgradient of Well PW-1(U) - UPA - MW-18/34 Area Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-7.1B
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

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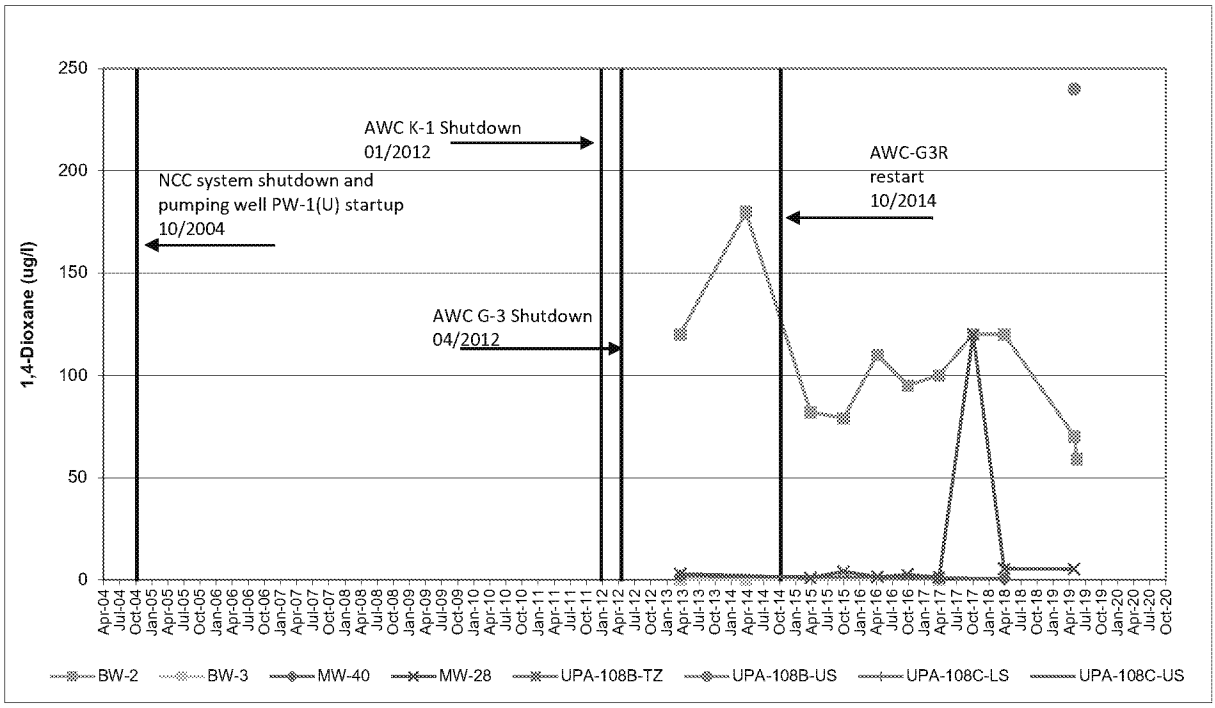

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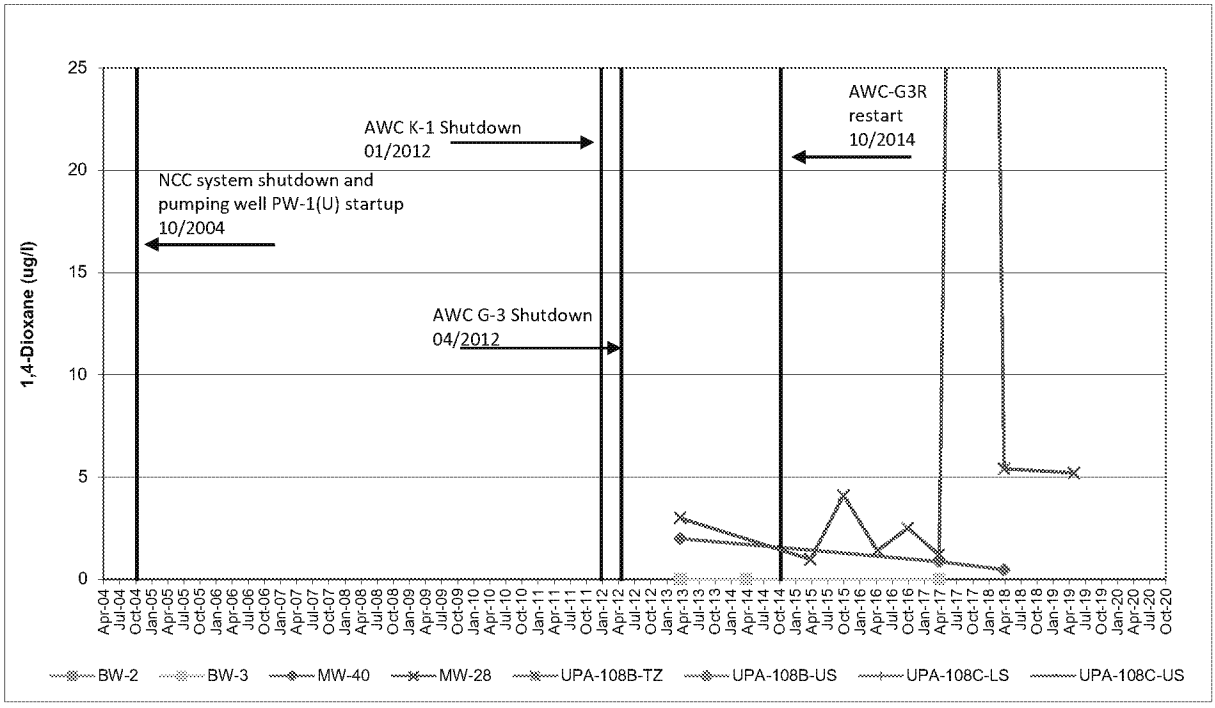

1,4-Dioxane - Downgradient of Well PW-1(U) - UPA - BW-2 Area Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-7.2B
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

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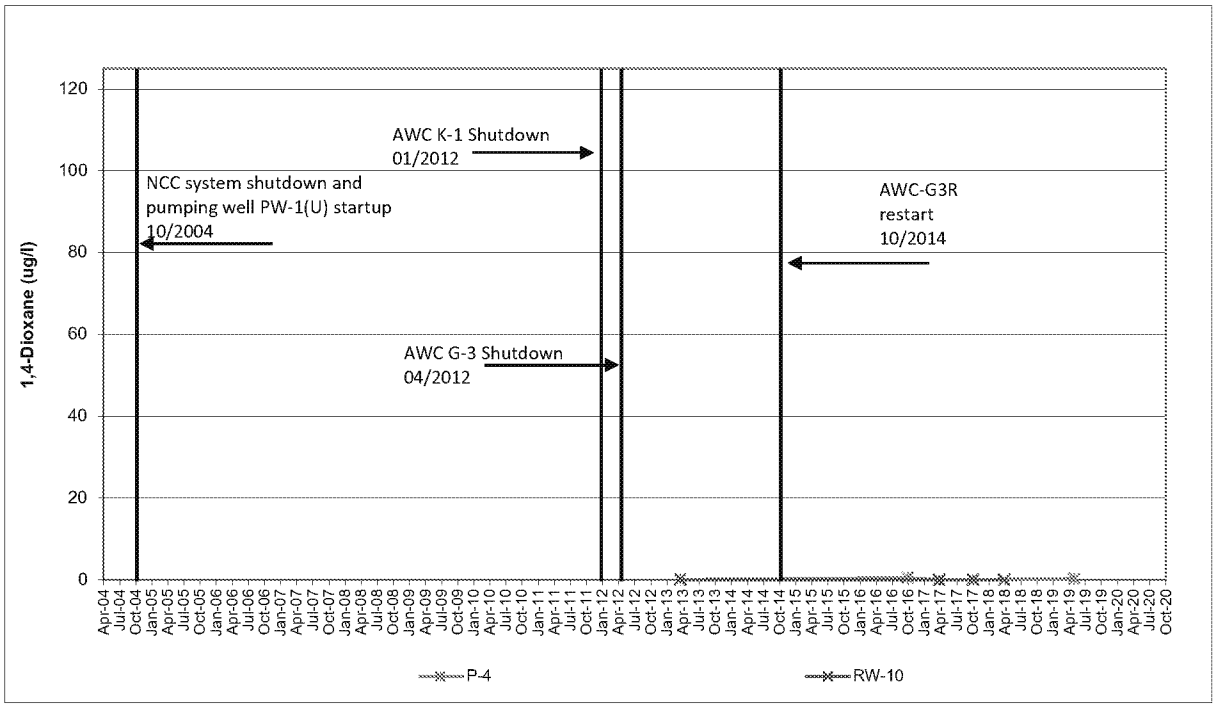

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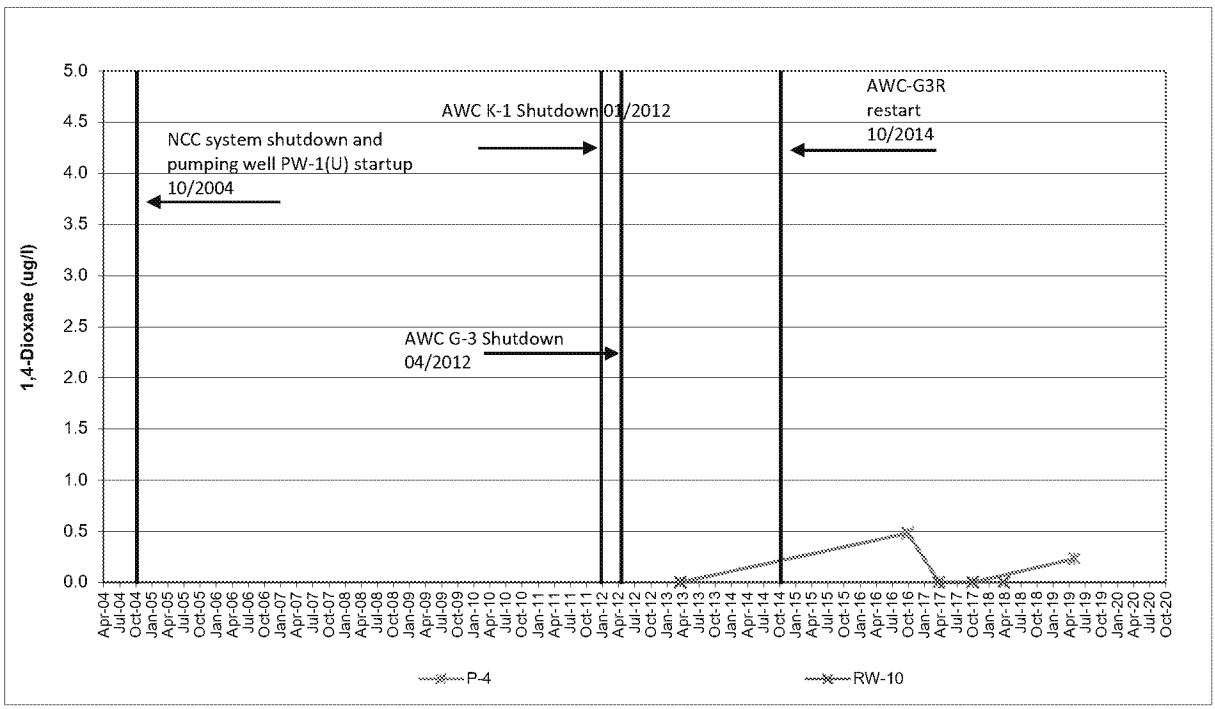
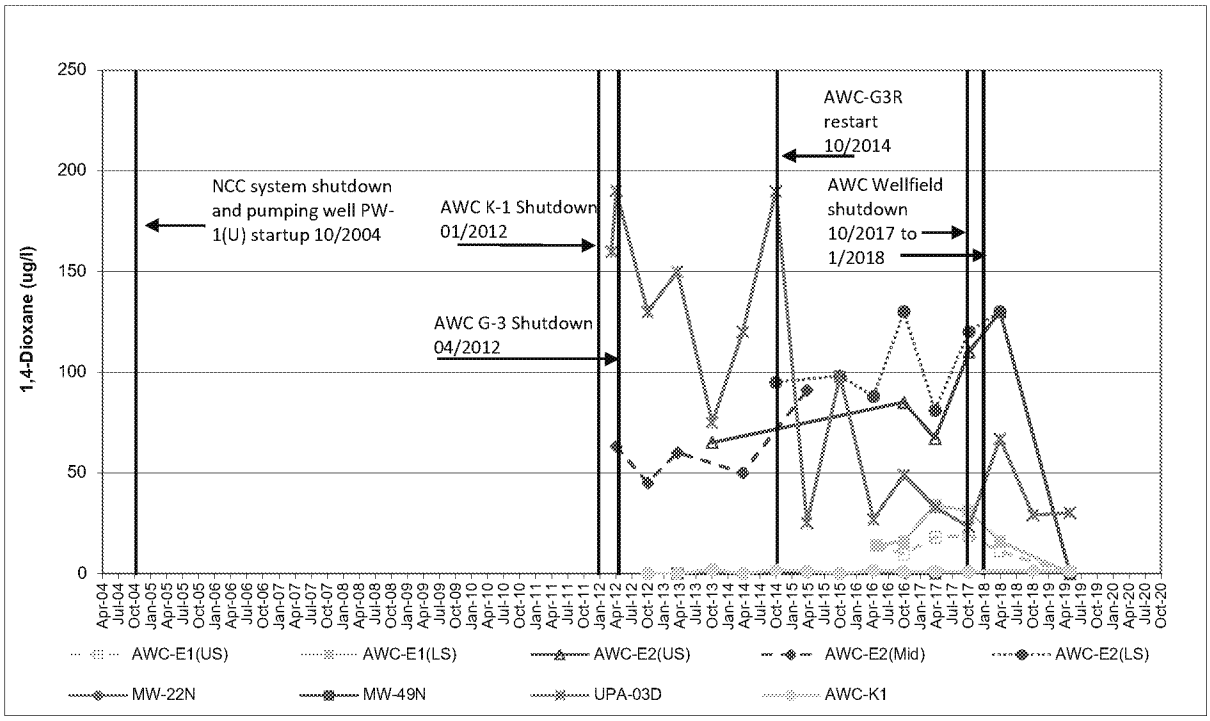


1,4-Dioxane - UPA Downgradient - Western Lobe NCC Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-8B
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



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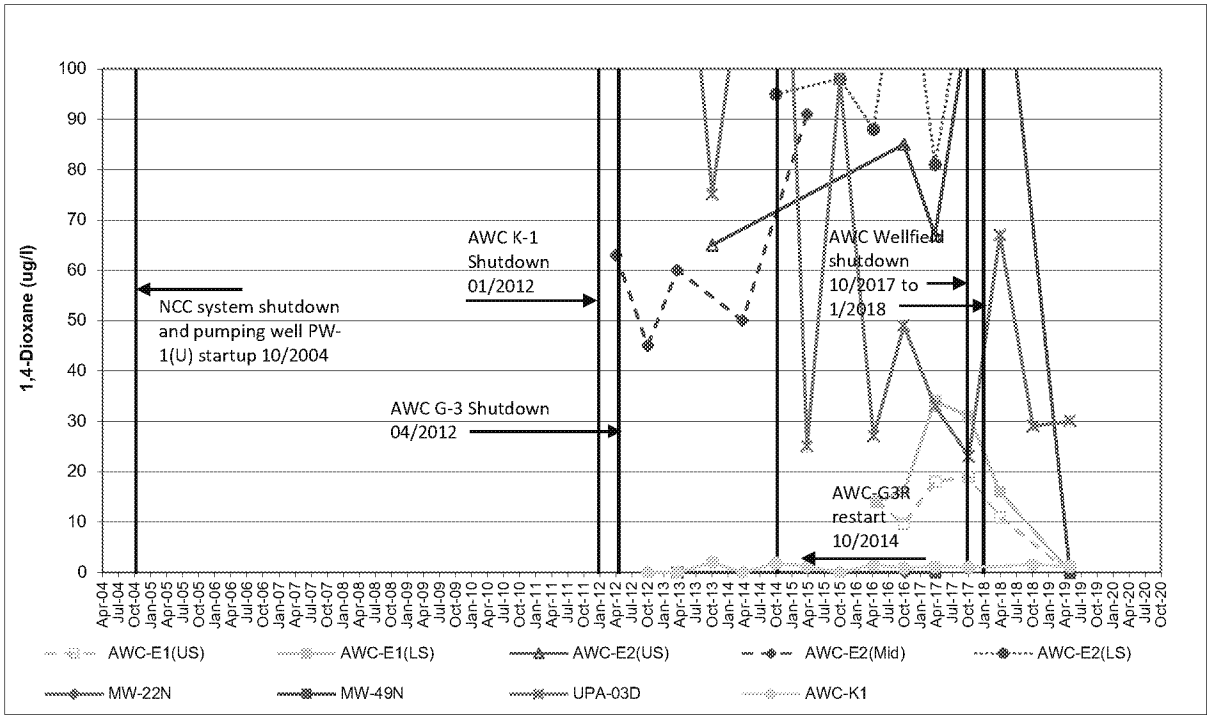


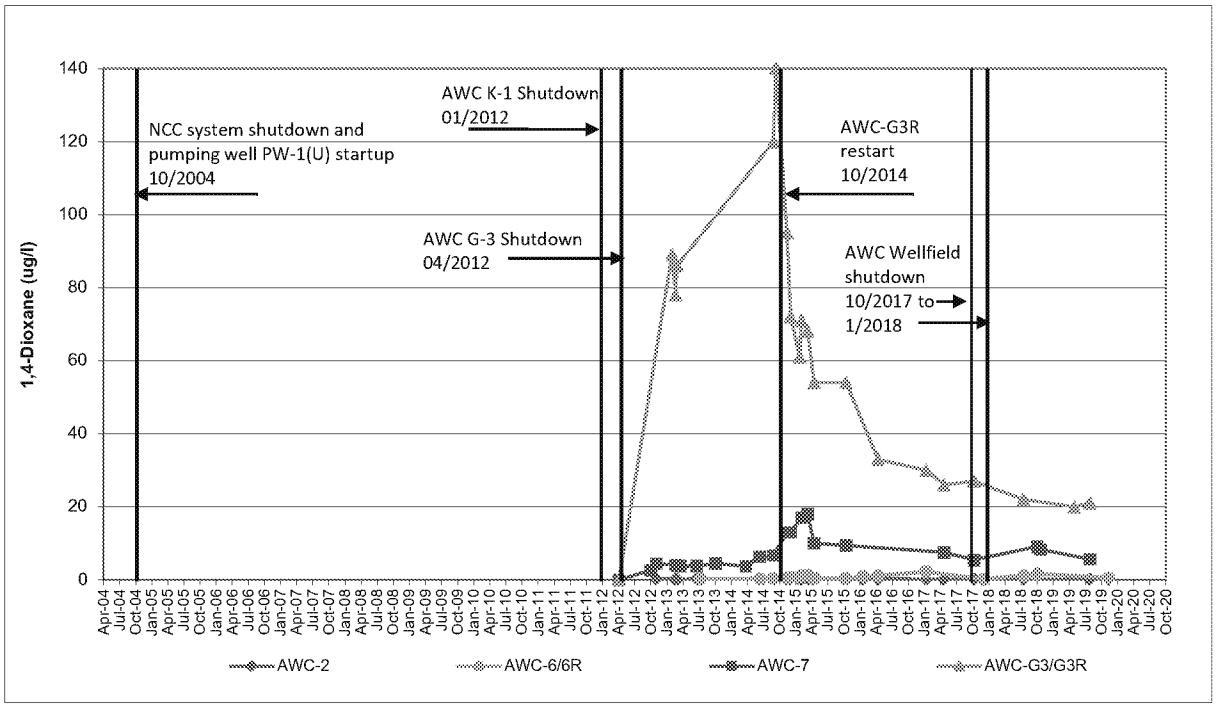
On May 4 2016, AWC collected a combined sample from the shallow and deep aquifer at AWC-E1 via a 3x purge of the entire screen length.

1,4-Dioxane - UPA Downgradient - Well Trends in Front of AWC Wellfield

Golder Associates	Project Number:	013-6052		FIGURE F-9B
	Prepared by:	TK	1/8/2020	
	Checked by:	BPC	1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



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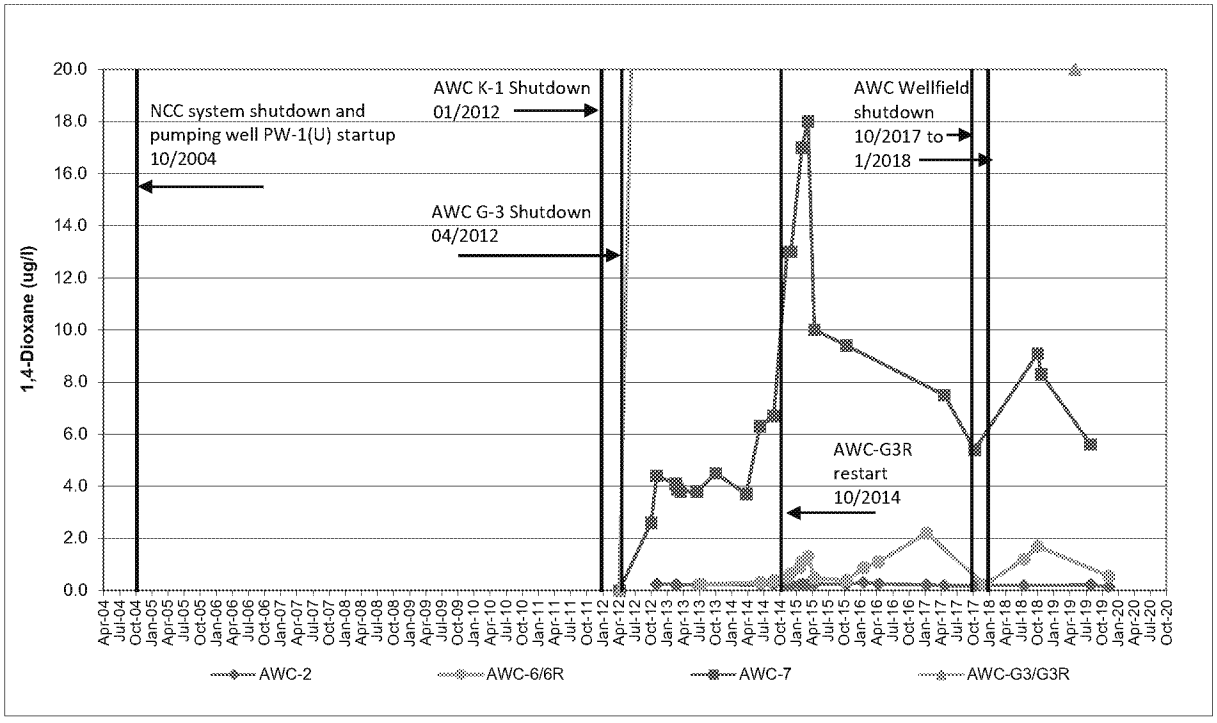
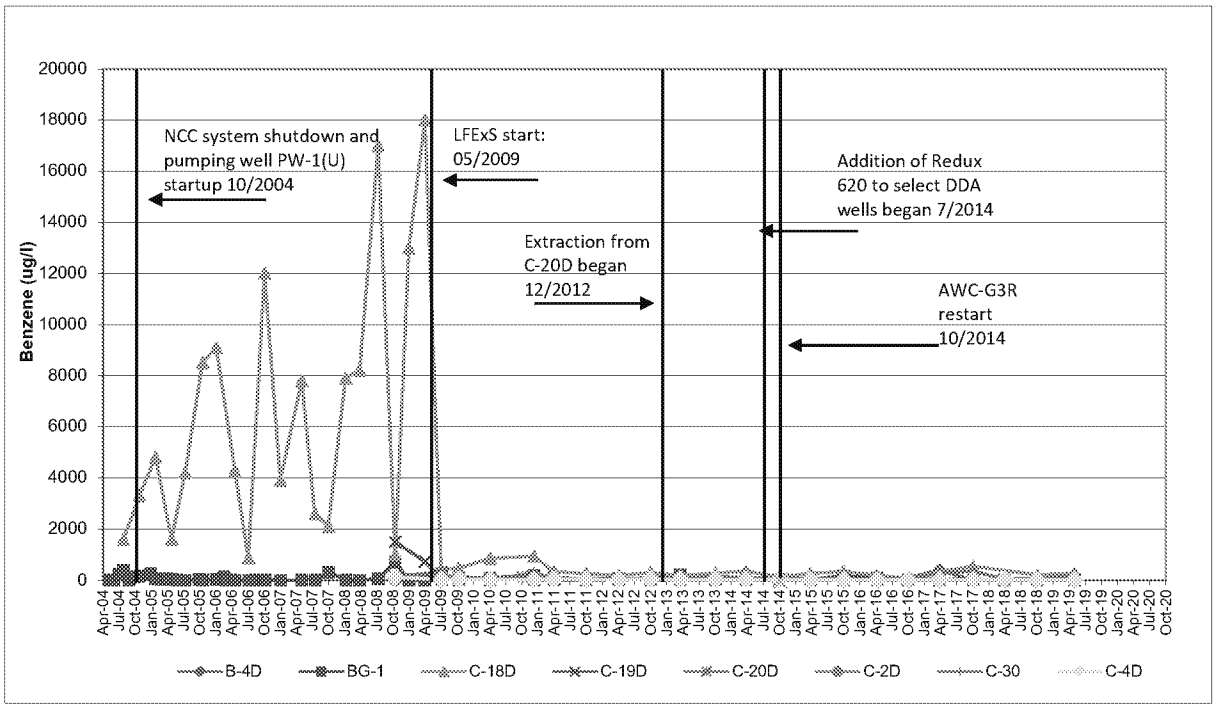


1,4-Dioxane - UPA Downgradient - AWC Well Trends

Golder Associates	Project Number:	013-6052	FIGURE F-10B
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



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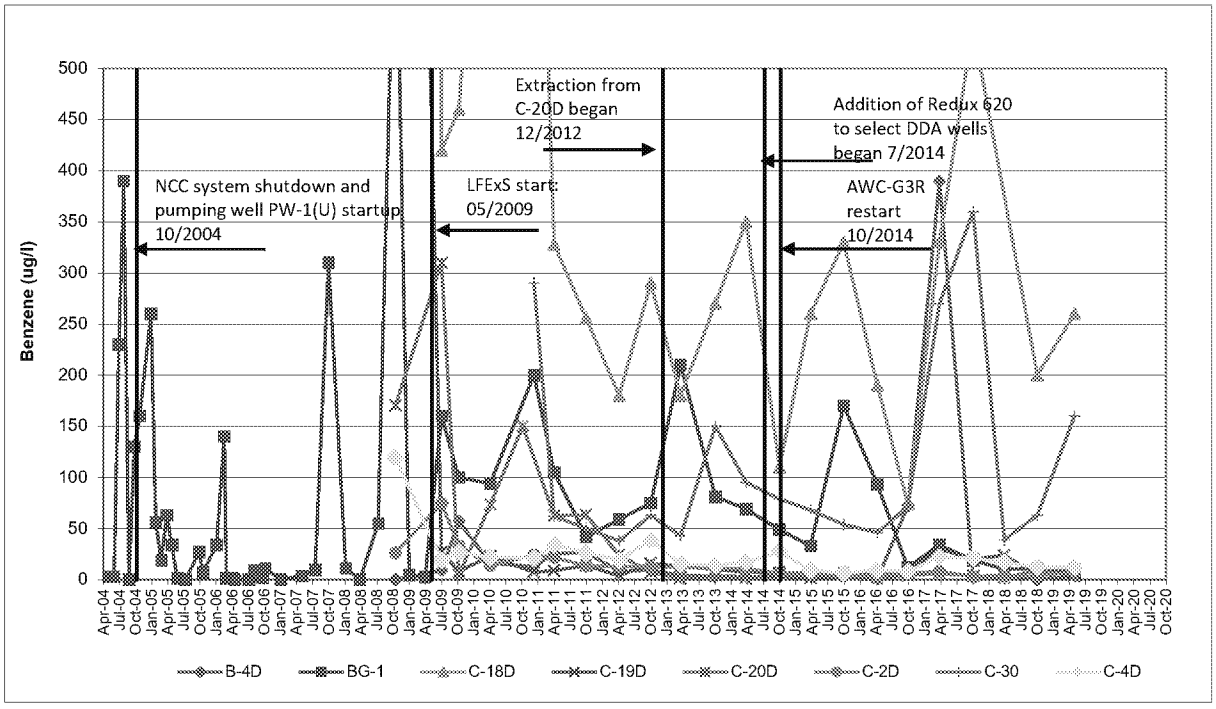
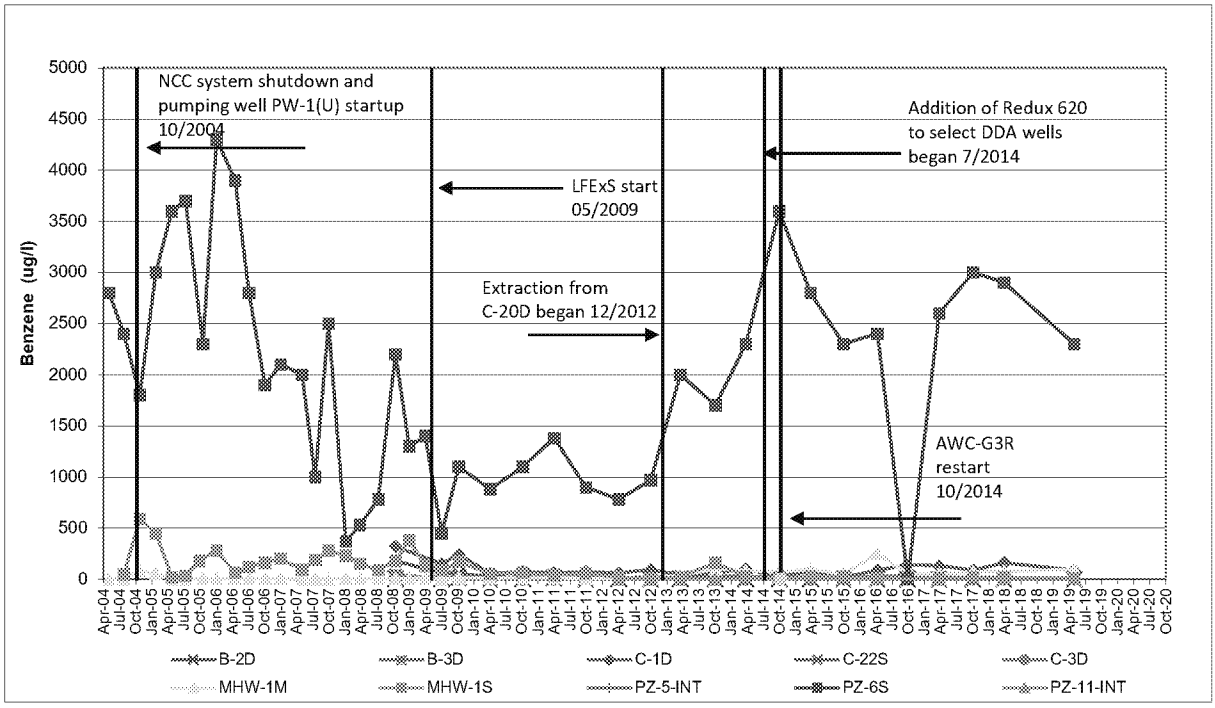


Benzene - DDA Groundwater - LFExS Extraction Wells

Golder Associates	Project Number:	013-6052	FIGURE F-1C
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



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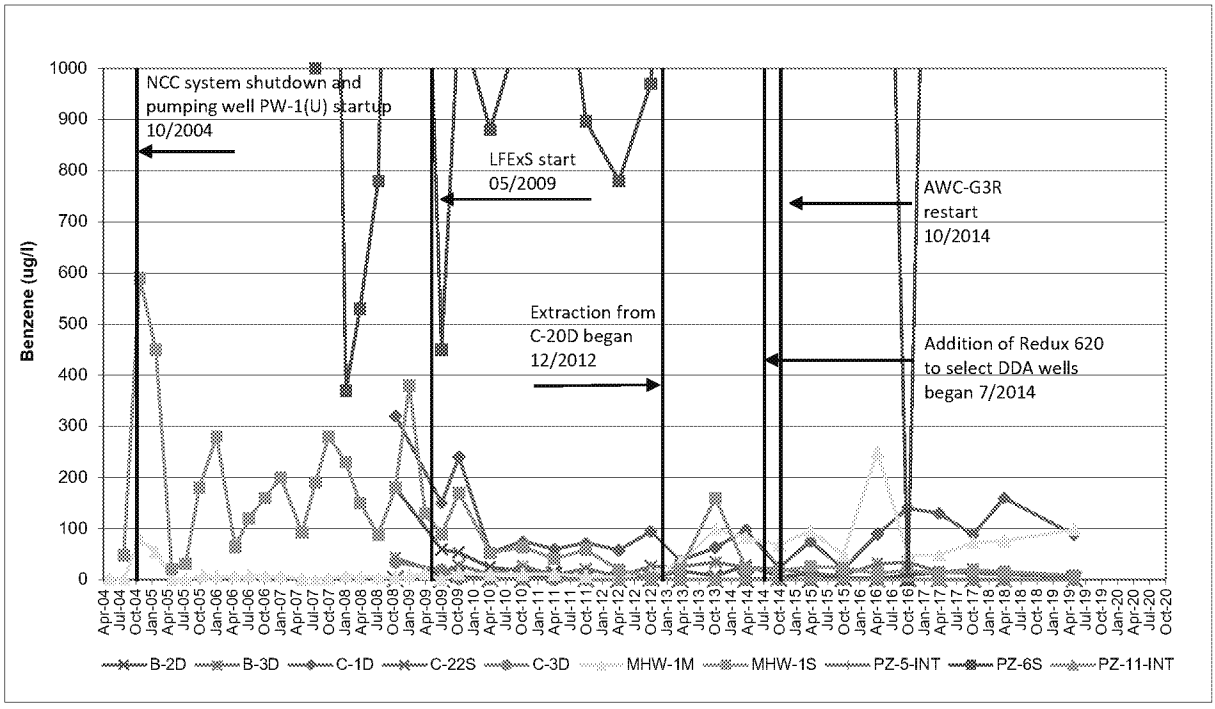
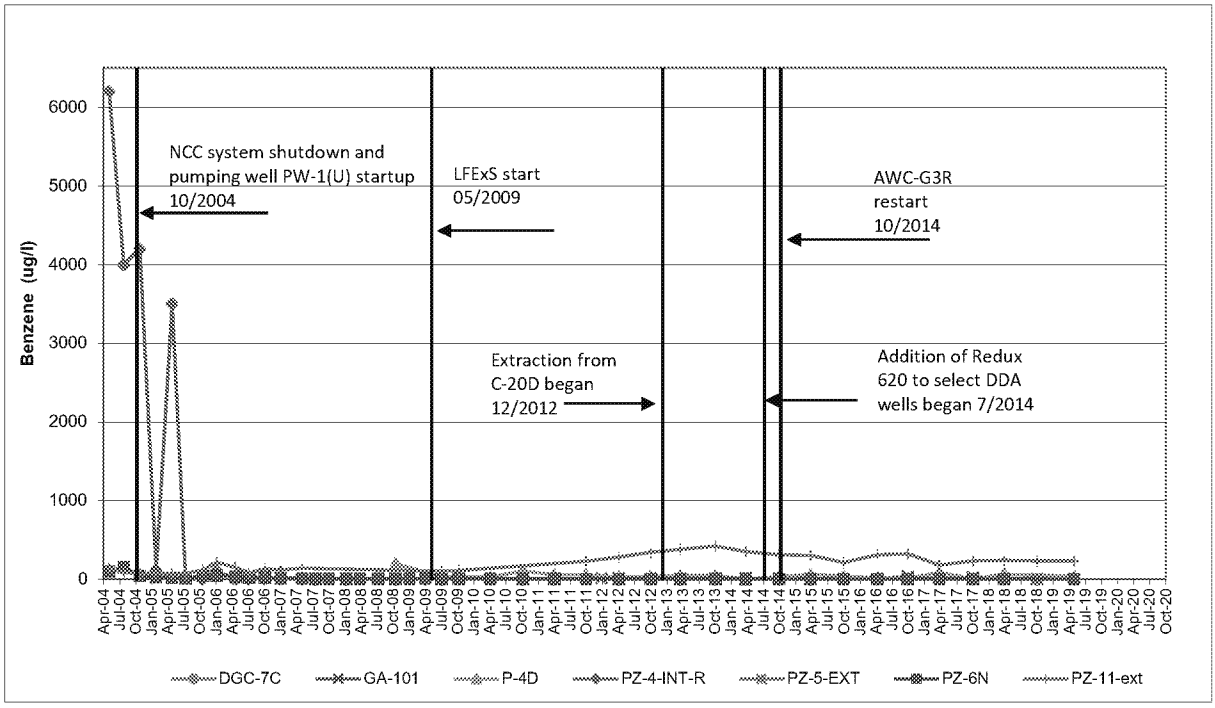


Benzene - DDA Groundwater - LFExS Monitoring Wells

Golder Associates	Project Number:	013-6052		FIGURE F-2C
	Prepared by:	TK	1/8/2020	
	Checked by:	BPC	1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



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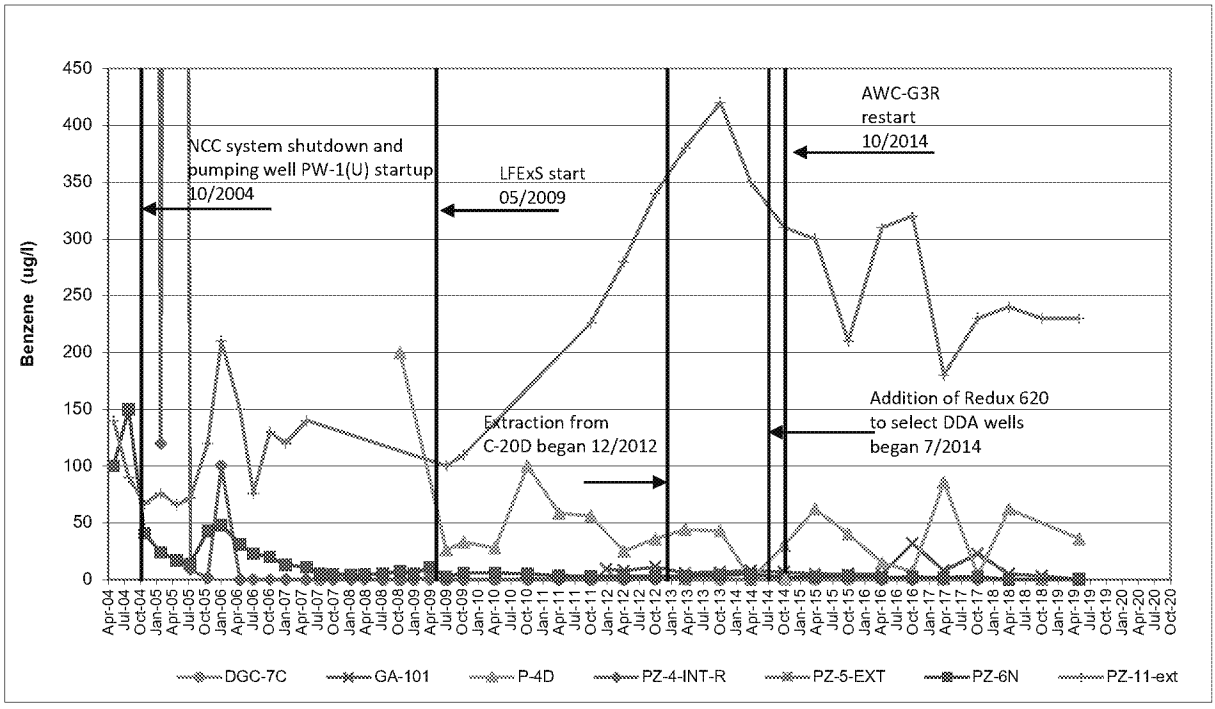
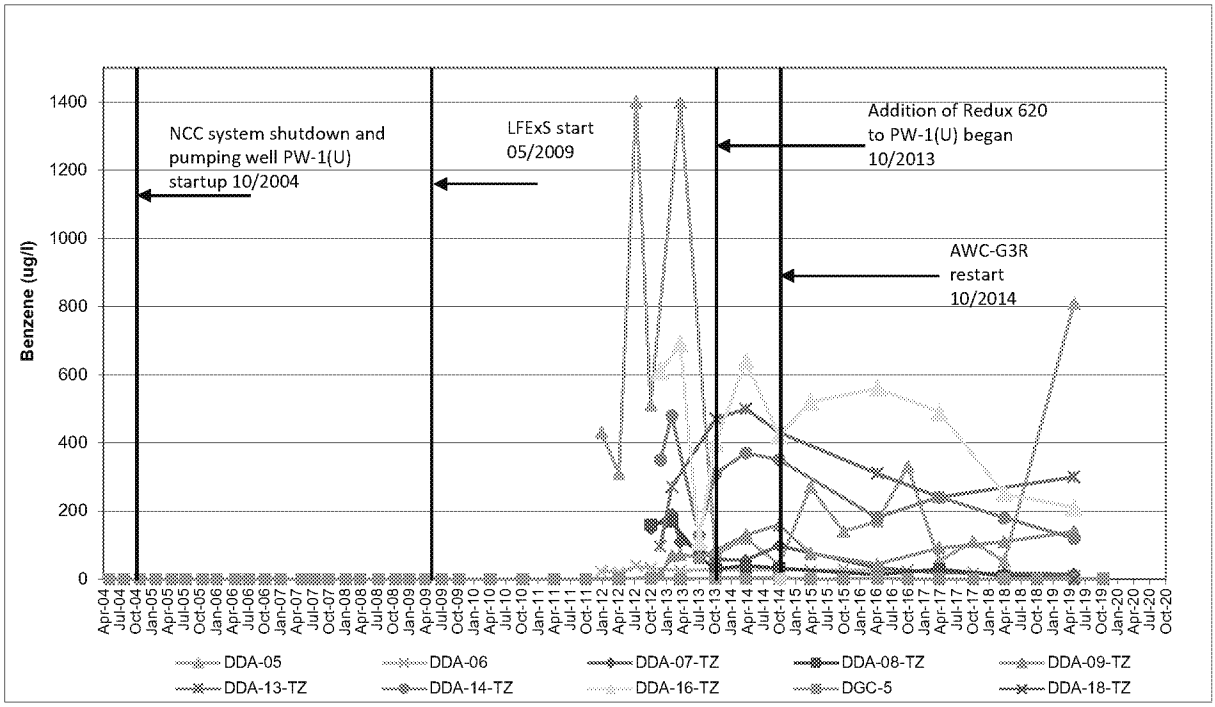


Benzene - DDA Groundwater - Columbia Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-3C
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



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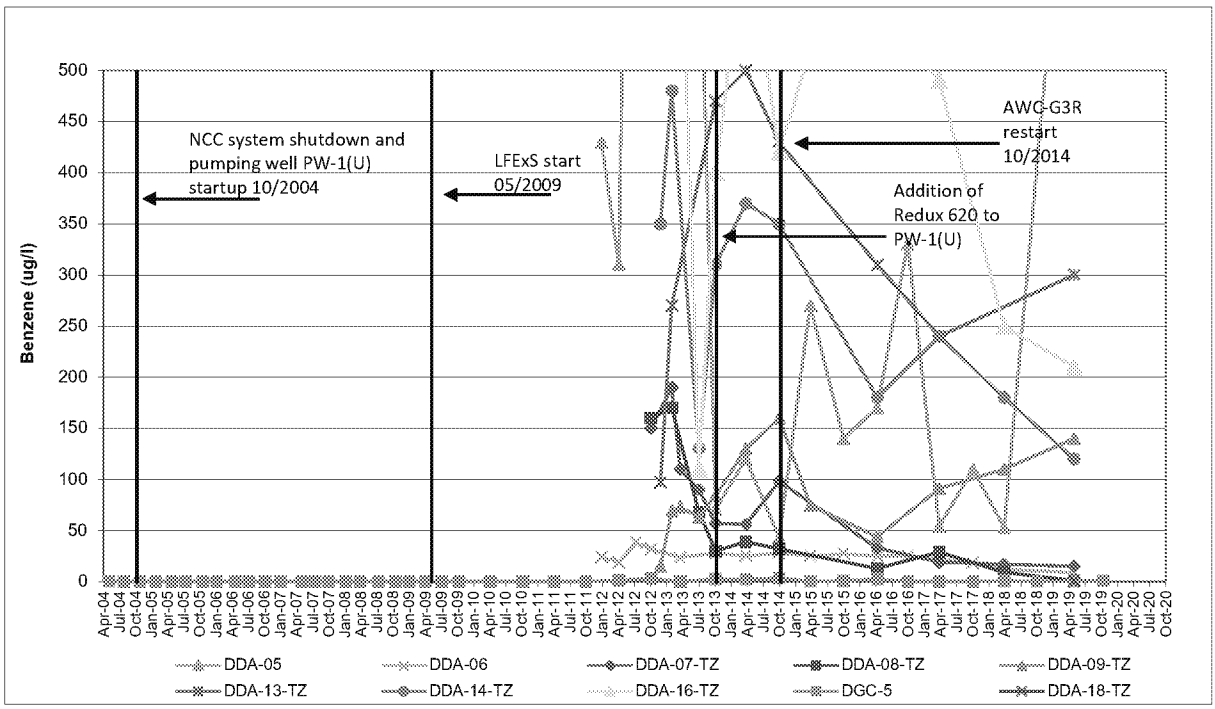
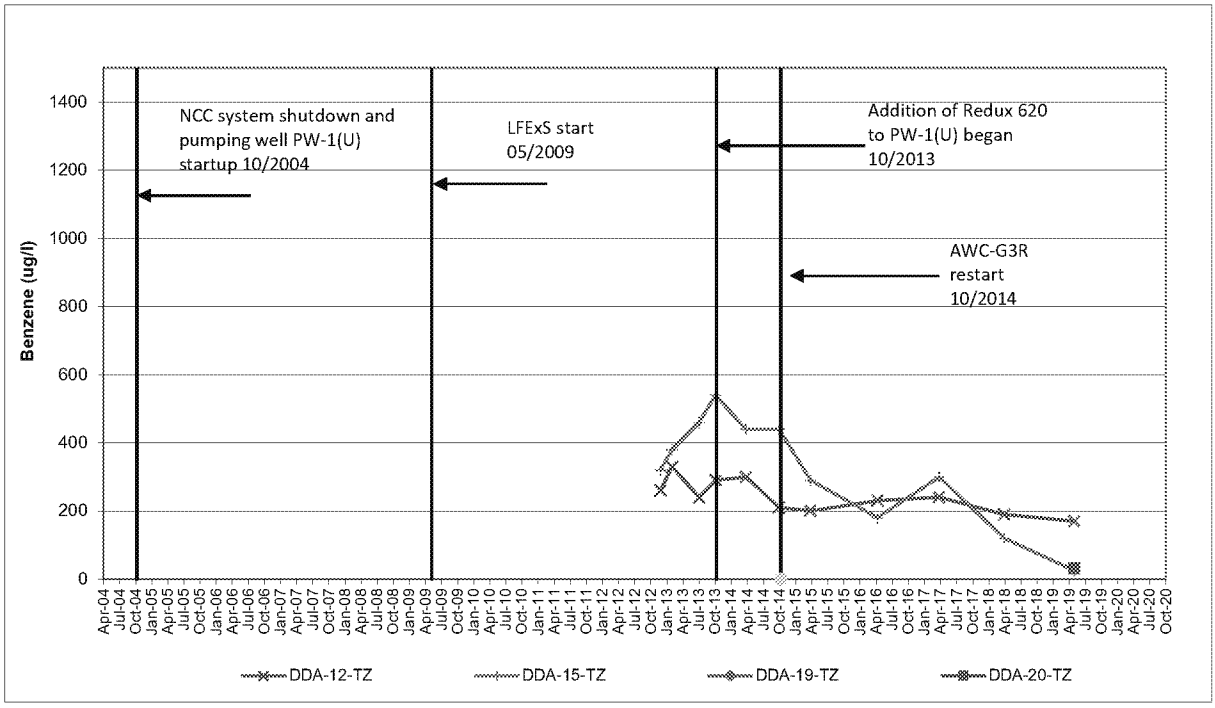


Benzene - DDA to Well PW-1(U) UPCUTZ - Western and Central Monitoring Wells

Golder Associates	Project Number:	013-6052	**FIGURE F-4.1C**
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	**Delaware Sand and Gravel Superfund Site**
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



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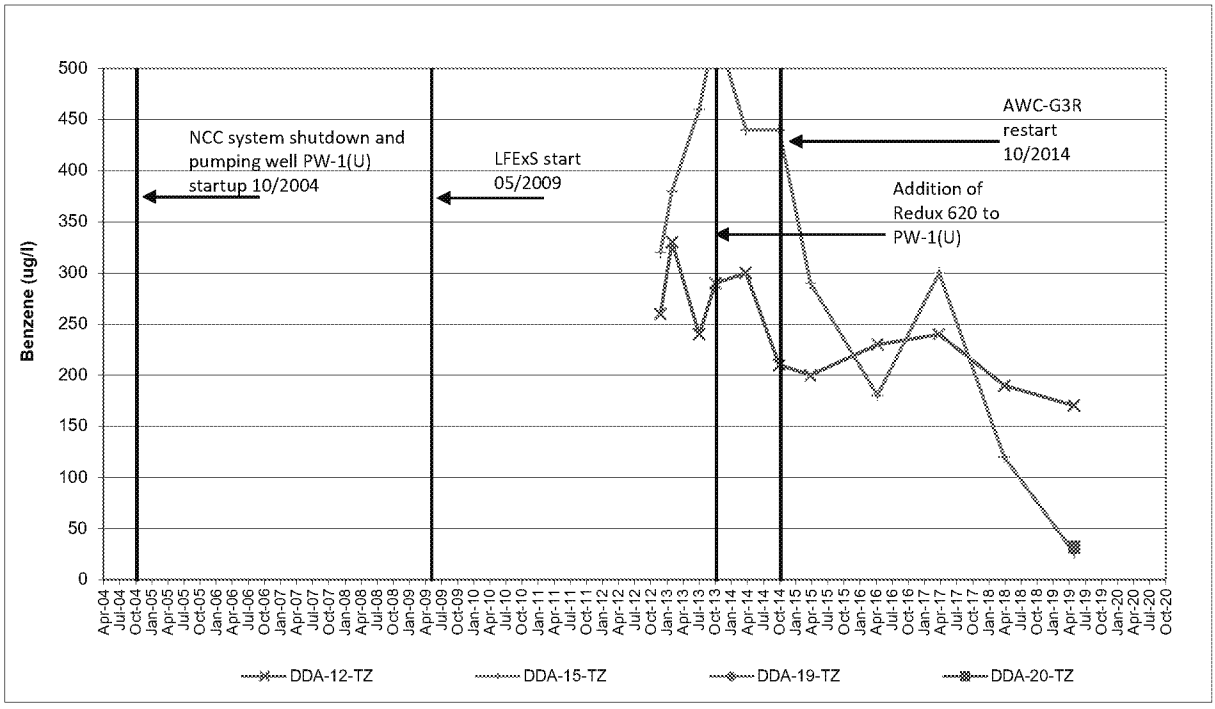
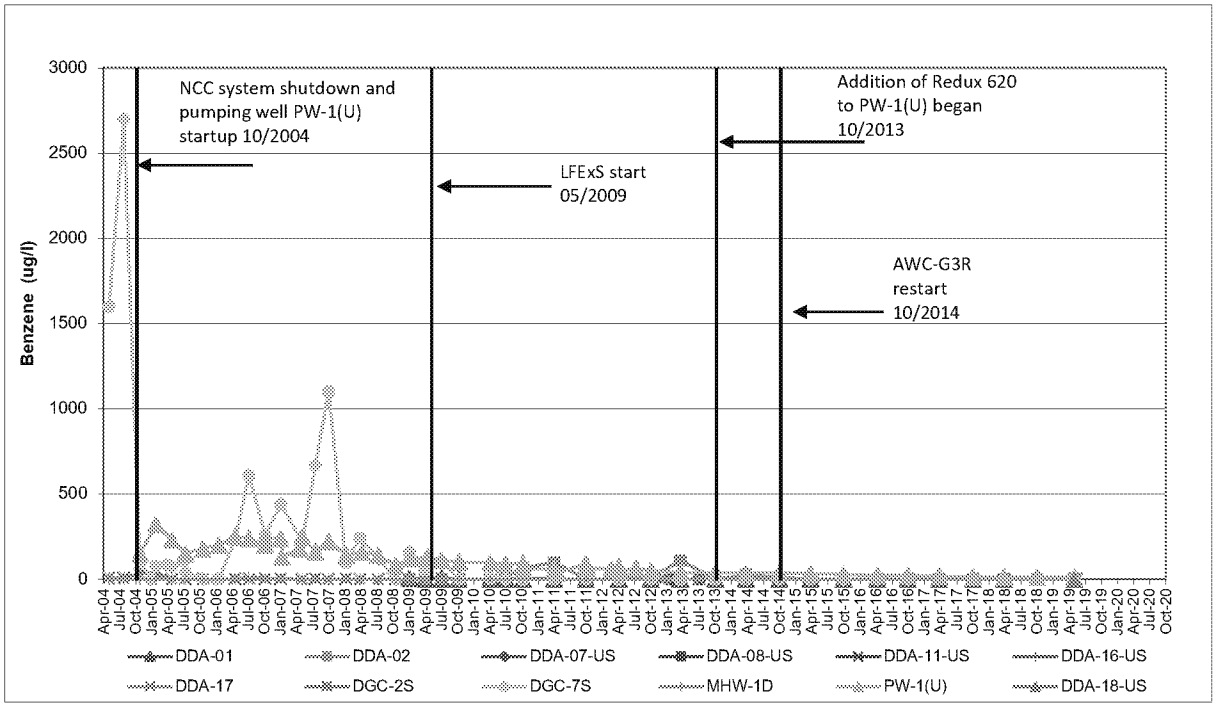


Benzene - DDA to Well PW-1(U) UPCUTZ - Eastern Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-4.2C
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



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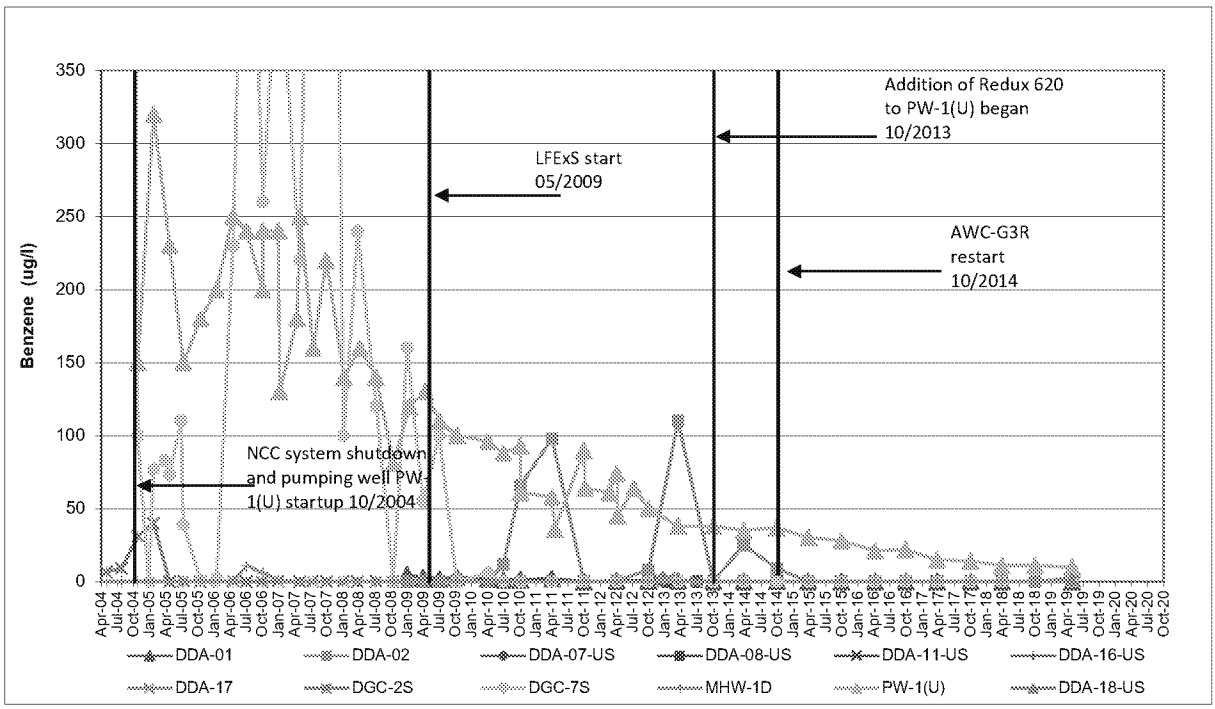

Benzene - DDA to Well PW-1(U) UPA - Western and Central Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-5.1C
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

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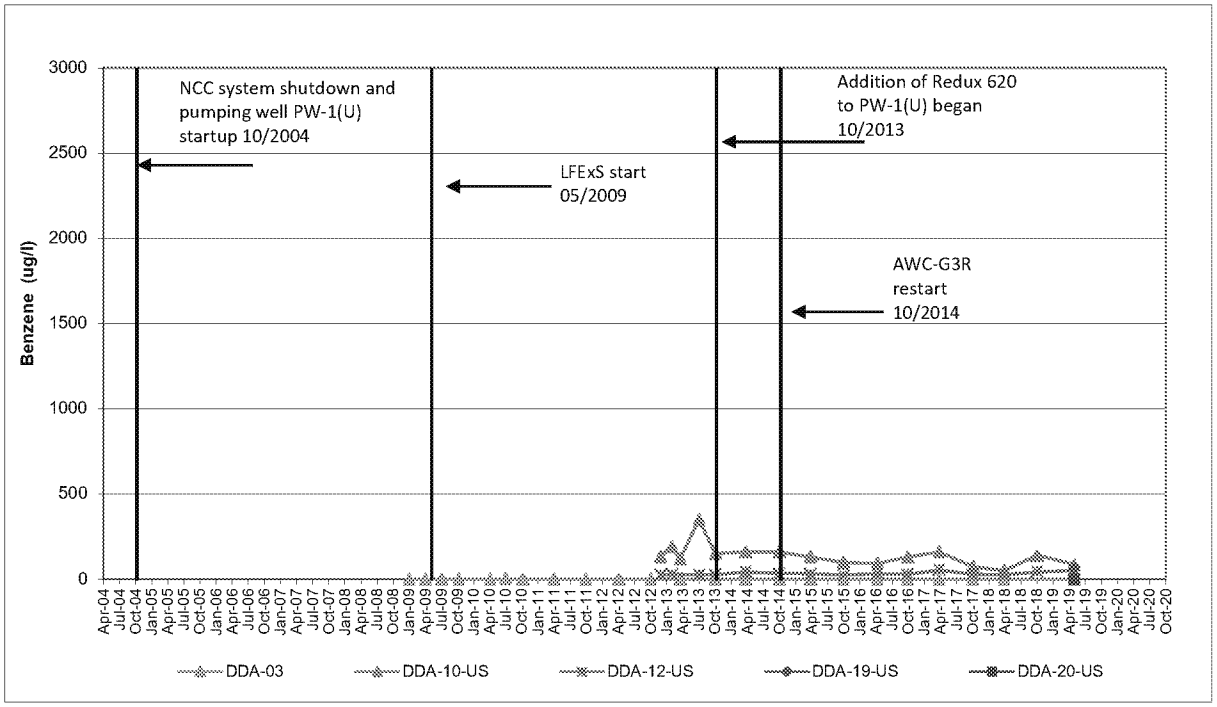

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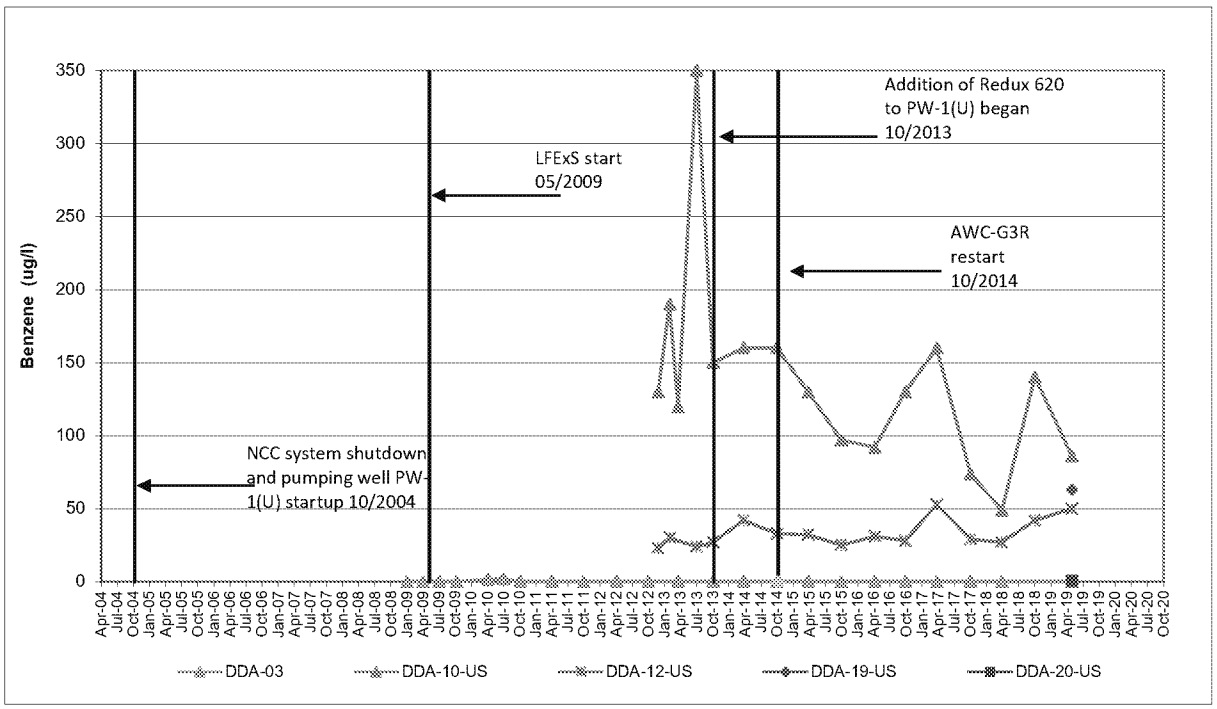

Benzene - DDA to Well PW-1(U) UPA - Eastern Monitoring Wells

Golder Associates	Project Number:	013-6052		FIGURE F-5.2C
	Prepared by:	TK	1/8/2020	
	Checked by:	BPC	1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

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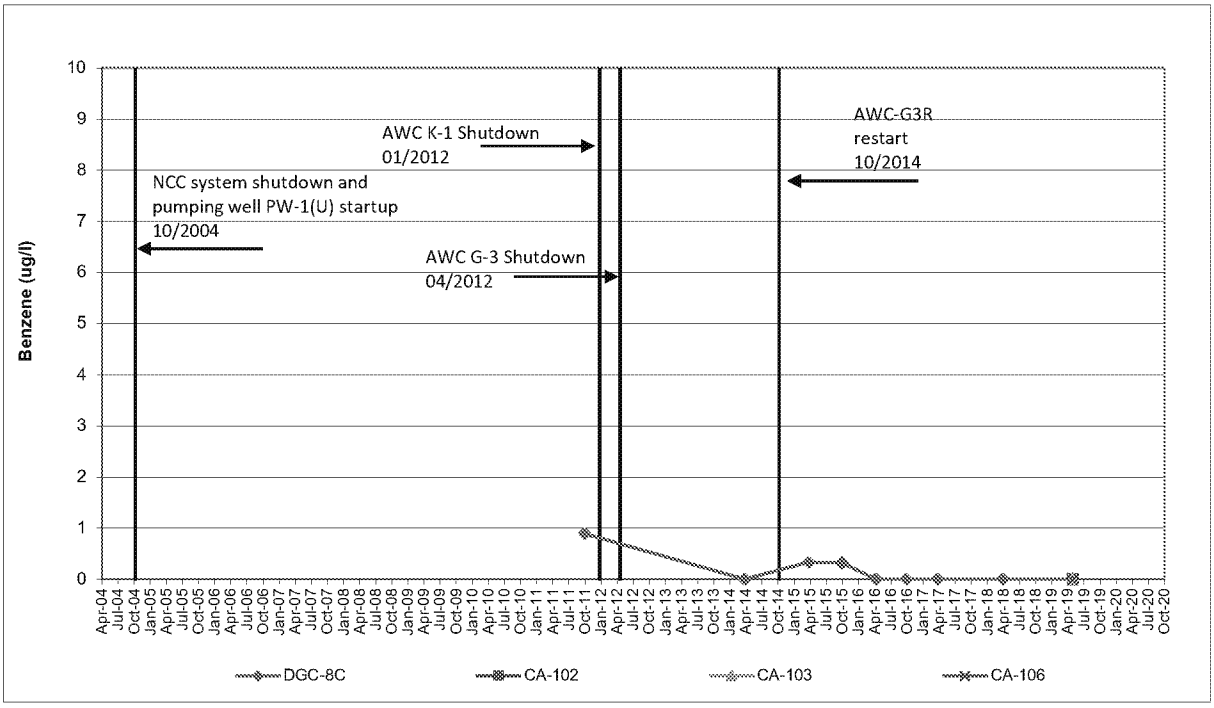

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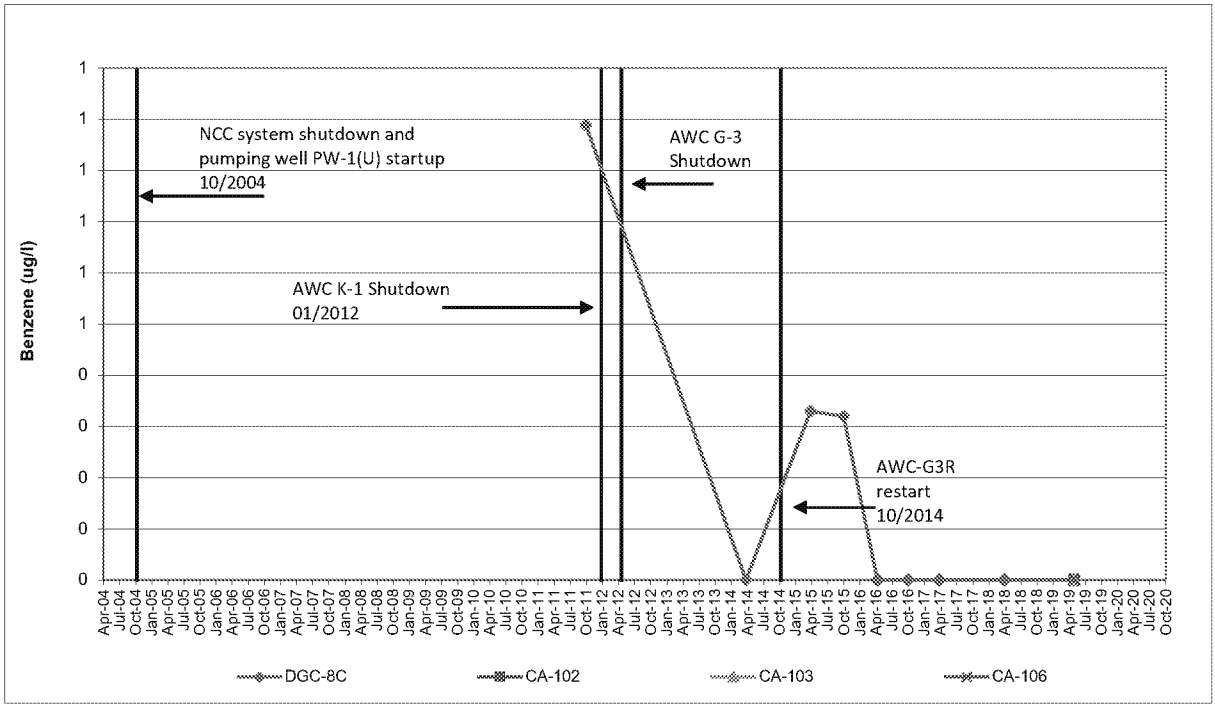

Benzene - Downgradient of Well PW-1(U) - Columbia Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-6.1C
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

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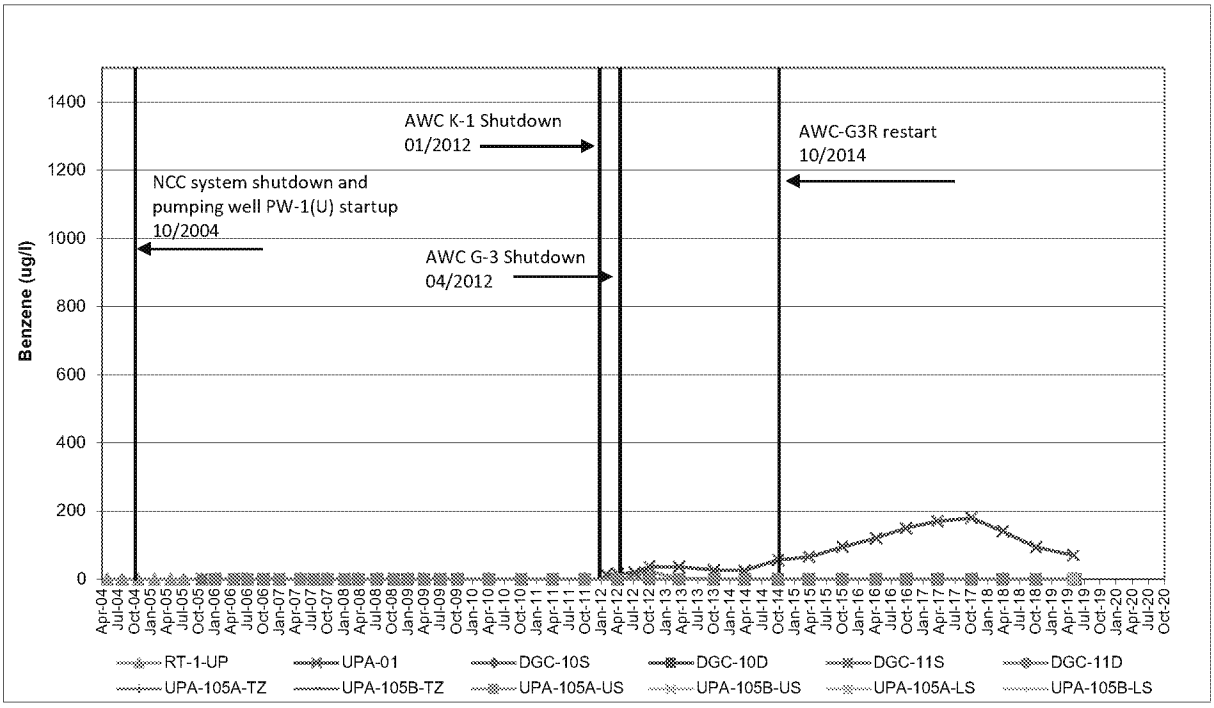

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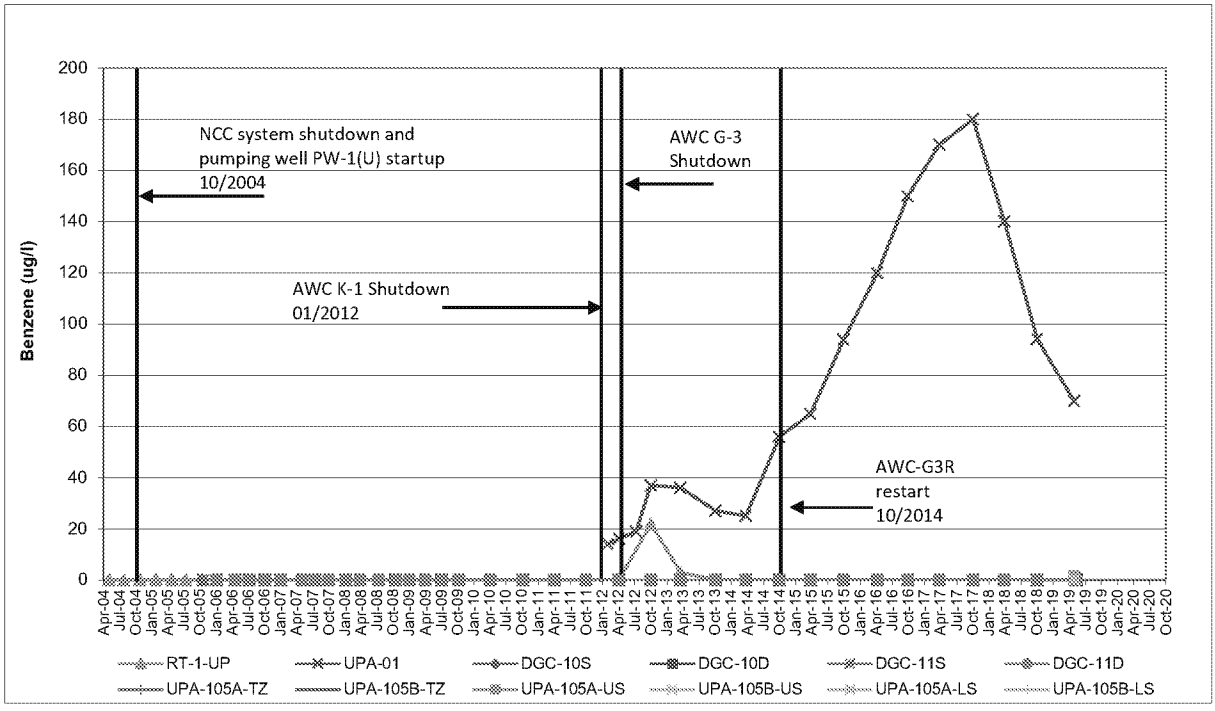
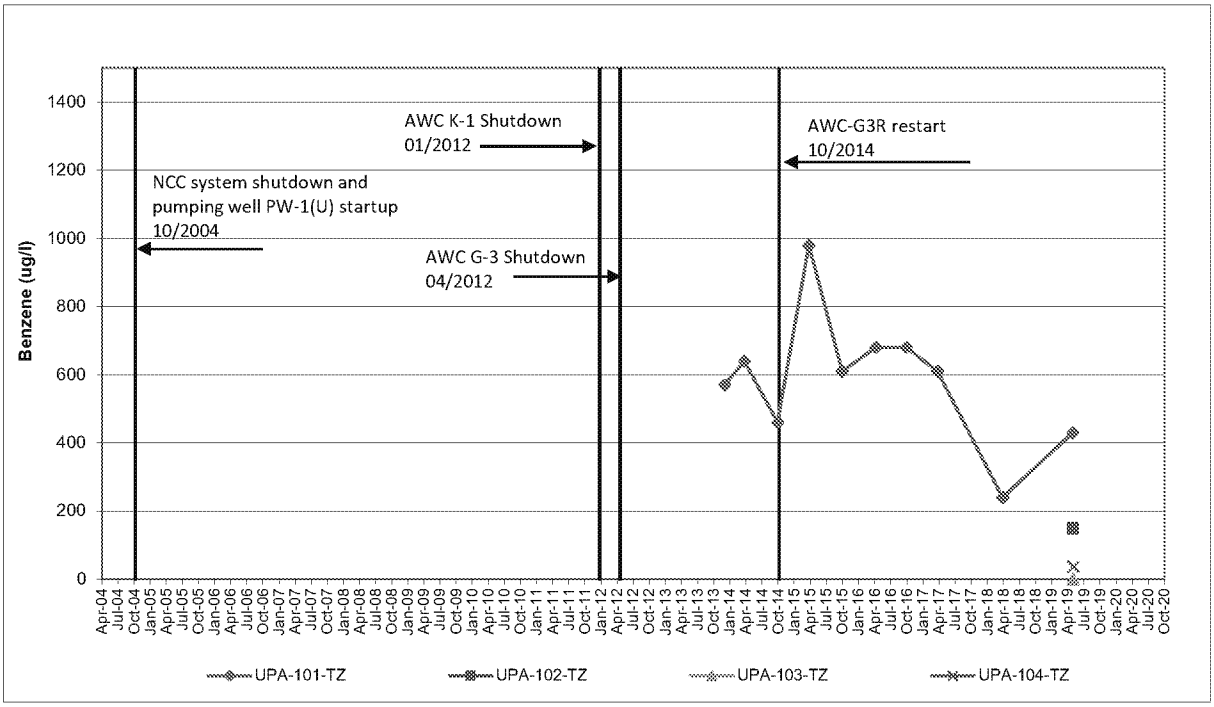


Benzene - Downgradient of Well PW-1(U) - UPCUTZ and UPA - UPA-01 Area Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-6.2C
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



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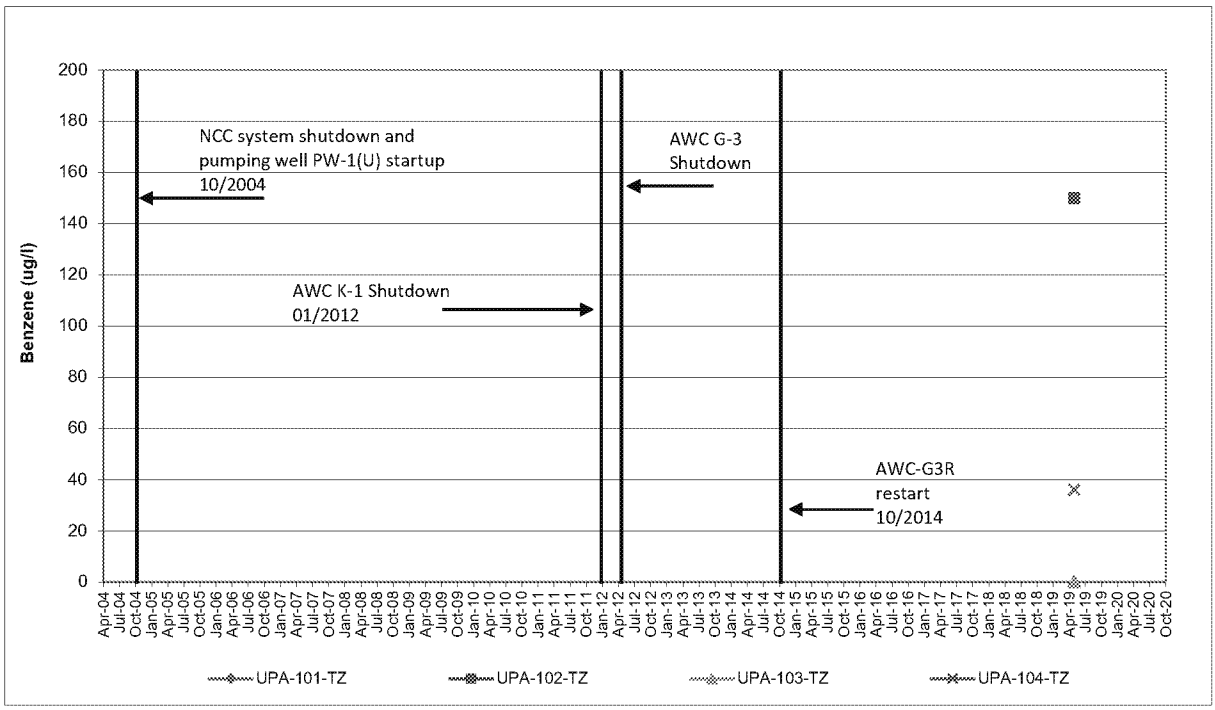
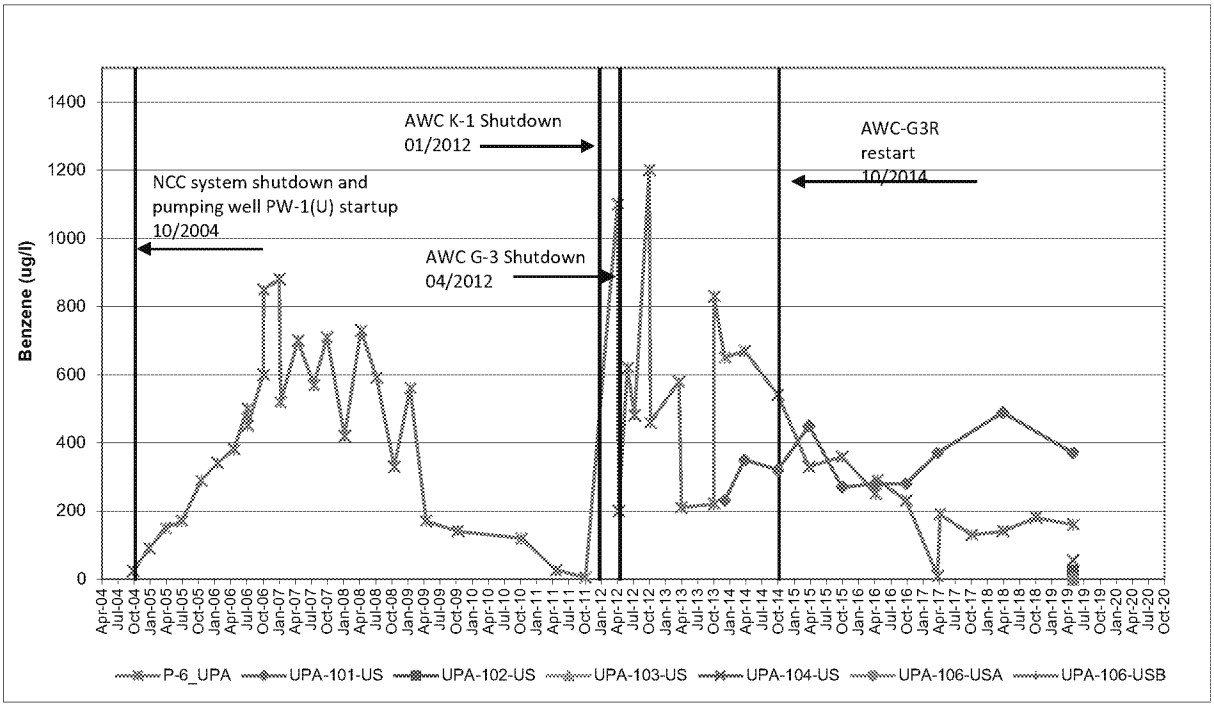


Benzene - Downgradient of Well PW-1(U) - UPCUTZ - P-6 Area Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-6.3C
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



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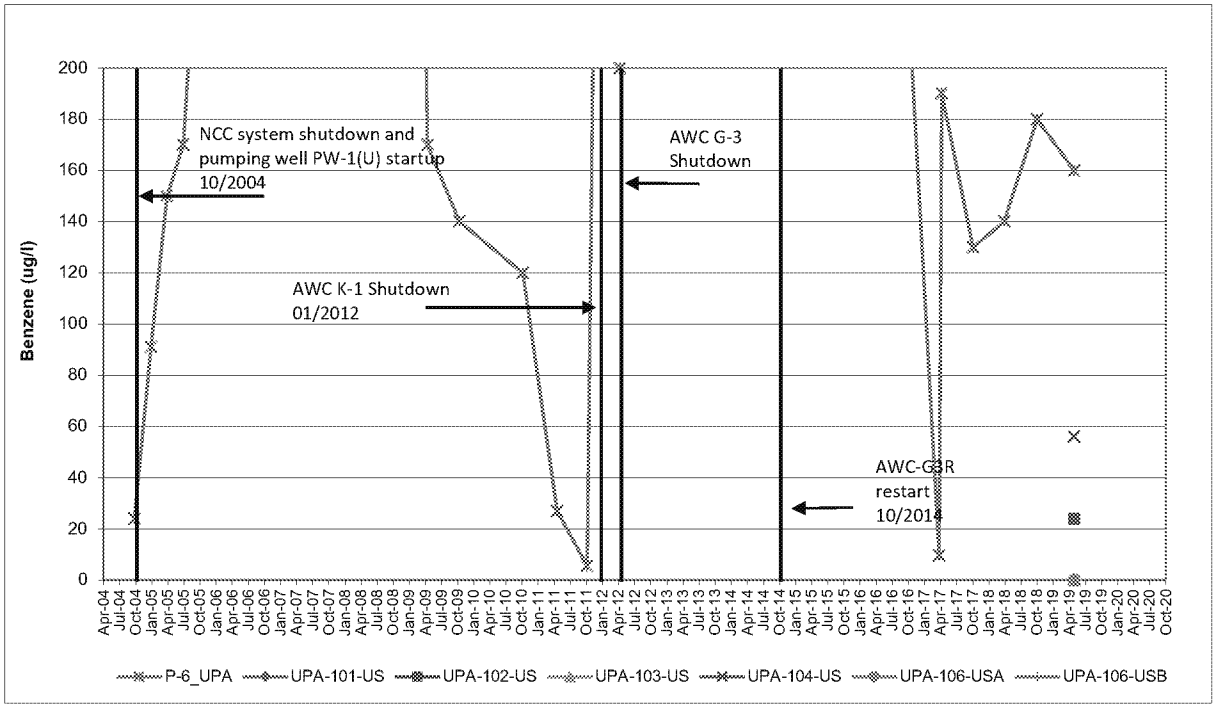
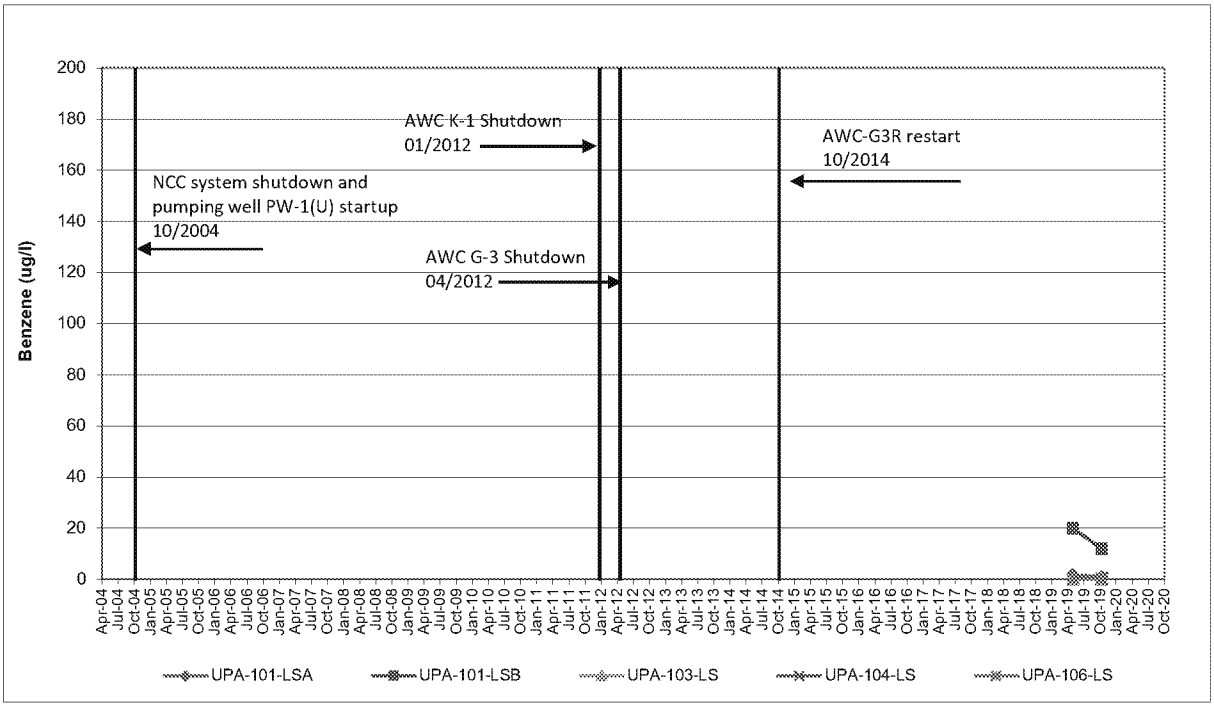


Benzene - Downgradient of Well PW-1(U) - UPA Upper Sand - P-6 Area Monitoring Wells

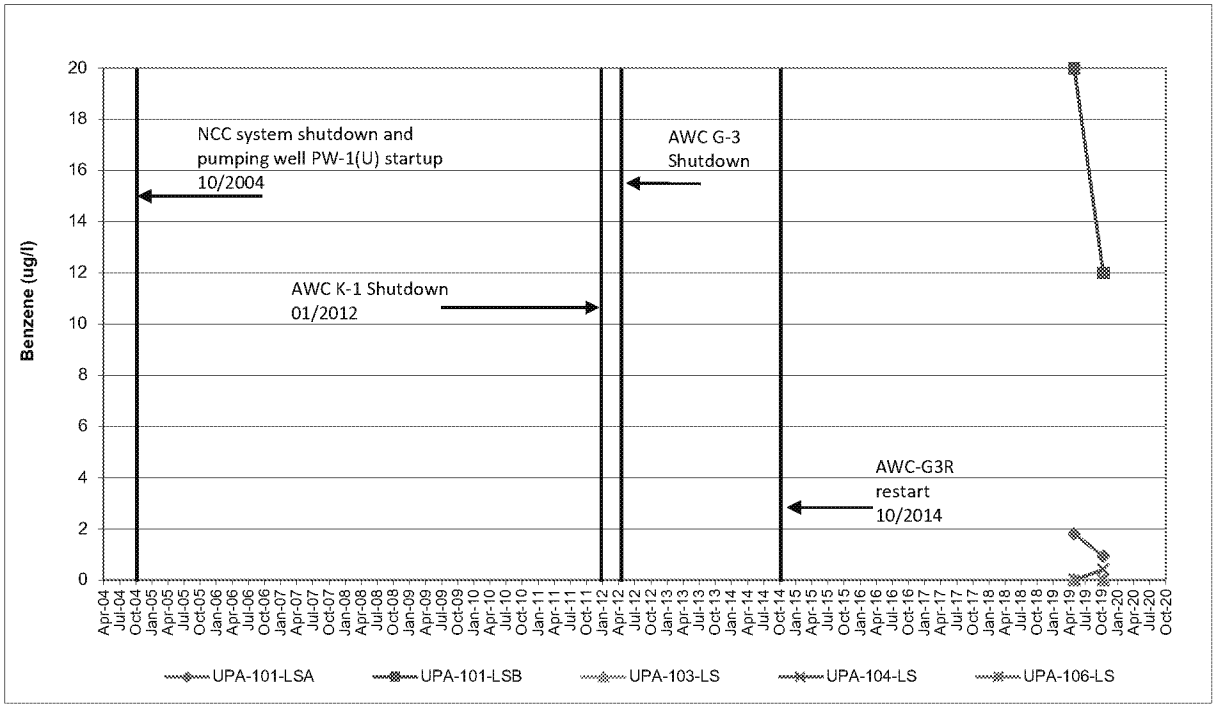
Golder Associates	Project Number:	013-6052	FIGURE F-6.4C
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



NORMAL SCALE, <200 ug/l

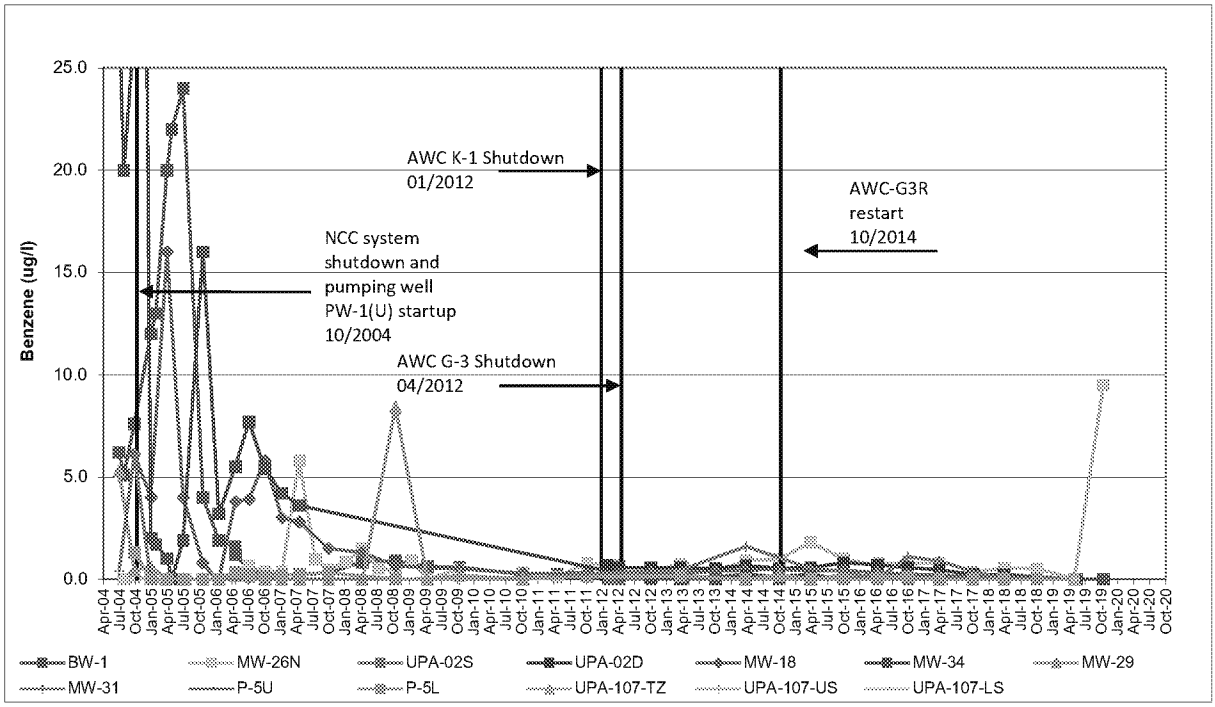


Benzene - Downgradient of Well PW-1(U) - UPA Lower Sand - P-6 Area Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-6.5C
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



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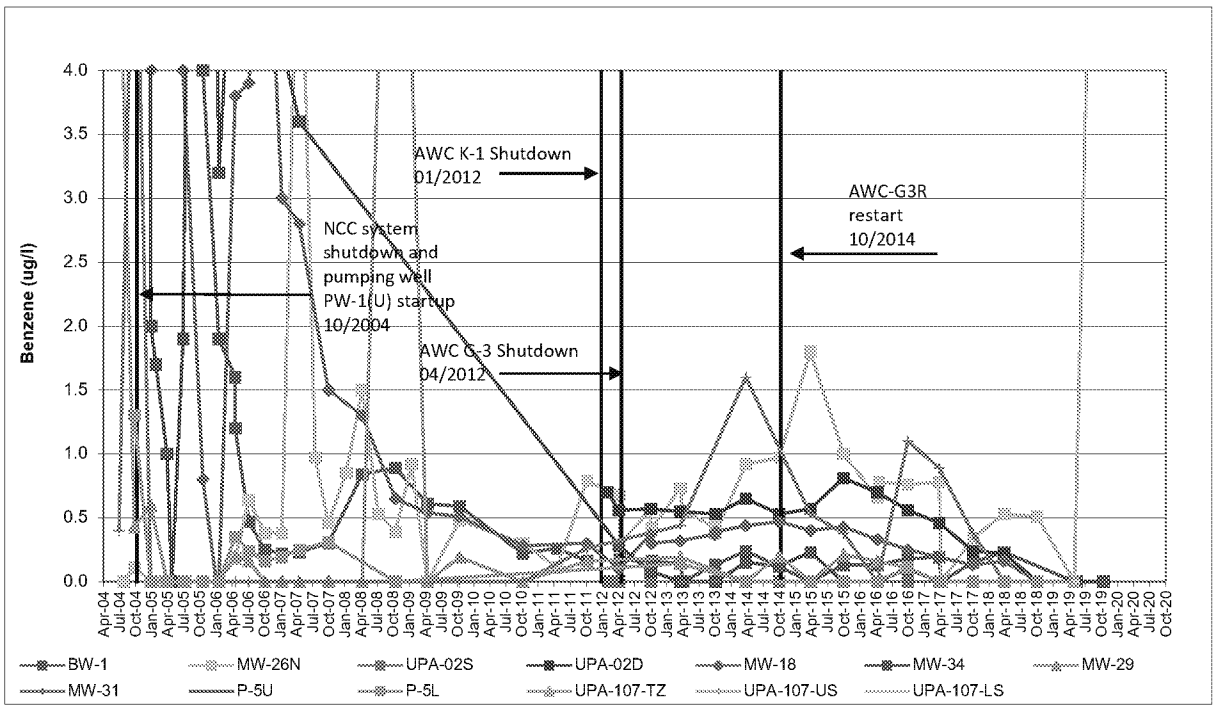


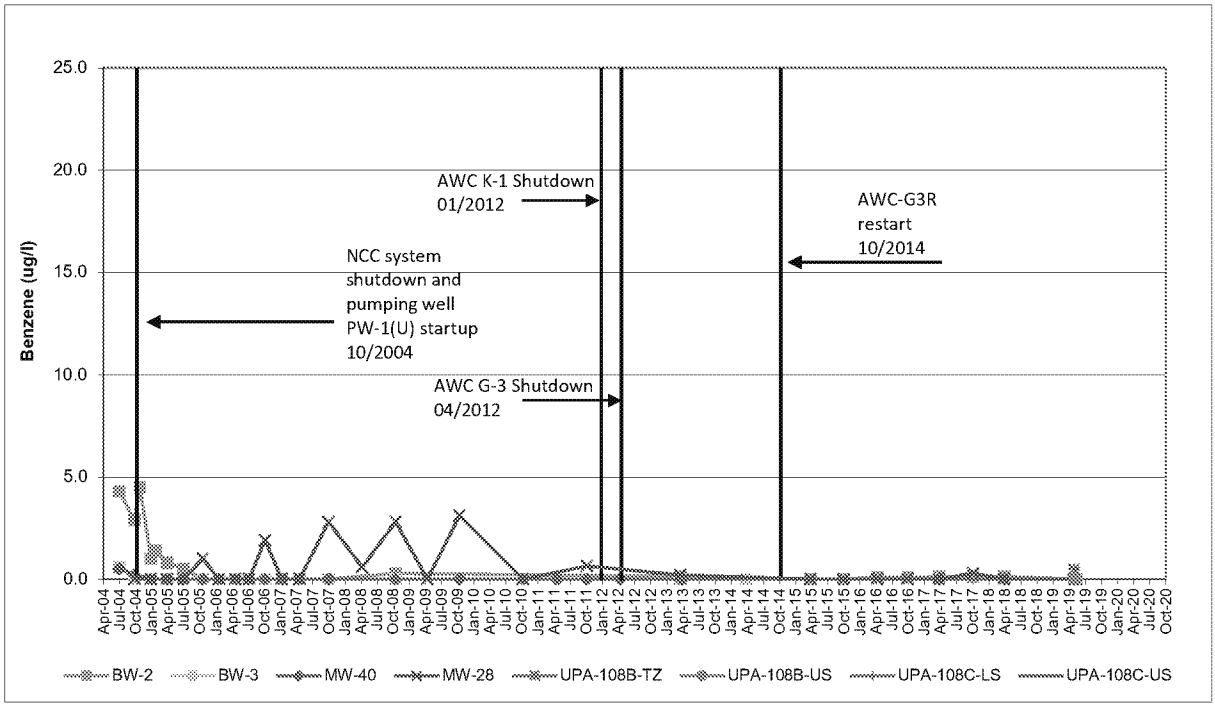
Benzene - Downgradient of Well PW-1(U) - UPA - MW-18/34 Area Monitoring Wells

Golder Associates

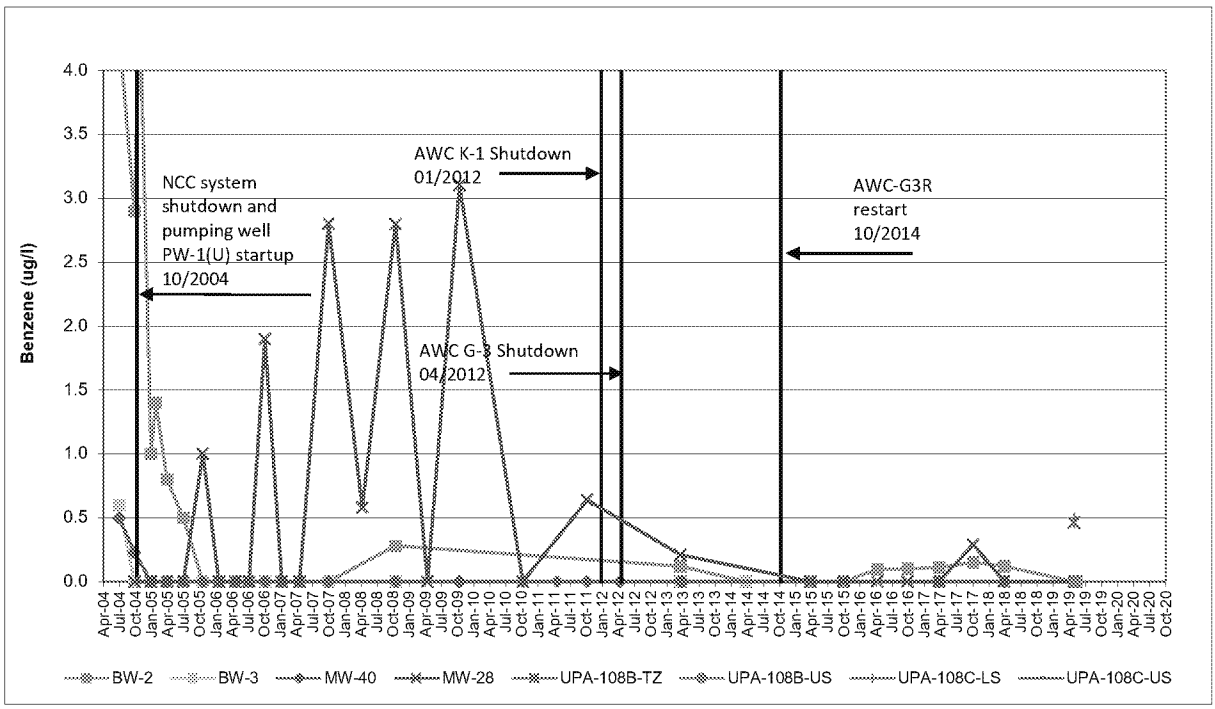
Project Number:	013-6052		FIGURE F-7.1C
Prepared by:	TK	1/8/2020	
Checked by:	BPC	1/8/2020	Delaware Sand and Gravel Superfund Site
Reviewed by:	TAM	2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



NORMAL SCALE, <4 ug/l



Benzene - Downgradient of Well PW-1(U) - UPA - BW-2 Area Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-7.2C
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

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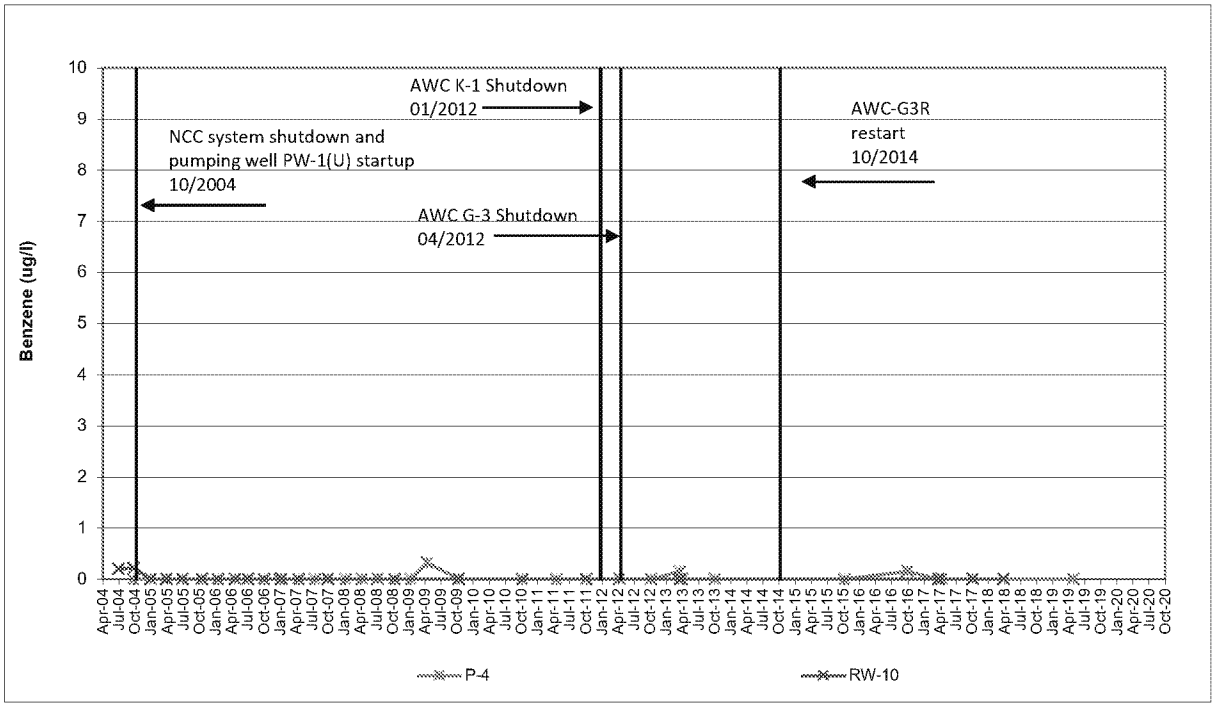

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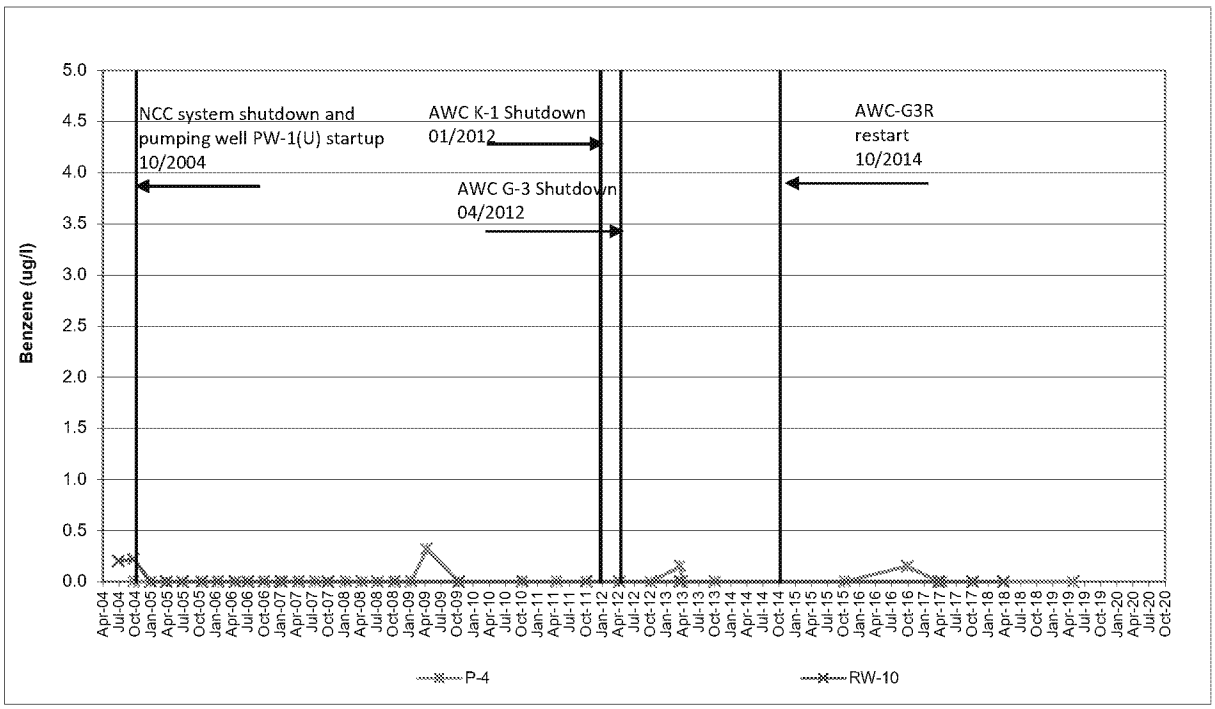
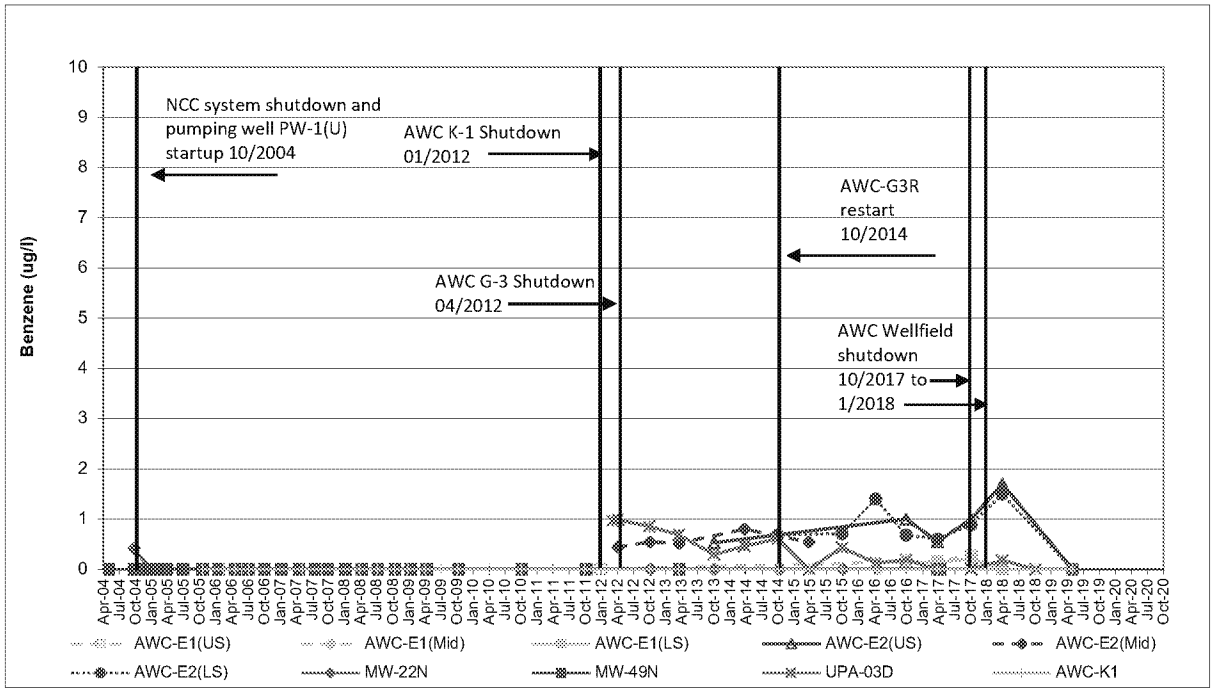


Benzene - UPA Downgradient - Western Lobe NCC Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-8C
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



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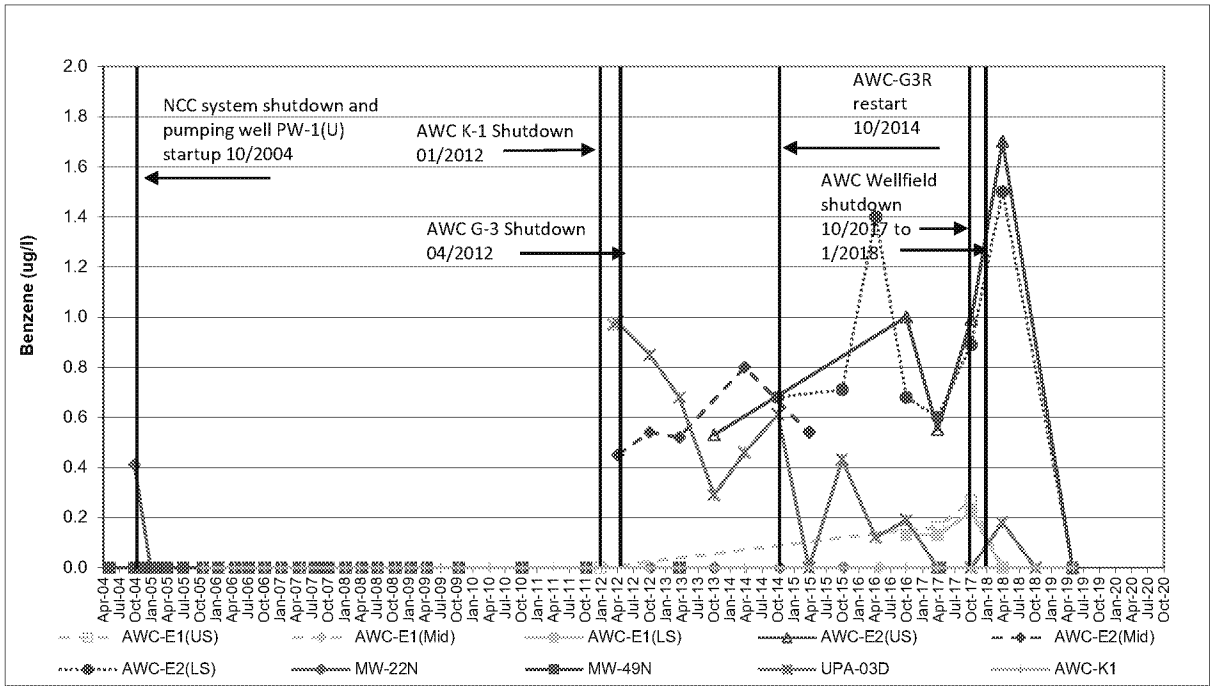


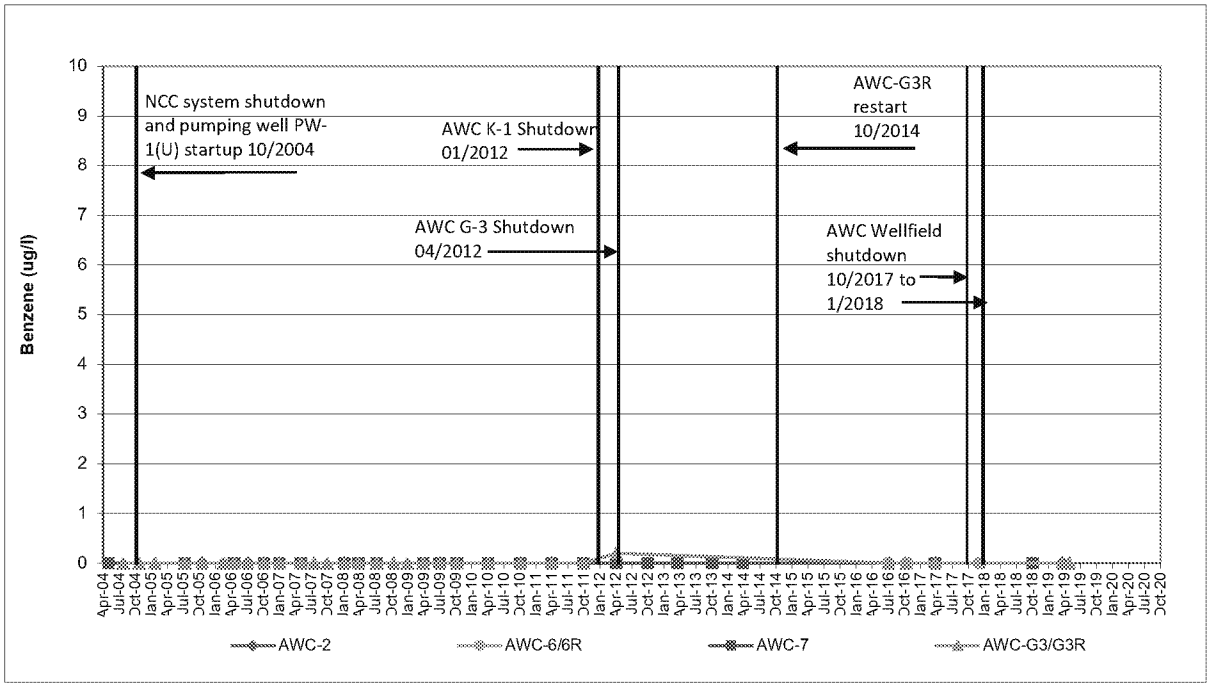
On May 4 2016, AWC collected a combined sample from the shallow and deep aquifer at AWC-E1 via a 3x purge of the entire screen length.

Benzene - UPA Downgradient - Well Trends in Front of AWC Wellfield

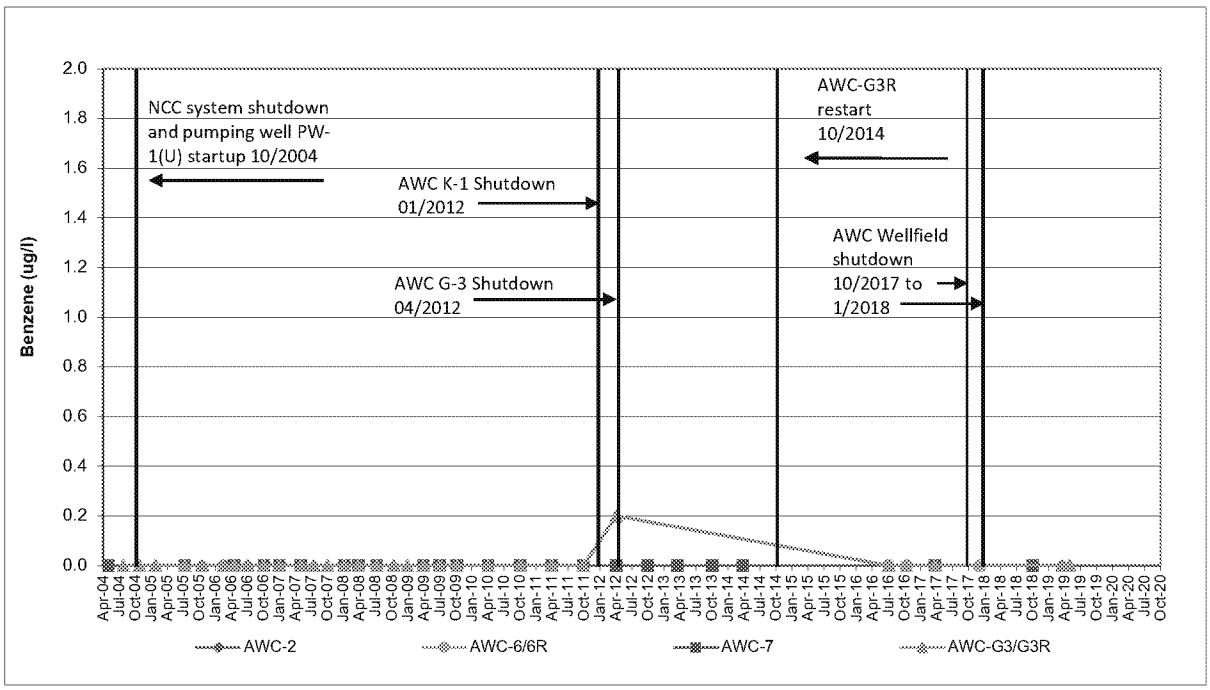
Golder Associates	Project Number:	013-6052	FIGURE F-9C
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



NORMAL SCALE, <2 ug/l

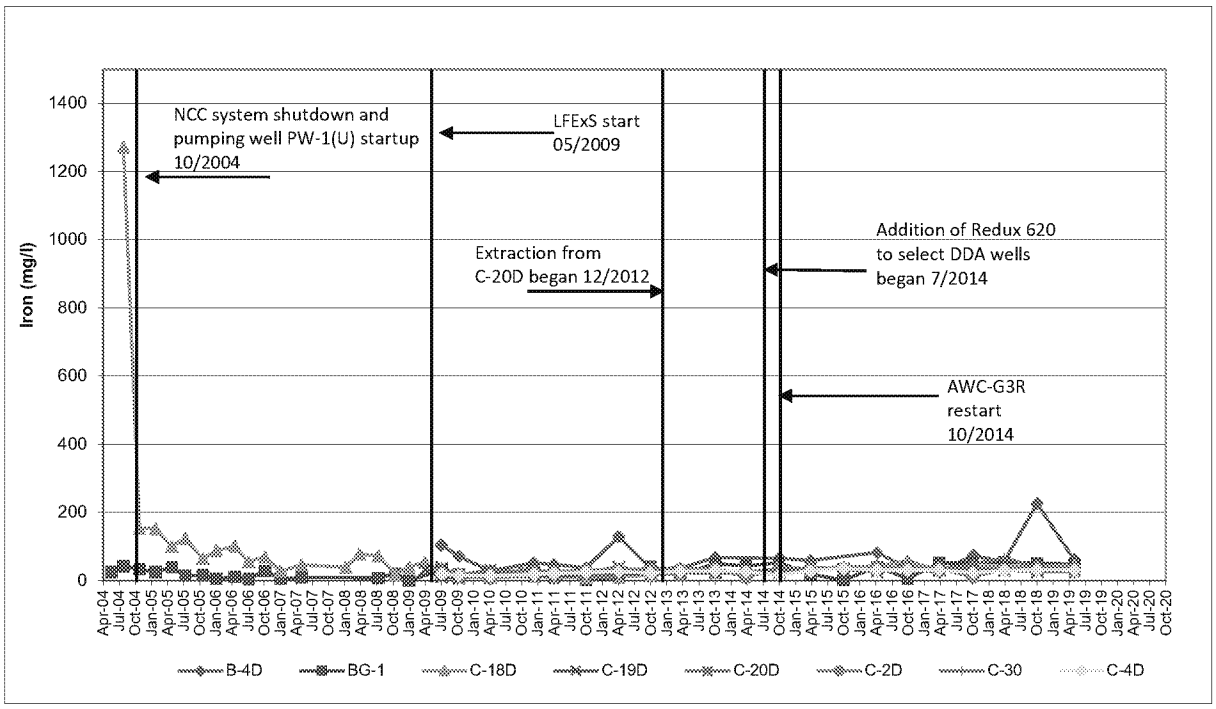


Benzene - UPA Downgradient - AWC Well Trends

Golder Associates	Project Number:	013-6052	FIGURE F-10C
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



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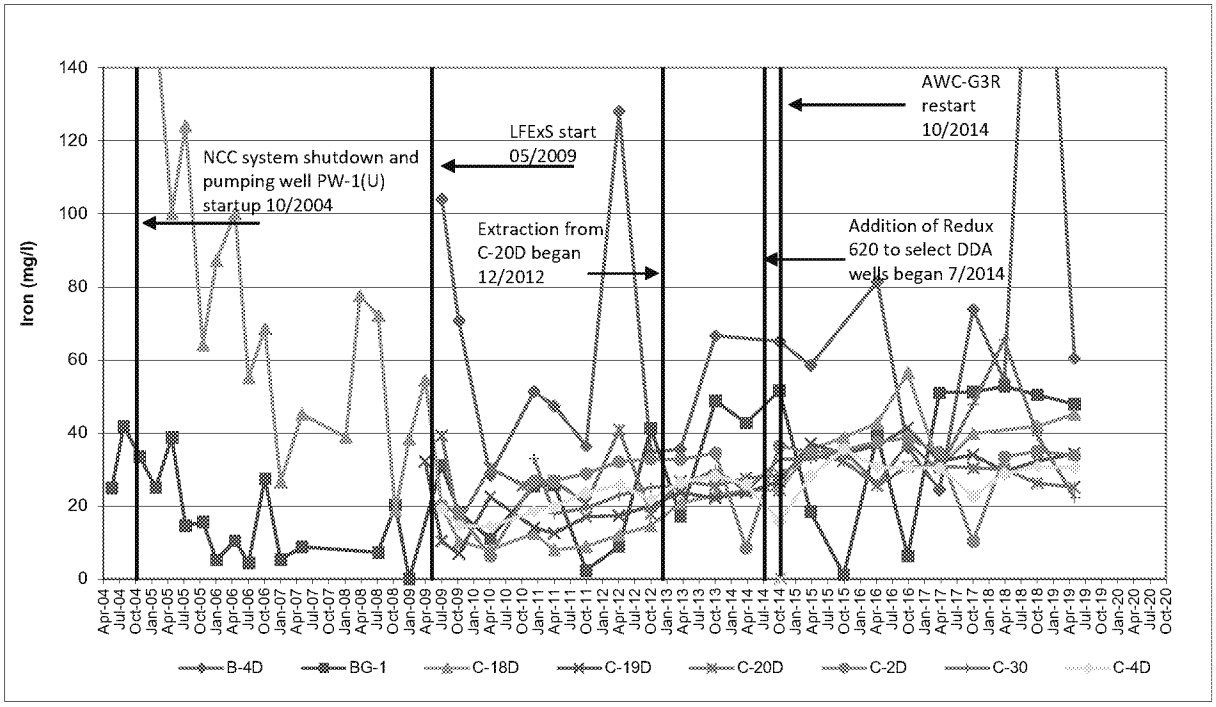


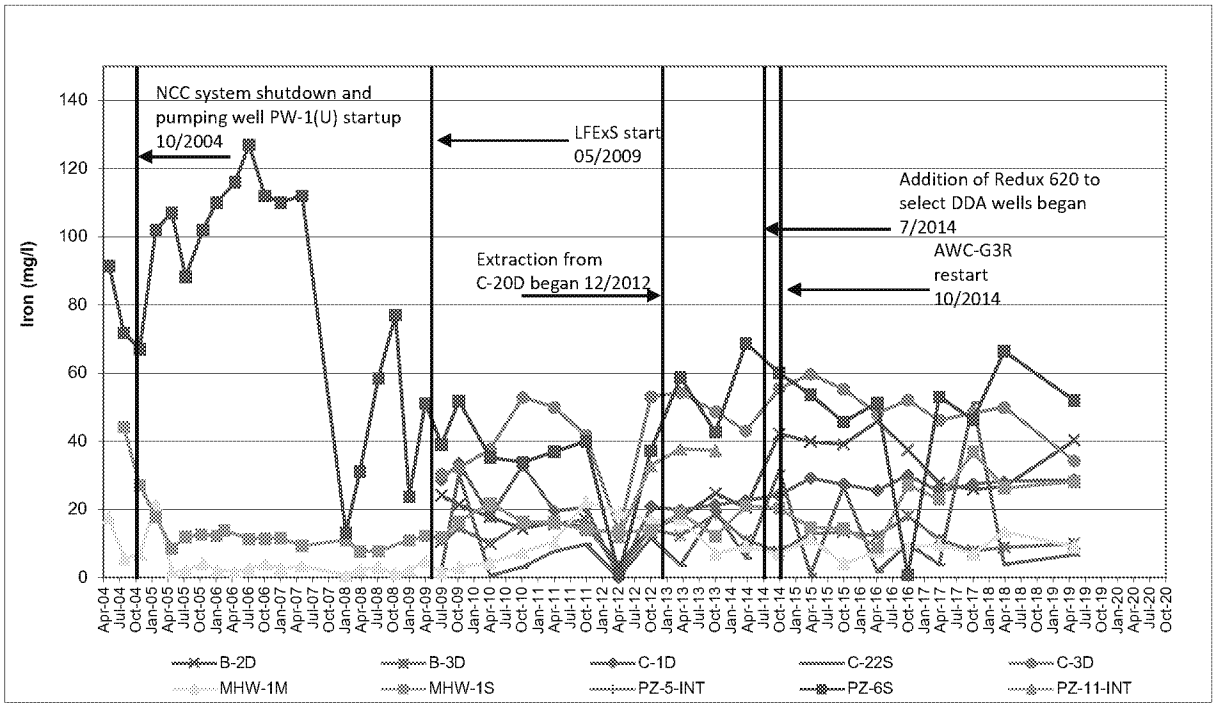
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total iron results.

Iron - DDA Groundwater - LFExS Extraction Wells

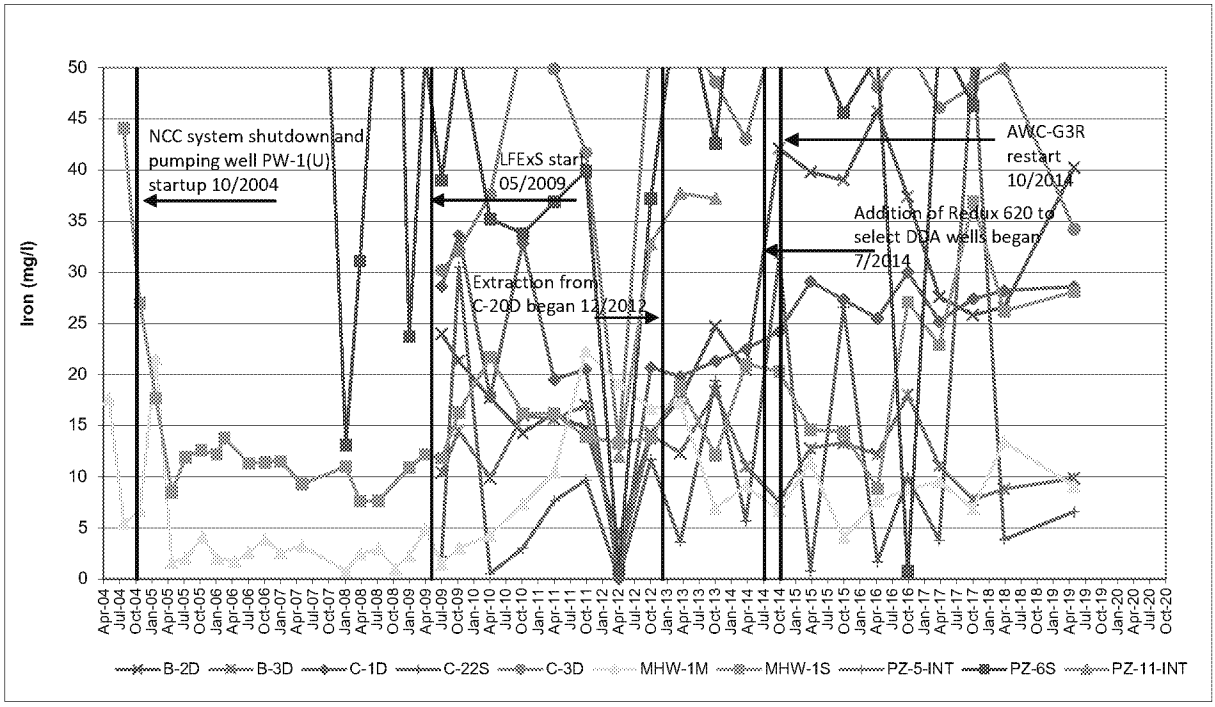
Golder Associates	Project Number:	013-6052	**FIGURE F-1D**
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	**Delaware Sand and Gravel Superfund Site**
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



NORMAL SCALE, <50 mg/l



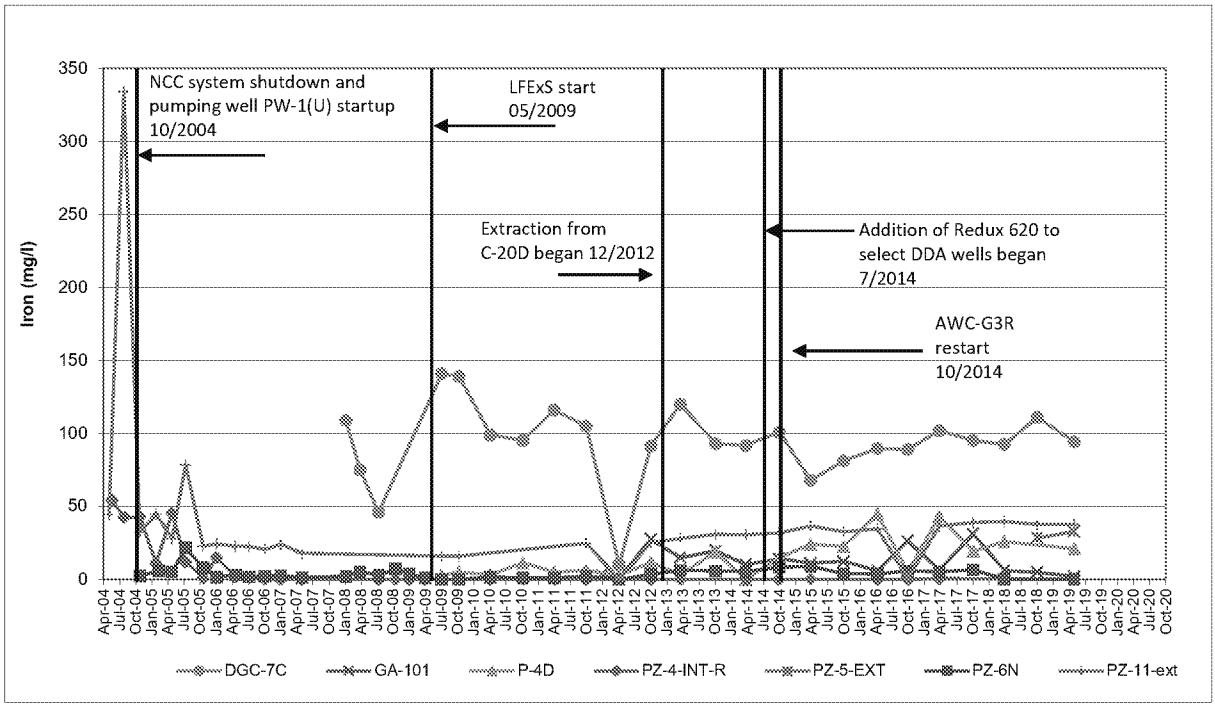
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total iron results.

Iron - DDA Groundwater - LFExS Monitoring Wells

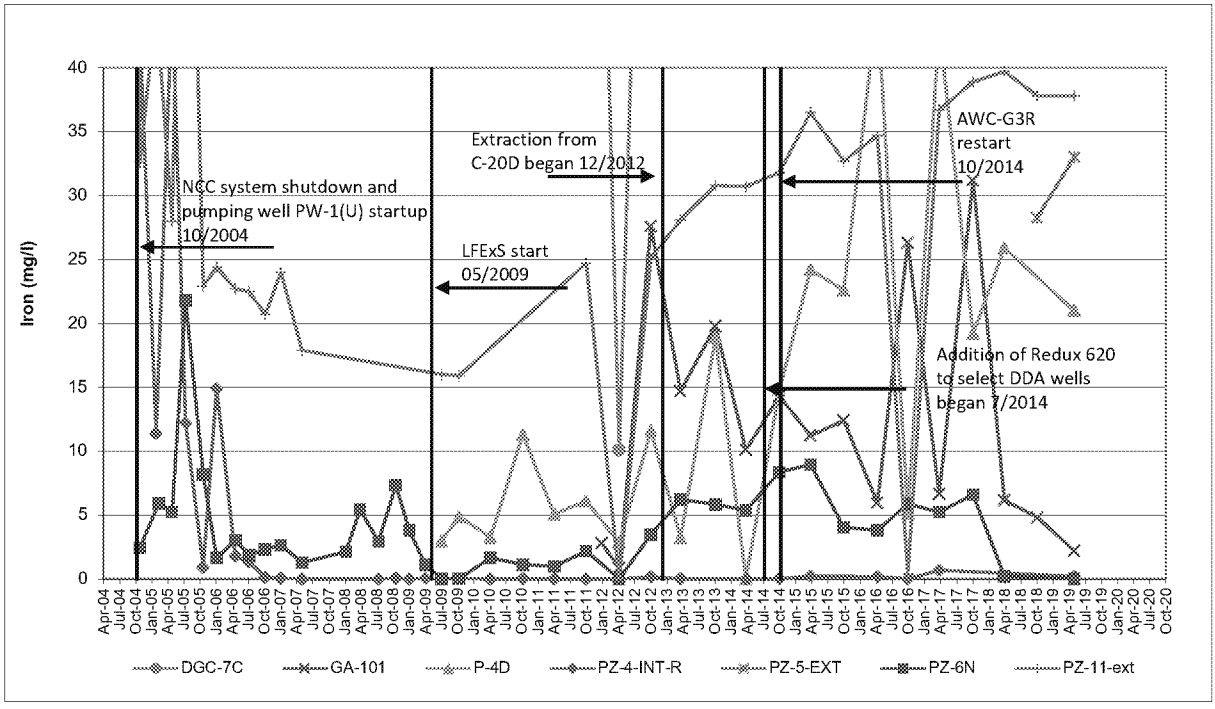
Golder Associates	Project Number:	013-6052	**FIGURE F-2D**
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	**Delaware Sand and Gravel Superfund Site**
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



NORMAL SCALE, <40 mg/l



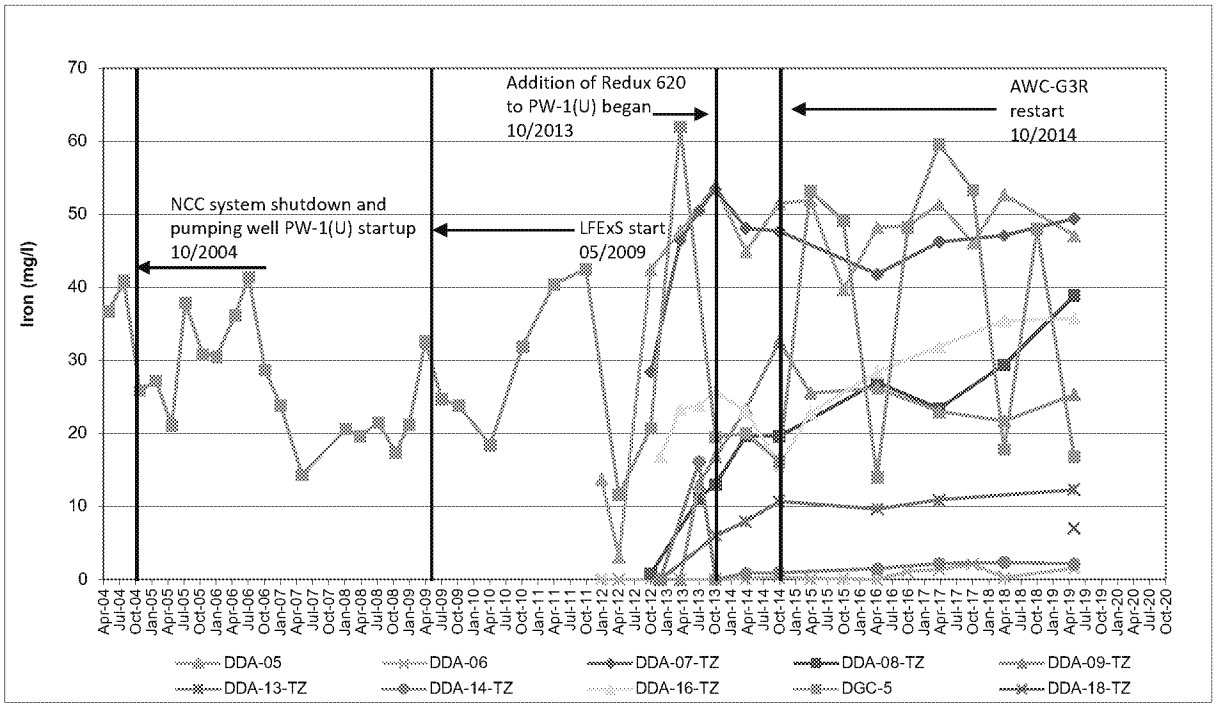
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total iron results.

Iron - DDA Grounwater - Columbia Monitoring Wells

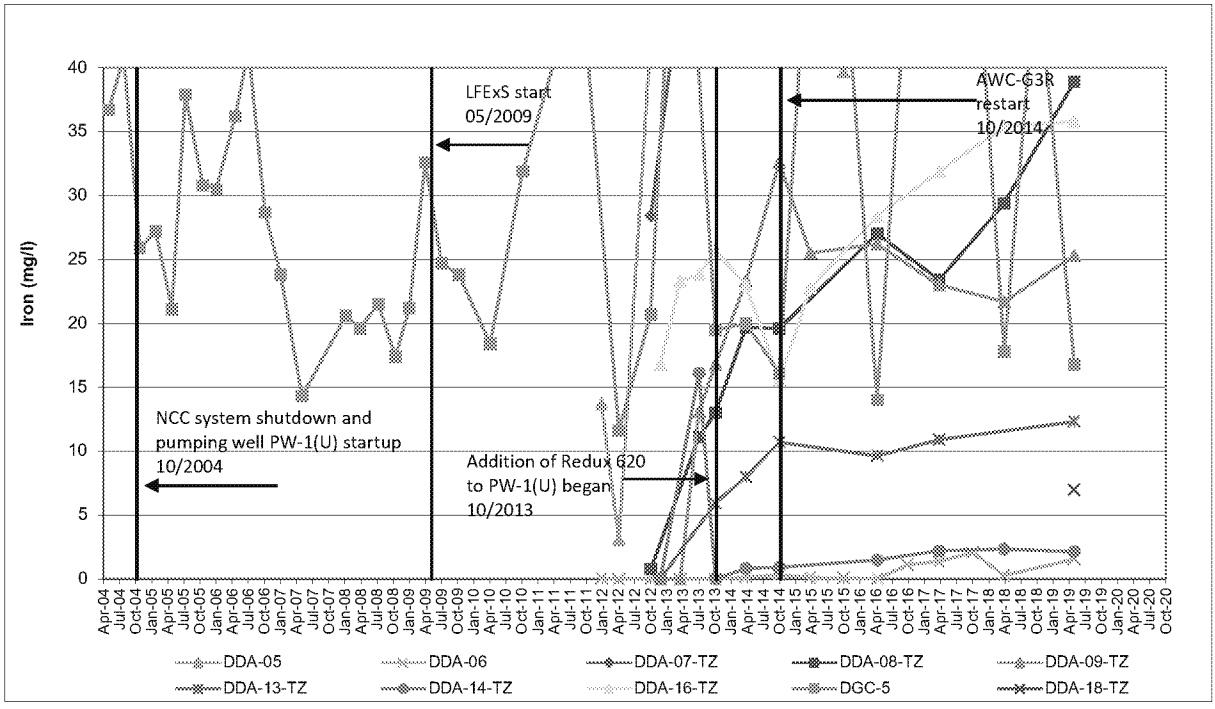
Golder Associates	Project Number:	013-6052	FIGURE F-3D
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



NORMAL SCALE, <40 mg/l



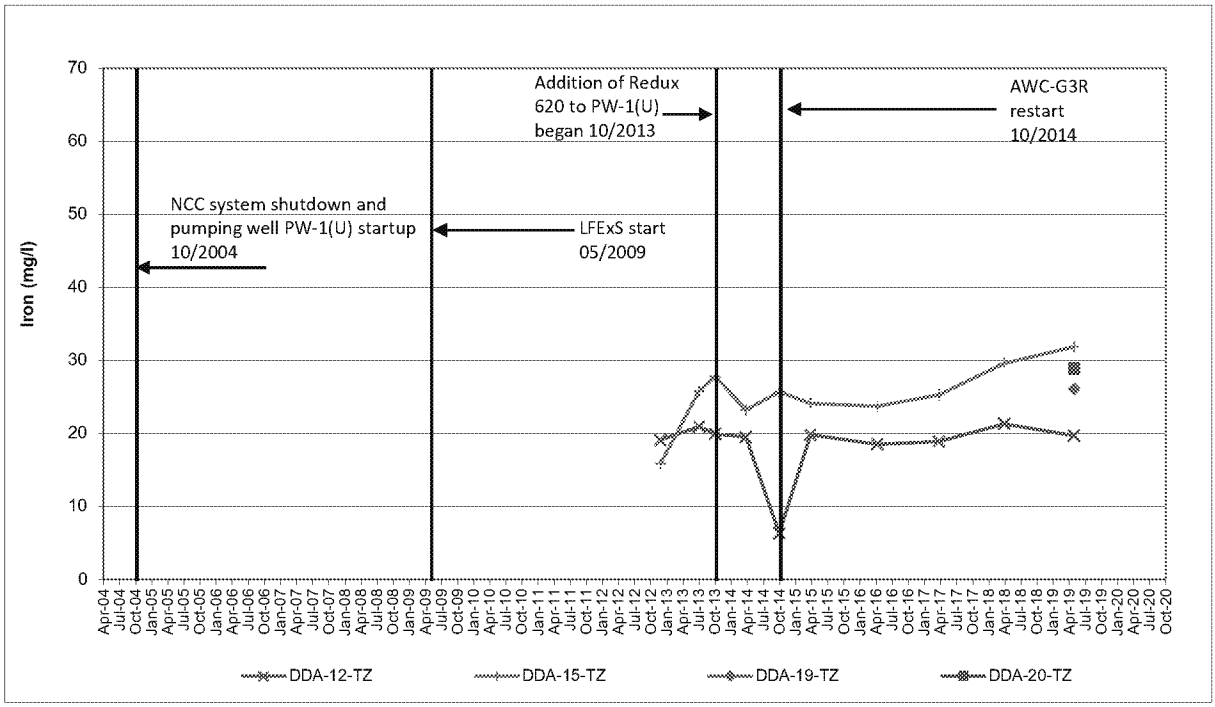
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total iron results.

Iron - DDA to Well PW-1(U) UPCUTZ - Western and Central Monitoring Wells

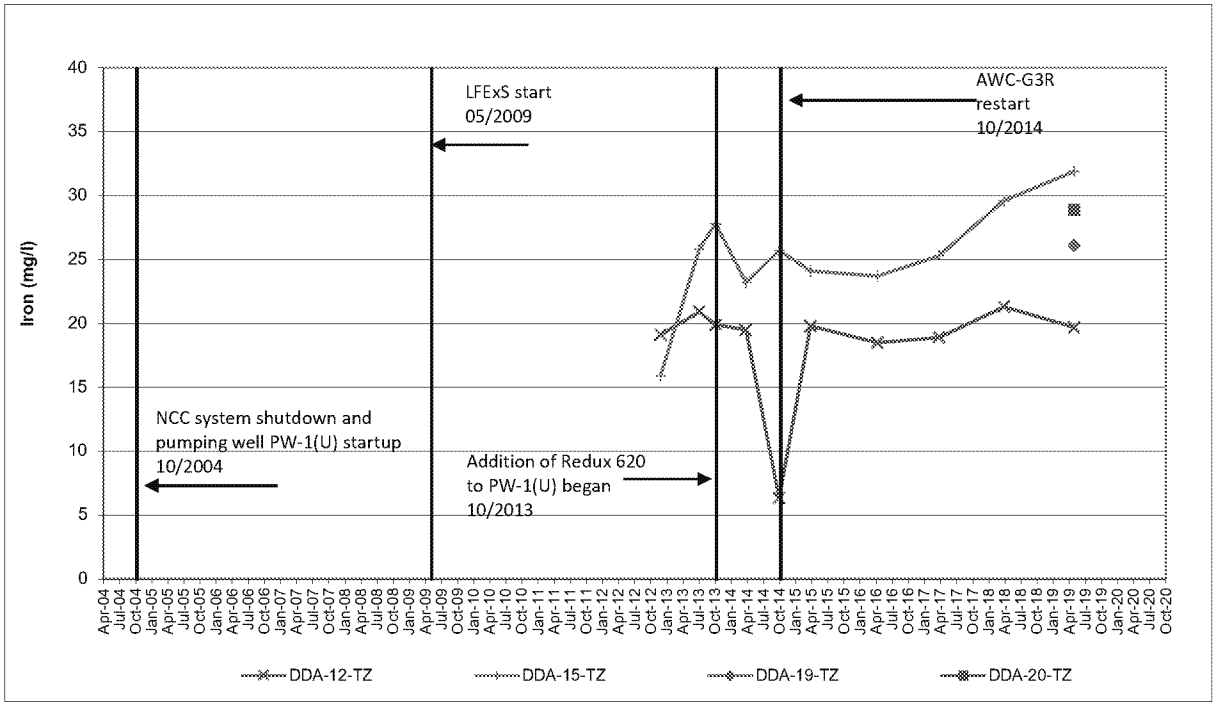
Golder Associates	Project Number:	013-6052	**FIGURE F-4.1D**
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	**Delaware Sand and Gravel Superfund Site**
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



NORMAL SCALE, <40 mg/l



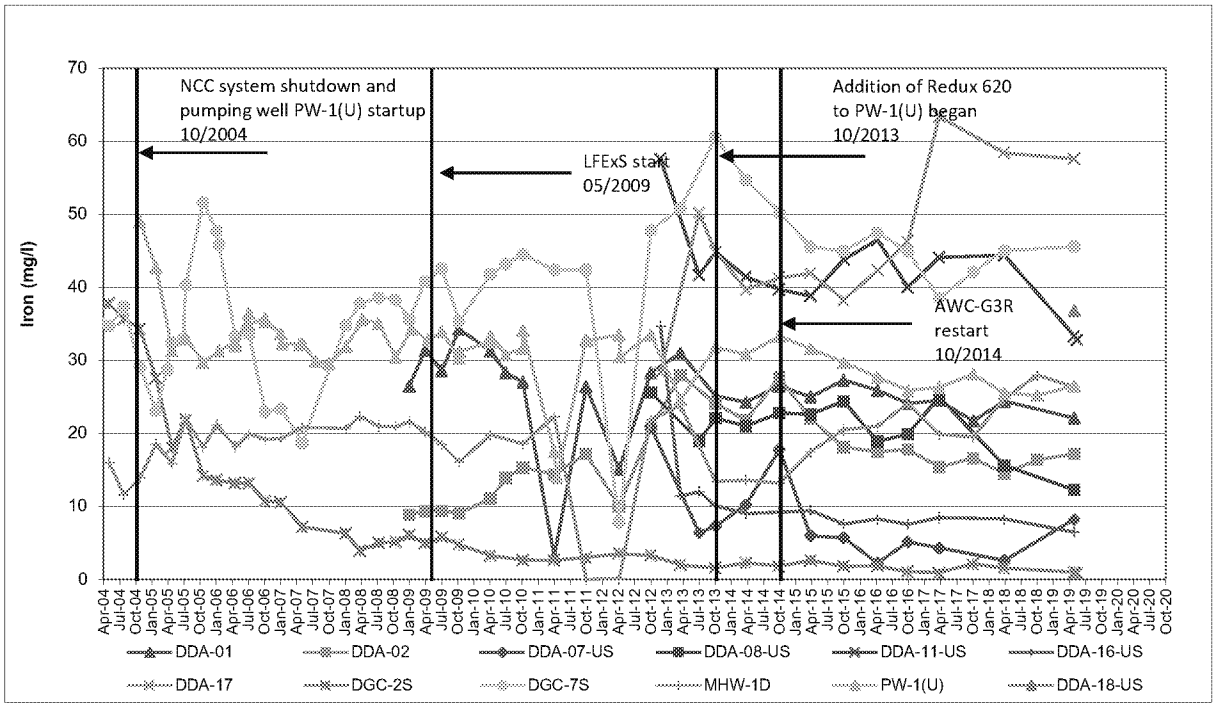
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total iron results.

Iron - DDA to Well PW-1(U) UPCUTZ - Eastern Monitoring Wells

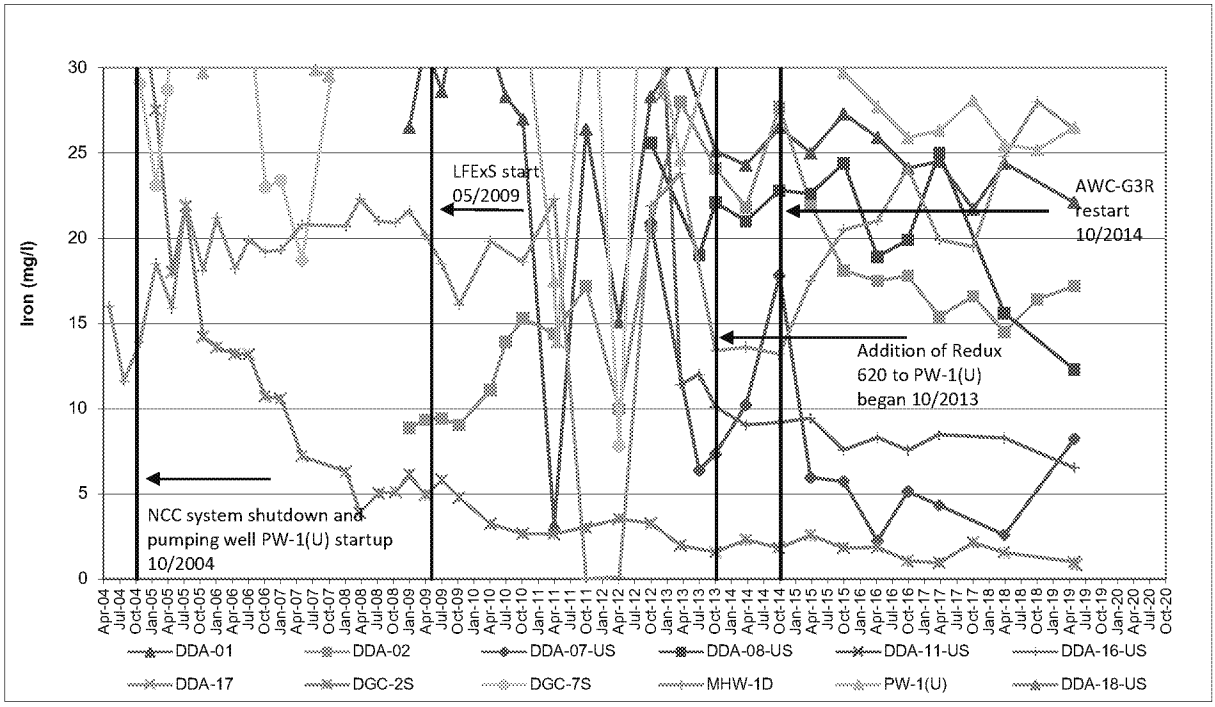
Golder Associates	Project Number:	013-6052	**FIGURE F-4.2D**
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	**Delaware Sand and Gravel Superfund Site**
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



NORMAL SCALE, <30 mg/l



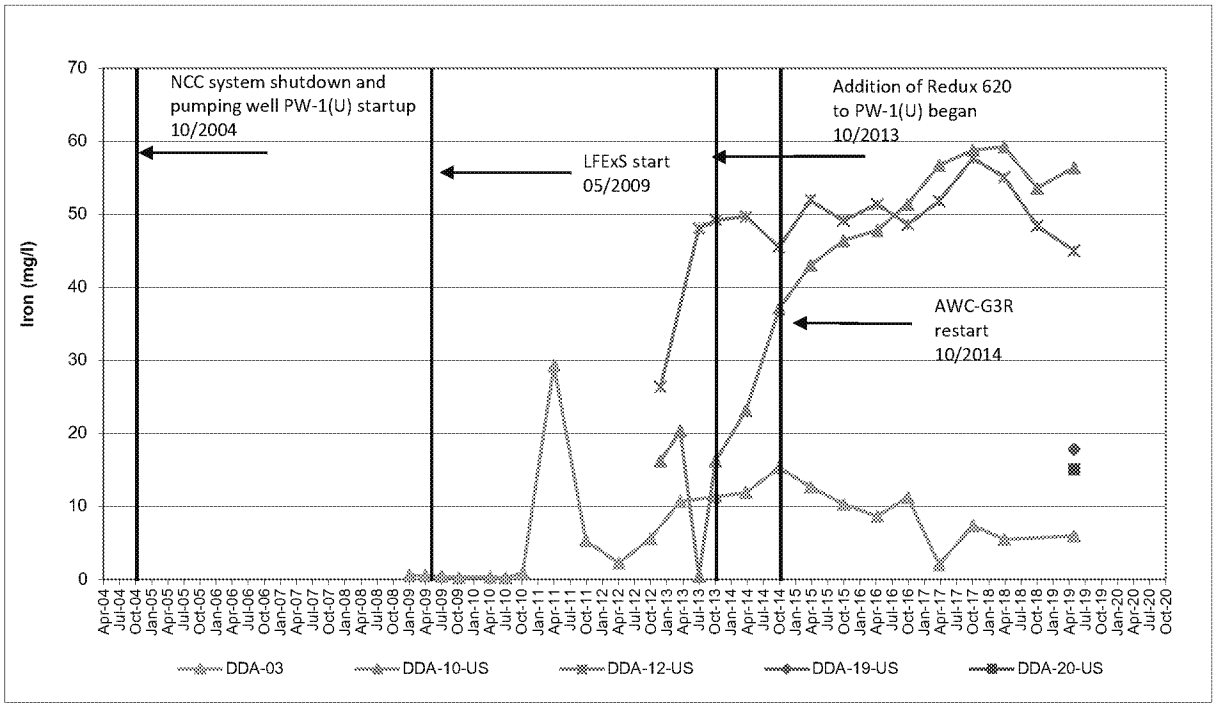
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total iron results.

Iron - DDA to Well PW-1(U) UPA - Western and Central Monitoring Wells

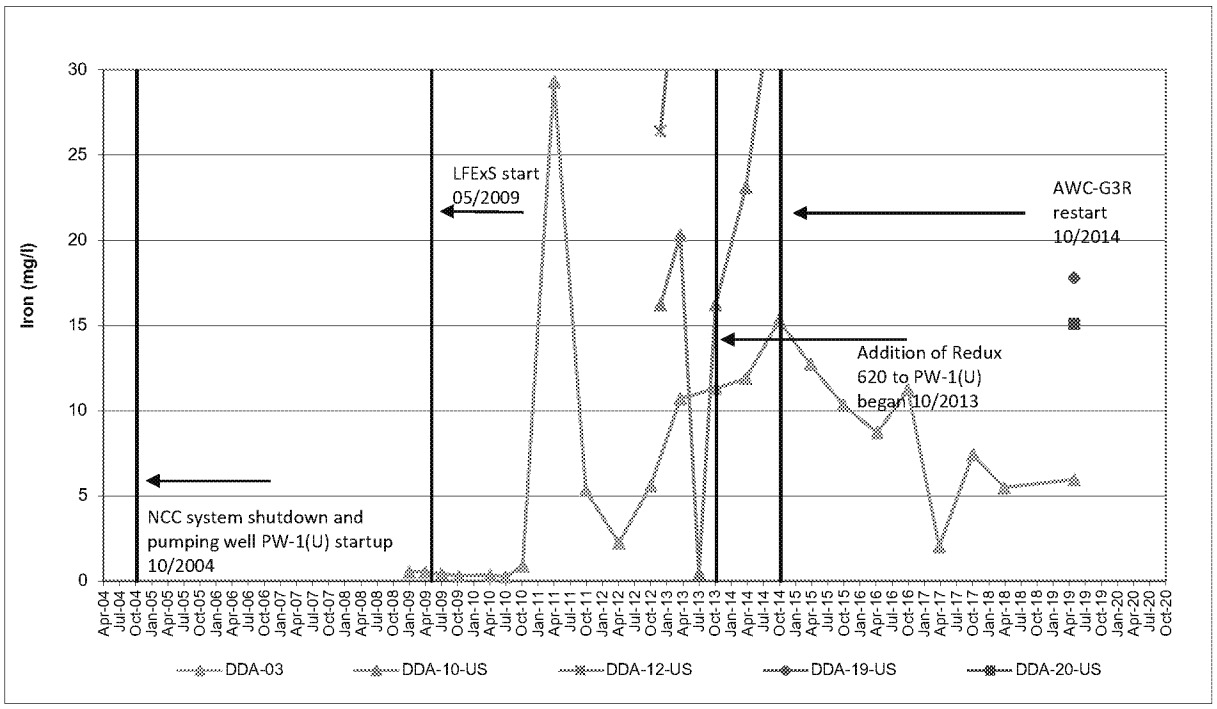
Golder Associates	Project Number:	013-6052	**FIGURE F-5.1D**
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	**Delaware Sand and Gravel Superfund Site**
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



NORMAL SCALE, <30 mg/l



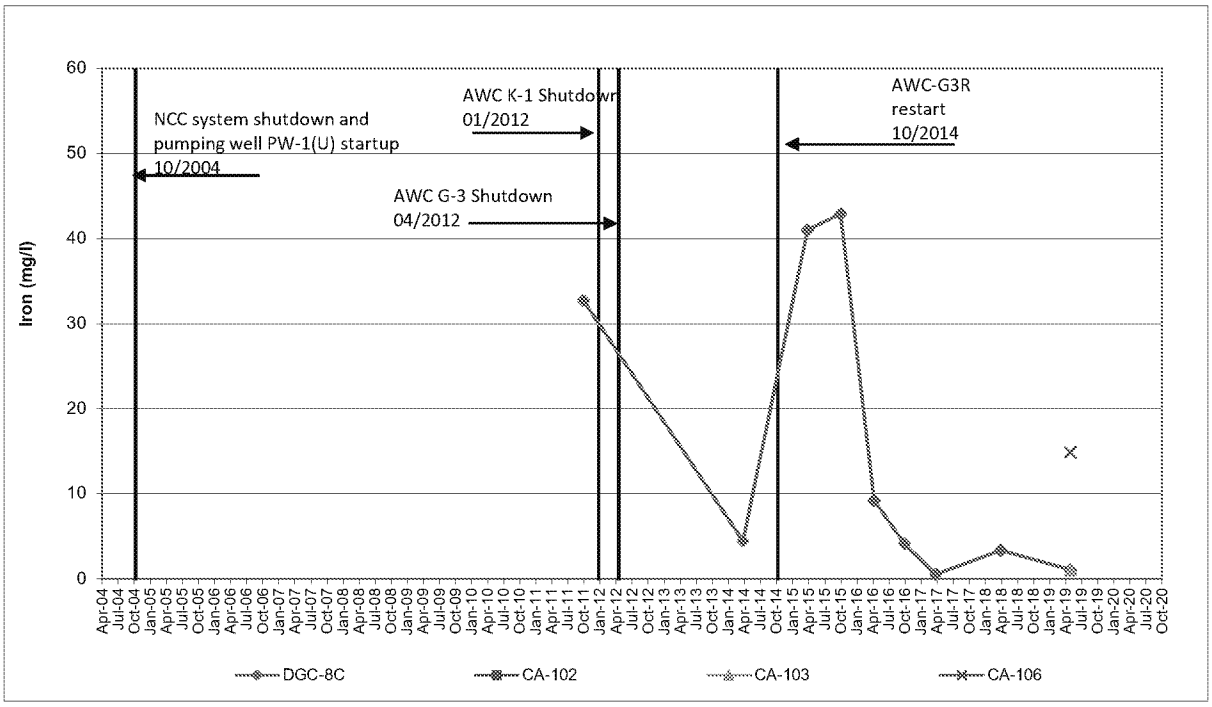
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total iron results.

Iron - DDA to Well PW-1(U) UPA - Eastern Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-5.2D
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



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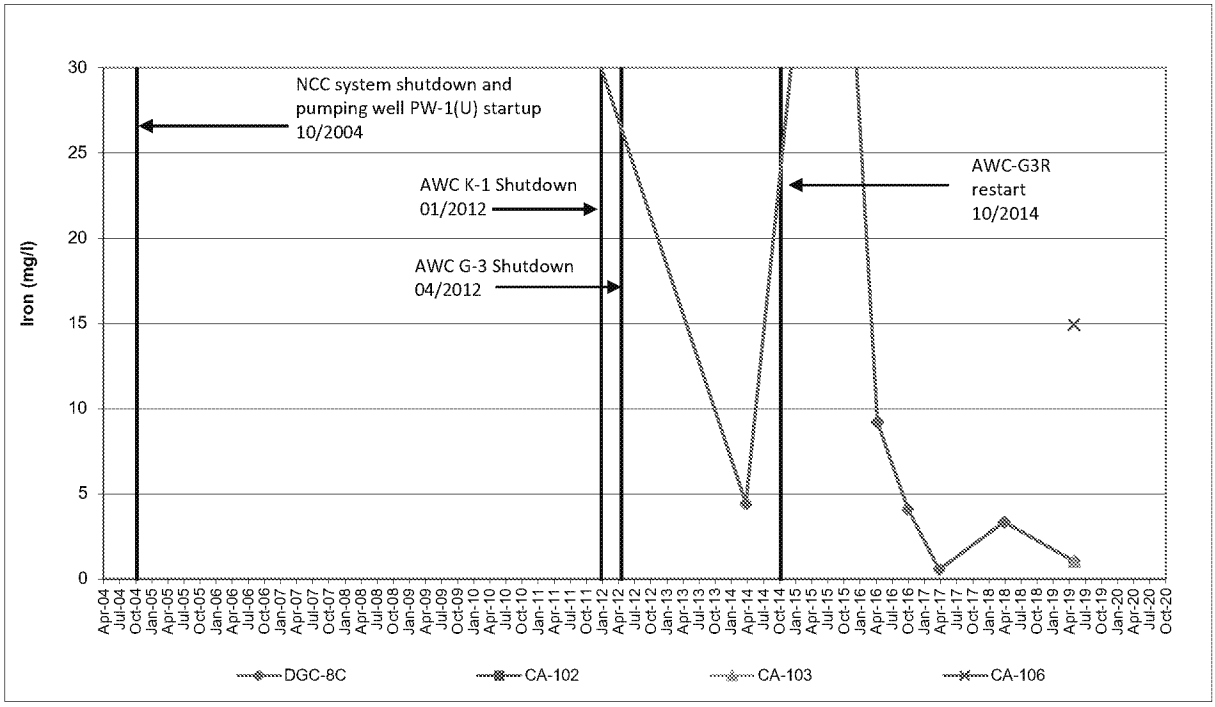


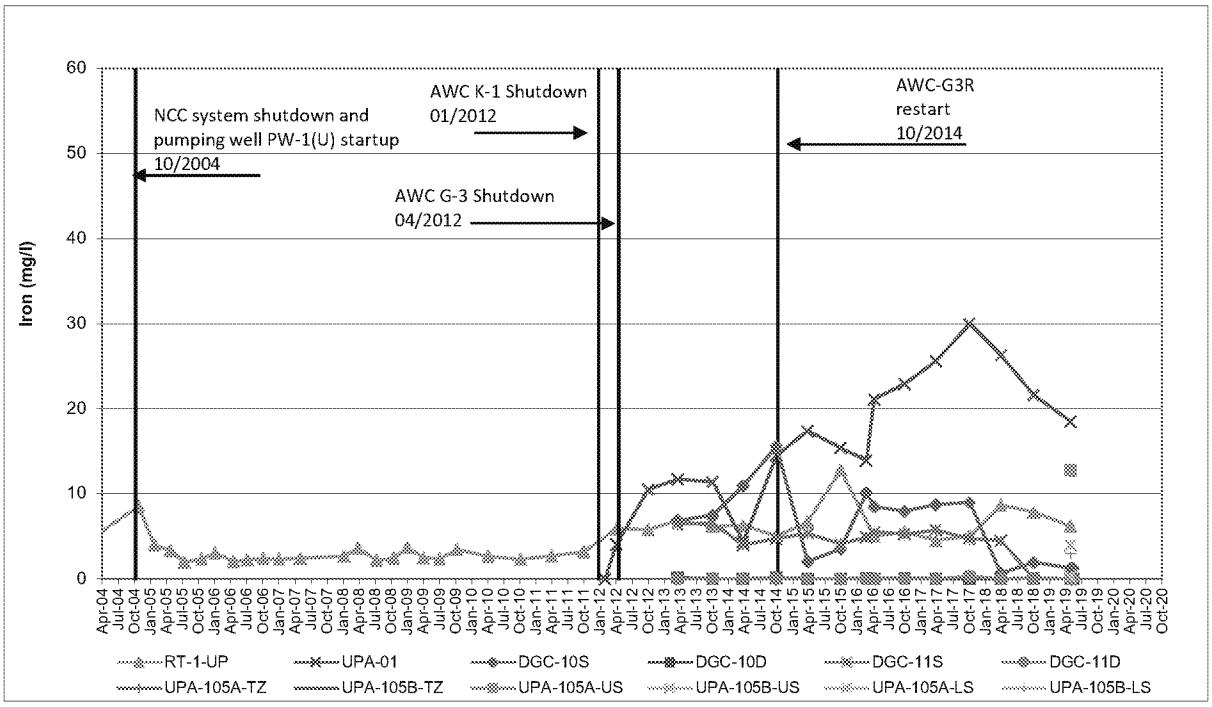
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total iron results.

Iron - Downgradient of Well PW-1(U) - Columbia Monitoring Wells

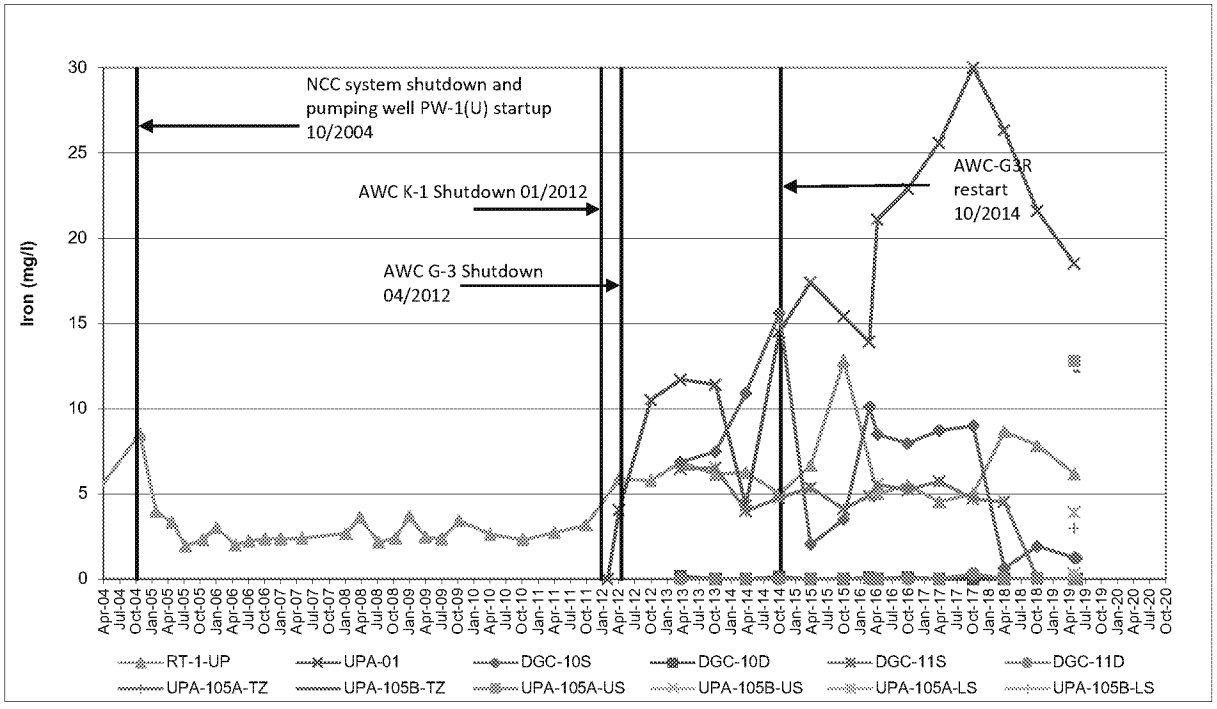
Golder Associates	Project Number:	013-6052	FIGURE F-6.1D
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



NORMAL SCALE, <30 mg/l



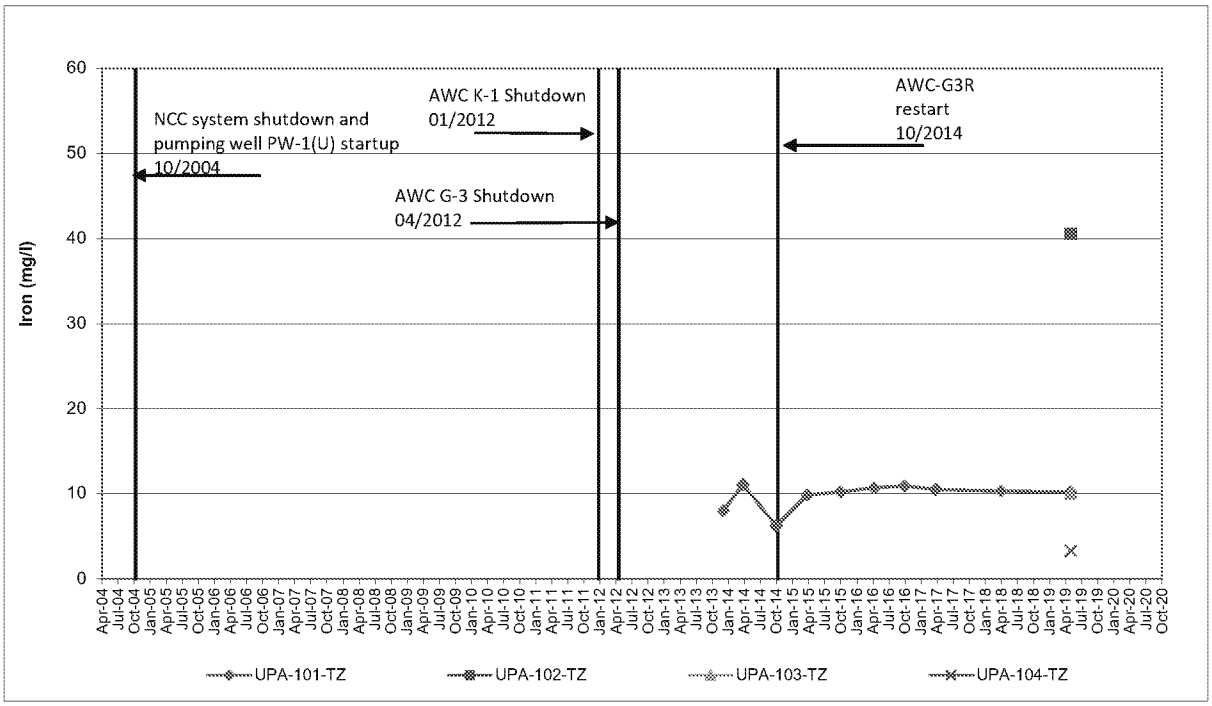
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total iron results.

Iron - Downgradient of Well PW-1(U) - UPCUTZ and UPA - UPA-01 Area Monitoring Wells

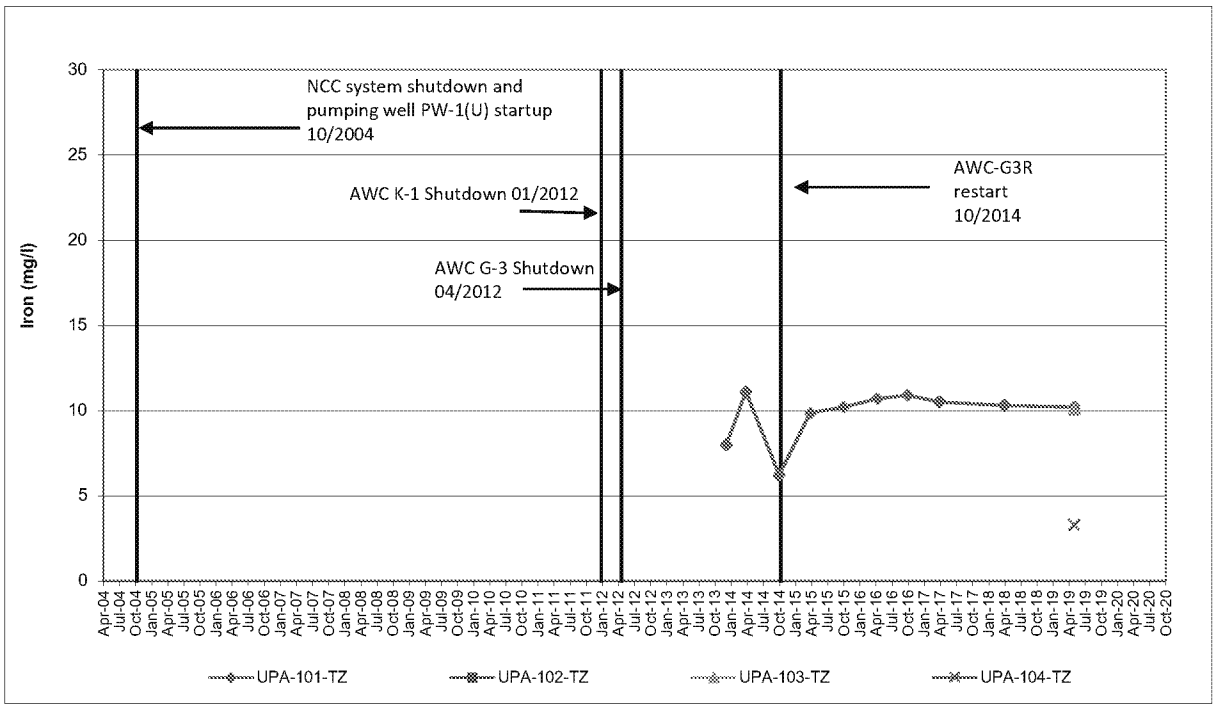
Golder Associates	Project Number:	013-6052	**FIGURE F-6.2D**
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	**Delaware Sand and Gravel Superfund Site**
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



NORMAL SCALE, <30 mg/l



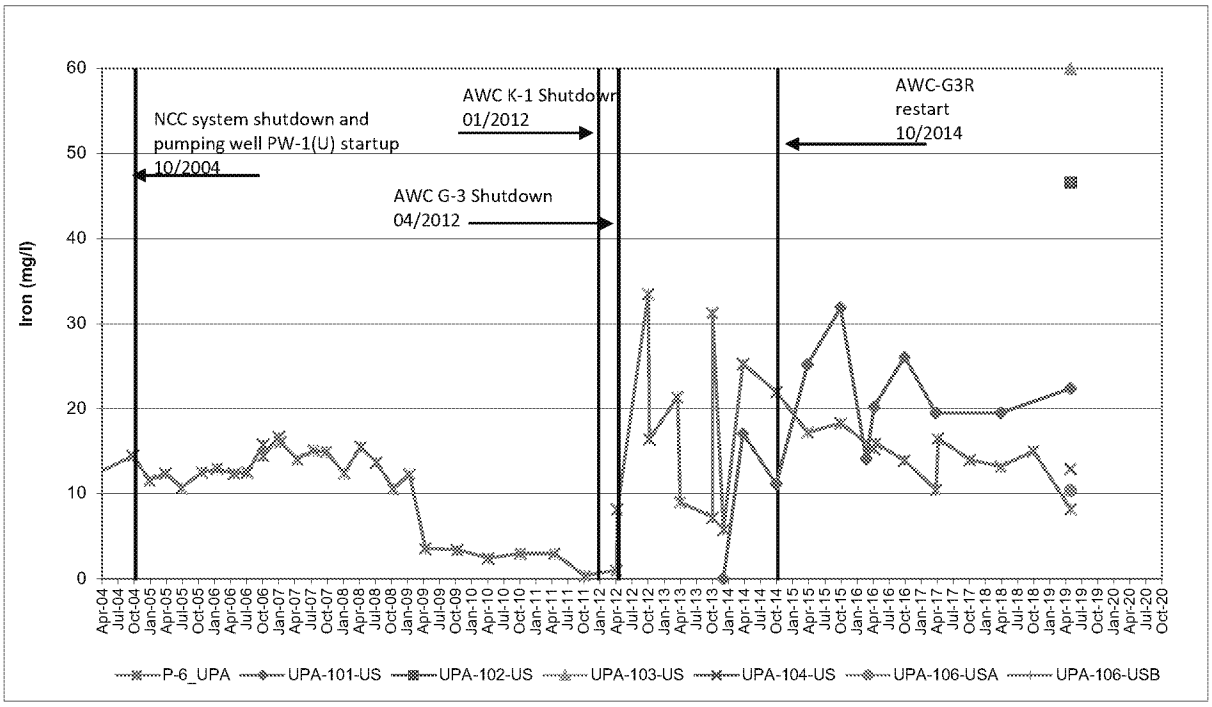
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total iron results.

Iron - Downgradient of Well PW-1(U) - UPCUTZ - P-6 Area Monitoring Wells

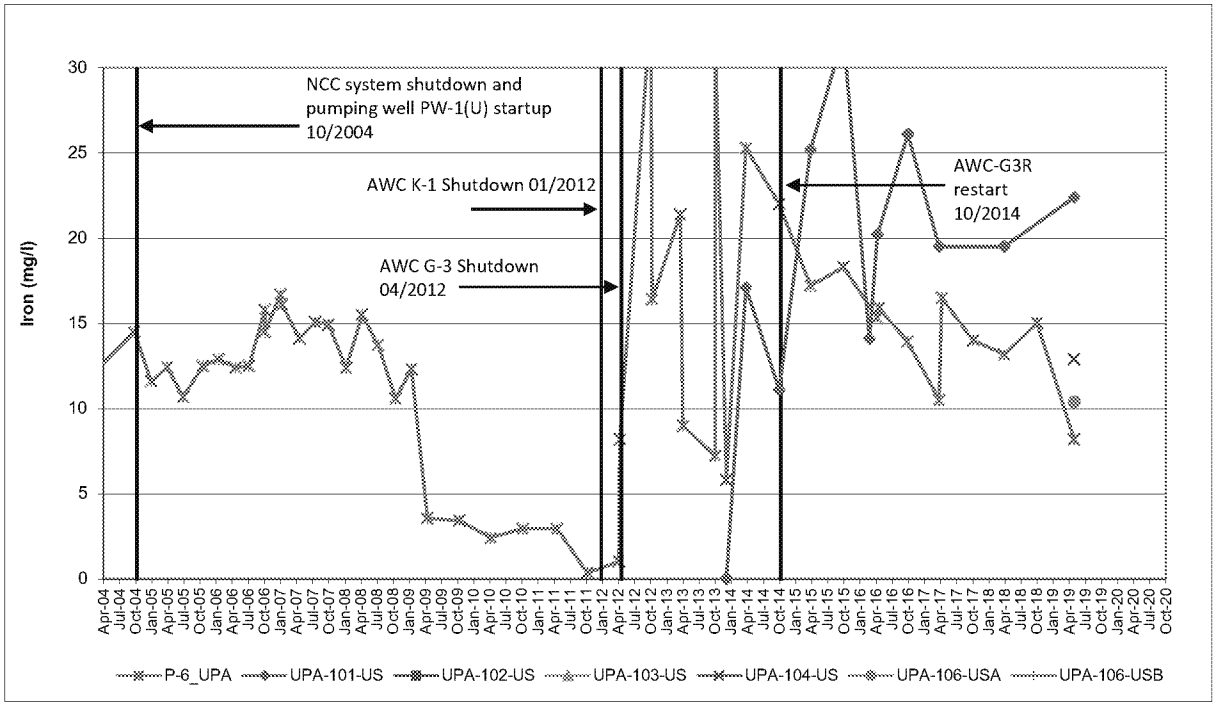
Golder Associates	Project Number:	013-6052	FIGURE F-6.3D
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



NORMAL SCALE, <30 mg/l



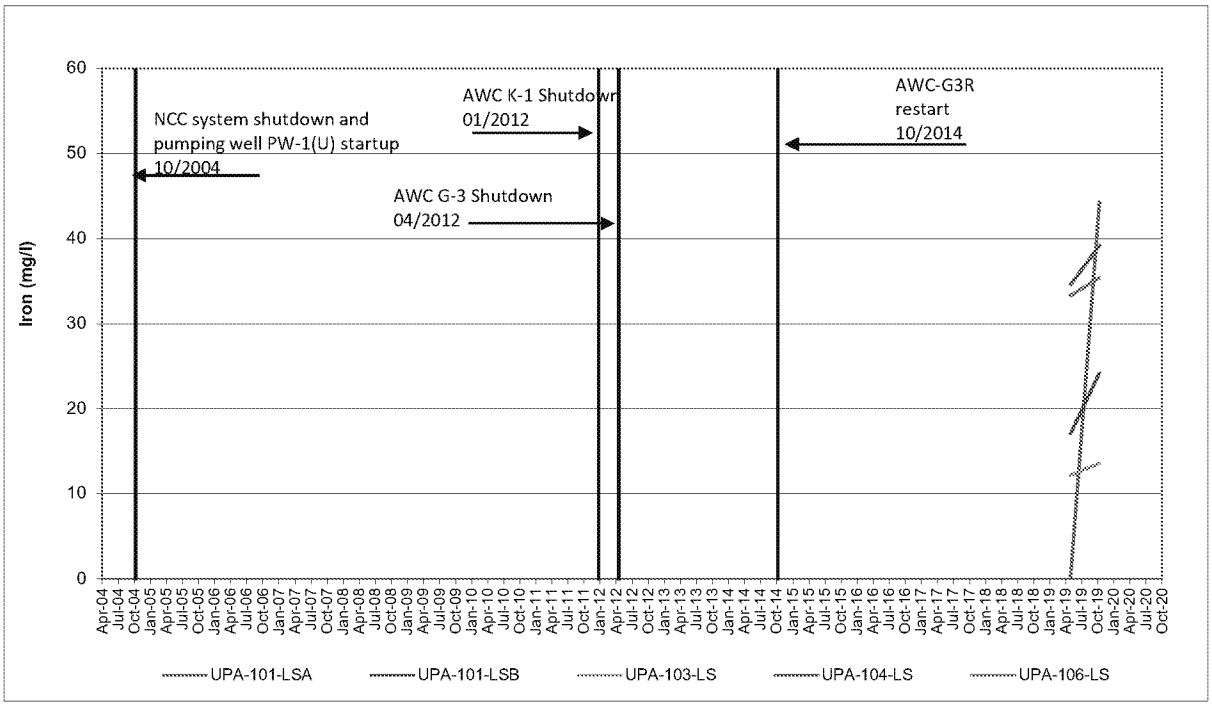
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total iron results.

Iron - Downgradient of Well PW-1(U) - UPA Upper Sand - P-6 Area Monitoring Wells

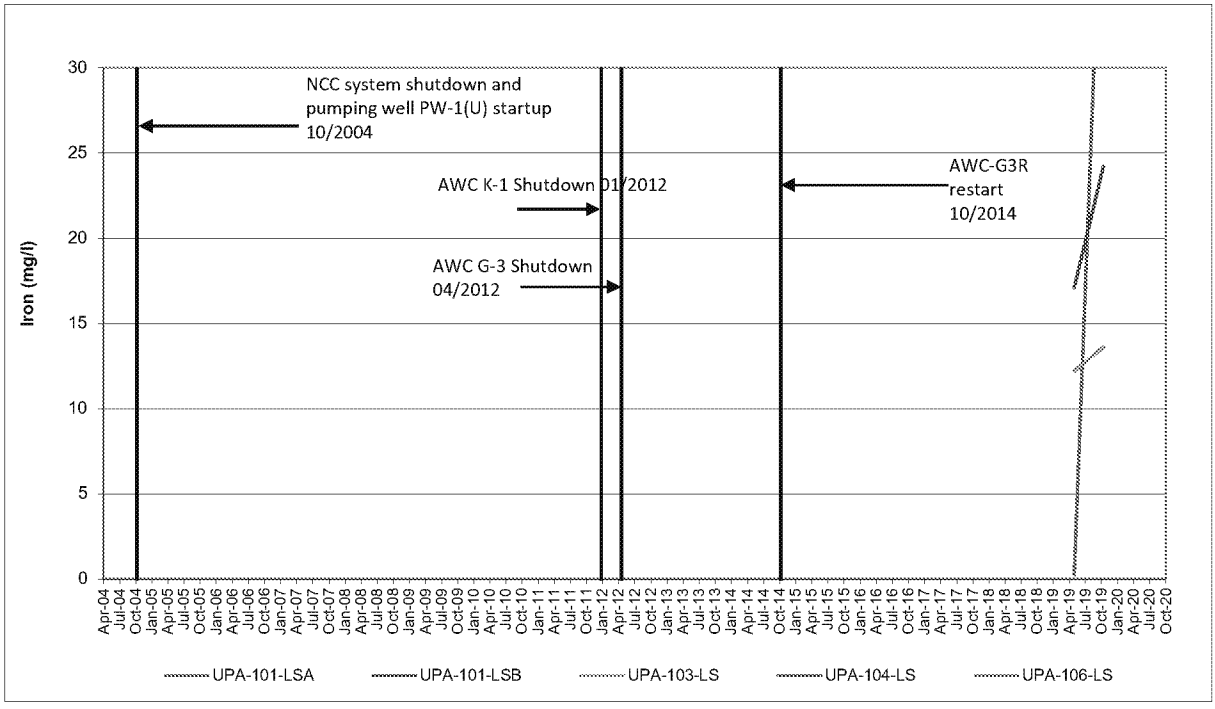
Golder Associates	Project Number:	013-6052	**FIGURE F-6.4D**
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	**Delaware Sand and Gravel Superfund Site**
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



NORMAL SCALE, <30 mg/l



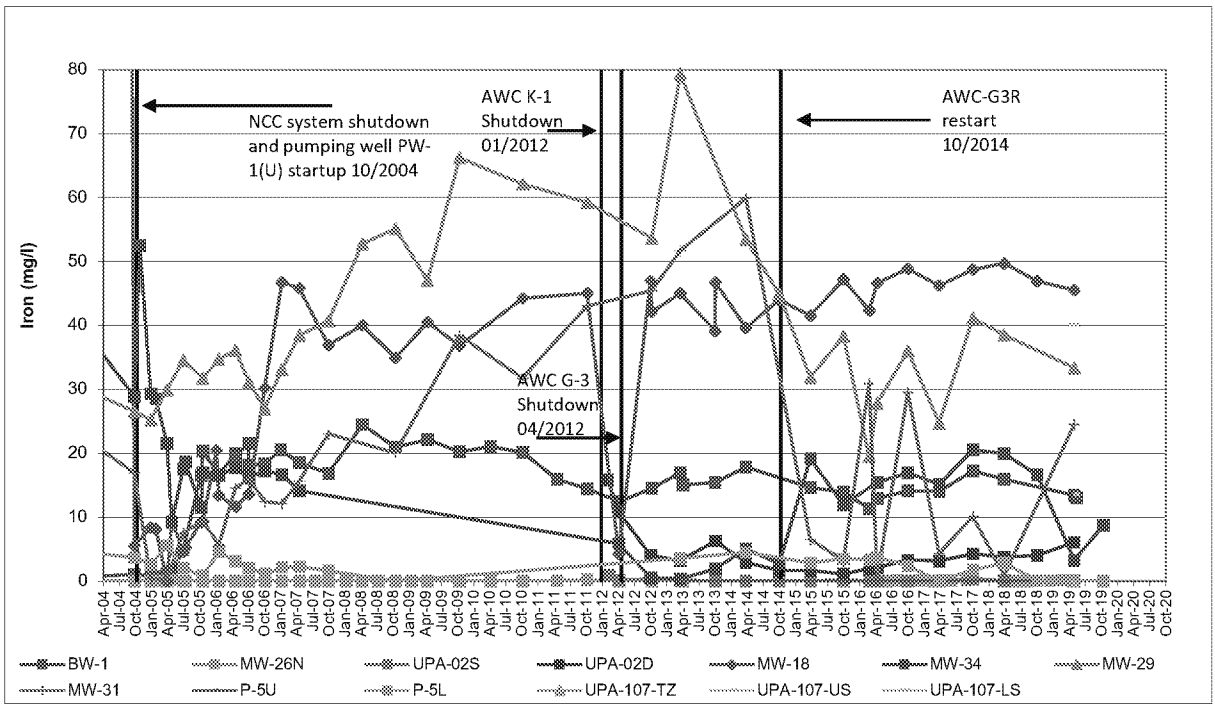
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total iron results.

Iron - Downgradient of Well PW-1(U) - UPA Lower Sand - P-6 Area Monitoring Wells

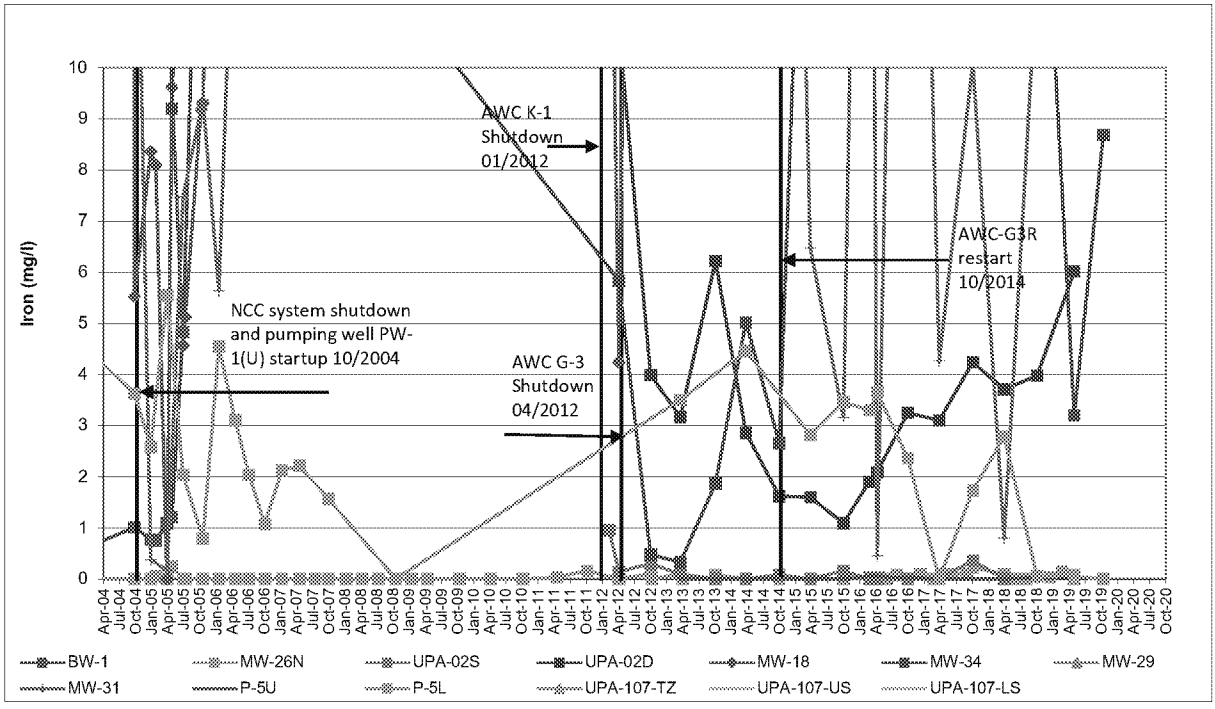
Golder Associates	Project Number:	013-6052	**FIGURE F-6.5D**
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	**Delaware Sand and Gravel Superfund Site**
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



NORMAL SCALE, <10 mg/l



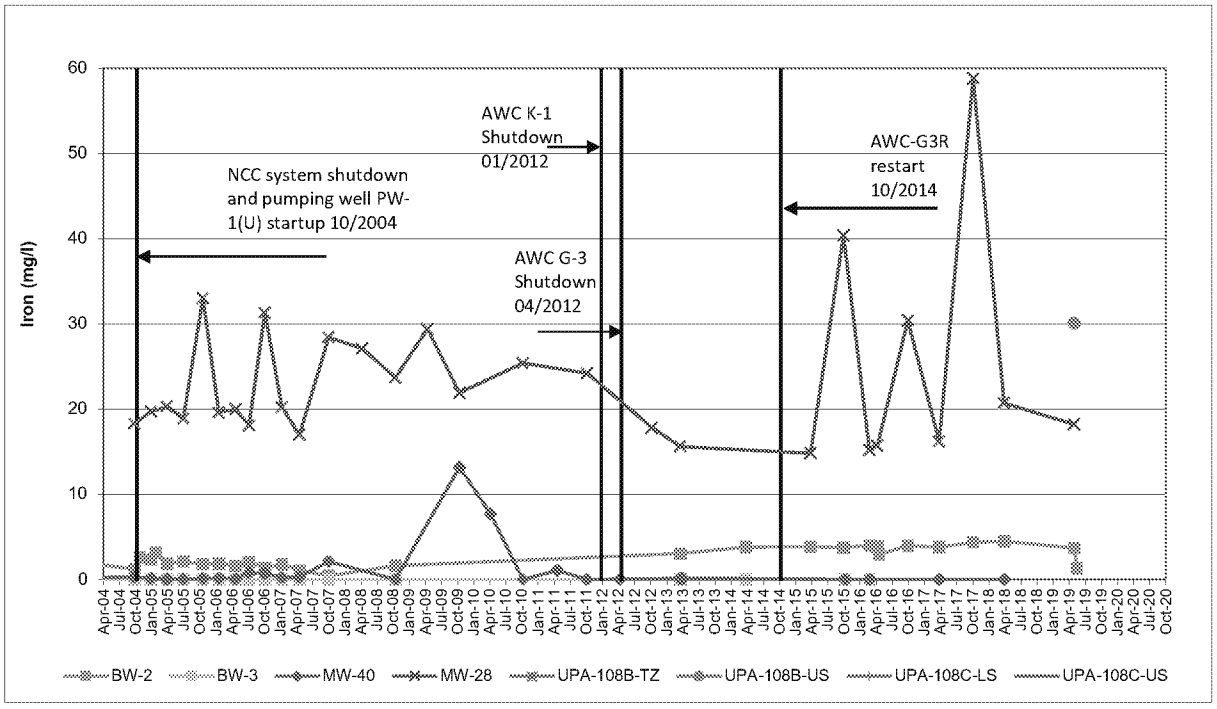
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total iron results.

Iron - Downgradient of Well PW-1(U) - UPA - MW-18/34 Area Monitoring Wells

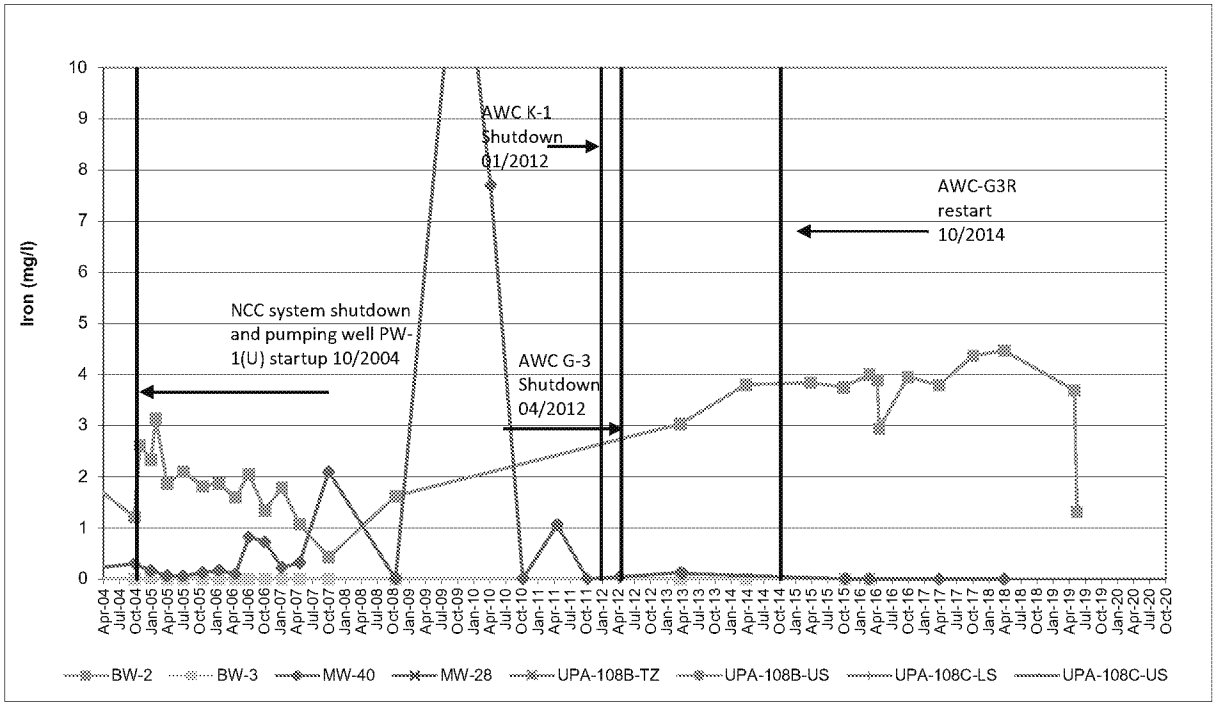
Golder Associates	Project Number:	013-6052		FIGURE F-7.1D
	Prepared by:	TK	1/8/2020	
	Checked by:	BPC	1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



NORMAL SCALE, <10 mg/l



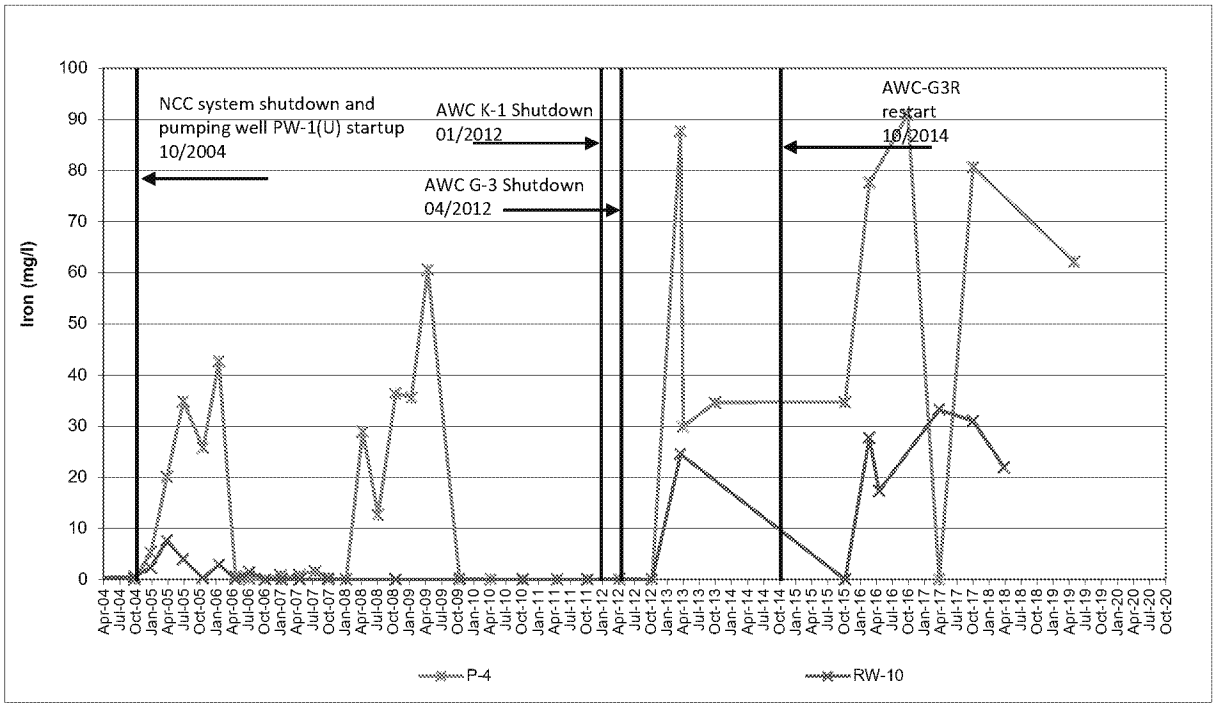
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total iron results.

Iron - Downgradient of Well PW-1(U) - UPA - BW-2 Area Monitoring Wells

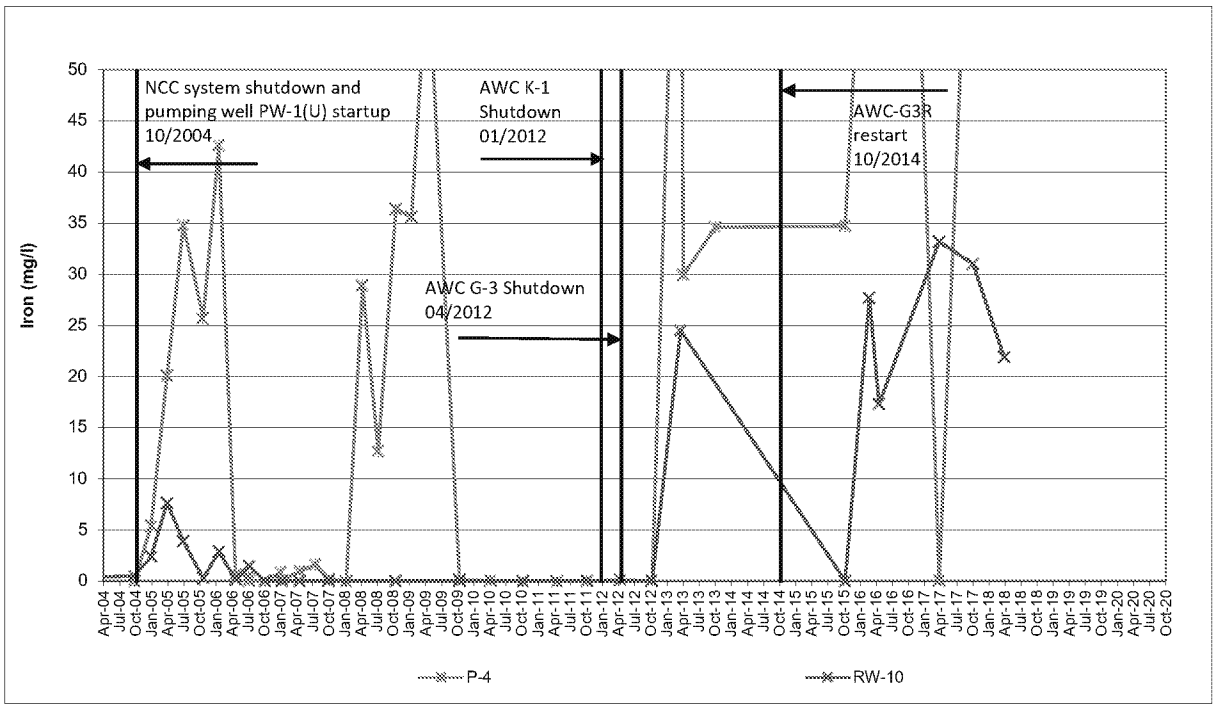
Golder Associates	Project Number:	013-6052	FIGURE F-7.2D
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



NORMAL SCALE, <50 mg/l

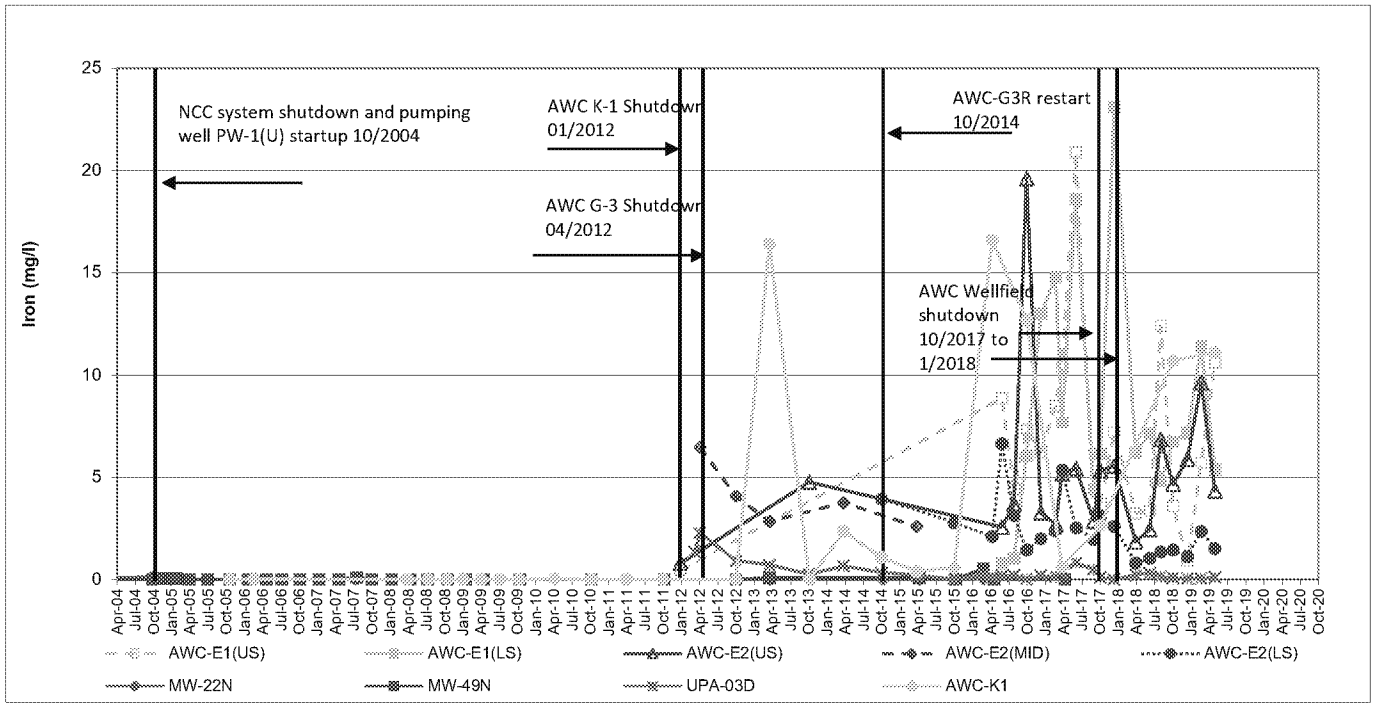


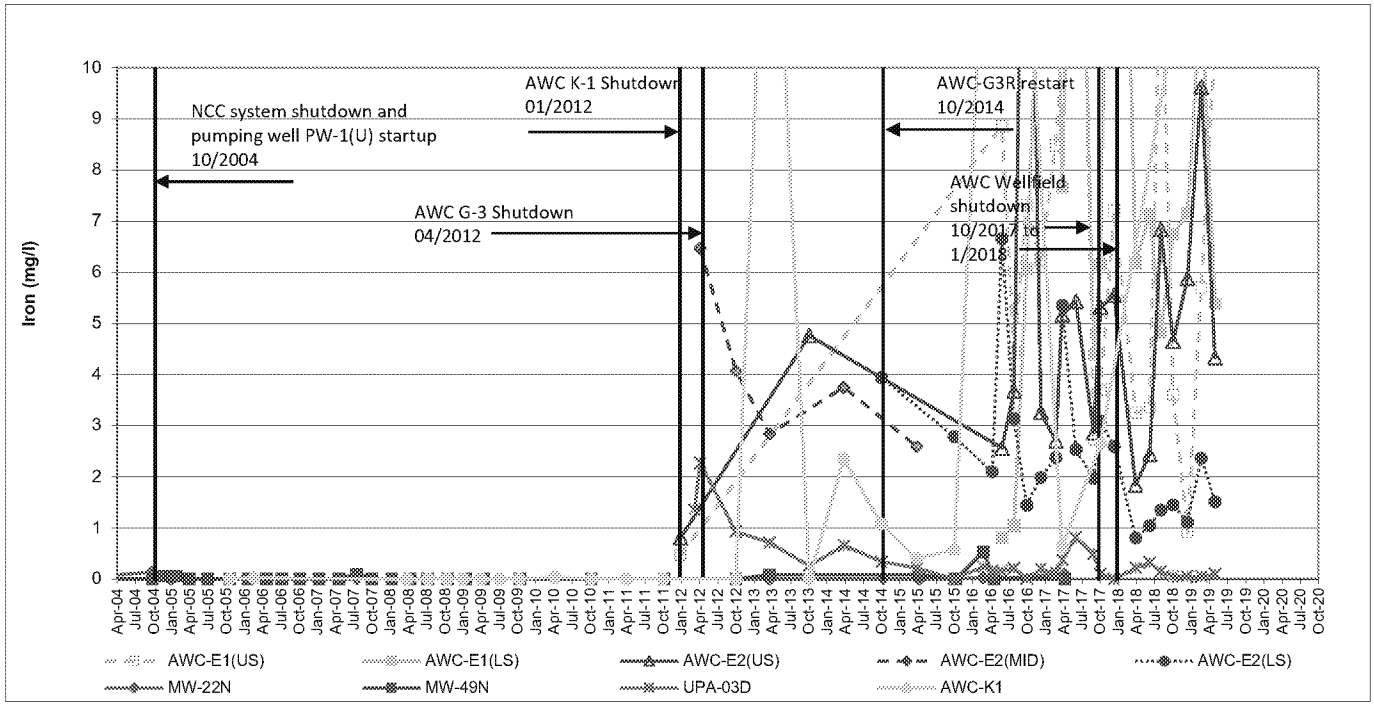
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total iron results.

Iron - UPA Downgradient - Western Lobe NCC Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-8D
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx





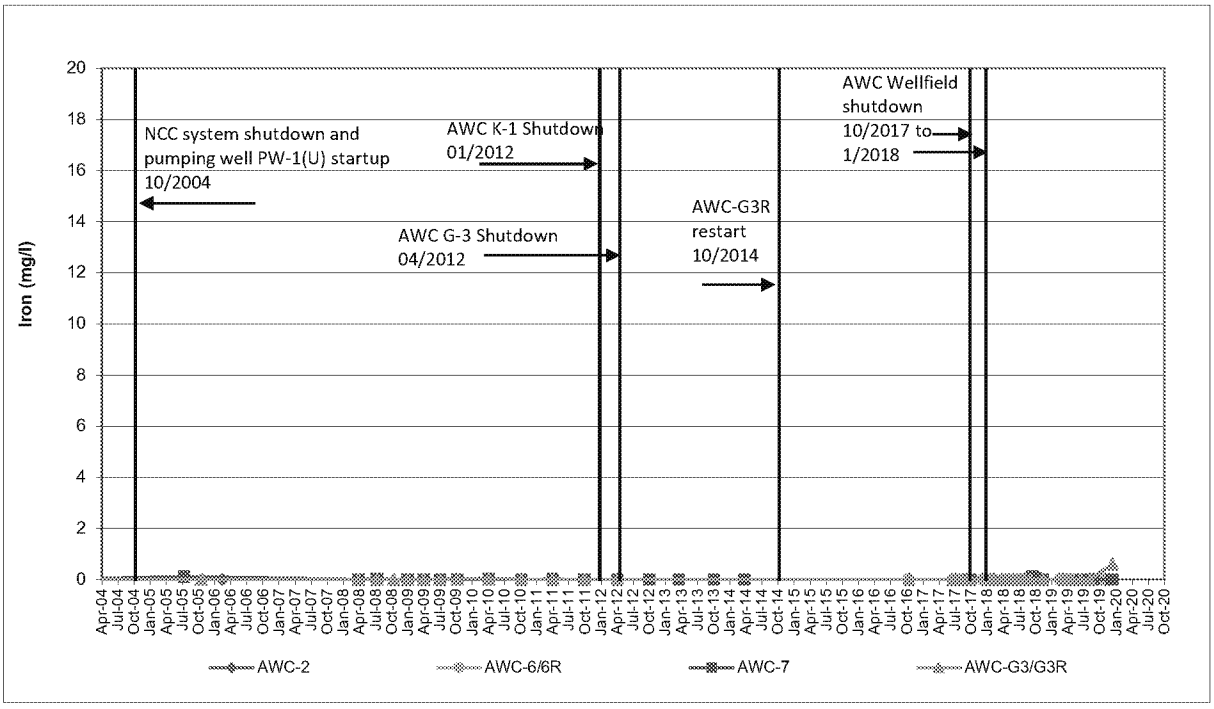
Notes: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total iron results.

Iron - UPA Downgradient - Well Trends in Front of AWC Wellfield

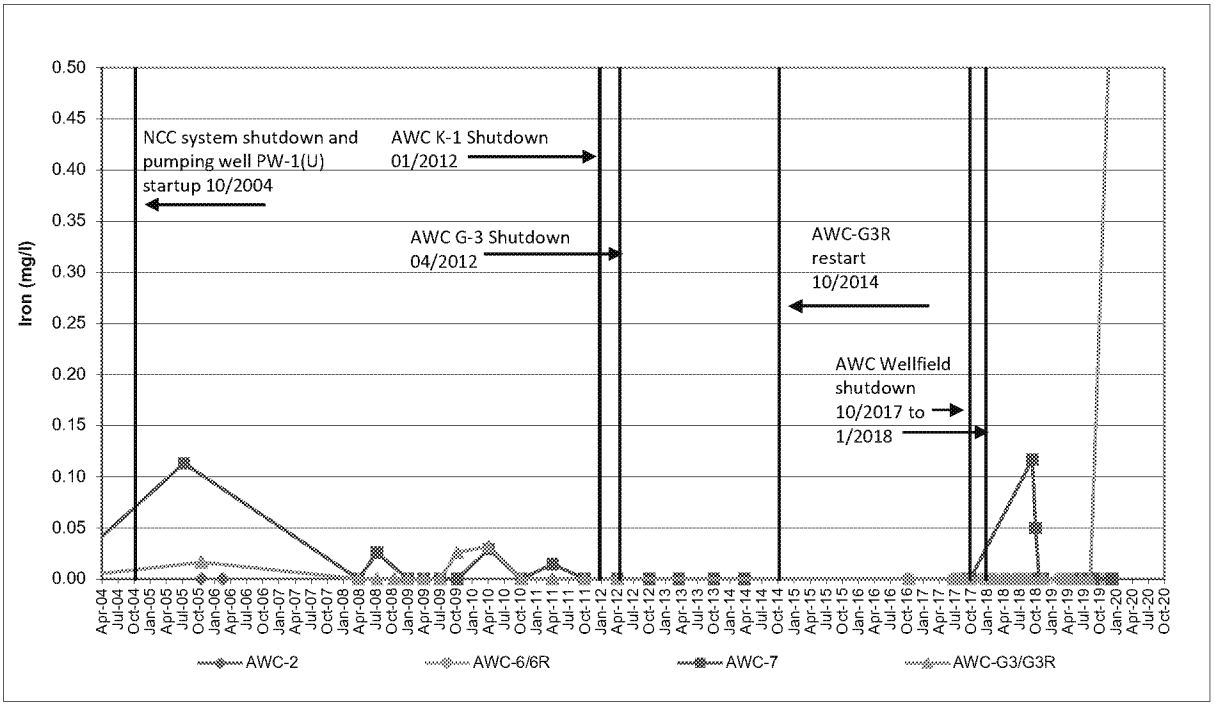
Golder Associates	Project Number:	013-6052		FIGURE F-9D
	Prepared by:	TK	1/8/2020	
	Checked by:	BPC	1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE



NORMAL SCALE, <0.5 mg/l

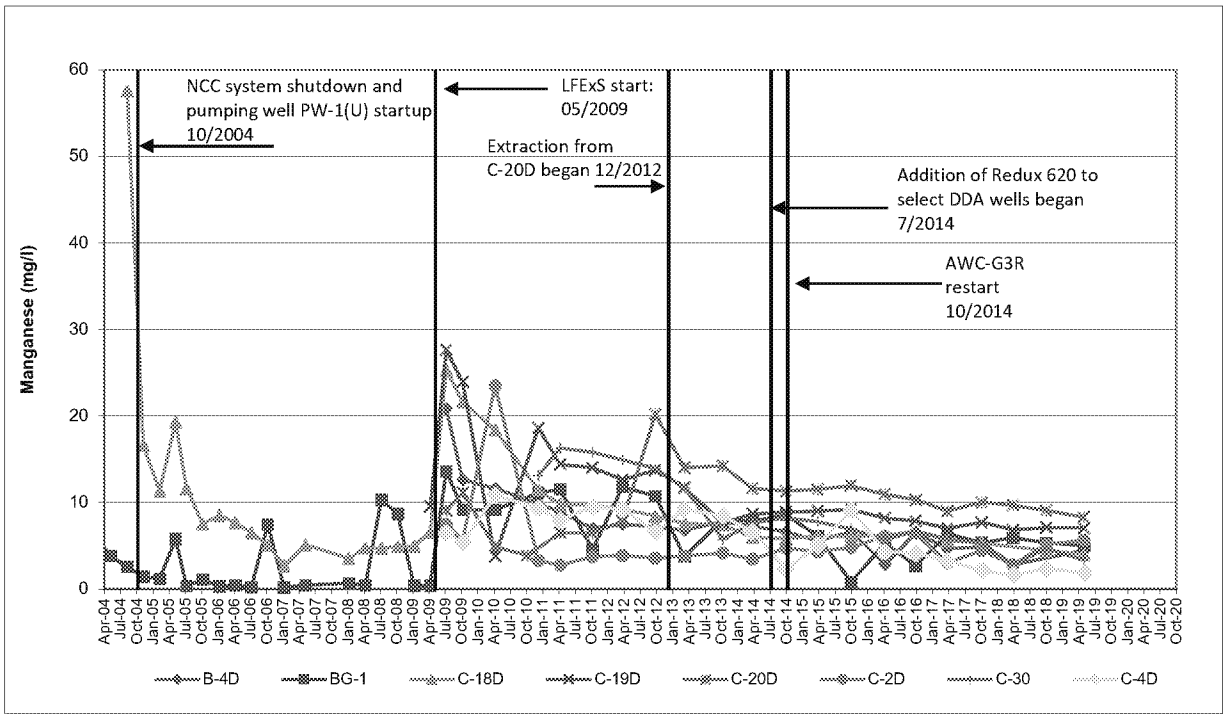


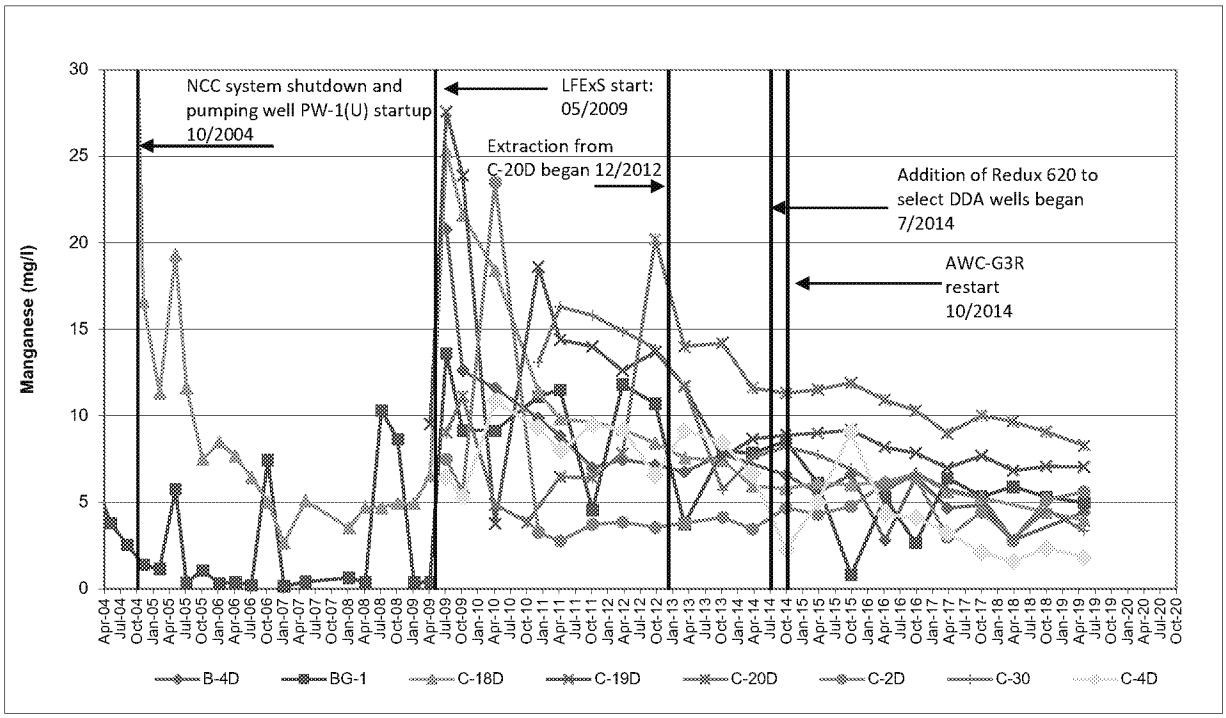
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total iron results.

Iron - UPA Downgradient - AWC Well Trends

Golder Associates	Project Number:	013-6052	FIGURE F-10D
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx





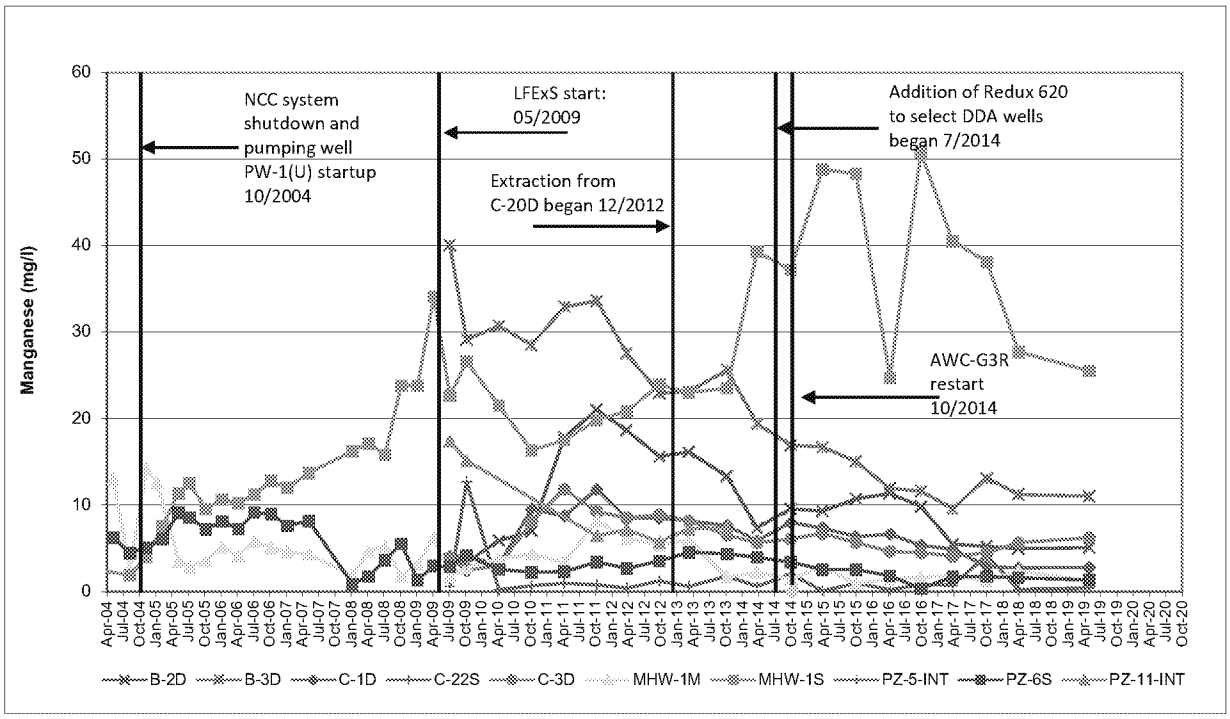
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total manganese results.

Manganese - DDA Groundwater - LFExS Extraction Wells

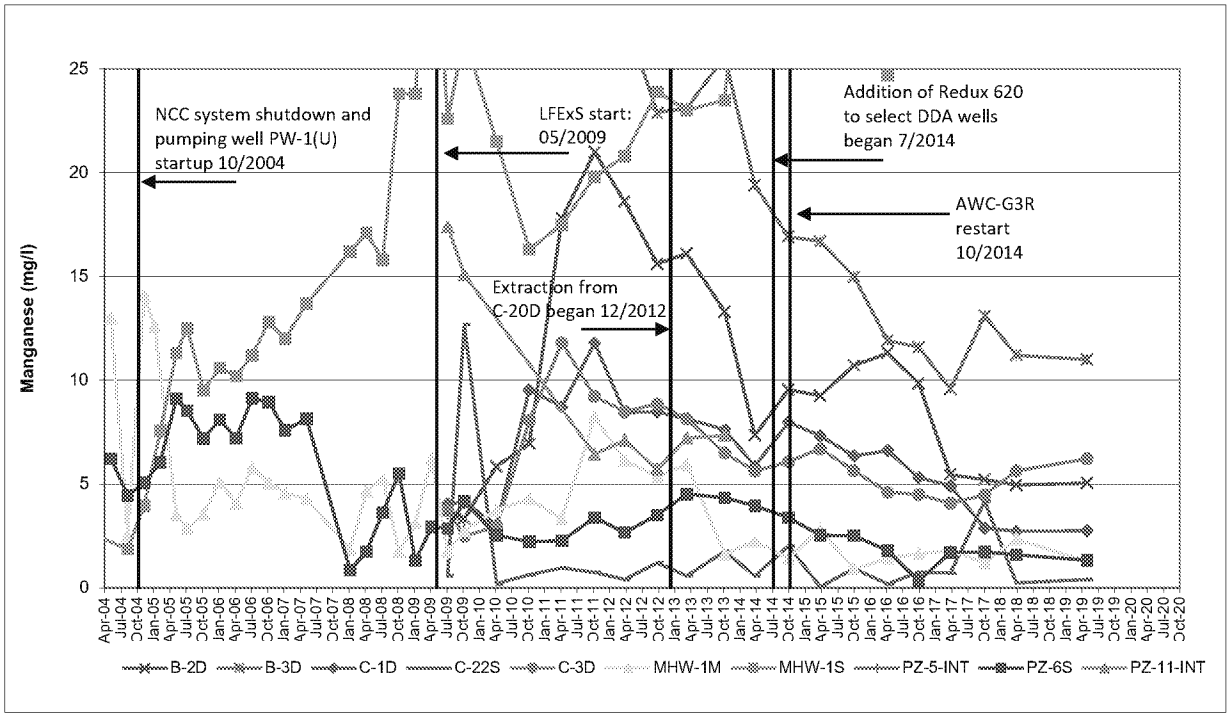
Golder Associates	Project Number:	013-6052		**FIGURE F-1E**
	Prepared by:	TK	1/8/2020	
	Checked by:	BPC	1/8/2020	**Delaware Sand and Gravel Superfund Site**
	Reviewed by:	TAM	2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE <60 mg/l



NORMAL SCALE, <25 mg/l



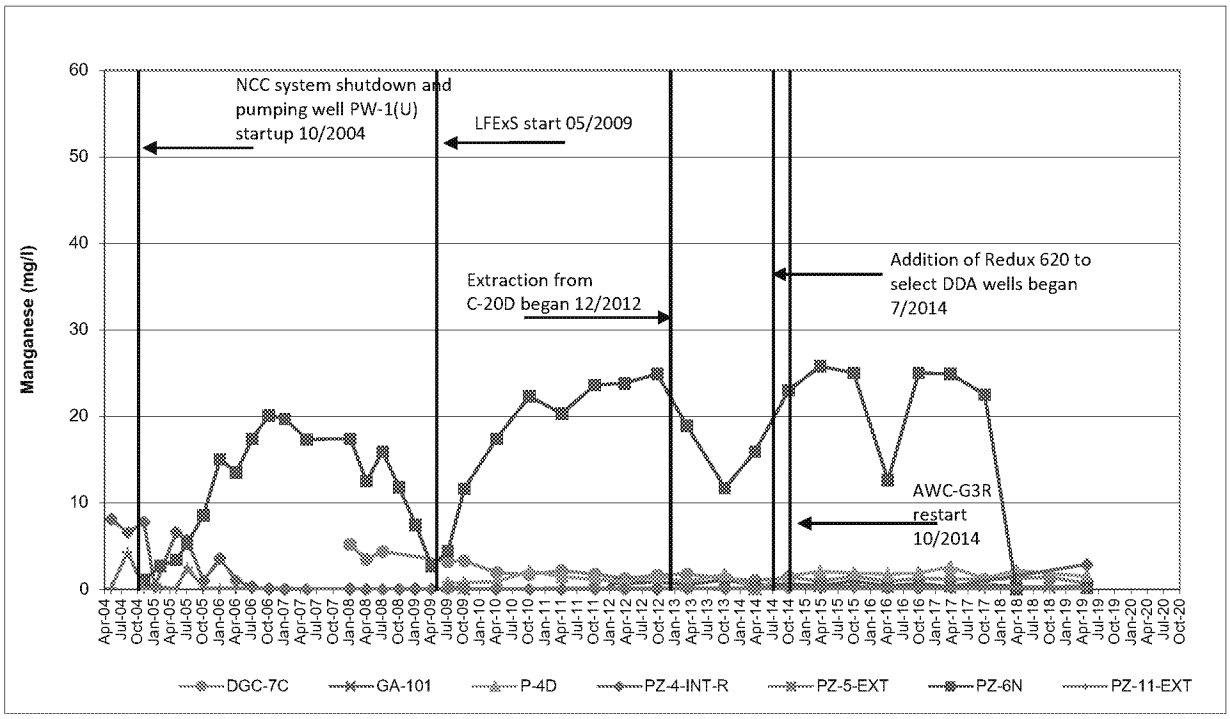
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total manganese results.

Manganese - DDA Groundwater - LFExS Monitoring Wells

Golder Associates	Project Number:	013-6052		FIGURE F-2E
	Prepared by:	TK	1/8/2020	
	Checked by:	BPC	1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE <60 mg/l



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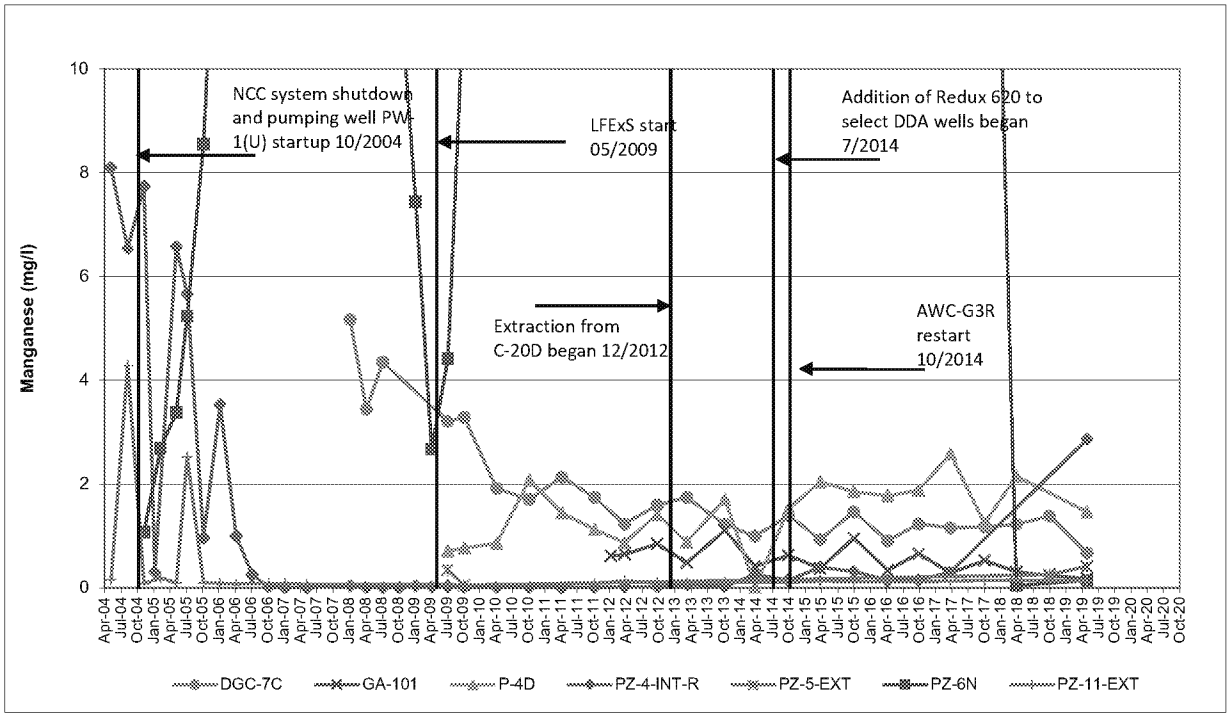


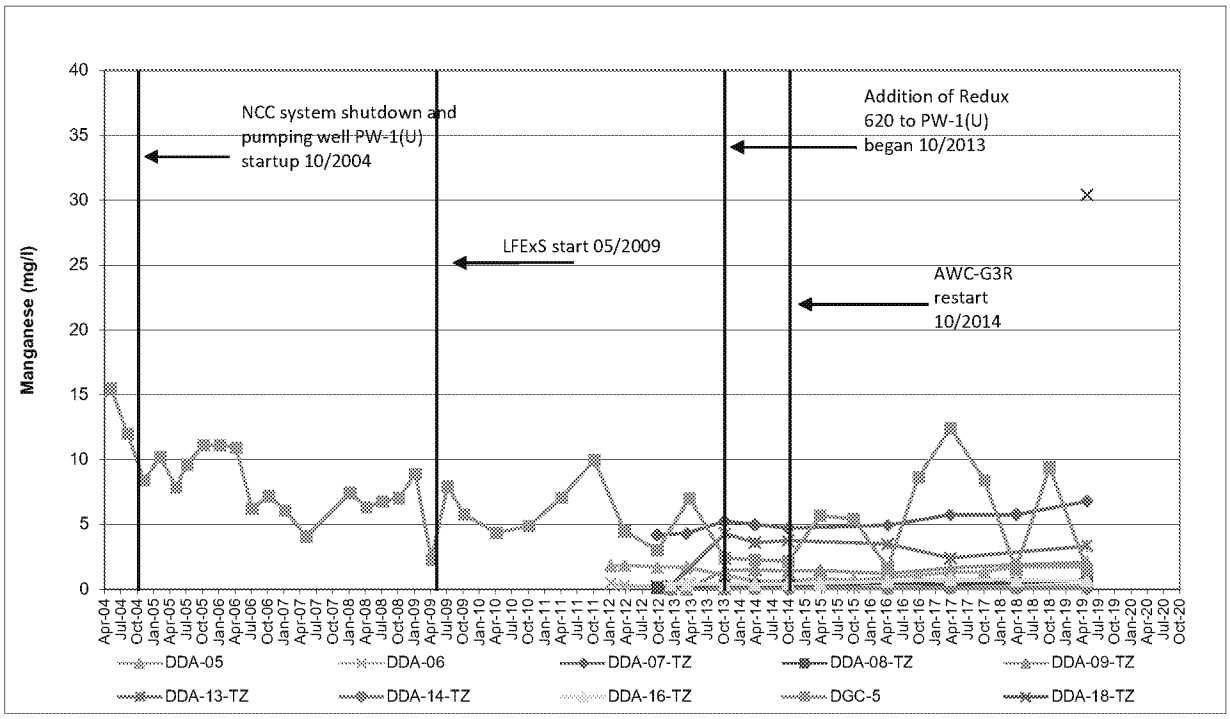
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total manganese results.

Manganese - DDA Groundwater - Columbia Monitoring Wells

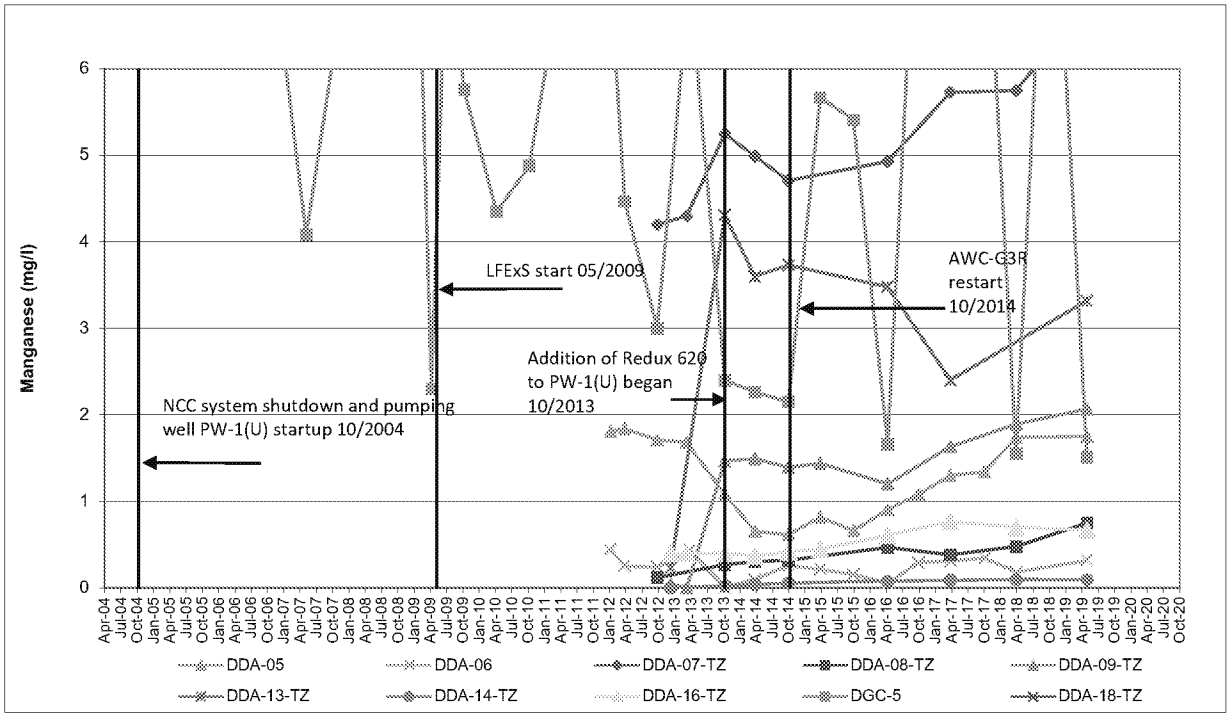
Golder Associates	Project Number:	013-6052	**FIGURE F-3E**
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	**Delaware Sand and Gravel Superfund Site**
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE <40 mg/l



NORMAL SCALE, <6 mg/l



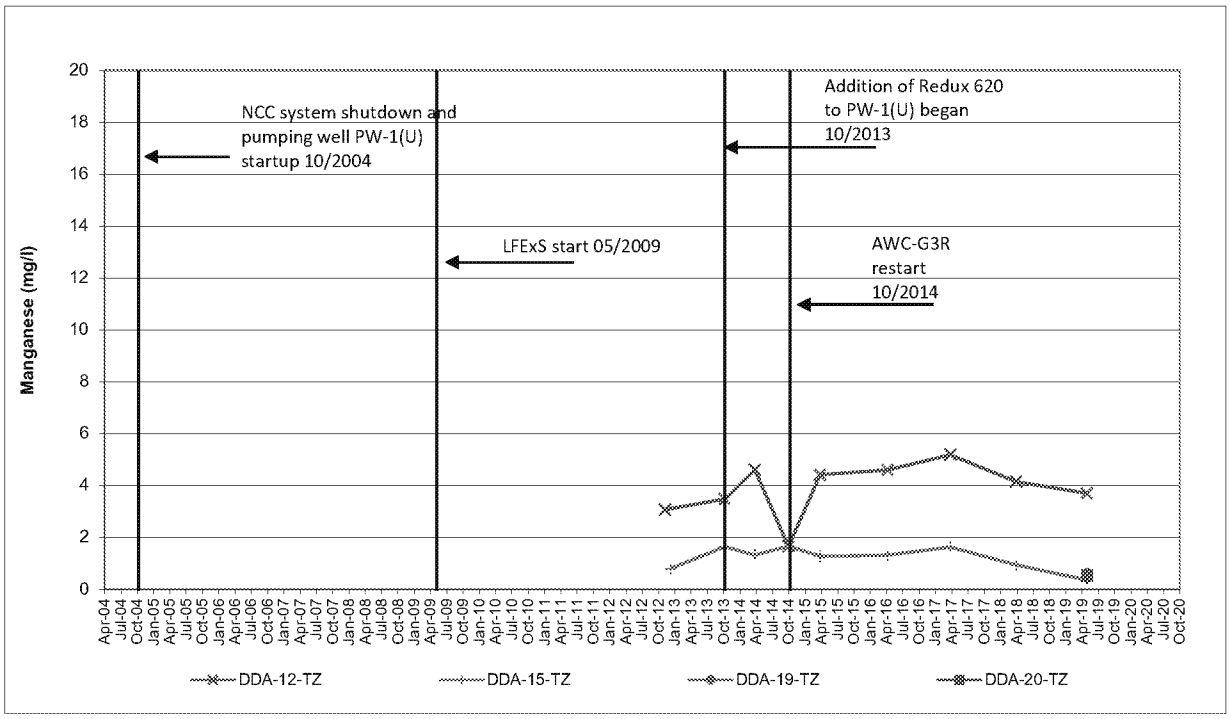
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total manganese results.

Manganese - DDA to Well PW-1(U) UPCUTZ - Western and Central Monitoring Wells

Golder Associates	Project Number:	013-6052	**FIGURE F-4.1E**
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	**Delaware Sand and Gravel Superfund Site**
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE <20 mg/l



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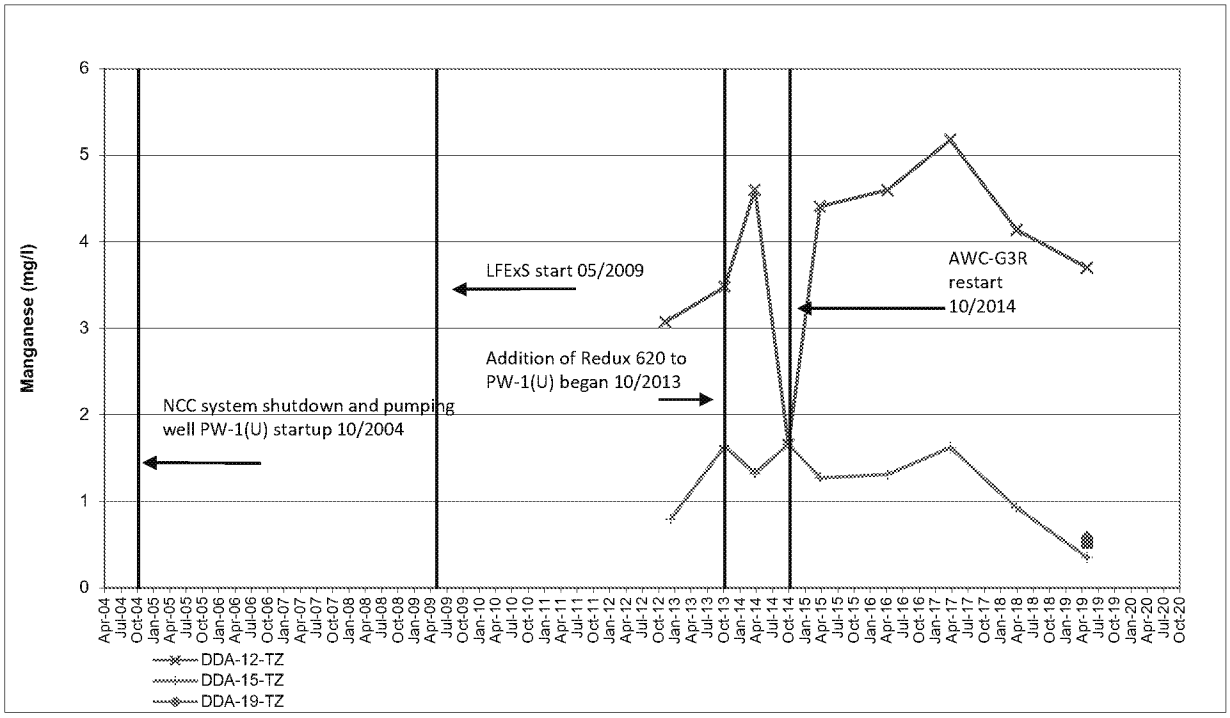
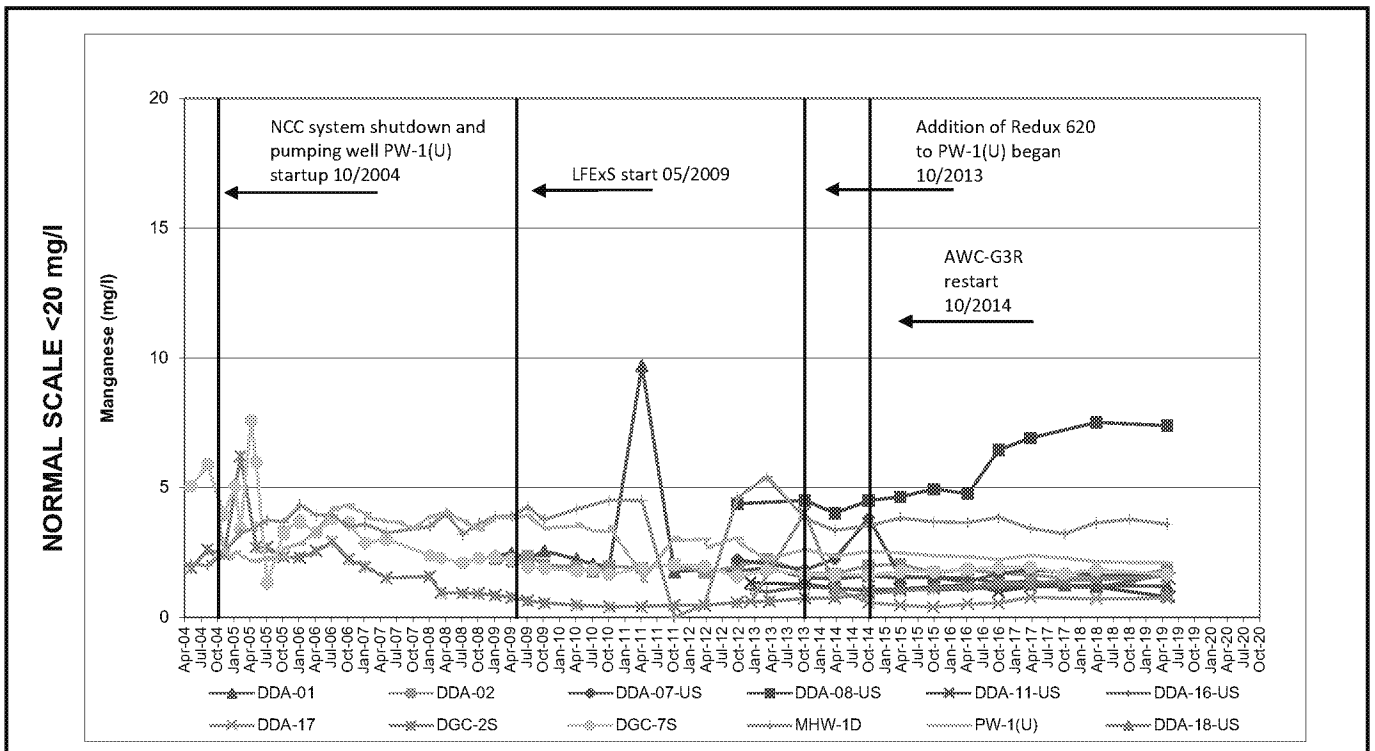


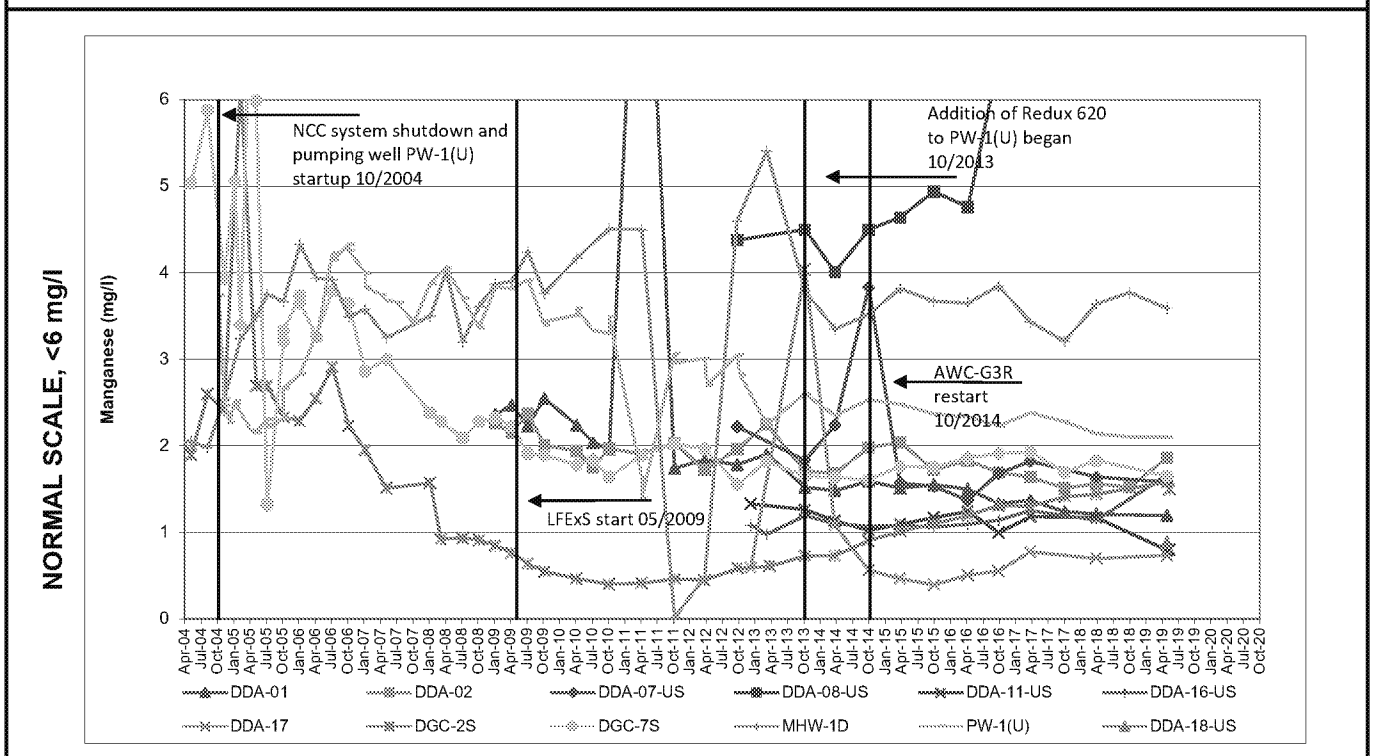
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total manganese results.

Manganese - DDA to Well PW-1(U) UPCUTZ - Eastern Monitoring Wells

Golder Associates	Project Number:	013-6052		FIGURE F-4.2E
	Prepared by:	TK	1/8/2020	
	Checked by:	BPC	1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx





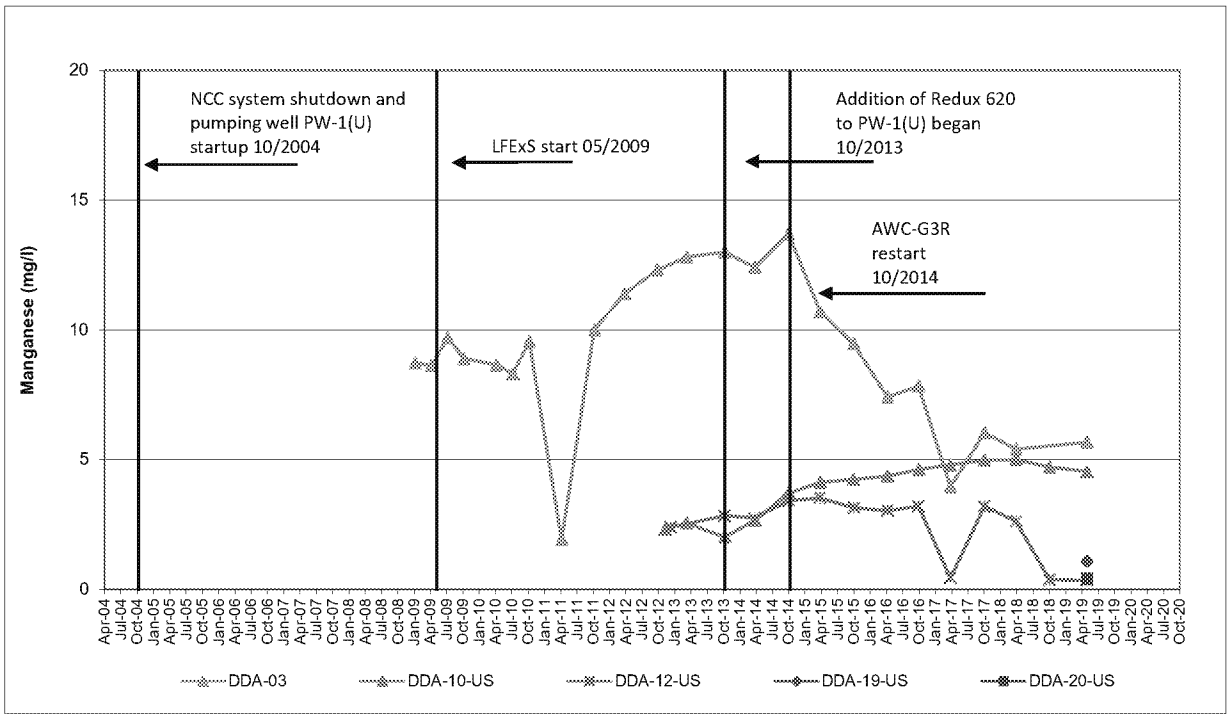
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total manganese results.

Manganese - DDA to Well PW-1(U) UPA - Western and Central Monitoring Wells

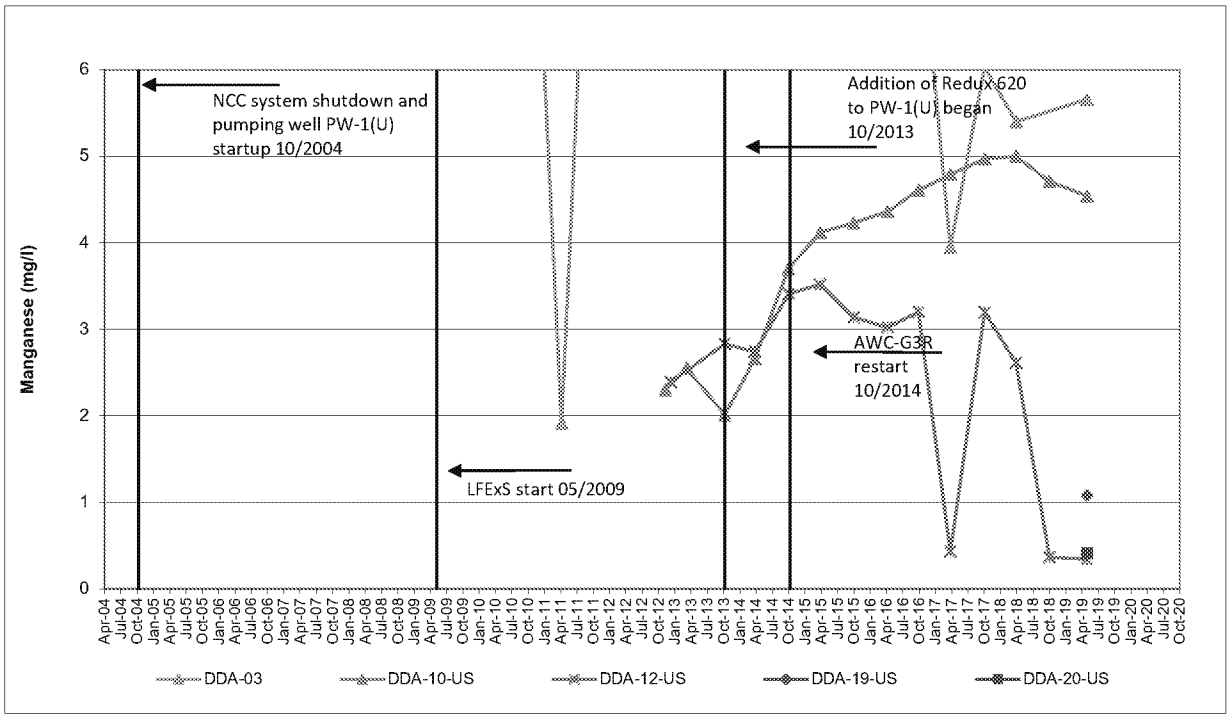
Golder Associates	Project Number:	013-6052		FIGURE F-5.1E
	Prepared by:	TK	1/8/2020	
	Checked by:	BPC	1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE <20 mg/l



NORMAL SCALE, <6 mg/l

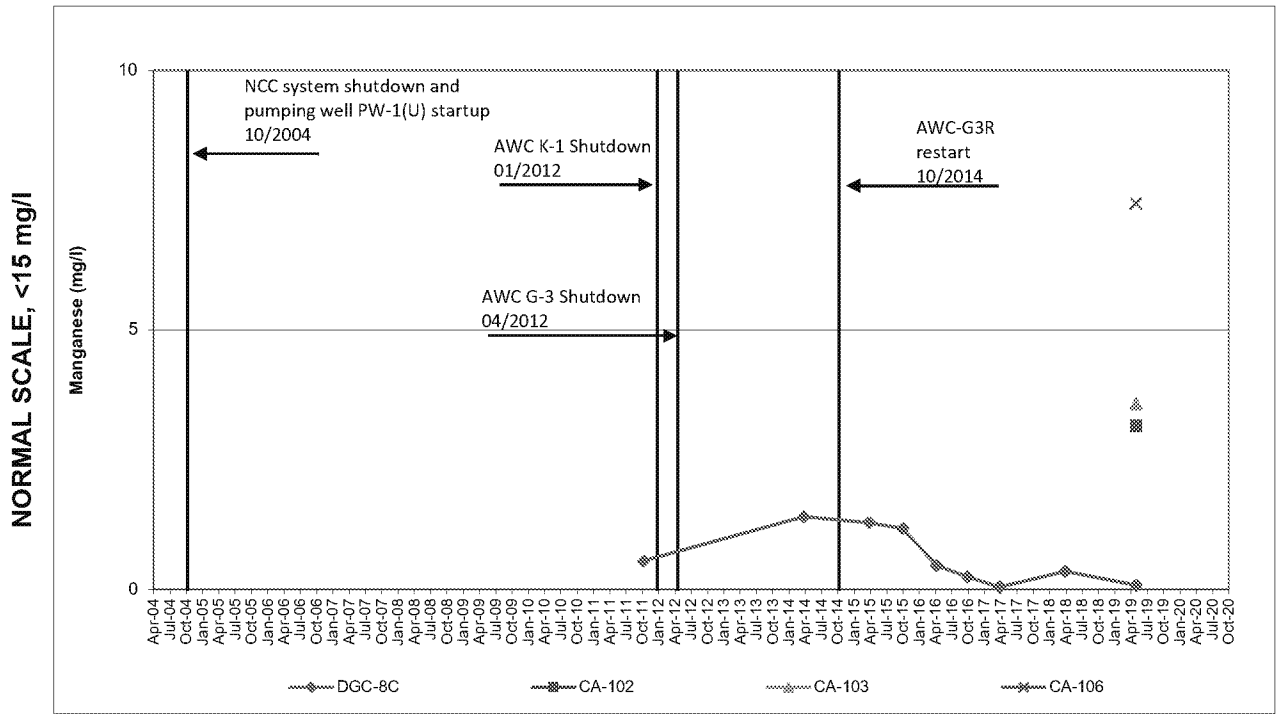


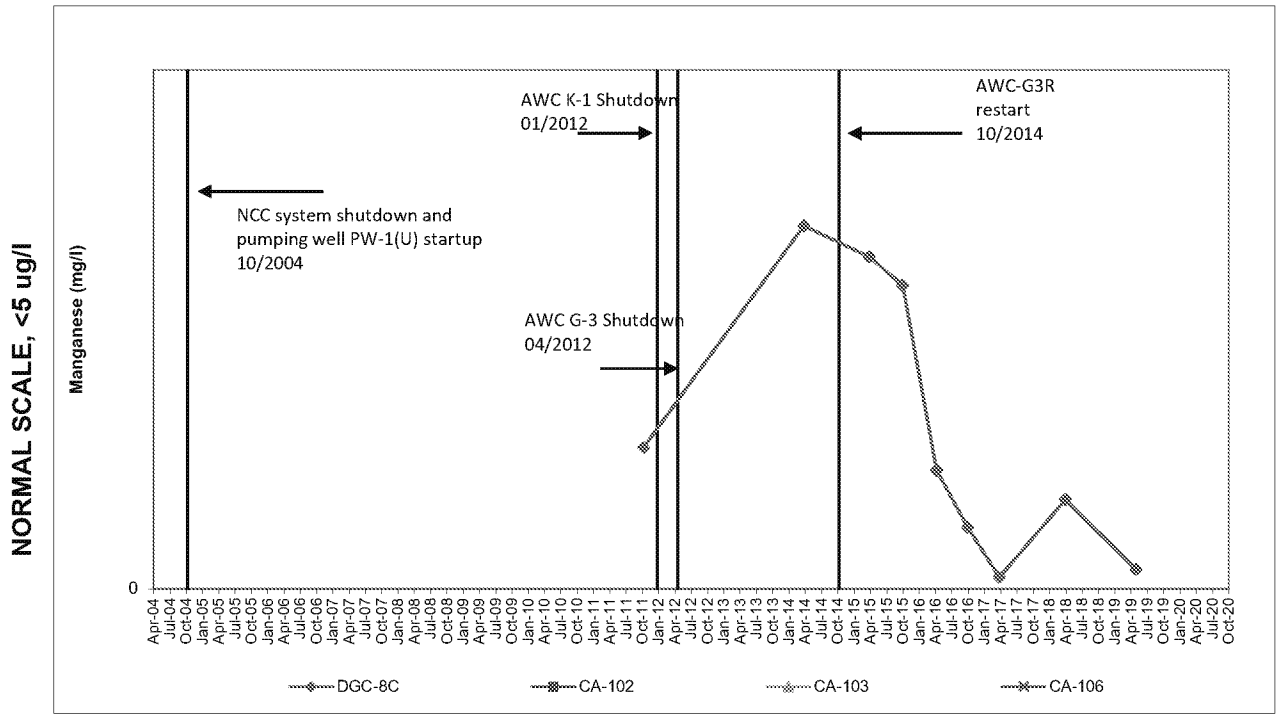
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total manganese results.

Manganese - DDA to Well PW-1(U) UPA - Eastern Monitoring Wells

Golder Associates	Project Number:	013-6052	**FIGURE F-5.2E**
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	**Delaware Sand and Gravel Superfund Site**
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx





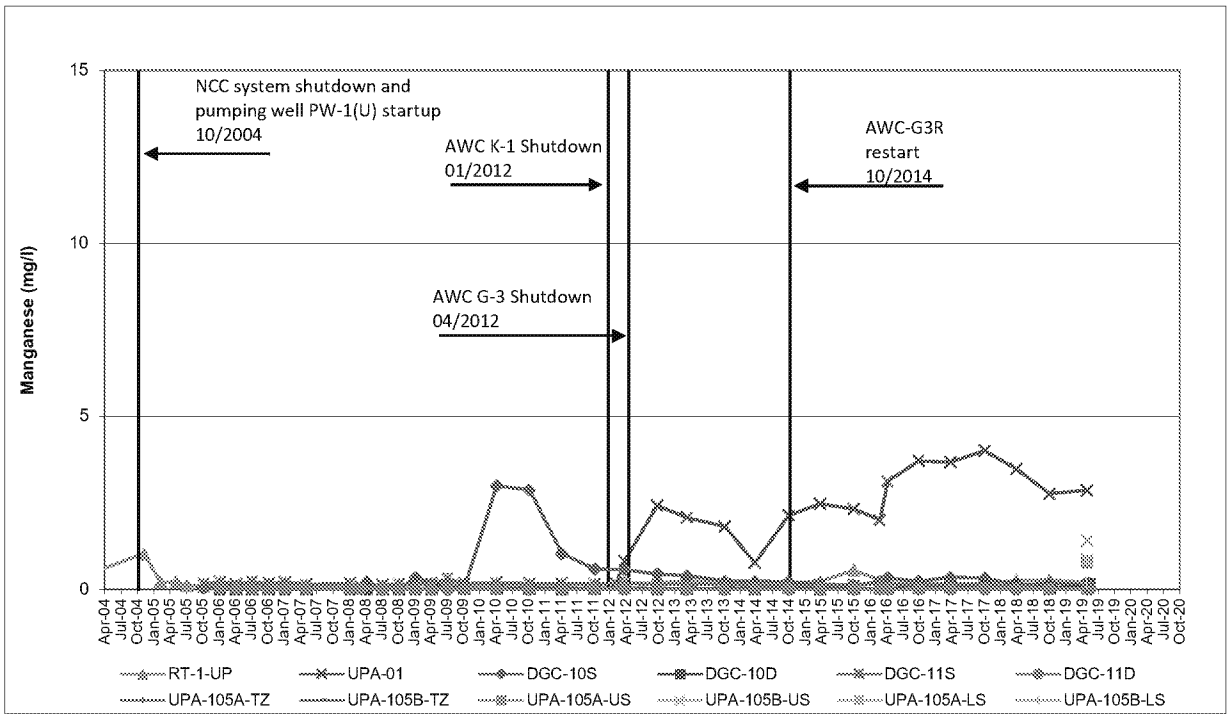
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total manganese results.

Manganese - Downgradient of Well PW-1(U) - Columbia Monitoring Wells

Golder Associates	Project Number:	013-6052		FIGURE F-6.1E
	Prepared by:	TK	1/8/2020	
	Checked by:	BPC	1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE, <15 mg/l



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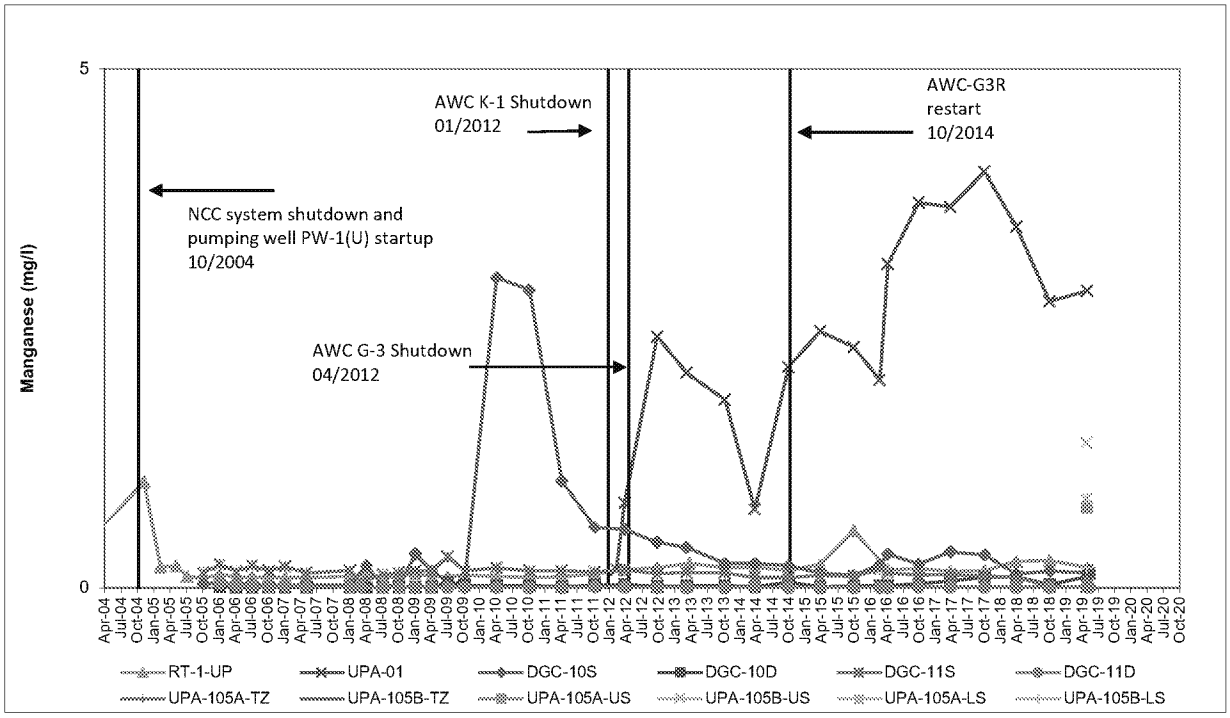


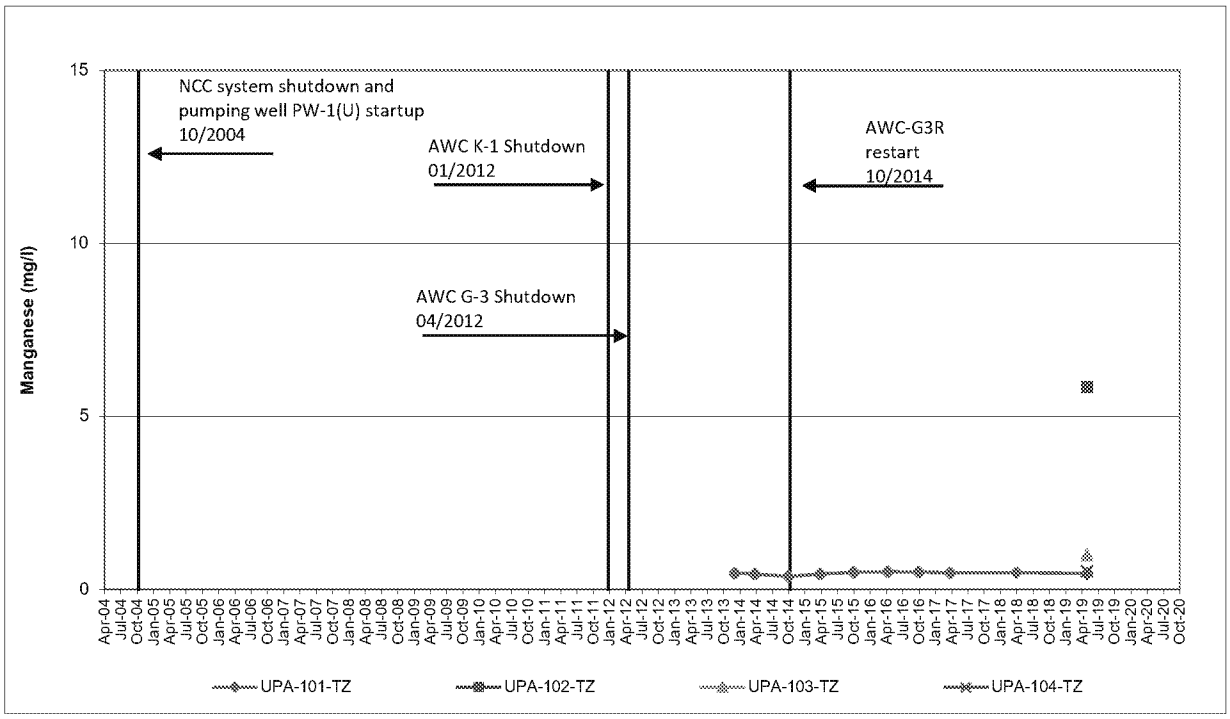
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total manganese results.

Manganese - Downgradient of Well PW-1(U) - UPCUTZ and UPA - UPA-01 Area Monitoring Wells

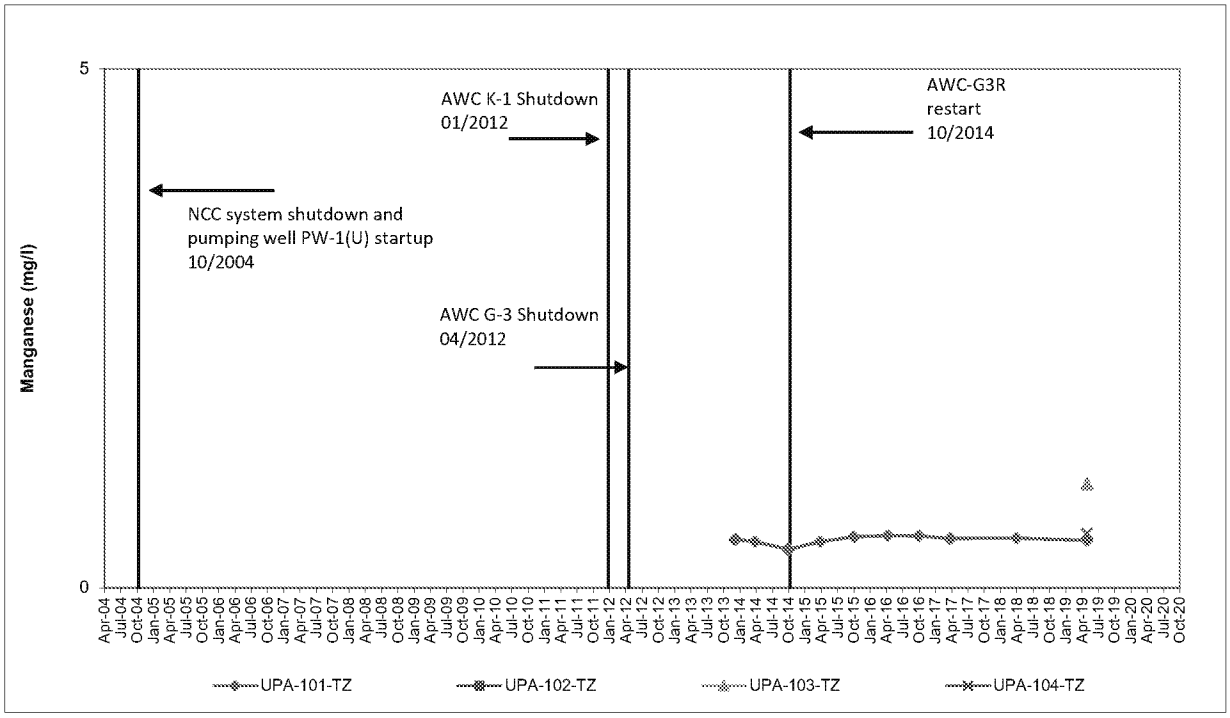
Golder Associates	Project Number:	013-6052		FIGURE F-6.2E
	Prepared by:	TK	1/8/2020	
	Checked by:	BPC	1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE, <15 mg/l



NORMAL SCALE, <5 ug/l



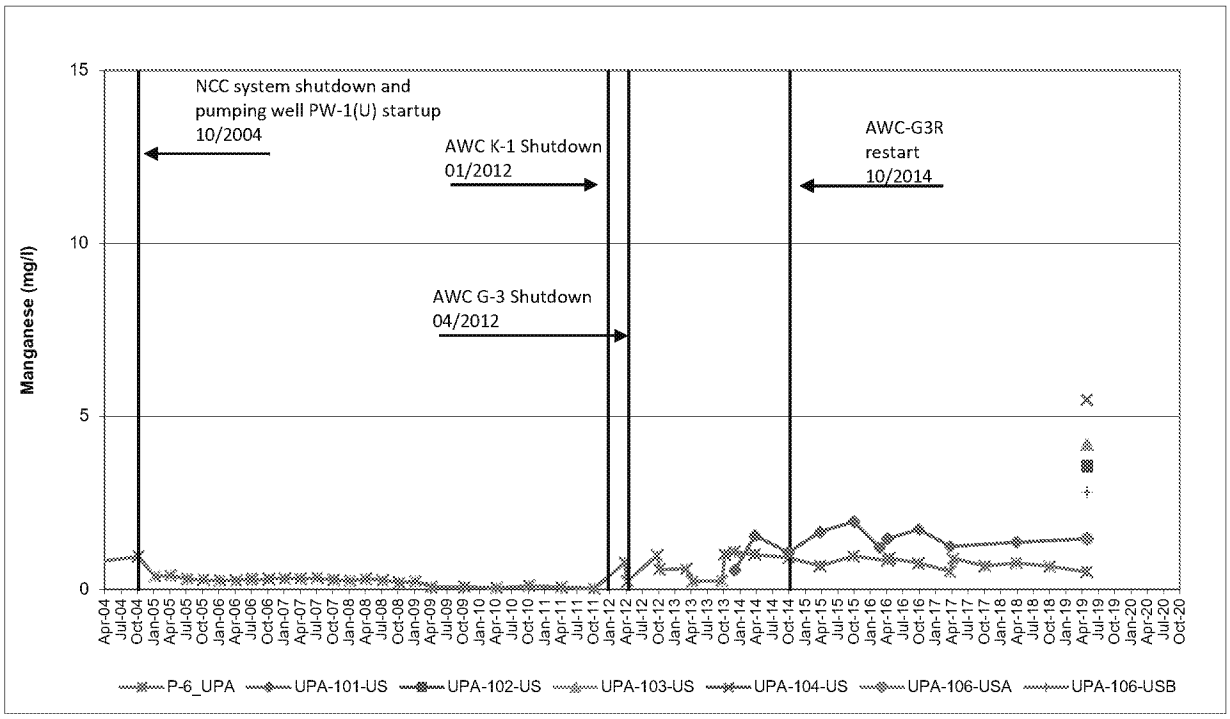
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total manganese results.

Manganese - Downgradient of Well PW-1(U) - UPCUTZ - P-6 Area Monitoring Wells

Golder Associates	Project Number:	013-6052		FIGURE F-6.3E
	Prepared by:	TK	1/8/2020	
	Checked by:	BPC	1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE, <15 mg/l



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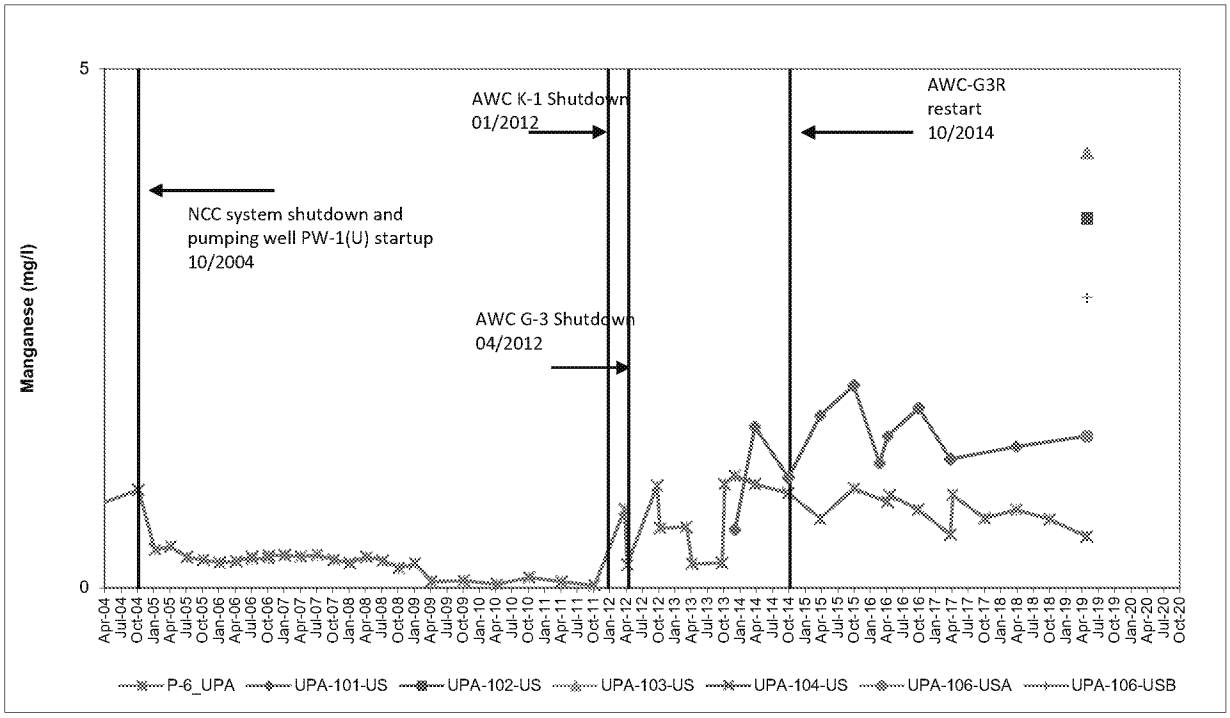


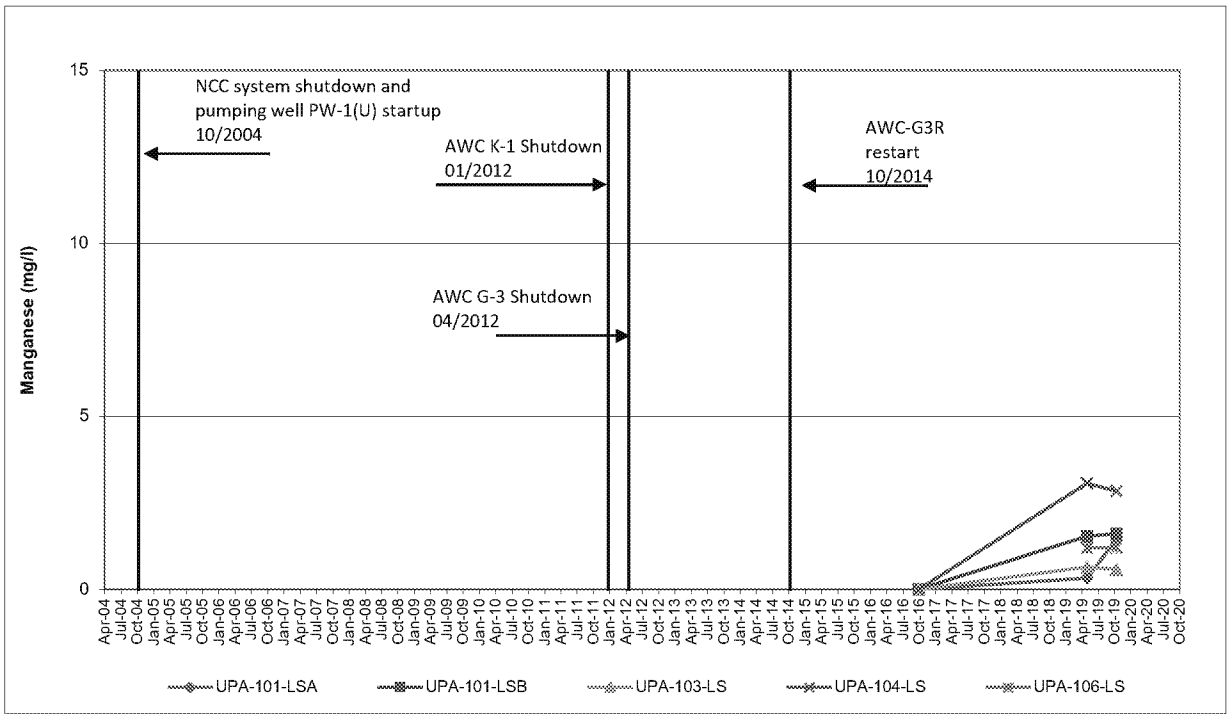
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total manganese results.

Manganese - Downgradient of Well PW-1(U) - UPA Upper Sand - P-6 Area Monitoring Wells

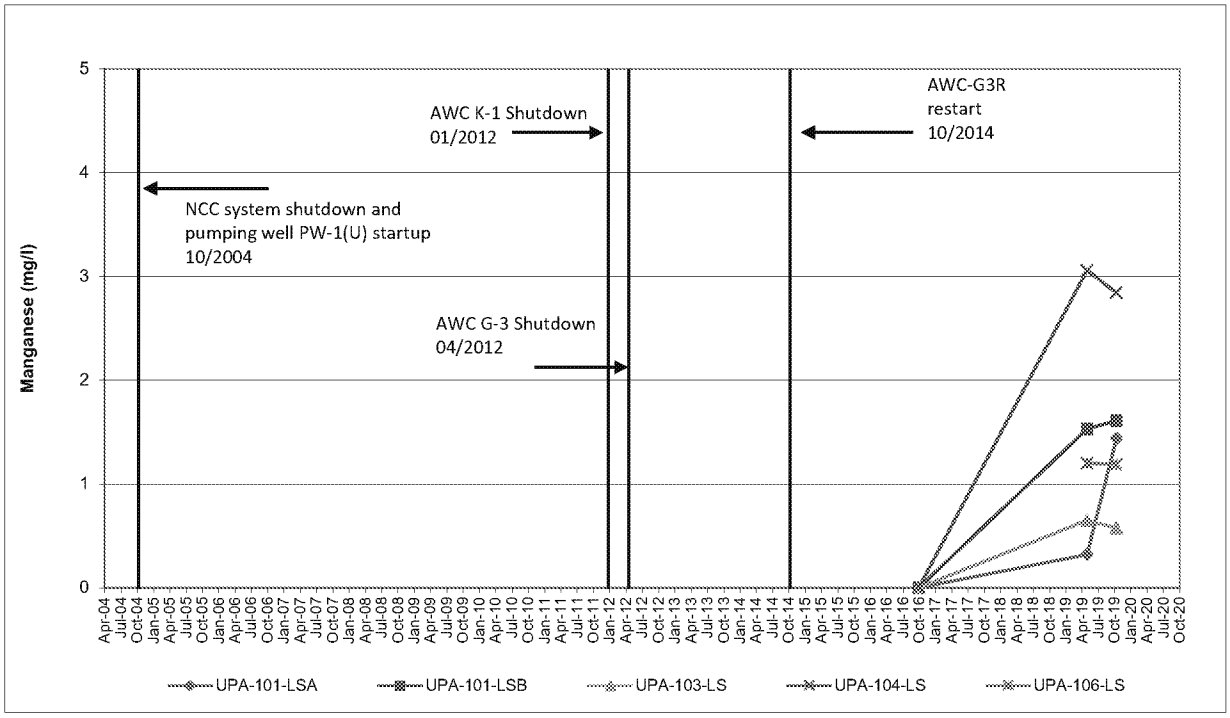
Golder Associates	Project Number:	013-6052	FIGURE F-6.4E
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE, <15 mg/l



NORMAL SCALE, <5 ug/l



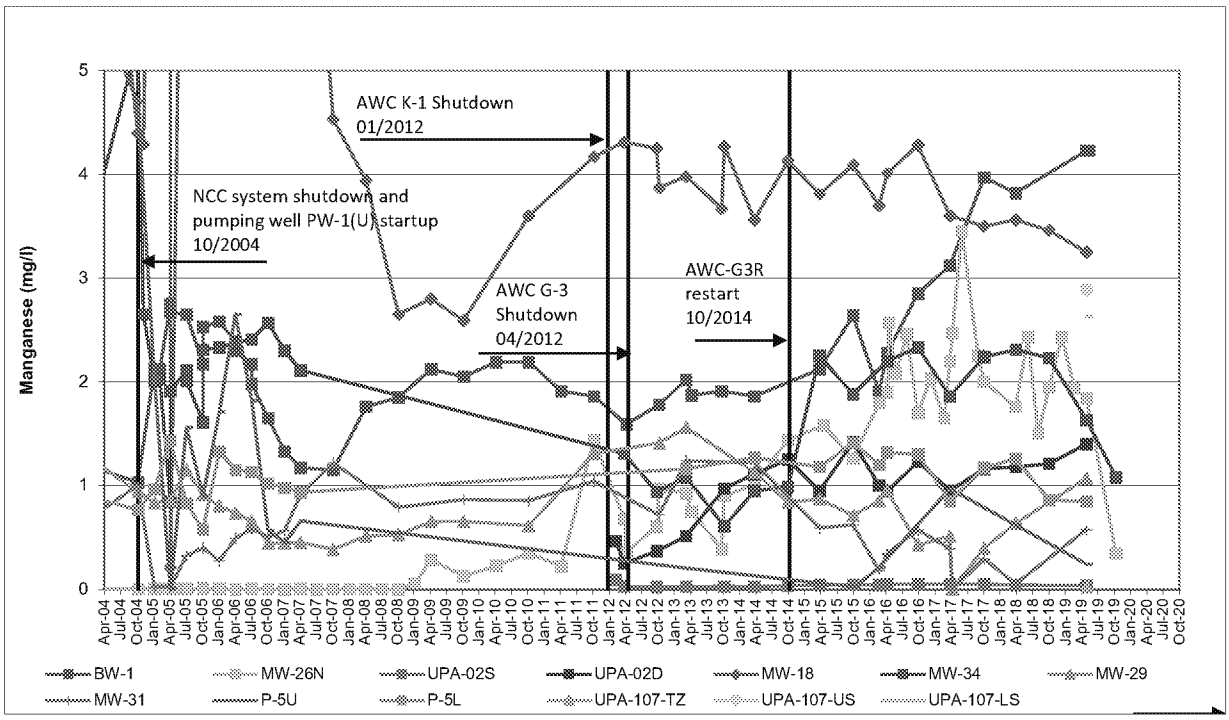
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total manganese results.

Manganese - Downgradient of Well PW-1(U) - UPA Lower Sand - P-6 Area Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-6.5E
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE <5 mg/l



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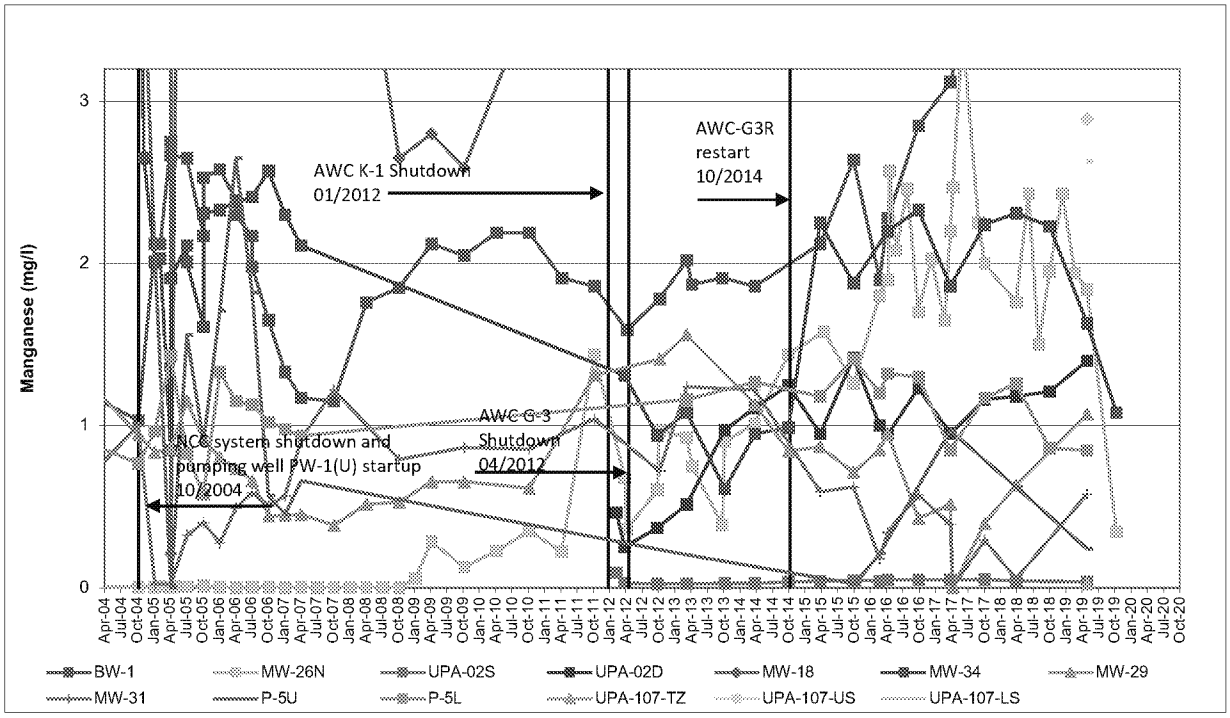


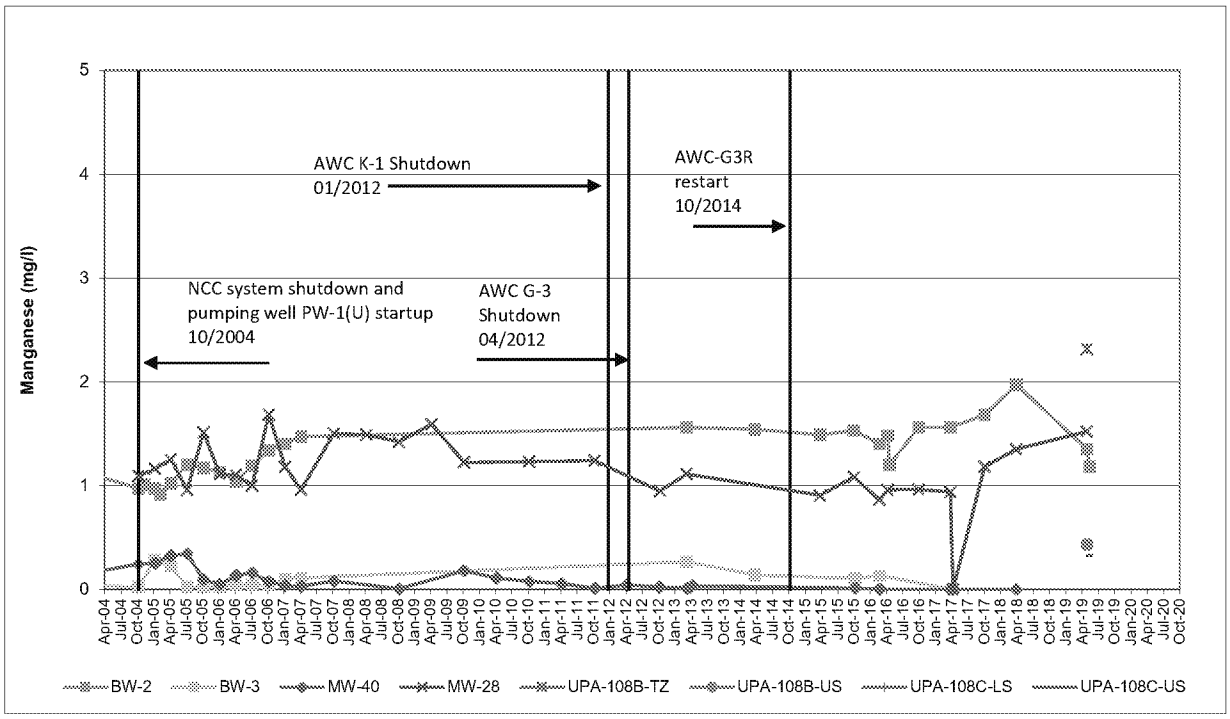
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total manganese results.

Manganese - Downgradient of Well PW-1(U) - UPA - MW-18/34 Area Monitoring Wells

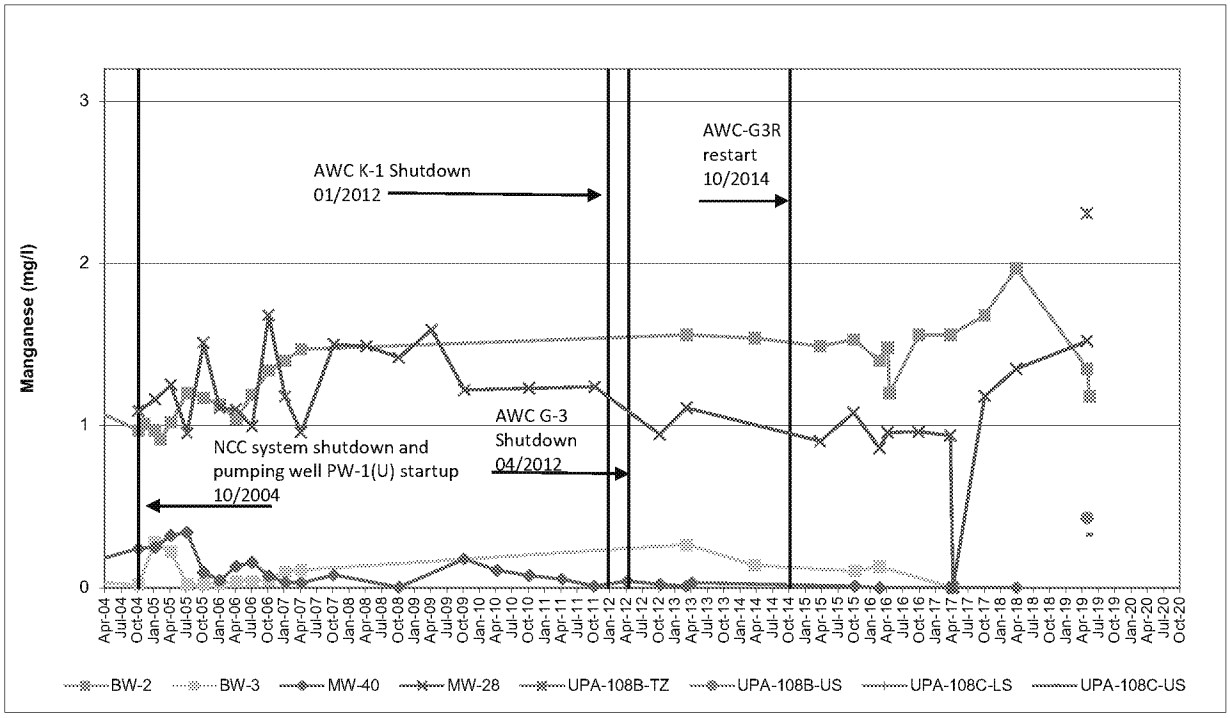
Golder Associates	Project Number:	013-6052	FIGURE F-7.1E
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE <5 mg/l



NORMAL SCALE, <3 mg/l



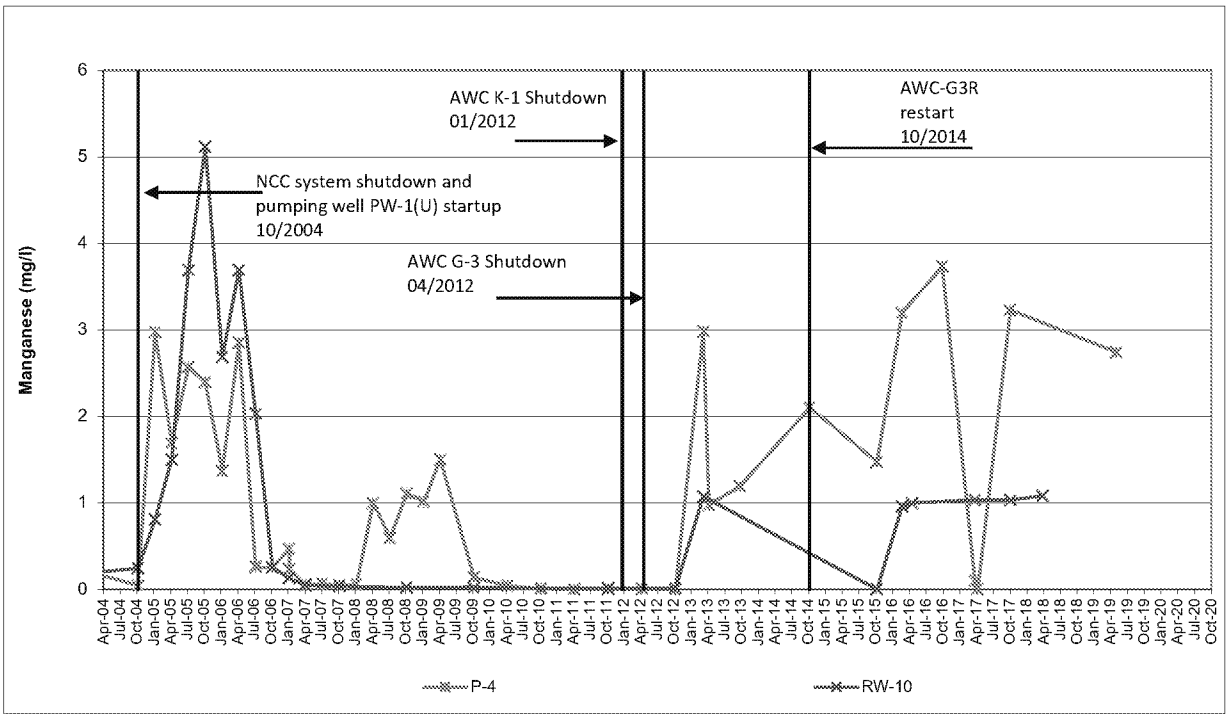
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total manganese results.

Manganese - Downgradient of Well PW-1(U) - UPA - BW-2 Area Monitoring Wells

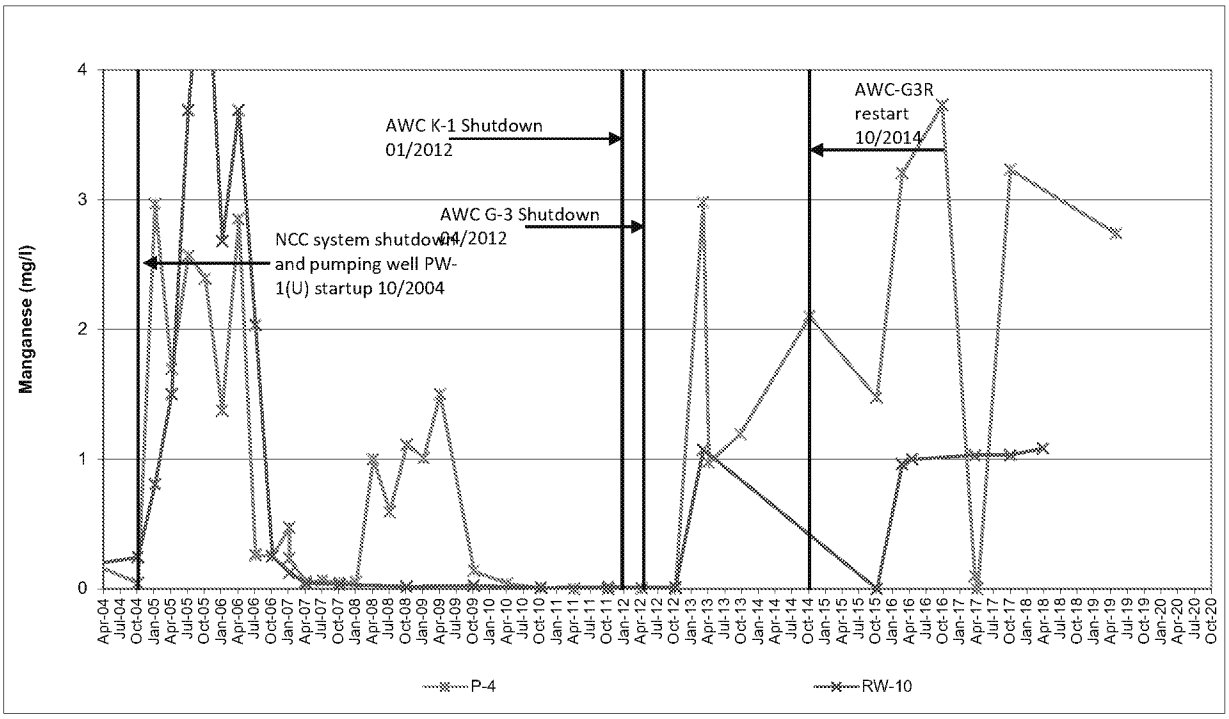
Golder Associates	Project Number:	013-6052	FIGURE F-7.2E
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE <6 mg/l



NORMAL SCALE, <4 mg/l

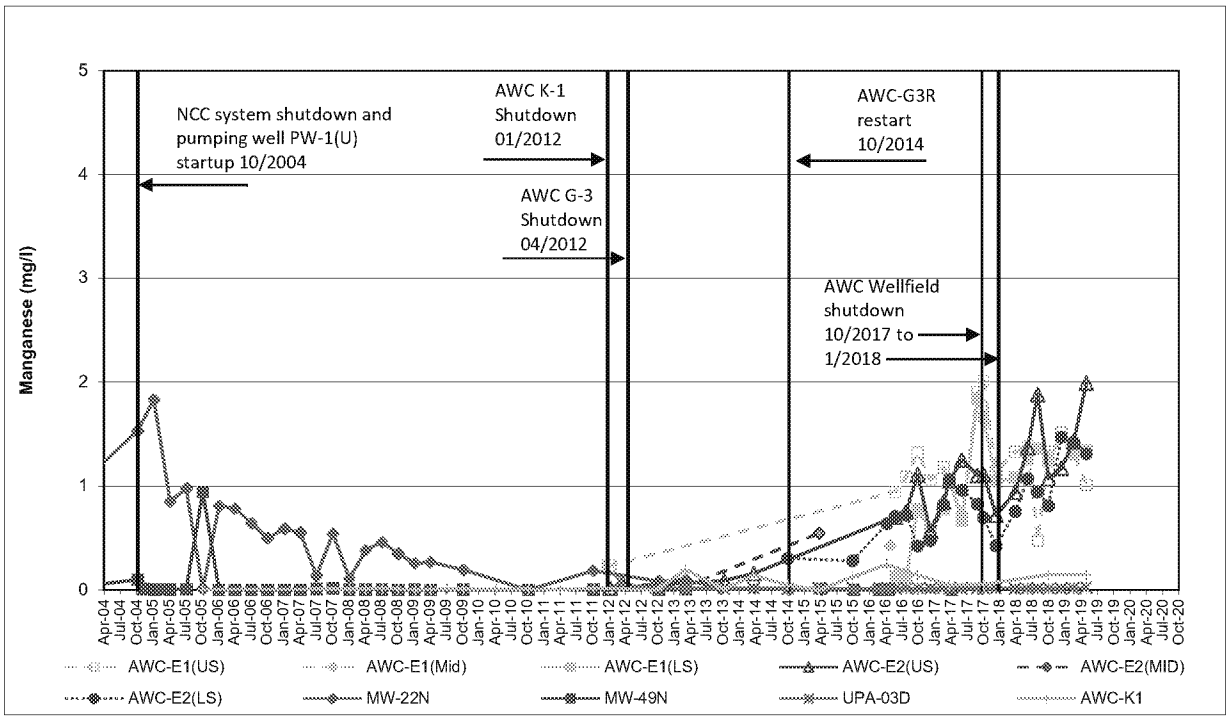


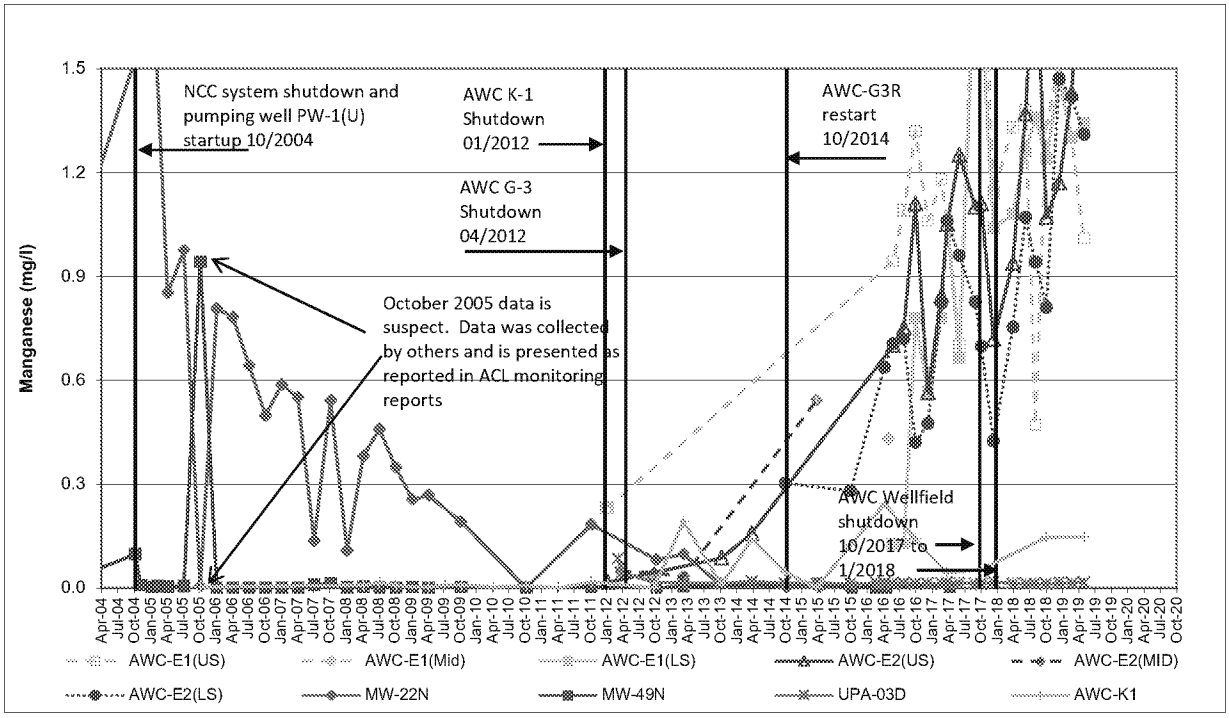
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total manganese results..

Manganese - UPA Downgradient - Western Lobe NCC Monitoring Wells

Golder Associates	Project Number:	013-6052		FIGURE F-8E
	Prepared by:	TK	1/8/2020	
	Checked by:	BPC	1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx





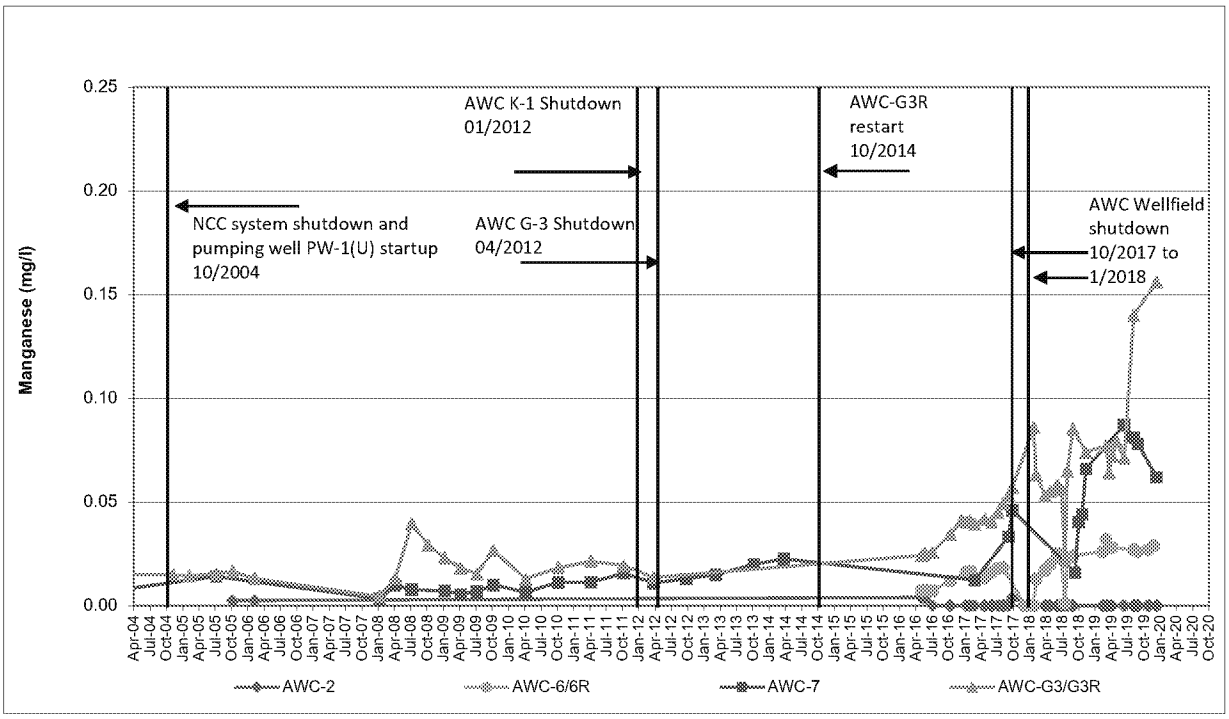
Notes: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total manganese results.

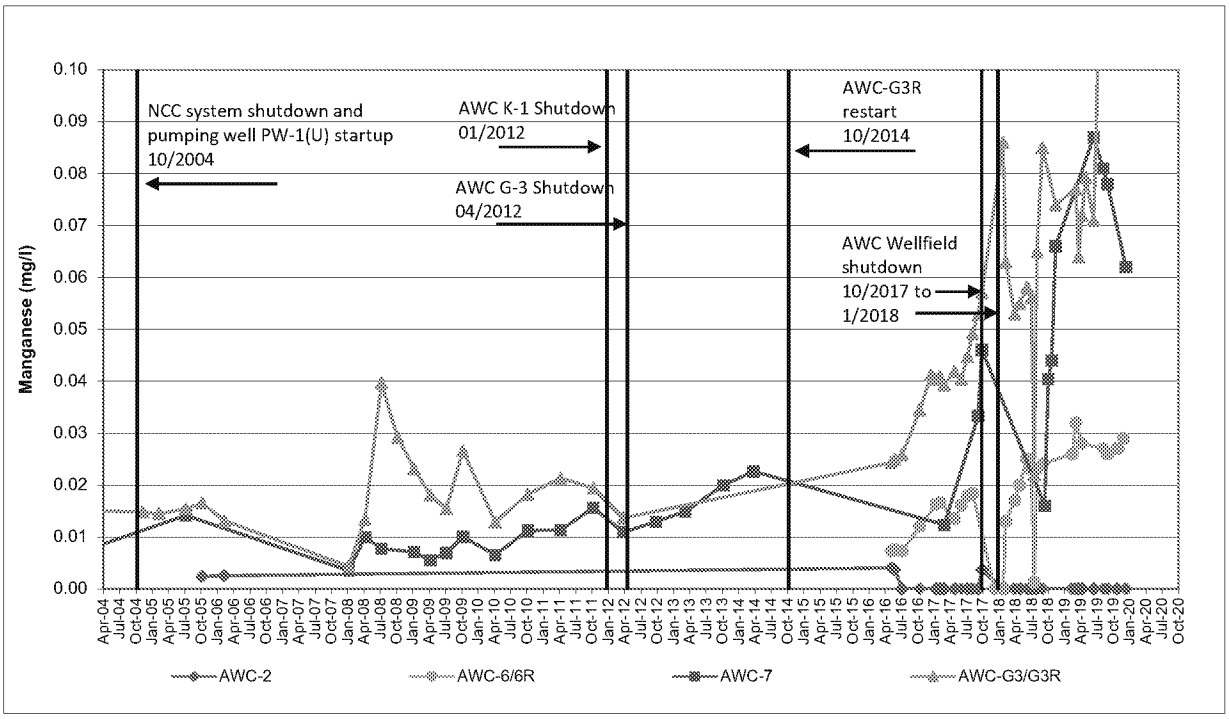
On May 4 2016, AWC collected a combined sample from the shallow and deep aquifer at AWC-E1 via a 3x purge of the entire screen.

Manganese - UPA Downgradient - Well Trends in Front of AWC Wellfield

Golder Associates	Project Number:	013-6052		FIGURE F-9E
	Prepared by:	TK	1/8/2020	
	Checked by:	BPC	1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx



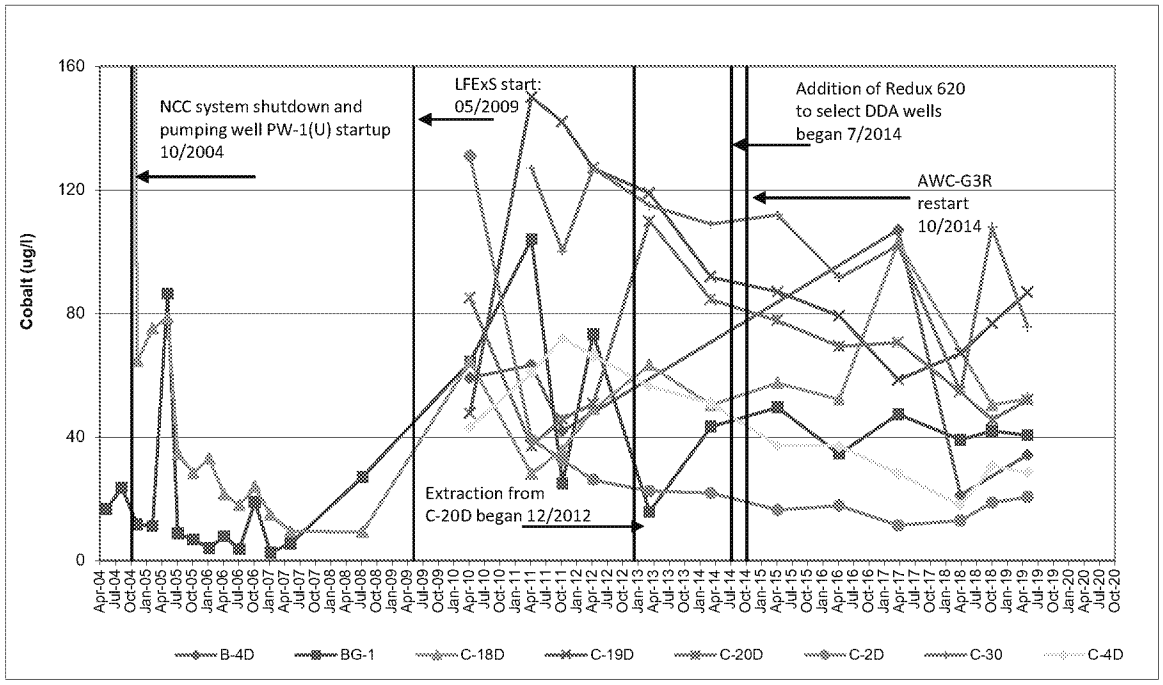


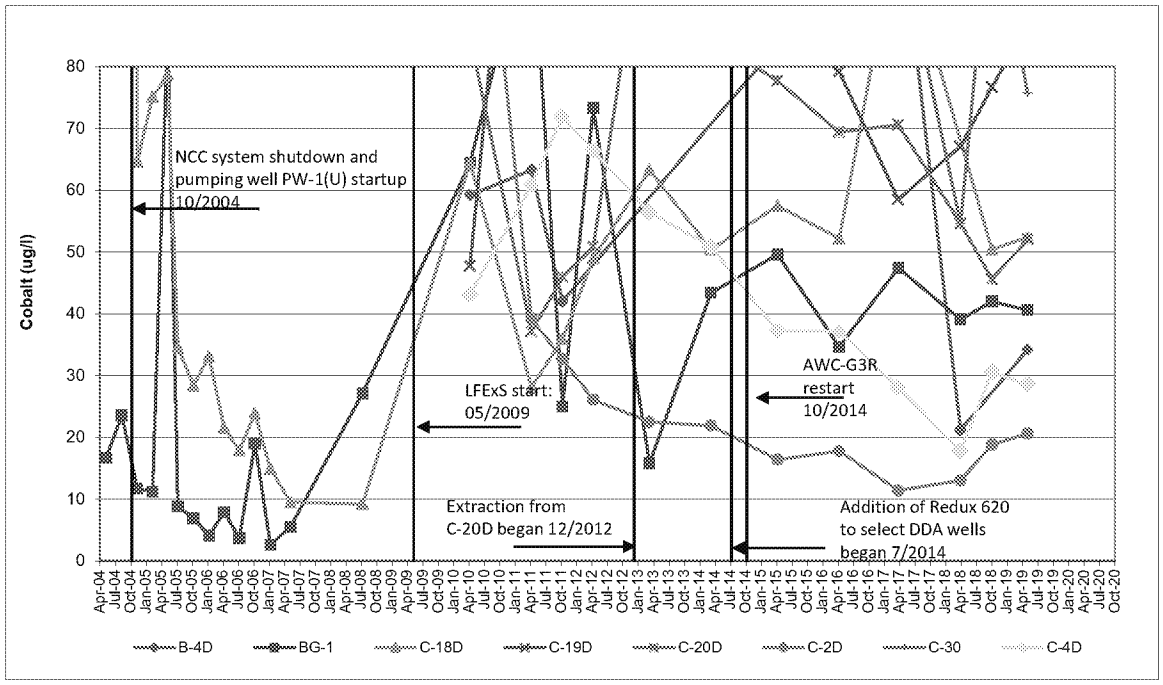
Note: Prior to January 2008, routine groundwater samples for the DS&G site were analyzed for total metals only; therefore, data presented for samples collected prior to January 2008 are based on total manganese results.

Manganese - UPA Downgradient - AWC Well Trends

Golder Associates	Project Number:	013-6052		FIGURE F-10E
	Prepared by:	TK	1/8/2020	
	Checked by:	BPC	1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

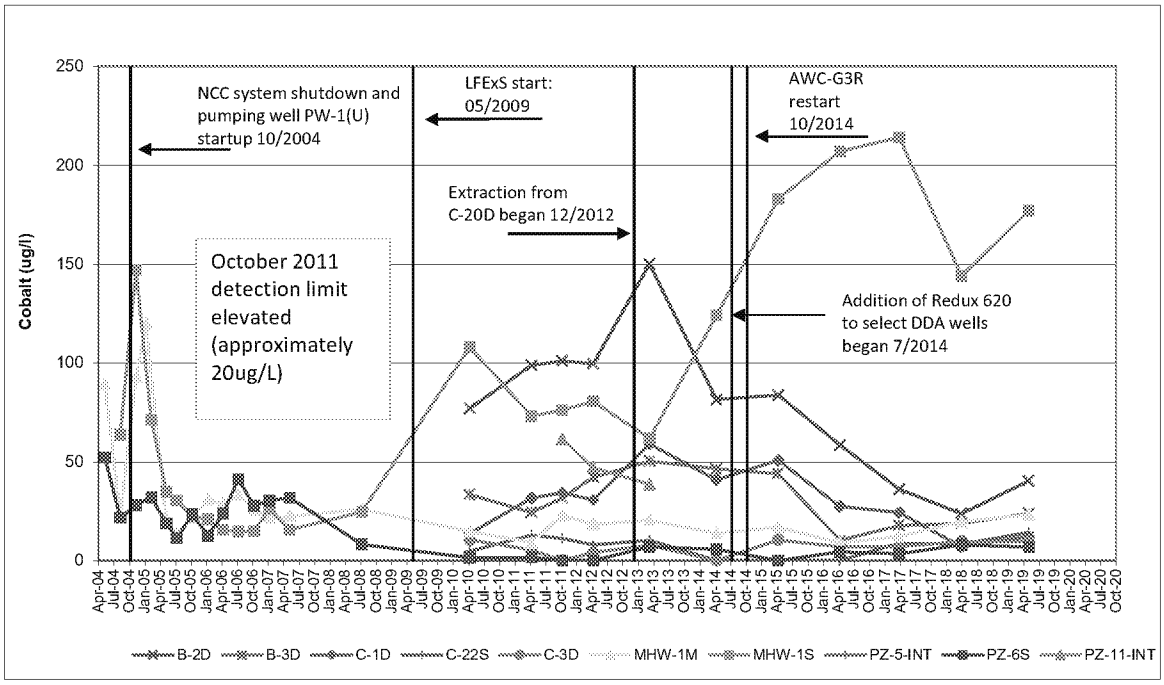


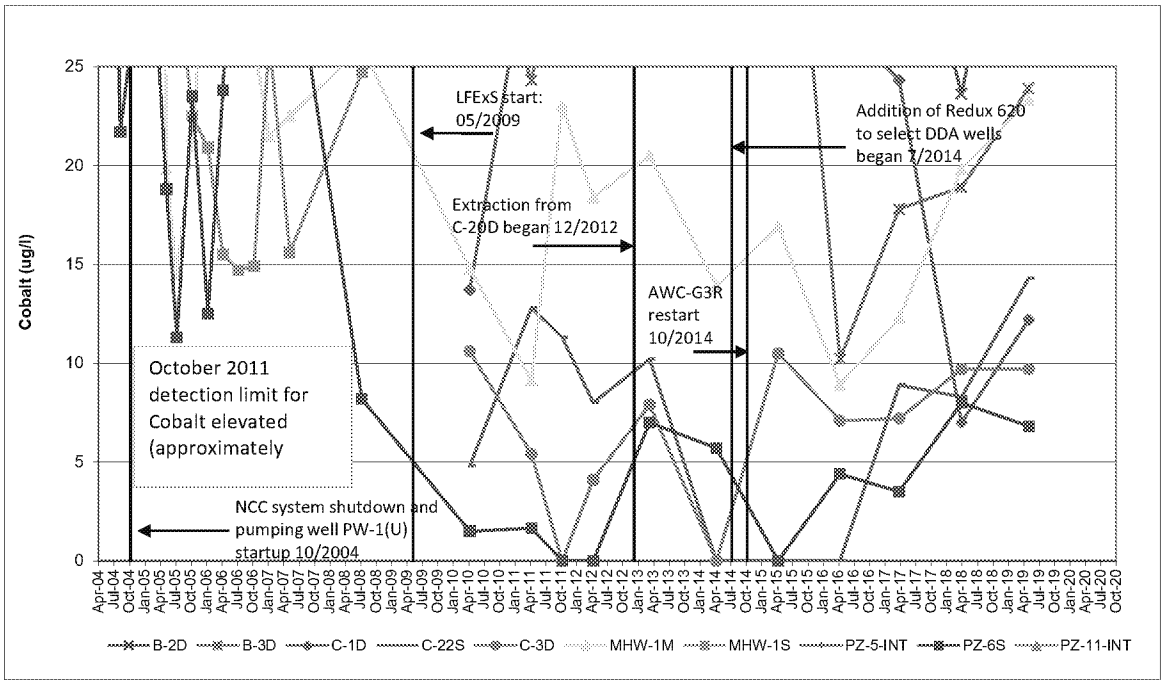


Cobalt - DDA Groundwater - LFExS Extraction Wells

Golder Associates	Project Number:	013-6052	FIGURE F-1F
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

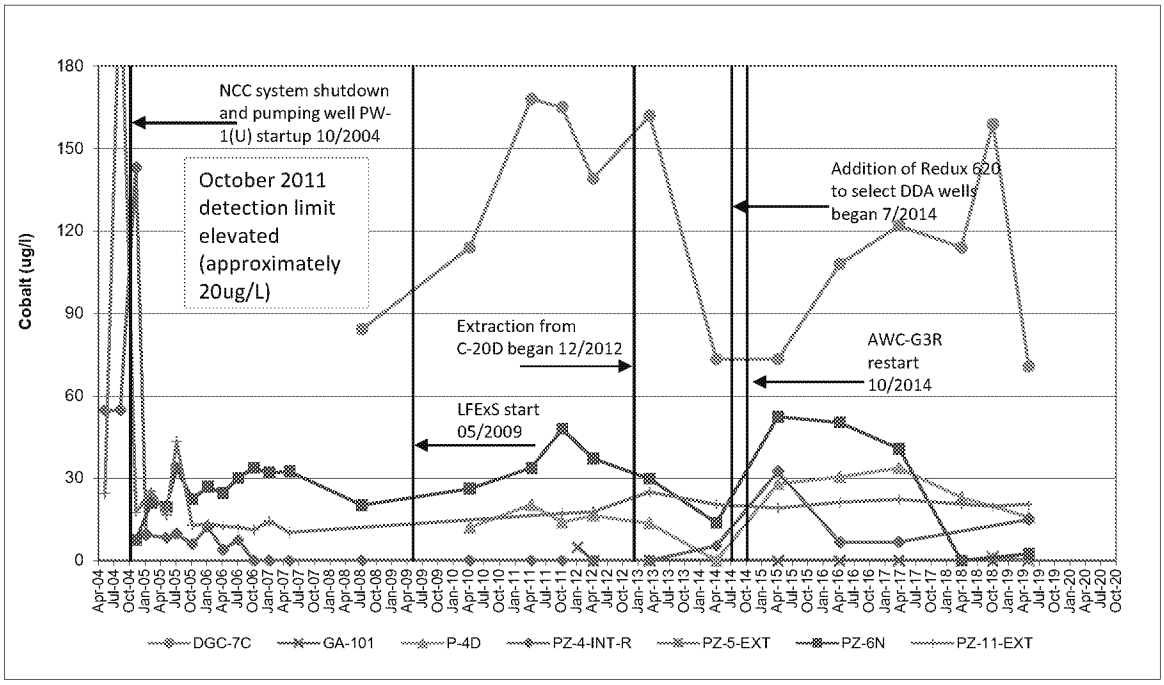


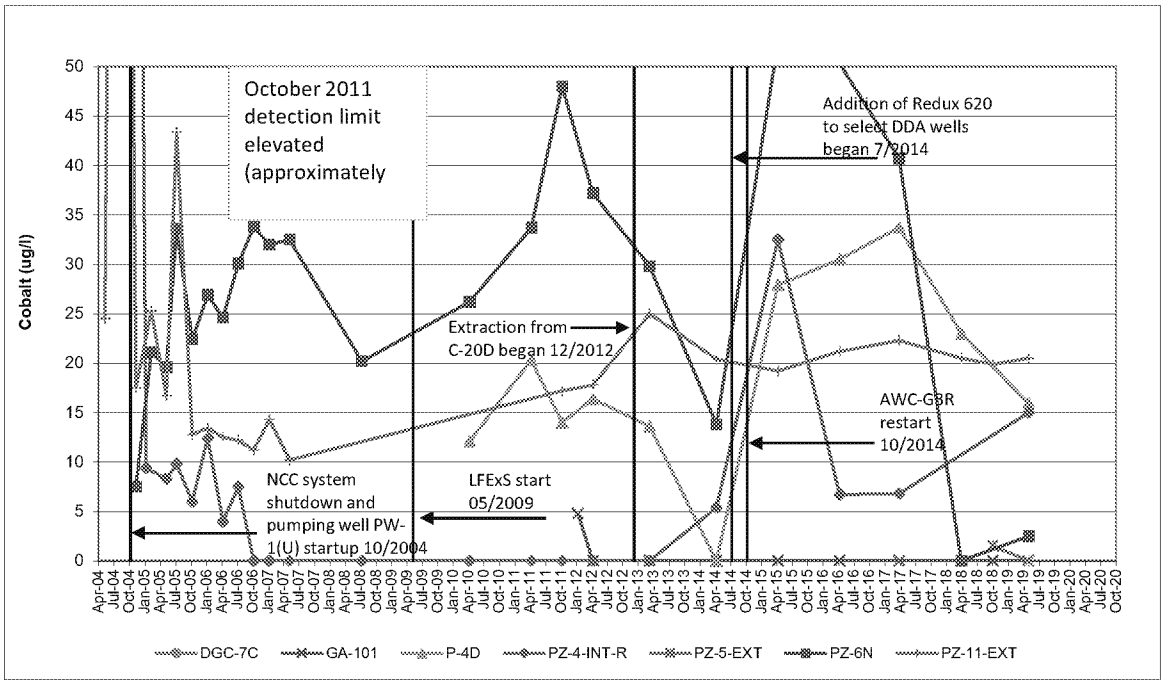


Cobalt - DDA Groundwater - LFExS Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-2F
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx





Cobalt - DDA Groundwater - Columbia Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-3F
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

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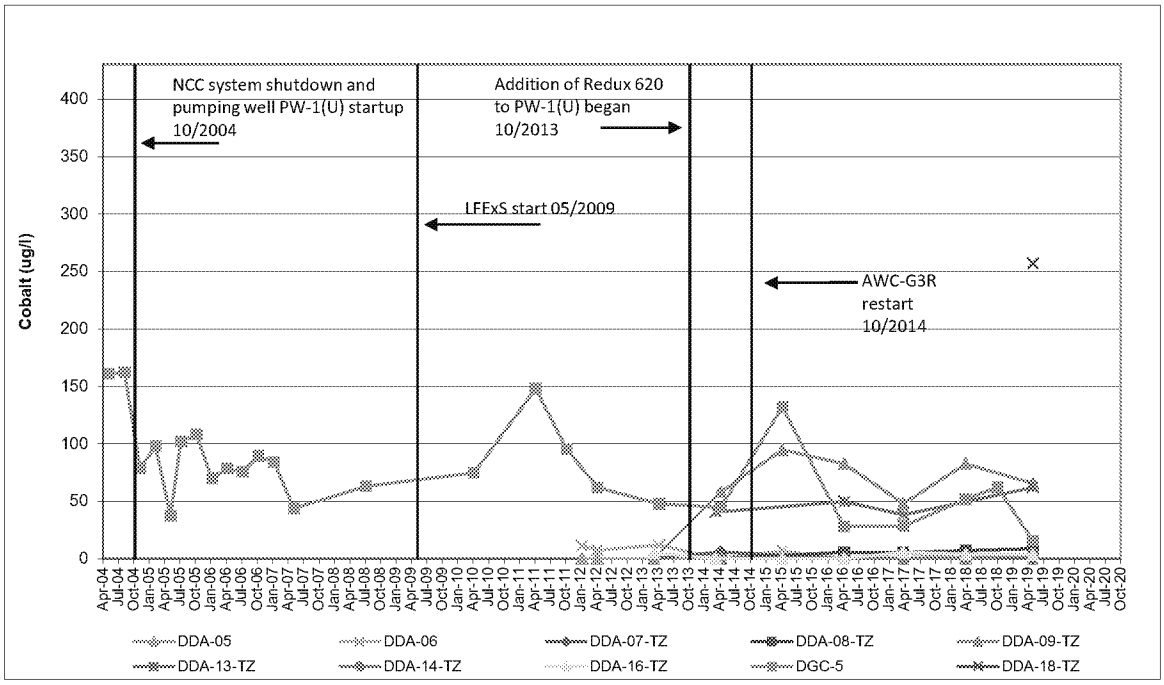

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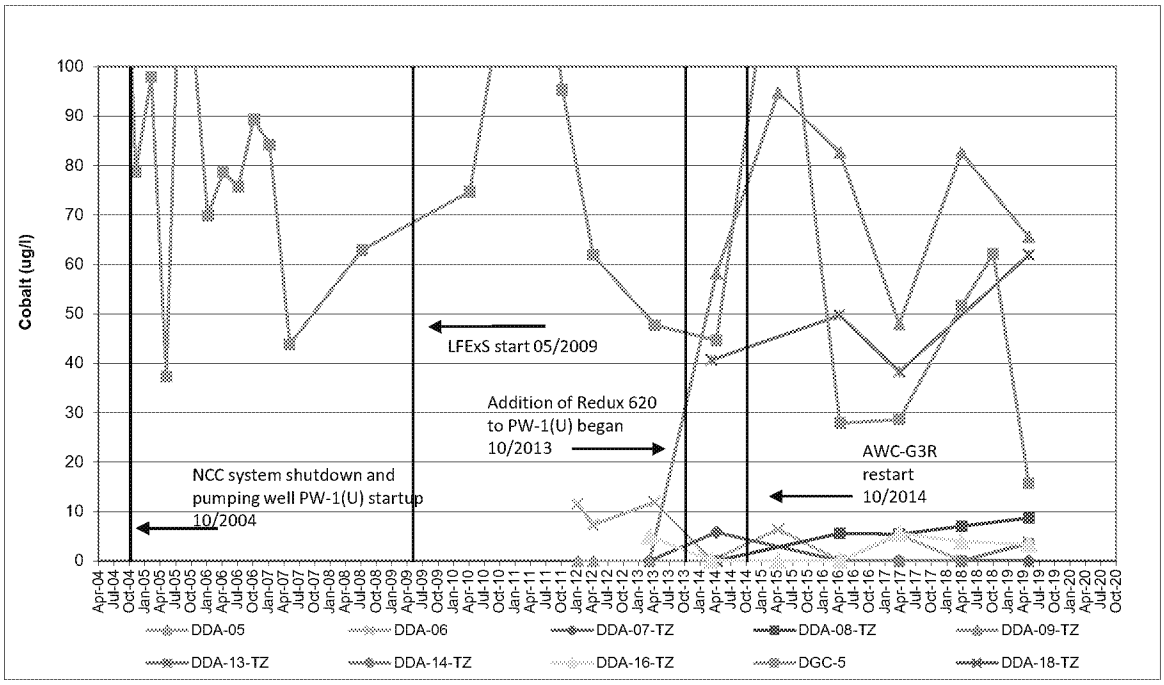

Cobalt - DDA to Well PW-1(U) UPCUTZ - Western and Central Monitoring Wells

Golder Associates	Project Number:	013-6052	**FIGURE F-4.1F**
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	**Delaware Sand and Gravel Superfund Site**
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual.xlsx

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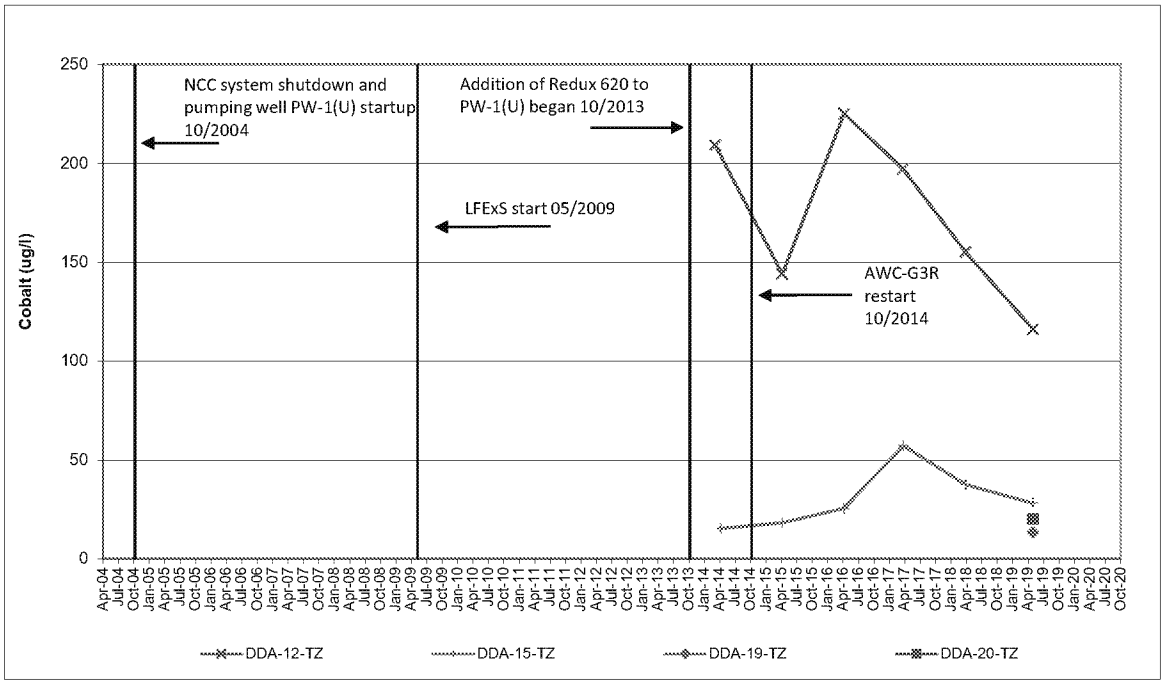

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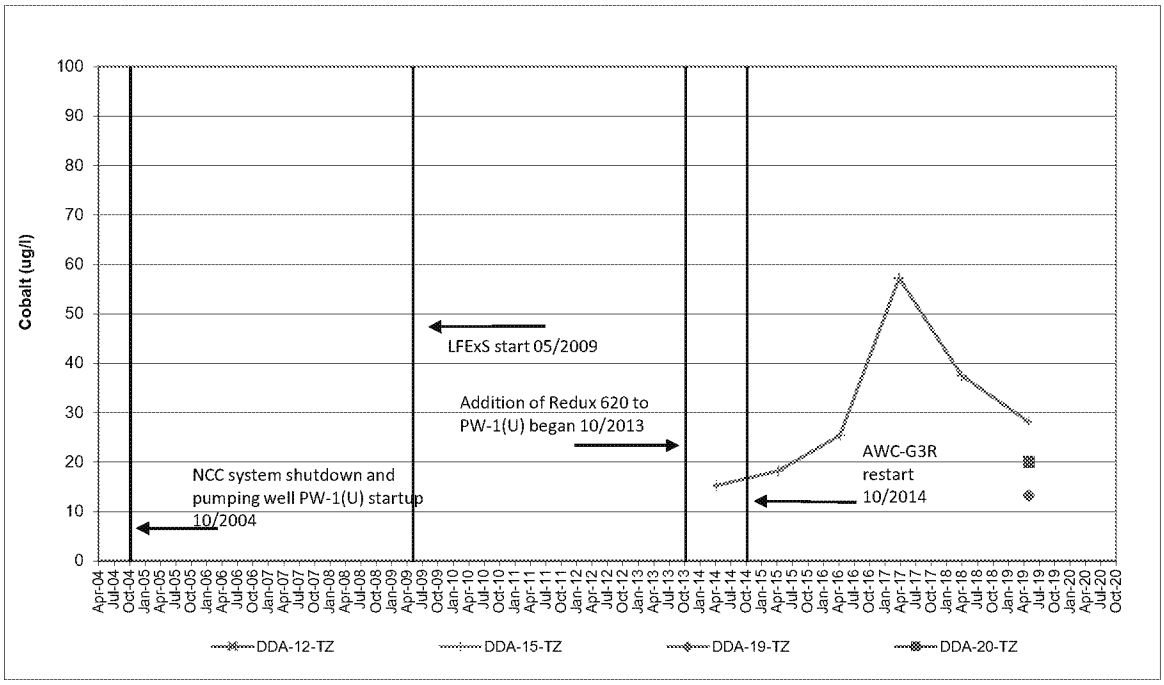
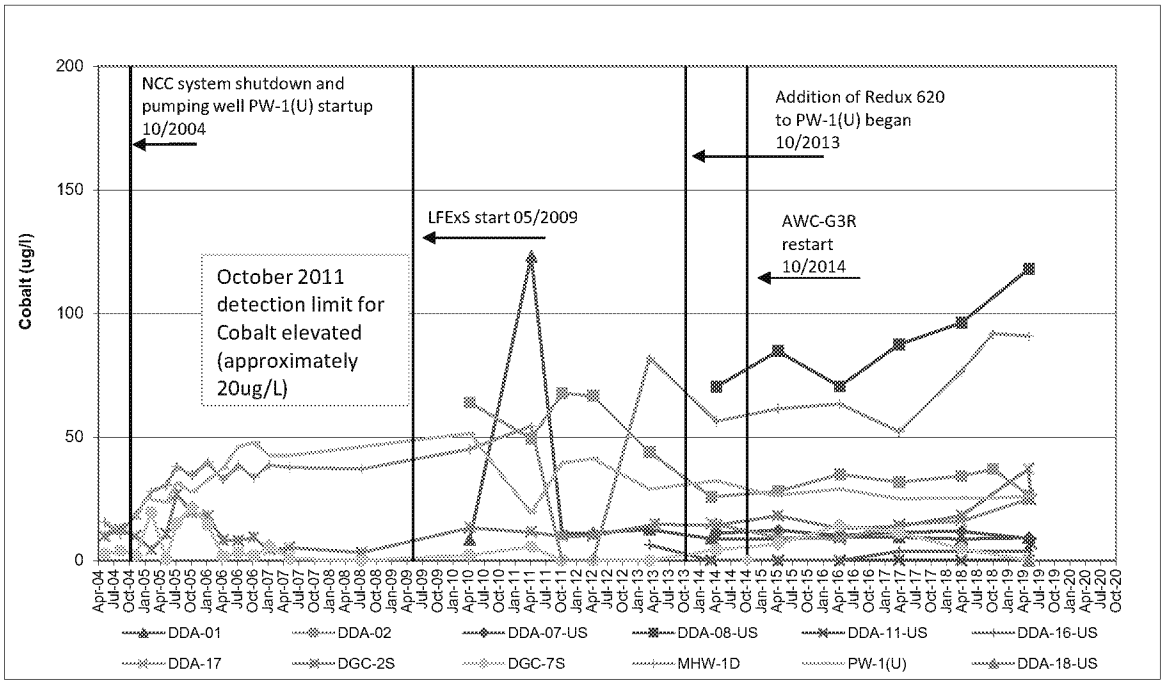
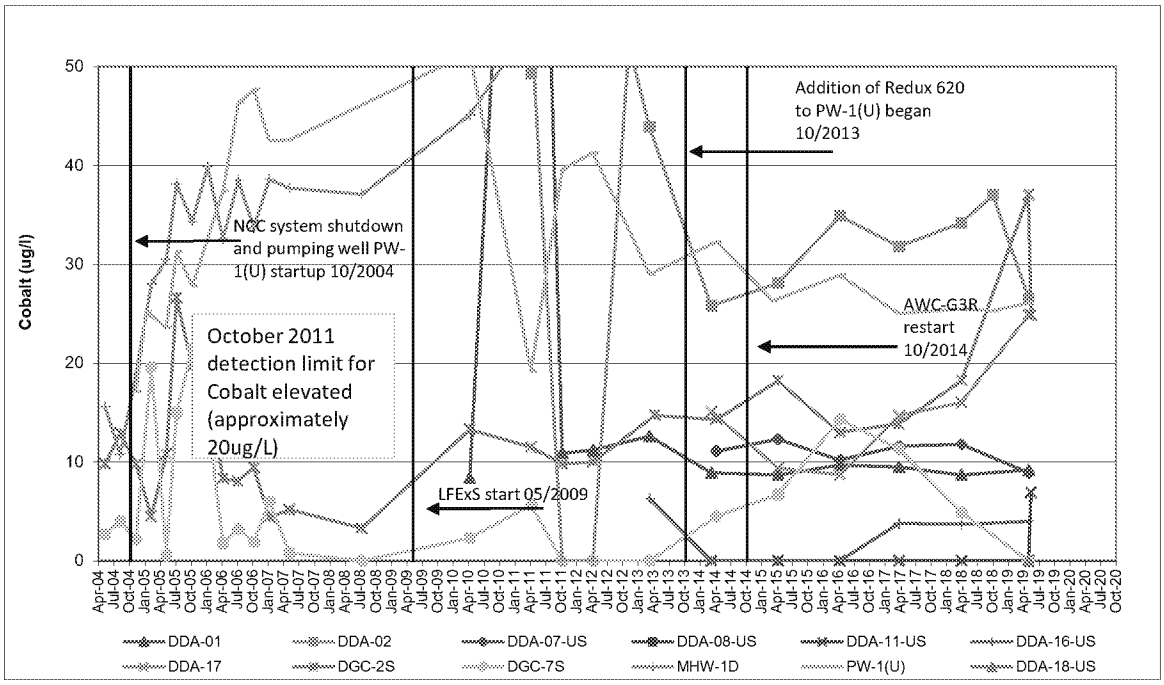


Cobalt - DDA to Well PW-1(U) UPCUTZ - Eastern Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-4.2F
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx





Cobalt - DDA to Well PW-1(U) UPA - Western and Central Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-5.1F
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual.xlsx

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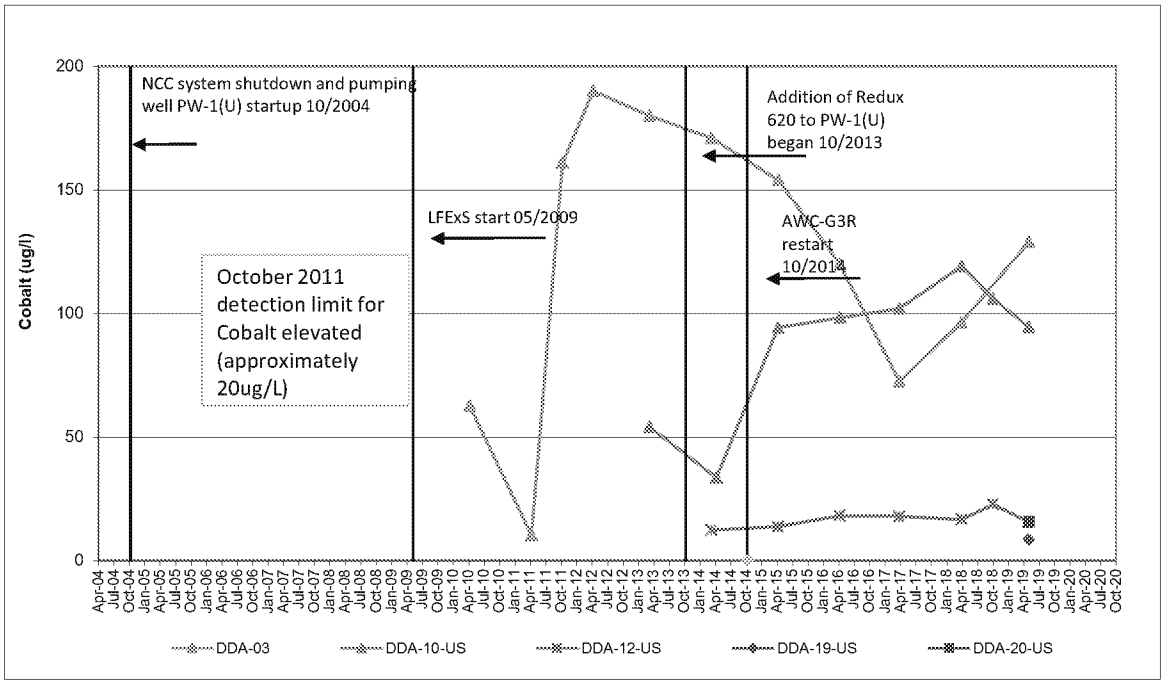

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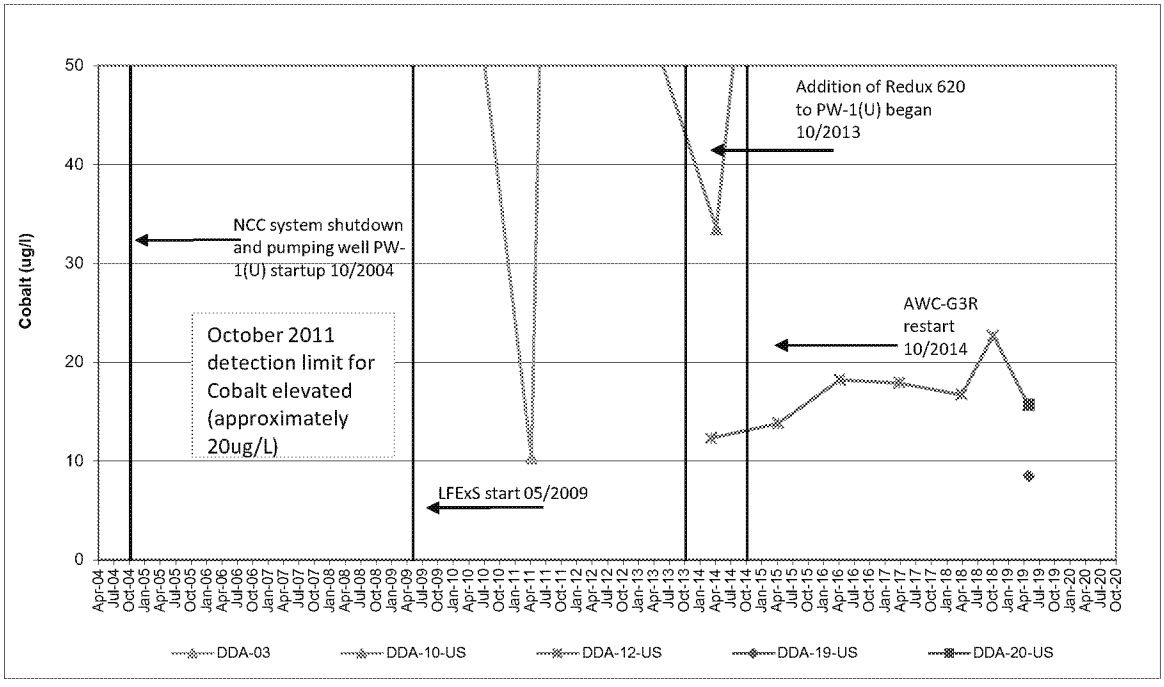

Cobalt - DDA to Well PW-1(U) UPA - Eastern Monitoring Wells

Golder Associates	Project Number:	013-6052		FIGURE F-5.2F
	Prepared by:	TK	1/8/2020	
	Checked by:	BPC	1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

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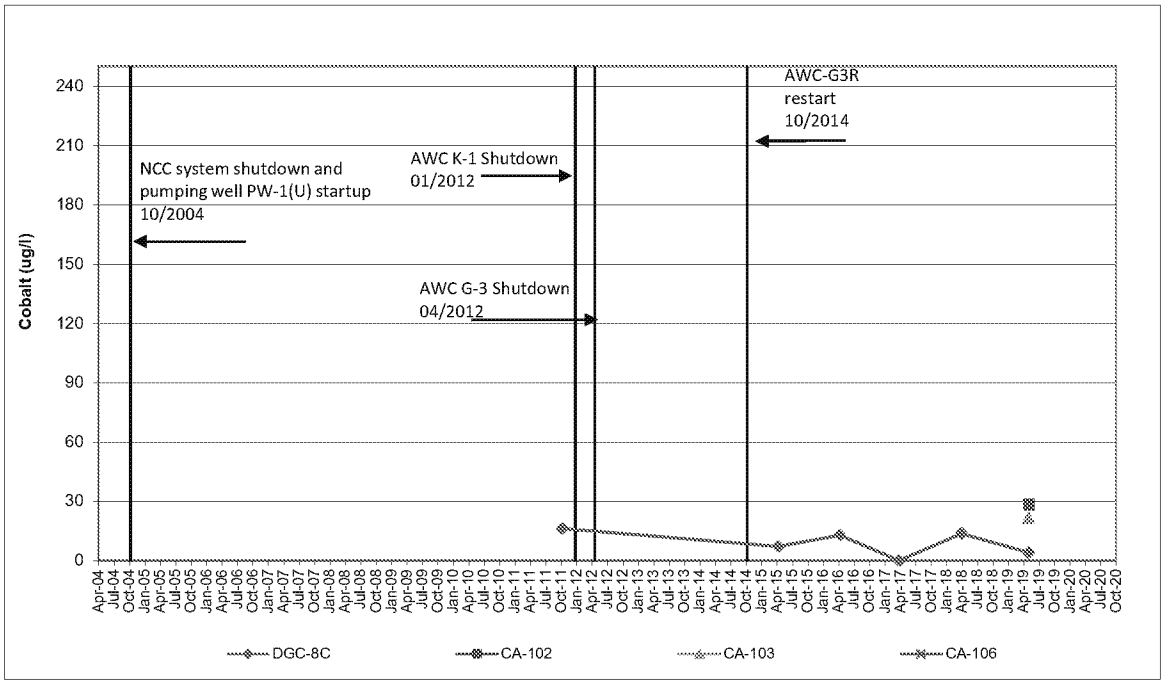

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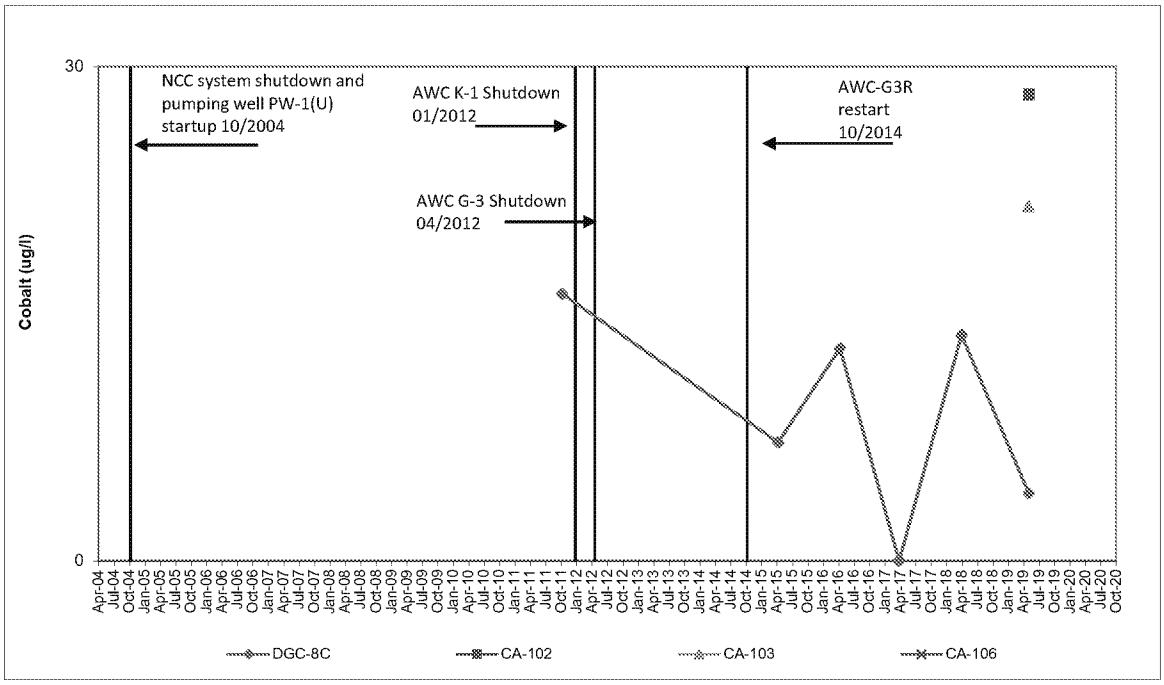

Cobalt - Downgradient of Well PW-1(U) - Columbia Monitoring Wells

Golder Associates	Project Number:	013-6052		FIGURE F-6.1F
	Prepared by:	TK	1/8/2020	
	Checked by:	BPC	1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual.xlsx

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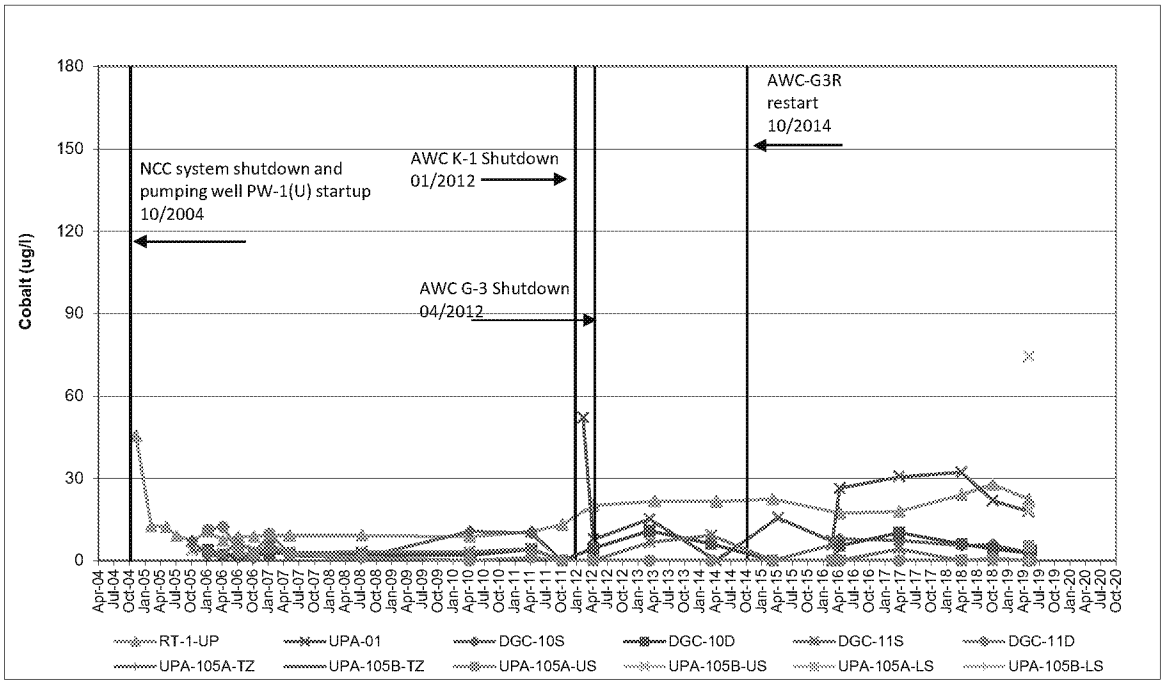

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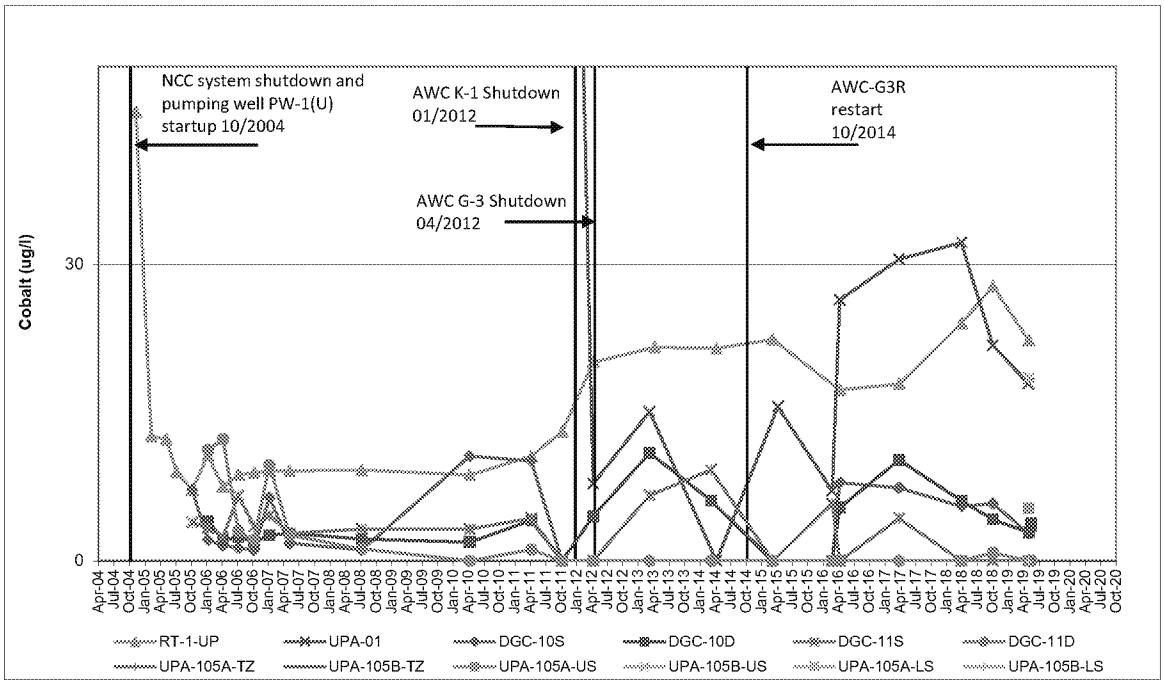


Cobalt - Downgradient of Well PW-1(U) - UPCUTZ and UPA - UPA-01 Area Monitoring Wells

Golder Associates

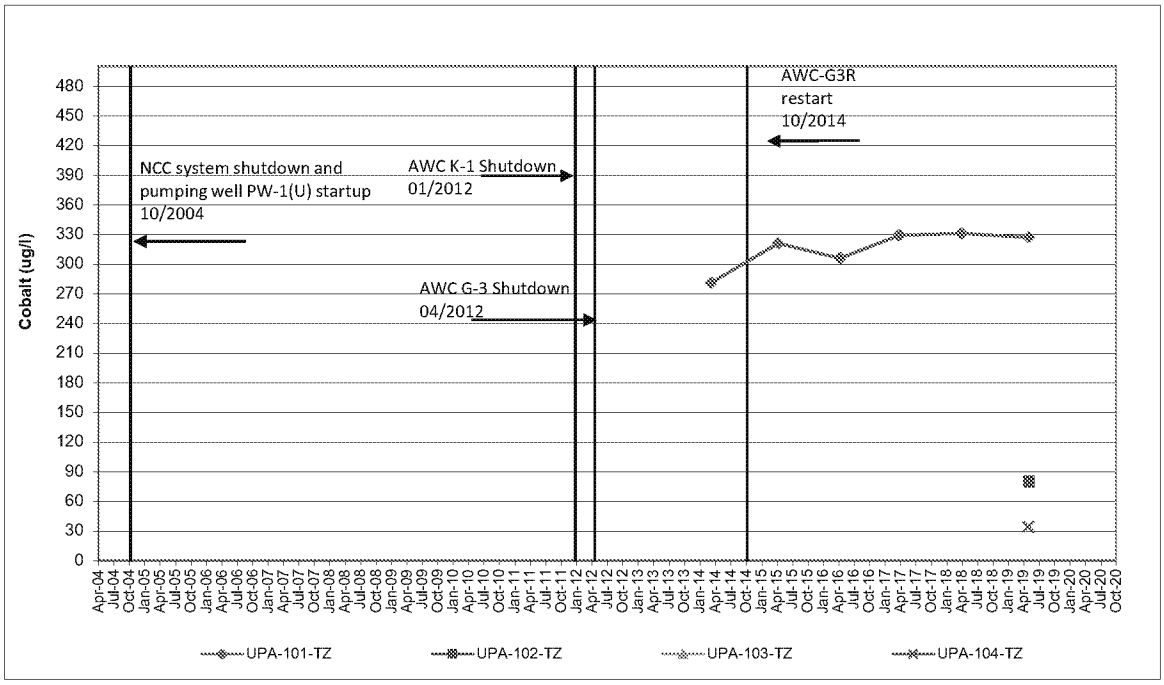
Project Number:	013-6052	
Prepared by:	TK	1/8/2020
Checked by:	BPC	1/8/2020
Reviewed by:	TAM	2/24/2020

FIGURE F-6.2F

Delaware Sand and Gravel Superfund Site

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE, <180 ug/l



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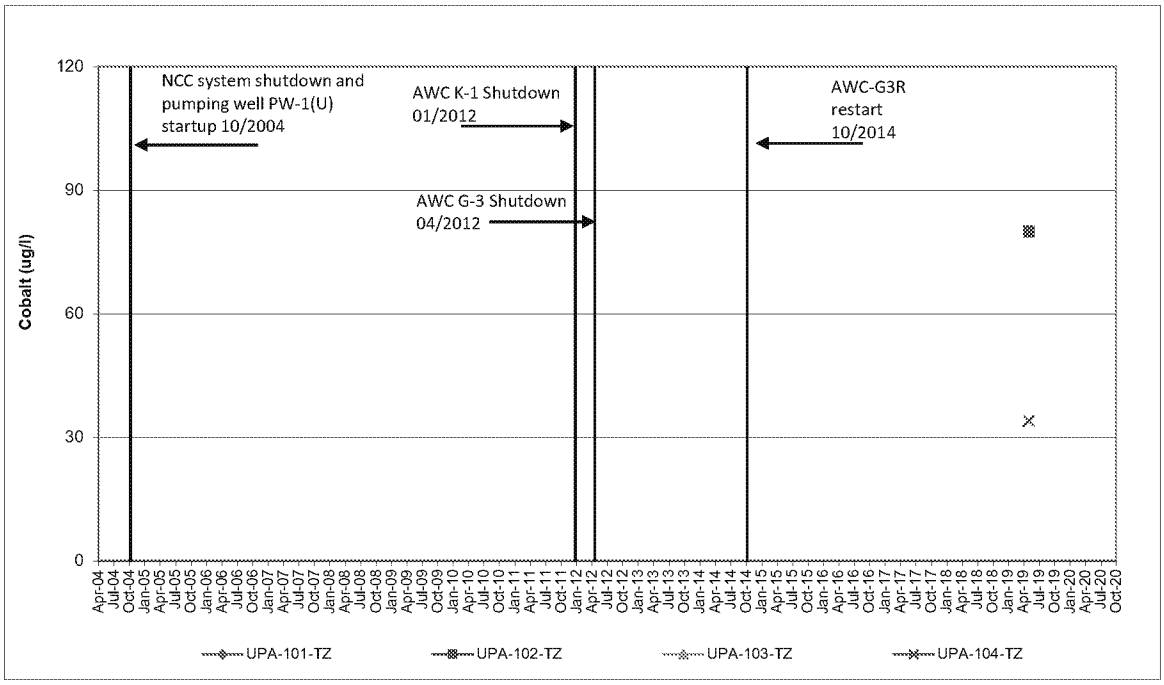
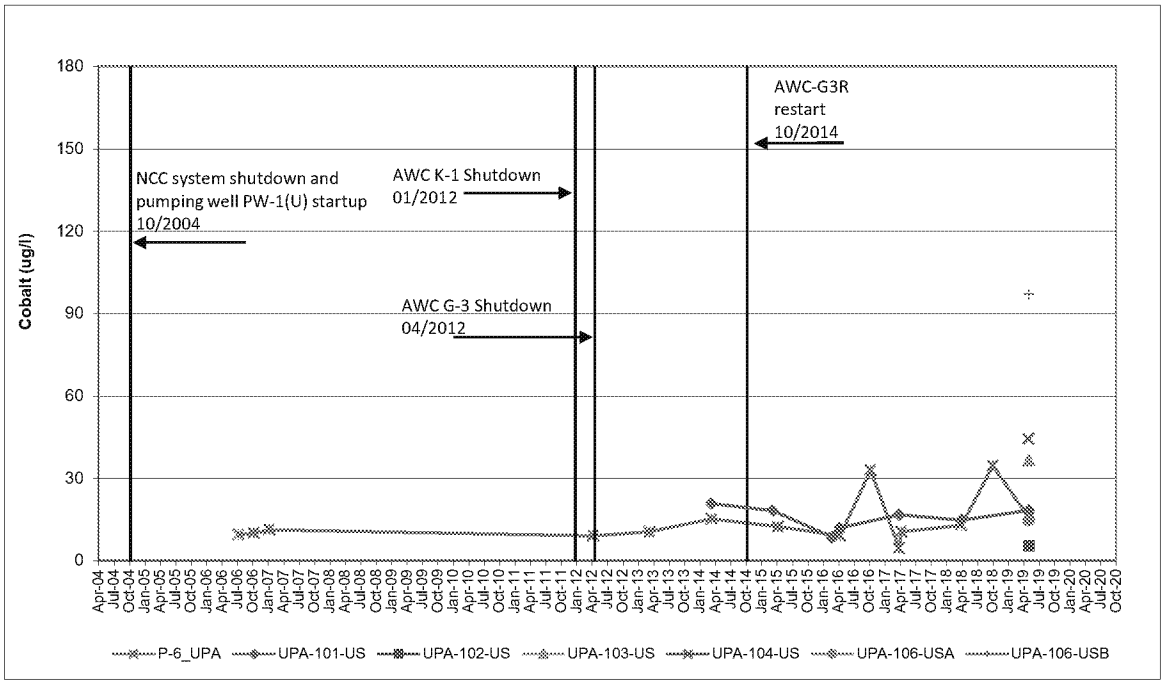


Cobalt - Downgradient of Well PW-1(U) - UPCUTZ - P-6 Area Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-6.3F
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

NORMAL SCALE, <180 ug/l



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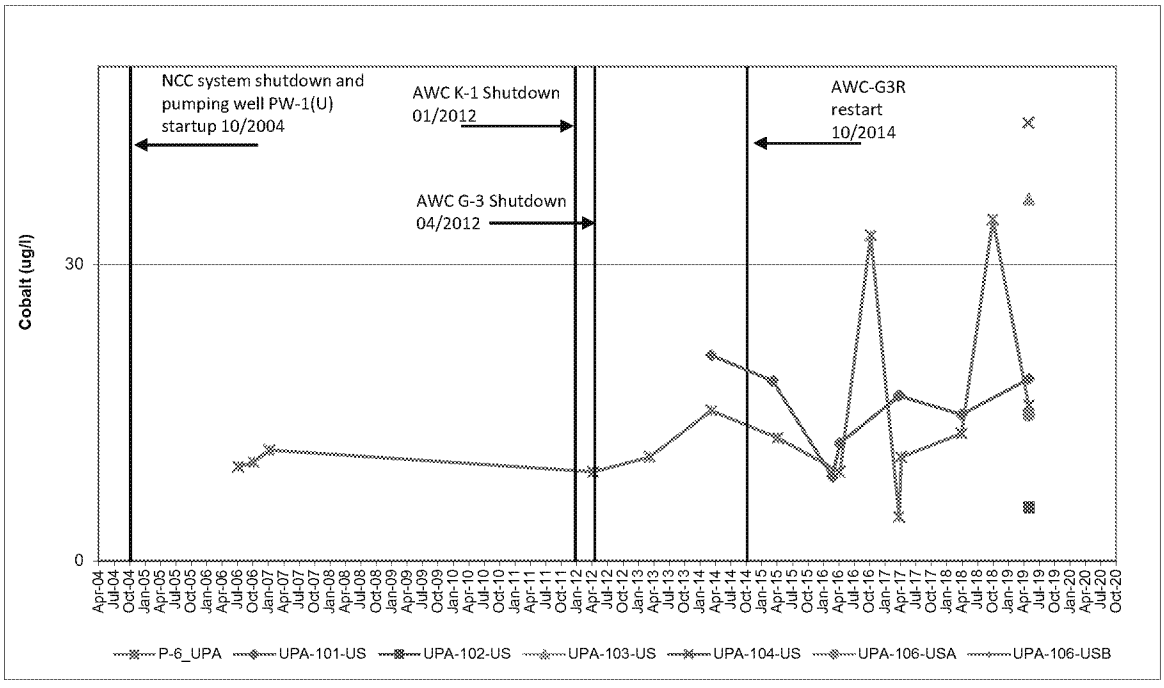

Cobalt - Downgradient of Well PW-1(U) - UPA Upper Sand - P-6 Area Monitoring Wells

Golder Associates	Project Number:	013-6052		FIGURE F-6.4F
	Prepared by:	TK	1/8/2020	
	Checked by:	BPC	1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM	2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

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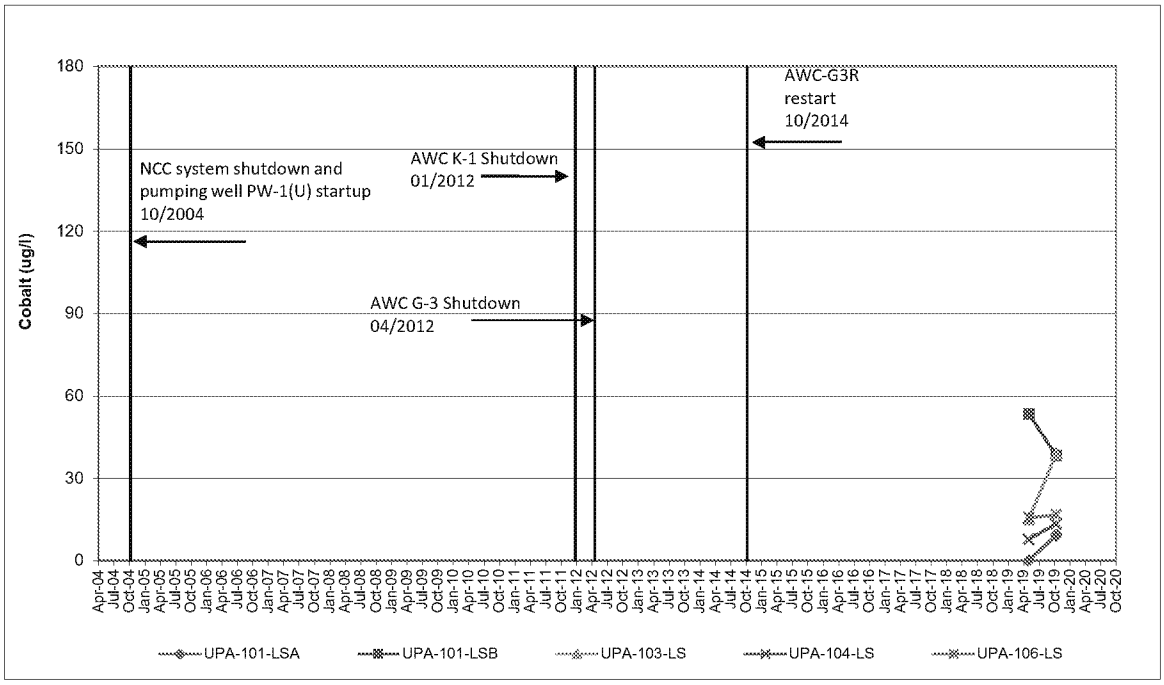

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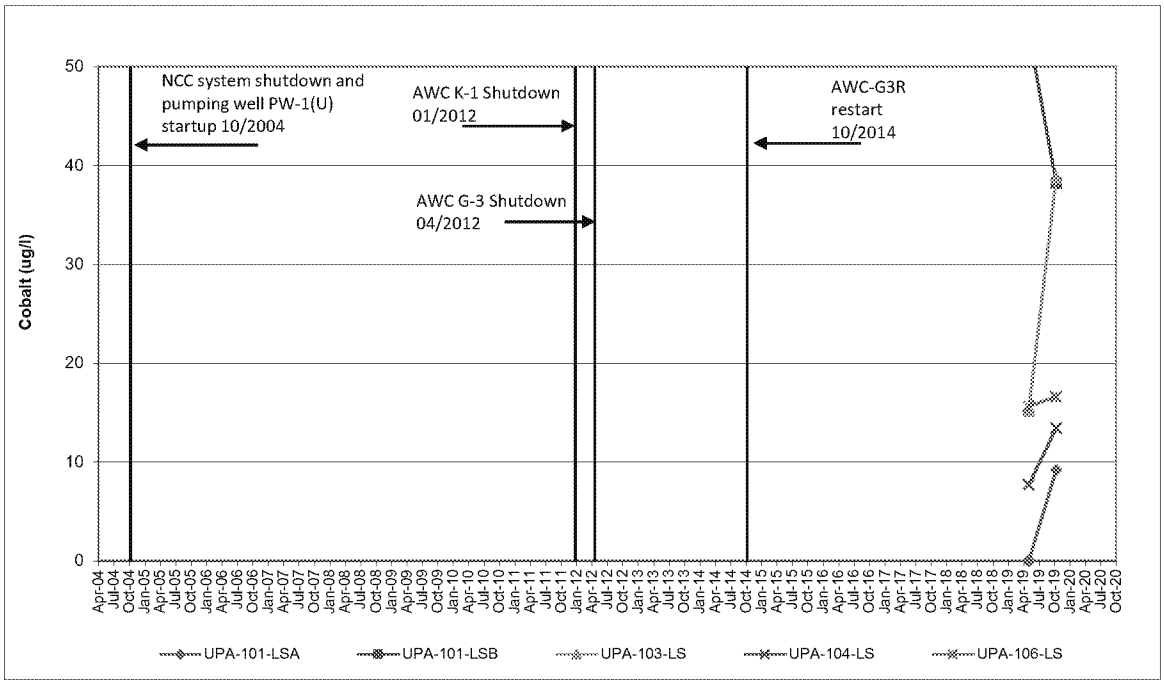
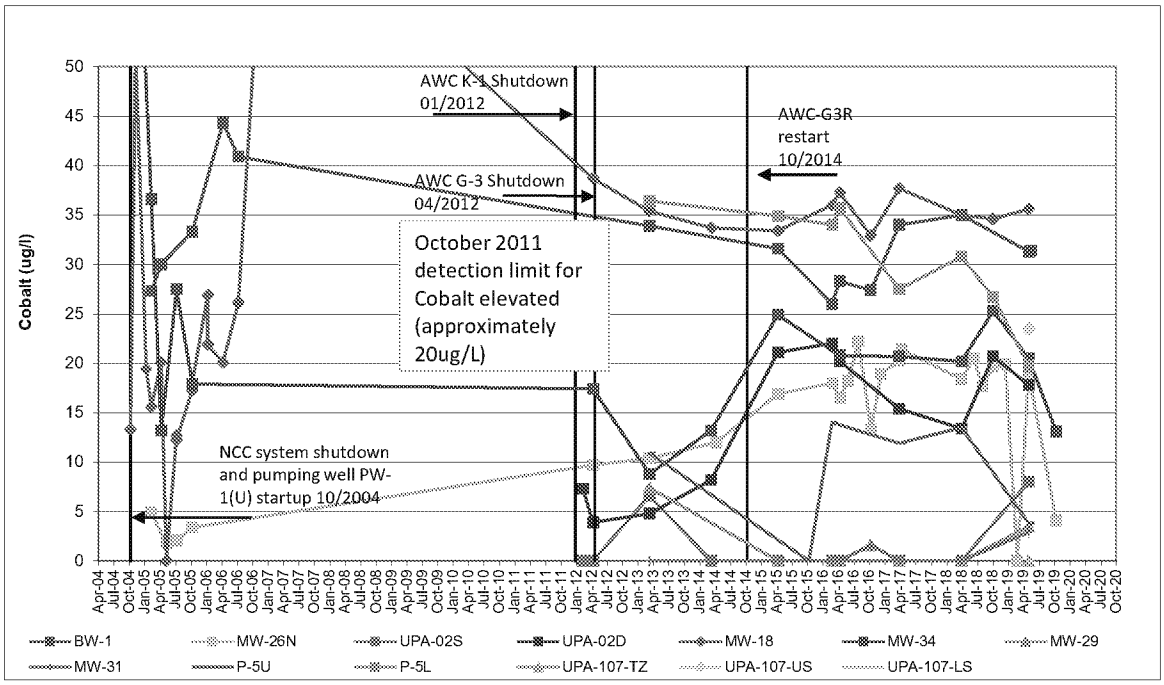


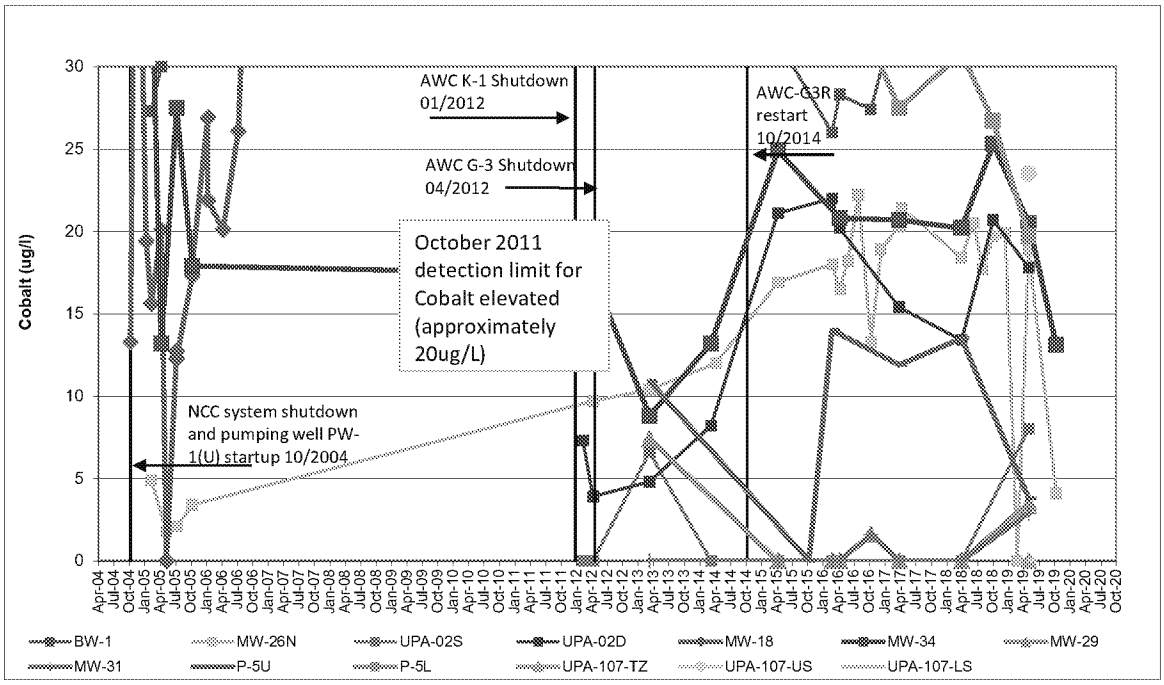
Cobalt - Downgradient of Well PW-1(U) - UPA Lower Sand - P-6 Area Monitoring Wells

Golder Associates

Project Number:	013-6052		FIGURE F-6.5F
Prepared by:	TK	1/8/2020	
Checked by:	BPC	1/8/2020	Delaware Sand and Gravel Superfund Site
Reviewed by:	TAM	2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

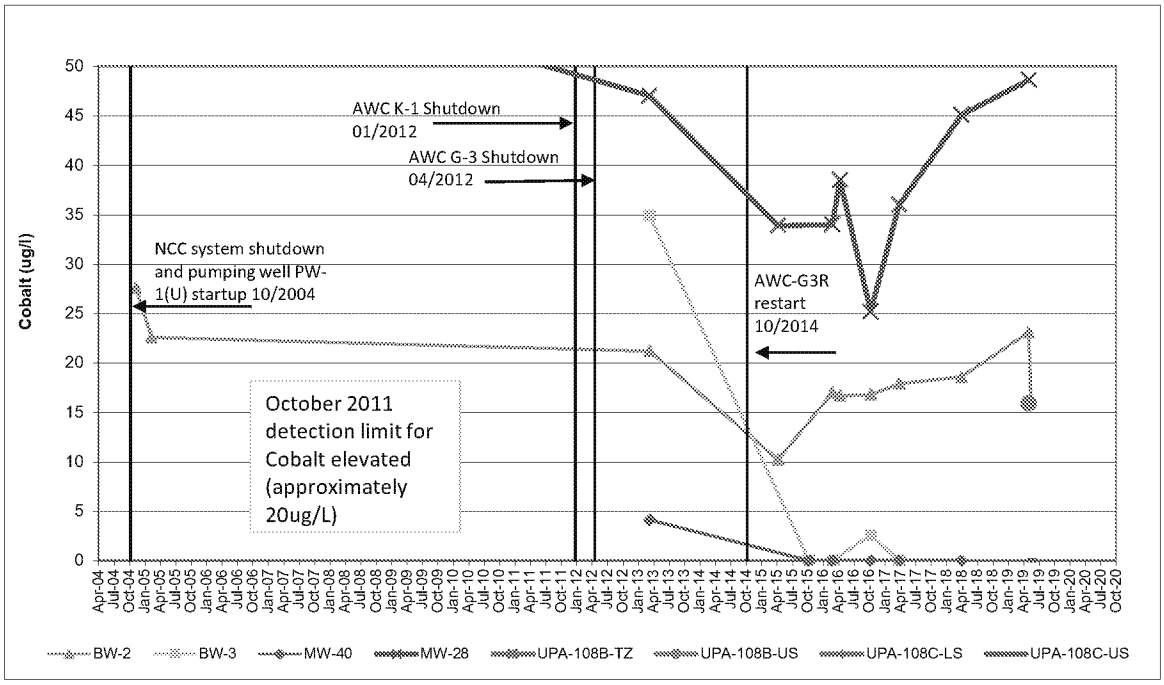


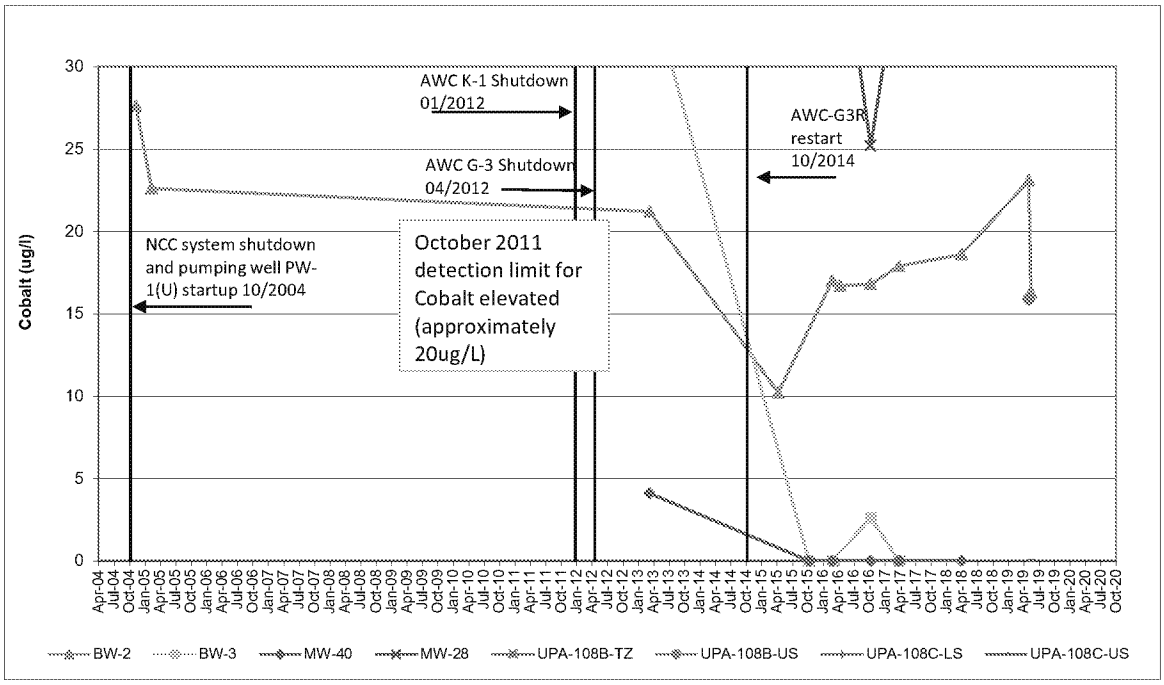


Cobalt - Downgradient of Well PW-1(U) - UPA - MW-18/34 Area Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-7.1F
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx





Cobalt - Downgradient of Well PW-1(U) - UPA - BW-2 Area Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-7.2F
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual.xlsx

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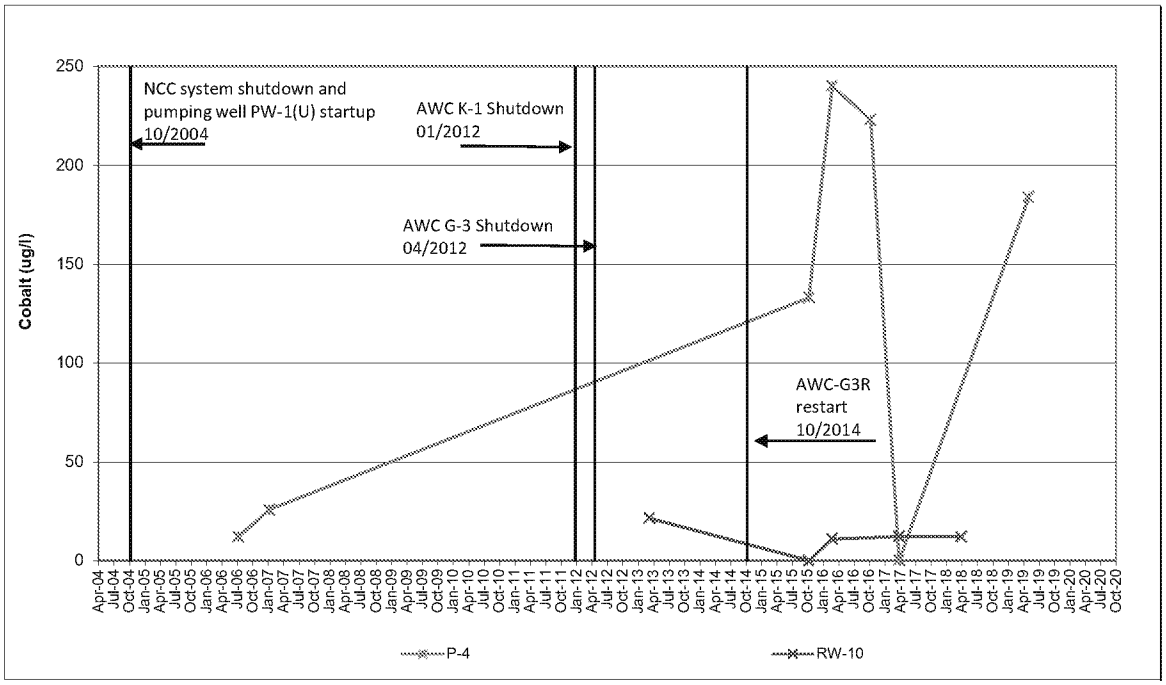

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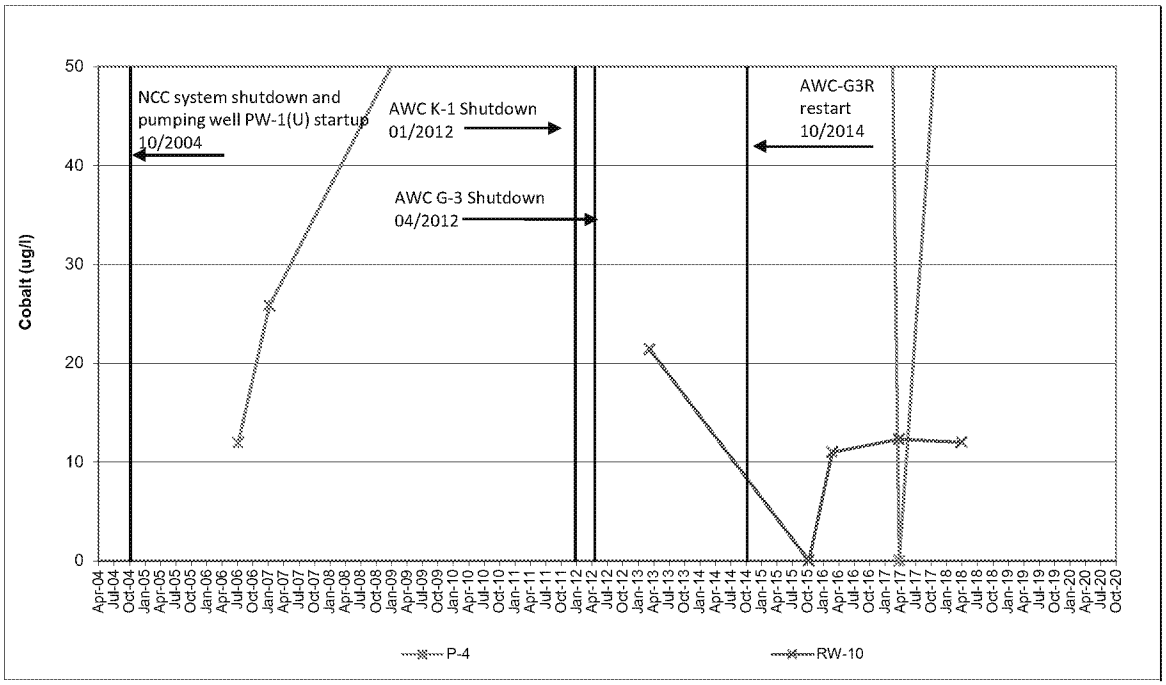
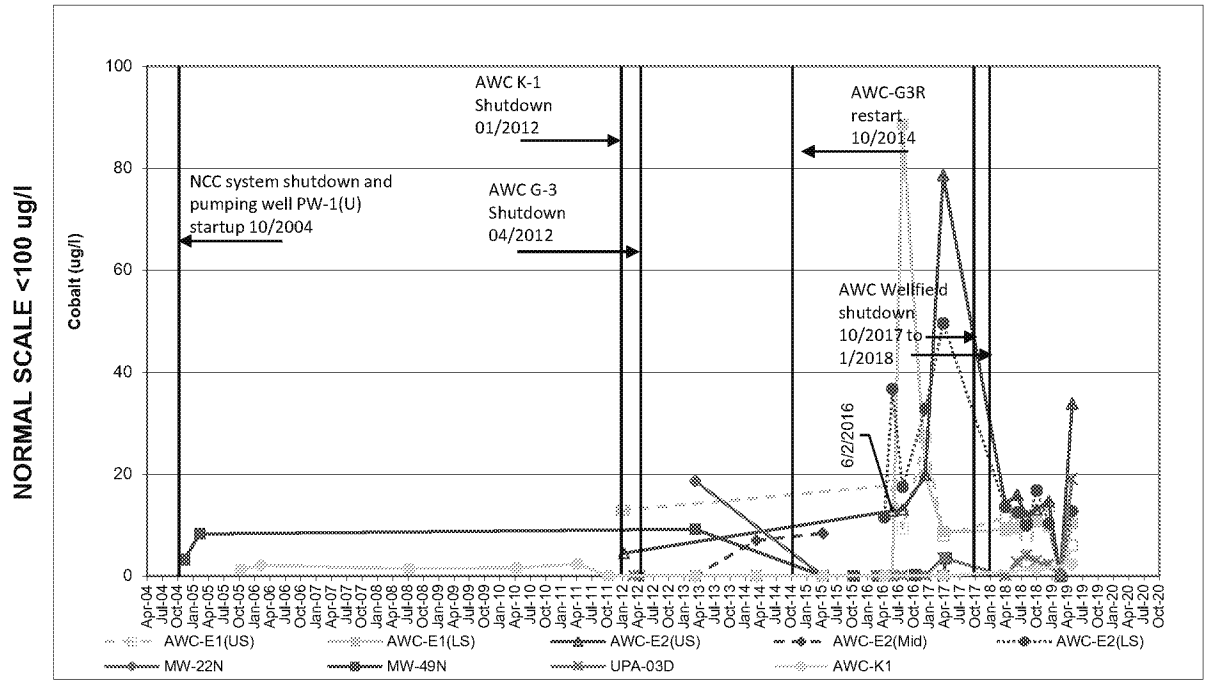
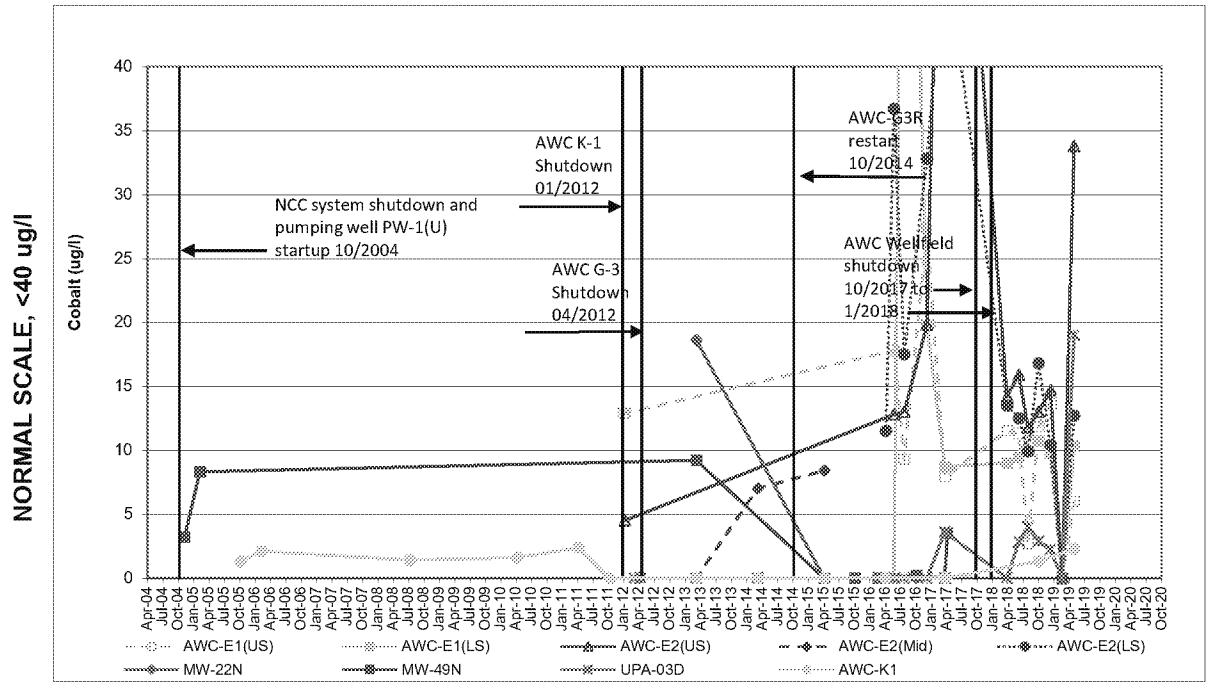


Cobalt - UPA Downgradient - Western Lobe NCC Monitoring Wells

Golder Associates	Project Number:	013-6052	FIGURE F-8F
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx





Cobalt - UPA Downgradient - Well Trends in Front of AWC Wellfield

Golder Associates	Project Number:	013-6052	FIGURE F-9F
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

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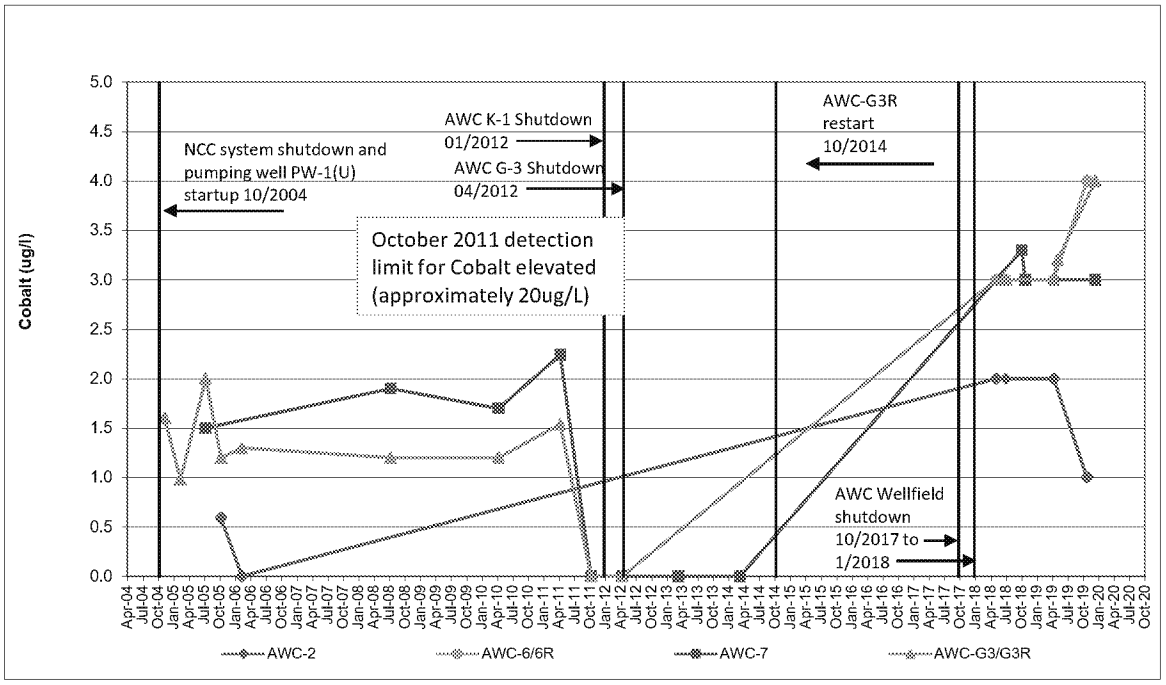

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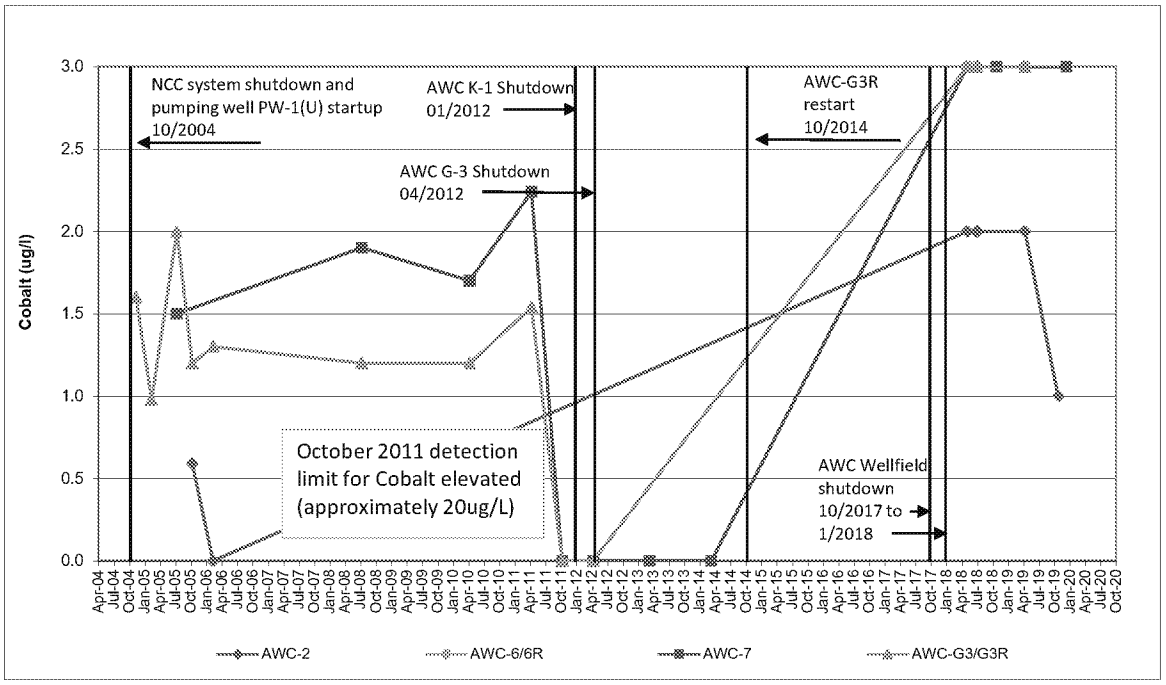


Cobalt - UPA Downgradient - AWC Well Trends

Golder Associates	Project Number:	013-6052	FIGURE F-10F
	Prepared by:	TK 1/8/2020	
	Checked by:	BPC 1/8/2020	Delaware Sand and Gravel Superfund Site
	Reviewed by:	TAM 2/24/2020	

\\Manchester\data\Projects\2001\013-6052 DS&G\Trends\46 Trends for 2019 Q4\DSG Trends V46.1 Semi-Annual .xlsx

APPENDIX G

Effluent Analytical Reports and Mass Loading Estimates

Appendix Table G-1
PW-1 (U) and TTO Metals Mass Loading Estimate
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

PW-1 (U) DISCHARGE	Permit Limit (lb/day) Based on Flow Rate (gpm) of	Permit Limit (ug/l) Based on Permitted Flow Rate																					
		Analytical Date	9/30/2016			3/27/2017			10/9/2017			4/12/2018			10/8/2018			5/14/2019			10/28/2019		
Total Metals (ug/L)	39	Method Number	E200.7	E245.1	ISM01.3	E200.7	E245.1	ISM01.3	E200.7	E245.1	ISM02.3	E200.7	E245.1	ISM02.3	E200.7	E245.1	ISM02.4	E200.8	E245.1	ISM02.4	E200.8	E245.1	ISM02.4
Arsenic	0.04215	90	<3.1		2.8	<3.1		2.8	<3.1		2.9	<4.2		2.1	<4.2		2.4	<2.5		2.4	3.4		4.2
Cadmium	0.00141	3	<1.6		<0.22	<1.6		<0.22	<1.6		<0.15	<2.1		<0.08	<2.1		<0.08	<2.5		<1	<2.5		0.084 J
Chromium	0.02342	50	<4.6		<0.13	<4.6		<0.13	<4.6		<0.13	<5.9		<0.46	<5.9		<0.46	<5		<2	<5		<2
Copper	0.04684	100	<5.6		1.3 J	2.4 J		38.7	<5.6		7.9	<5.5		1.2 J	<5.5		6.5(1)	9		11.2	**111**		5.6
Lead	0.02295	49	<4.3		2.2 B	0.38		4.1	<4.3		1.1	<3.8		0.98 J	<3.8		0.31 J	<1.5		1.6	2.5		0.66 J
Mercury	0.00014	0.3		<0.17	<0.044	3.3	<0.17	<0.075		<0.17	<0.075		<0.17	<0.075		<0.12	<0.075			<0.2		<0.2	<0.2
Molybdenum*	0.00000	0.0	<4.5			6.7			<4.5			<4.7			<4.7			<5			<5		
Nickel	0.35128	751	<5.5		3.9	<5.5		5.1	<5.5		5.3	<6.3		3.4	<6.3		3.4	<5		4.1	<5		3
Selenium	0.23419	500	<4.6		3.4 J	<4.6		3.9 J	<4.6		3.4 J	<4.2		1.8 J	<4.2		2.5 J	<2.5		3.5 J	<2.5		11.4
Zinc	0.08197	175	14.5 J		11.5	58.1		62	<5.2		22.4	33.4		30.2	<5.4		25.9	66.8		59.4	34.6		30.3

LFExS Discharge TTO	Permit Limit (lb/day) Based on Flow Rate (gpm) of	Permit Limit (ug/l) Based on Permitted Flow Rate														
		Analytical Date	9/30/2016		3/27/2017		10/9/2017		4/12/2018		10/8/2018		5/13/2019		10/28/2019	
Total Metals (ug/L)	12	Method Number	E200.7	E245.1	E200.7	E245.1	E200.7	E245.1	E200.7	E245.1	E200.7	E245.1	E200.8	E245.1	E200.8	E245.1
Arsenic	0.012970	90	6.8		4.3 J		7.1		6.4		6.9		4.2		3.4	
Cadmium	0.000432	3	<1.6		<1.6		<1.6		<2.1		<2.1		<2.5		<2.5	
Chromium	0.007206	15	<4.6		<4.6		<4.6		<5.9		<5.9		<5		2.1 J	
Copper	0.014412	31	12.4 J		15.7 J		<5.6		11.8 J		<5.5		7.6		12.5	
Lead	0.007062	15	6.9		<4.3		4.7 J		<3.8		<3.8		<1.5		1.1 J	
Mercury	0.000043	0.1		<0.17		<0.17		<0.17		<0.17		<0.12		<0.2		<0.2
Molybdenum*	0.000000	0.0	<4.5		<4.5		<4.5		<4.7		<4.7		<5		**8.7 B**	
Nickel	0.108086	231	15.5 J		11.9 J		8.6 J		11 J		9.8 J		12.2		6.2	
Selenium	0.072058	154	<4.6		<4.6		<4.6		<4.2		<4.2		<2.5		0.45 J	
Zinc	0.025220	54	10.8 J		17.2 J		8.4 J		15.4 J		6.5 J		9.8 J		10 J	

Notes:
lb/day = pounds per day
gpm = gallons per minute
ug/L = micrograms per liter
NA = Not Available
Detection limits use method detection limit (MDL) values
Detection limits exceed permit limit
J = estimated result
B = blank contamination
TTO = total toxic organics
Bold text indicates result exceeding permit limit
* Permit limit for molybdenum confirmed to be '0.000000 lb/day' based on review of discharge permit titled "Wastewater Discharge Permit WDP 04-107, Permit Revision 5"
(1) Duplicate analysis not within control limits.

Prepared by: KNG
Checked by: CH
Reviewed by: TAM

Appendix Table G-2
PW-1 (U) and TTO Wet Chemistry Mass Loading Estimate
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

PW-1 (U) DISCHARGE	Permit Limit (lb/day) Based on Flow Rate (gpm) of	Permit Limit (mg/l) Based on Permitted Flow Rate							
Wet Chemistry (mg/L)	39	Analytical Date	9/30/2016	3/27/2017	10/9/2017	4/12/2018	10/8/2018	5/14/2019	10/22/2019
Cyanide, Total	0.2295	0.49	<0.01	<0.01	0.0019 J	0.0042 J	0.0015 J	2.4 J	<10
Ammonia (SM4500-NH3)	16.393	35	0.65	0.6	0.49	0.23	0.41	0.38	0.4
Biochemical Oxygen Demand (SM5210B)	234.187	500	4.1	3.5	3.2	1.6	2.4	3.3	2.6
Total Suspended Solids (SM2540D)	234.187	500	13.5	17	13.1	14	23.1	6.7	<6.6

LFExS Discharge TTO	Permit Limit (lb/day) Based on Flow Rate (gpm) of	Permit Limit (mg/l) Based on Permitted Flow Rate							
Wet Chemistry (mg/L)	12	Analytical Date	9/30/2016	3/27/2017	10/9/2017	4/12/2018	10/8/2018	5/13/2019	10/22/2019
Cyanide, Total	0.070616	0.49	0.0036 J	<0.01	<0.002	<0.002	0.0034 J	<0.01	<0.01
Ammonia (SM4500-NH3)	5.044	35	1.3	1	0.54	0.89	0.99 B	0.91	0.61
Biochemical Oxygen Demand (SM5210B)	72.058	500	2.1	3.1	1.8	<1.5	2.6	< 1	1.5
Total Suspended Solids (SM2540D)	72.058	500	55.6	58.8	56.4	49.2	53.2	40.7	38

Notes:
lb/day = pounds per day
gpm = gallons per minute
mg/L = milligrams per liter
Detection limits use method detection limit (MDL) values
J = estimated result
B = blank contamination
TTO = total toxic organics

Prepared by: KNG
Checked by: CH
Reviewed by: TAM

Client Sample ID: TTO — Lab Sample ID: 460-195117-1

Date Collected: 10/28/19 12:25 **Matrix: Water**
Date Received: 10/28/19 20:20

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	0.45	U	1.0	0.45	ug/L			10/30/19 11:04	1
Vinyl chloride	0.34	U	1.0	0.34	ug/L			10/30/19 11:04	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/30/19 11:04	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/30/19 11:04	1
1,1-Dichloroethene	0.12	U	1.0	0.12	ug/L			10/30/19 11:04	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/30/19 11:04	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/30/19 11:04	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/30/19 11:04	1
1,2-Dichloroethane	0.84	U	1.0	0.84	ug/L			10/30/19 11:04	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/30/19 11:04	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/30/19 11:04	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/30/19 11:04	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/30/19 11:04	1
Trichloroethene	**0.36**	**J**	1.0	0.31	ug/L			10/30/19 11:04	1
Dibromochloromethane	0.13	U	1.0	0.13	ug/L			10/30/19 11:04	1
1,1,2-Trichloroethane	0.15	U	1.0	0.15	ug/L			10/30/19 11:04	1
Benzene	**2.9**		1.0	0.43	ug/L			10/30/19 11:04	1
trans-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/30/19 11:04	1
2-Chloroethyl vinyl ether	0.91	U	1.0	0.91	ug/L			10/30/19 11:04	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/30/19 11:04	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/30/19 11:04	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/30/19 11:04	1
Toluene	0.38	U	1.0	0.38	ug/L			10/30/19 11:04	1
Chlorobenzene	**2.2**		1.0	0.38	ug/L			10/30/19 11:04	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/30/19 11:04	1
Acrolein	1.1	U	4.0	1.1	ug/L			10/30/19 11:04	1
Acrylonitrile	0.77	U	2.0	0.77	ug/L			10/30/19 11:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*60 - 140*		*10/30/19 11:04*	*1*
Toluene-d8 (Surr)	*99*		*60 - 140*		*10/30/19 11:04*	*1*
Bromofluorobenzene	*102*		*60 - 140*		*10/30/19 11:04*	*1*
Dibromofluoromethane (Surr)	*108*		*60 - 140*		*10/30/19 11:04*	*1*

Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	1.2	U	10	1.2	ug/L		10/30/19 09:28	10/30/19 22:06	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		10/30/19 09:28	10/30/19 22:06	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		10/30/19 09:28	10/30/19 22:06	1
2,4-Dimethylphenol	0.66	U	10	0.66	ug/L		10/30/19 09:28	10/30/19 22:06	1
2,4-Dichlorophenol	1.2	U	10	1.2	ug/L		10/30/19 09:28	10/30/19 22:06	1
4-Chloro-3-methylphenol	1.2	U	10	1.2	ug/L		10/30/19 09:28	10/30/19 22:06	1
2,4,6-Trichlorophenol	0.70	U	10	0.70	ug/L		10/30/19 09:28	10/30/19 22:06	1
2,4-Dinitrophenol	2.0	U	20	2.0	ug/L		10/30/19 09:28	10/30/19 22:06	1
4-Nitrophenol	1.7	U	20	1.7	ug/L		10/30/19 09:28	10/30/19 22:06	1
4,6-Dinitro-2-methylphenol	3.4	U	20	3.4	ug/L		10/30/19 09:28	10/30/19 22:06	1
Pentachlorophenol	3.0	U	20	3.0	ug/L		10/30/19 09:28	10/30/19 22:06	1
N-Nitrosodimethylamine	1.4	U	10	1.4	ug/L		10/30/19 09:28	10/30/19 22:06	1
Bis(2-chloroethyl)ether	**7.0**		1.0	0.69	ug/L		10/30/19 09:28	10/30/19 22:06	1
1,3-Dichlorobenzene	2.0	U	10	2.0	ug/L		10/30/19 09:28	10/30/19 22:06	1

Client Sample ID: TTO — Lab Sample ID: 460-195117-1

Date Collected: 10/28/19 12:25 **Matrix: Water**
Date Received: 10/28/19 20:20

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/30/19 09:28	10/30/19 22:06	1
1,2-Dichlorobenzene	1.3	U	10	1.3	ug/L		10/30/19 09:28	10/30/19 22:06	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		10/30/19 09:28	10/30/19 22:06	1
Hexachloroethane	1.2	U	2.0	1.2	ug/L		10/30/19 09:28	10/30/19 22:06	1
Nitrobenzene	1.6	U	2.0	1.6	ug/L		10/30/19 09:28	10/30/19 22:06	1
Isophorone	0.80	U	10	0.80	ug/L		10/30/19 09:28	10/30/19 22:06	1
Bis(2-chloroethoxy)methane	0.64	U	10	0.64	ug/L		10/30/19 09:28	10/30/19 22:06	1
1,2,4-Trichlorobenzene	1.3	U	2.0	1.3	ug/L		10/30/19 09:28	10/30/19 22:06	1
Naphthalene	1.1	U	10	1.1	ug/L		10/30/19 09:28	10/30/19 22:06	1
Hexachlorobutadiene	0.44	U	1.0	0.44	ug/L		10/30/19 09:28	10/30/19 22:06	1
Hexachlorocyclopentadiene	1.7	U	10	1.7	ug/L		10/30/19 09:28	10/30/19 22:06	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		10/30/19 09:28	10/30/19 22:06	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		10/30/19 09:28	10/30/19 22:06	1
Acenaphthylene	0.82	U	10	0.82	ug/L		10/30/19 09:28	10/30/19 22:06	1
2,6-Dinitrotoluene	0.53	U	2.0	0.53	ug/L		10/30/19 09:28	10/30/19 22:06	1
Acenaphthene	1.1	U	10	1.1	ug/L		10/30/19 09:28	10/30/19 22:06	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		10/30/19 09:28	10/30/19 22:06	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		10/30/19 09:28	10/30/19 22:06	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		10/30/19 09:28	10/30/19 22:06	1
Fluorene	0.91	U	10	0.91	ug/L		10/30/19 09:28	10/30/19 22:06	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		10/30/19 09:28	10/30/19 22:06	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		10/30/19 09:28	10/30/19 22:06	1
Hexachlorobenzene	0.91	U	1.0	0.91	ug/L		10/30/19 09:28	10/30/19 22:06	1
Phenanthrene	0.58	U	10	0.58	ug/L		10/30/19 09:28	10/30/19 22:06	1
Anthracene	0.63	U	10	0.63	ug/L		10/30/19 09:28	10/30/19 22:06	1
Di-n-butyl phthalate	0.75	U	10	0.75	ug/L		10/30/19 09:28	10/30/19 22:06	1
Fluoranthene	0.84	U	10	0.84	ug/L		10/30/19 09:28	10/30/19 22:06	1
Pyrene	1.6	U	10	1.6	ug/L		10/30/19 09:28	10/30/19 22:06	1
Benzidine	5.9	U	10	5.9	ug/L		10/30/19 09:28	10/30/19 22:06	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		10/30/19 09:28	10/30/19 22:06	1
3,3'-Dichlorobenzidine	1.6	U	10	1.6	ug/L		10/30/19 09:28	10/30/19 22:06	1
Benzo[a]anthracene	0.59	U	1.0	0.59	ug/L		10/30/19 09:28	10/30/19 22:06	1
Chrysene	0.91	U	2.0	0.91	ug/L		10/30/19 09:28	10/30/19 22:06	1
Bis(2-ethylhexyl) phthalate	1.0	U	2.0	1.0	ug/L		10/30/19 09:28	10/30/19 22:06	1
Di-n-octyl phthalate	1.4	U	10	1.4	ug/L		10/30/19 09:28	10/30/19 22:06	1
Benzo[b]fluoranthene	1.4	U	2.0	1.4	ug/L		10/30/19 09:28	10/30/19 22:06	1
Benzo[a]pyrene	0.68	U	1.0	0.68	ug/L		10/30/19 09:28	10/30/19 22:06	1
Indeno[1,2,3-cd]pyrene	1.3	U	2.0	1.3	ug/L		10/30/19 09:28	10/30/19 22:06	1
Dibenz(a,h)anthracene	0.74	U	1.0	0.74	ug/L		10/30/19 09:28	10/30/19 22:06	1
Benzo[g,h,i]perylene	1.3	U	10	1.3	ug/L		10/30/19 09:28	10/30/19 22:06	1
1,2-Diphenylhydrazine	0.37	U	10	0.37	ug/L		10/30/19 09:28	10/30/19 22:06	1
2,3,7,8-TCDD	1.0	U	1.0	1.0	ug/L		10/30/19 09:28	10/30/19 22:06	1
bis (2-chloroisopropyl) ether	0.63	U	10	0.63	ug/L		10/30/19 09:28	10/30/19 22:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*116*		*15 - 314*	*10/30/19 09:28*	*10/30/19 22:06*	*1*
Phenol-d5	*45*		*8 - 424*	*10/30/19 09:28*	*10/30/19 22:06*	*1*
Terphenyl-d14	*118*		*28 - 150*	*10/30/19 09:28*	*10/30/19 22:06*	*1*
2-Fluorophenol	*65*		*10 - 76*	*10/30/19 09:28*	*10/30/19 22:06*	*1*
2,4,6-Tribromophenol	*132*		*14 - 149*	*10/30/19 09:28*	*10/30/19 22:06*	*1*

Client Sample ID: TTO — Lab Sample ID: 460-195117-1

Date Collected: 10/28/19 12:25 **Matrix: Water**
Date Received: 10/28/19 20:20

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*105*		*44 - 129*	*10/30/19 09:28*	*10/30/19 22:06*	*1*

Method: 608.3 - Organochlorine Pesticides/PCBs in Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	0.012	U	0.020	0.012	ug/L		10/29/19 17:13	10/30/19 12:16	1
alpha-BHC	0.013	U *	0.020	0.013	ug/L		10/29/19 17:13	10/30/19 12:16	1
beta-BHC	0.015	U	0.030	0.015	ug/L		10/29/19 17:13	10/30/19 12:16	1
delta-BHC	0.0090	U	0.020	0.0090	ug/L		10/29/19 17:13	10/30/19 12:16	1
gamma-BHC (Lindane)	0.013	U	0.030	0.013	ug/L		10/29/19 17:13	10/30/19 12:16	1
Chlordane	0.093	U	0.50	0.093	ug/L		10/29/19 17:13	10/30/19 12:16	1
4,4'-DDD	0.018	U	0.040	0.018	ug/L		10/29/19 17:13	10/30/19 12:16	1
4,4'-DDE	0.018	U	0.030	0.018	ug/L		10/29/19 17:13	10/30/19 12:16	1
4,4'-DDT	0.025	U	0.030	0.025	ug/L		10/29/19 17:13	10/30/19 12:16	1
Dieldrin	0.016	U	0.020	0.016	ug/L		10/29/19 17:13	10/30/19 12:16	1
Endosulfan I	0.014	U	0.030	0.014	ug/L		10/29/19 17:13	10/30/19 12:16	1
Endosulfan II	0.017	U	0.030	0.017	ug/L		10/29/19 17:13	10/30/19 12:16	1
Endosulfan sulfate	0.015	U *	0.030	0.015	ug/L		10/29/19 17:13	10/30/19 12:16	1
Endrin	0.021	U *	0.030	0.021	ug/L		10/29/19 17:13	10/30/19 12:16	1
Endrin aldehyde	0.024	U	0.030	0.024	ug/L		10/29/19 17:13	10/30/19 12:16	1
Heptachlor	0.014	U	0.030	0.014	ug/L		10/29/19 17:13	10/30/19 12:16	1
Heptachlor epoxide	0.014	U	0.030	0.014	ug/L		10/29/19 17:13	10/30/19 12:16	1
Toxaphene	0.20	U	0.50	0.20	ug/L		10/29/19 17:13	10/30/19 12:16	1
Aroclor 1016	0.030	U	1.0	0.030	ug/L		10/29/19 17:13	10/30/19 12:16	1
Aroclor 1221	0.030	U	1.0	0.030	ug/L		10/29/19 17:13	10/30/19 12:16	1
Aroclor 1232	0.030	U	1.0	0.030	ug/L		10/29/19 17:13	10/30/19 12:16	1
Aroclor 1242	0.030	U	1.0	0.030	ug/L		10/29/19 17:13	10/30/19 12:16	1
Aroclor 1248	0.030	U	1.0	0.030	ug/L		10/29/19 17:13	10/30/19 12:16	1
Aroclor 1254	0.037	U	1.0	0.037	ug/L		10/29/19 17:13	10/30/19 12:16	1
Aroclor 1260	0.037	U	1.0	0.037	ug/L		10/29/19 17:13	10/30/19 12:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*75*		*10 - 150*	*10/29/19 17:13*	*10/30/19 12:16*	*1*
Tetrachloro-m-xylene	*88*		*10 - 150*	*10/29/19 17:13*	*10/30/19 12:16*	*1*
DCB Decachlorobiphenyl	*60*		*10 - 150*	*10/29/19 17:13*	*10/30/19 12:16*	*1*
DCB Decachlorobiphenyl	*62*		*10 - 150*	*10/29/19 17:13*	*10/30/19 12:16*	*1*

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**3.4**		2.5	2.2	ug/L		10/31/19 21:00	11/01/19 16:19	5
Cadmium	0.89	U	2.5	0.89	ug/L		10/31/19 21:00	11/01/19 16:19	5
Chromium	**2.1**	**J**	5.0	0.54	ug/L		10/31/19 21:00	11/01/19 16:19	5
Copper	**12.5**		5.0	2.6	ug/L		10/31/19 21:00	11/01/19 16:19	5
Lead	**1.1**	**J**	1.5	0.17	ug/L		10/31/19 21:00	11/01/19 16:19	5
Molybdenum	**8.7**	**B**	5.0	0.55	ug/L		10/31/19 21:00	11/01/19 16:19	5
Nickel	**6.2**		5.0	1.5	ug/L		10/31/19 21:00	11/01/19 16:19	5
Selenium	**0.45**	**J**	2.5	0.45	ug/L		10/31/19 21:00	11/01/19 16:19	5
Zinc	**10.0**	**J**	20.0	3.4	ug/L		10/31/19 21:00	11/01/19 16:19	5

Client Sample Results

Client: Golder Associates Inc.
Project/Site: DS&G/TTO

Job ID: 460-195117-1

Client Sample ID: TTO

Lab Sample ID: 460-195117-1

Date Collected: 10/28/19 12:25
Date Received: 10/28/19 20:20

Matrix: Water

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.12	U	0.20	0.12	ug/L		10/30/19 11:38	10/30/19 14:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.0040	U	0.010	0.0040	mg/L		10/31/19 10:21	10/31/19 14:40	1
Ammonia (as N)	**0.61**		0.10	0.068	mg/L			10/31/19 10:35	1
pH	**7.8**	**HF**			SU			11/01/19 12:38	1
Total Suspended Solids	**38.0**		10.0	10.0	mg/L			11/01/19 08:31	1
Biochemical Oxygen Demand	**1.5**		1.0	1.0	mg/L			10/30/19 09:28	1

Client Sample ID: TBGW_102819

Lab Sample ID: 460-195117-2

Date Collected: 10/28/19 00:00
Date Received: 10/28/19 20:20

Matrix: Water

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	0.45	U	1.0	0.45	ug/L			10/30/19 09:04	1
Vinyl chloride	0.34	U	1.0	0.34	ug/L			10/30/19 09:04	1
Chloroethane	0.32	U	1.0	0.32	ug/L			10/30/19 09:04	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			10/30/19 09:04	1
1,1-Dichloroethene	0.12	U	1.0	0.12	ug/L			10/30/19 09:04	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			10/30/19 09:04	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			10/30/19 09:04	1
Chloroform	0.33	U	1.0	0.33	ug/L			10/30/19 09:04	1
1,2-Dichloroethane	0.84	U	1.0	0.84	ug/L			10/30/19 09:04	1
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			10/30/19 09:04	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			10/30/19 09:04	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			10/30/19 09:04	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			10/30/19 09:04	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			10/30/19 09:04	1
Dibromochloromethane	0.13	U	1.0	0.13	ug/L			10/30/19 09:04	1
1,1,2-Trichloroethane	0.15	U	1.0	0.15	ug/L			10/30/19 09:04	1
Benzene	0.43	U	1.0	0.43	ug/L			10/30/19 09:04	1
trans-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			10/30/19 09:04	1
2-Chloroethyl vinyl ether	0.91	U	1.0	0.91	ug/L			10/30/19 09:04	1
Bromoform	0.54	U	1.0	0.54	ug/L			10/30/19 09:04	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			10/30/19 09:04	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			10/30/19 09:04	1
Toluene	0.38	U	1.0	0.38	ug/L			10/30/19 09:04	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			10/30/19 09:04	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			10/30/19 09:04	1
Acrolein	1.1	U	4.0	1.1	ug/L			10/30/19 09:04	1
Acrylonitrile	0.77	U	2.0	0.77	ug/L			10/30/19 09:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*60 - 140*		*10/30/19 09:04*	*1*
Toluene-d8 (Surr)	*99*		*60 - 140*		*10/30/19 09:04*	*1*
Bromofluorobenzene	*102*		*60 - 140*		*10/30/19 09:04*	*1*
Dibromofluoromethane (Surr)	*112*		*60 - 140*		*10/30/19 09:04*	*1*

Client Sample Results

Client: Golder Associates Inc. Job ID: 460-194625-1
Project/Site: Delaware Sand and Gravel Superfund Site

Client Sample ID: PW-1(U) Discharge Lab Sample ID: 460-194625-1

Date Collected: 10/22/19 15:20 **Matrix: Water**
Date Received: 10/22/19 20:40

Method: Trace VOA - 2.4/Trace Volatiles

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.50	U	0.50		ug/L			10/29/19 01:23	1
Chloromethane	0.50	U	0.50		ug/L			10/29/19 01:23	1
Vinyl chloride	0.50	U	0.50		ug/L			10/29/19 01:23	1
Bromomethane	0.50	U	0.50		ug/L			10/29/19 01:23	1
Chloroethane	0.50	U	0.50		ug/L			10/29/19 01:23	1
Trichlorofluoromethane	0.50	U	0.50		ug/L			10/29/19 01:23	1
1,1-Dichloroethene	0.50	U	0.50		ug/L			10/29/19 01:23	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U	0.50		ug/L			10/29/19 01:23	1
Acetone	5.0	U	5.0		ug/L			10/29/19 01:23	1
Carbon disulfide	0.50	U	0.50		ug/L			10/29/19 01:23	1
Methyl acetate	0.50	U	0.50		ug/L			10/29/19 01:23	1
Methylene chloride	0.50	U	0.50		ug/L			10/29/19 01:23	1
trans-1,2-Dichloroethene	0.50	U	0.50		ug/L			10/29/19 01:23	1
Methyl tert-butyl ether	**0.32**	**J**	0.50		ug/L			10/29/19 01:23	1
1,1-Dichloroethane	**0.098**	**J**	0.50		ug/L			10/29/19 01:23	1
cis-1,2-Dichloroethene	**0.31**	**J B**	0.50		ug/L			10/29/19 01:23	1
2-Butanone	5.0	U	5.0		ug/L			10/29/19 01:23	1
Bromochloromethane	0.50	U	0.50		ug/L			10/29/19 01:23	1
Chloroform	0.50	U	0.50		ug/L			10/29/19 01:23	1
1,1,1-Trichloroethane	0.50	U	0.50		ug/L			10/29/19 01:23	1
Cyclohexane	**0.51**		0.50		ug/L			10/29/19 01:23	1
Carbon tetrachloride	0.50	U	0.50		ug/L			10/29/19 01:23	1
Benzene	**11**		0.50		ug/L			10/29/19 01:23	1
1,2-Dichloroethane	0.50	U	0.50		ug/L			10/29/19 01:23	1
Trichloroethene	**0.18**	**J B**	0.50		ug/L			10/29/19 01:23	1
Methylcyclohexane	**1.3**		0.50		ug/L			10/29/19 01:23	1
1,2-Dichloropropane	0.50	U	0.50		ug/L			10/29/19 01:23	1
Bromodichloromethane	0.50	U	0.50		ug/L			10/29/19 01:23	1
cis-1,3-Dichloropropene	0.50	U	0.50		ug/L			10/29/19 01:23	1
4-Methyl-2-pentanone	5.0	U	5.0		ug/L			10/29/19 01:23	1
Toluene	**0.057**	**J**	0.50		ug/L			10/29/19 01:23	1
trans-1,3-Dichloropropene	0.50	U	0.50		ug/L			10/29/19 01:23	1
1,1,2-Trichloroethane	0.50	U	0.50		ug/L			10/29/19 01:23	1
Tetrachloroethene	**2.1**		0.50		ug/L			10/29/19 01:23	1
2-Hexanone	5.0	U	5.0		ug/L			10/29/19 01:23	1
Dibromochloromethane	0.50	U	0.50		ug/L			10/29/19 01:23	1
1,2-Dibromoethane	0.50	U	0.50		ug/L			10/29/19 01:23	1
Chlorobenzene	**1.7**		0.50		ug/L			10/29/19 01:23	1
Ethylbenzene	**2.8**		0.50		ug/L			10/29/19 01:23	1
o-Xylene	**0.083**	**J**	0.50		ug/L			10/29/19 01:23	1
m,p-Xylene	**16**		0.50		ug/L			10/29/19 01:23	1
Styrene	0.50	U	0.50		ug/L			10/29/19 01:23	1
Bromoform	0.50	U	0.50		ug/L			10/29/19 01:23	1
Isopropylbenzene	**1.3**		0.50		ug/L			10/29/19 01:23	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50		ug/L			10/29/19 01:23	1
1,3-Dichlorobenzene	0.50	U	0.50		ug/L			10/29/19 01:23	1
1,4-Dichlorobenzene	**0.11**	**J**	0.50		ug/L			10/29/19 01:23	1
1,2-Dichlorobenzene	**0.20**	**J**	0.50		ug/L			10/29/19 01:23	1
1,2-Dibromo-3-chloropropane	0.50	U	0.50		ug/L			10/29/19 01:23	1

Client Sample ID: PW-1(U) Discharge — Lab Sample ID: 460-194625-1

Date Collected: 10/22/19 15:20 **Matrix: Water**
Date Received: 10/22/19 20:40

Method: Trace VOA - 2.4/Trace Volatiles (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	0.50	U	0.50		ug/L			10/29/19 01:23	1
1,2,3-Trichlorobenzene	0.50	U	0.50		ug/L			10/29/19 01:23	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*2.4*	*J*	*ug/L*		*11.52*			*10/29/19 01:23*	*1*
Benzene, 1-ethyl-2-methyl-	*4.8*	*J N*	*ug/L*		*11.64*	*611-14-3*		*10/29/19 01:23*	*1*
Benzene, 1,2,3-trimethyl-	*2.4*	*J N*	*ug/L*		*11.75*	*526-73-8*		*10/29/19 01:23*	*1*
Benzene, 1-ethyl-4-methyl-	*2.7*	*J N*	*ug/L*		*11.99*	*622-96-8*		*10/29/19 01:23*	*1*
Mesitylene	*10*	*J N*	*ug/L*		*12.21*	*108-67-8*		*10/29/19 01:23*	*1*
Benzene, 1-ethyl-3-methyl-	*2.3*	*J N*	*ug/L*		*12.72*	*620-14-4*		*10/29/19 01:23*	*1*
Indane	*3.3*	*J N*	*ug/L*		*12.95*	*496-11-7*		*10/29/19 01:23*	*1*
Total Alkanes			*ug/L*			*STL00989*		*10/29/19 01:23*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Vinyl chloride-d3	*104*		*40 - 130*		*10/29/19 01:23*	*1*
Chloroethane-d5	*112*		*65 - 130*		*10/29/19 01:23*	*1*
1,1-Dichloroethene-d2	*90*		*60 - 125*		*10/29/19 01:23*	*1*
2-Butanone-d5	*127*		*40 - 130*		*10/29/19 01:23*	*1*
Chloroform-d	*113*		*70 - 125*		*10/29/19 01:23*	*1*
1,2-Dichloroethane-d4	*116*		*70 - 130*		*10/29/19 01:23*	*1*
Benzene-d6	*97*		*70 - 125*		*10/29/19 01:23*	*1*
1,2-Dichloropropane-d6	*89*		*60 - 140*		*10/29/19 01:23*	*1*
Toluene-d8	*96*		*70 - 130*		*10/29/19 01:23*	*1*
trans-1,3-Dichloropropene-d4	*103*		*55 - 130*		*10/29/19 01:23*	*1*
2-Hexanone-d5	*136*	*	*45 - 130*		*10/29/19 01:23*	*1*
1,1,2,2-Tetrachloroethane-d2	*104*		*65 - 120*		*10/29/19 01:23*	*1*
1,2-Dichlorobenzene-d4	*109*		*80 - 120*		*10/29/19 01:23*	*1*

Method: SVOA - 2.4/Semivolatiles

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**26**		2.1		ug/L		10/25/19 16:00	10/31/19 14:45	1
Benzaldehyde	11	U	11		ug/L		10/25/19 16:00	10/31/19 14:45	1
Phenol	11	U	11		ug/L		10/25/19 16:00	10/31/19 14:45	1
Bis(2-chloroethyl) ether	**6.2**	**J**	11		ug/L		10/25/19 16:00	10/31/19 14:45	1
2-Chlorophenol	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
2-Methylphenol	11	U	11		ug/L		10/25/19 16:00	10/31/19 14:45	1
2,2'-Oxybis(1-chloropropane)	11	U	11		ug/L		10/25/19 16:00	10/31/19 14:45	1
Acetophenone	11	U	11		ug/L		10/25/19 16:00	10/31/19 14:45	1
4-Methylphenol	11	U	11		ug/L		10/25/19 16:00	10/31/19 14:45	1
N-Nitroso-di-n propylamine	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
Hexachloroethane	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
Nitrobenzene	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
Isophorone	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
2-Nitrophenol	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
2,4-Dimethylphenol	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
Bis(2-chloroethoxy)methane	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
2,4-Dichlorophenol	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
Naphthalene	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
4-Chloroaniline	11	U	11		ug/L		10/25/19 16:00	10/31/19 14:45	1
Hexachlorobutadiene	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1

Client Sample ID: PW-1(U) Discharge Lab Sample ID: 460-194625-1

Date Collected: 10/22/19 15:20 **Matrix: Water**
Date Received: 10/22/19 20:40

Method: SVOA - 2.4/Semivolatiles (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Caprolactam	11	U	11		ug/L		10/25/19 16:00	10/31/19 14:45	1
4-Chloro-3-methylphenol	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
2-Methylnaphthalene	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
Hexachlorocyclo-pentadiene	11	U	11		ug/L		10/25/19 16:00	10/31/19 14:45	1
2,4,6-Trichlorophenol	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
2,4,5-Trichlorophenol	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
1,1'-Biphenyl	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
2-Chloronaphthalene	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
2-Nitroaniline	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
Dimethylphthalate	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
2,6-Dinitrotoluene	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
Acenaphthylene	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
3-Nitroaniline	11	U	11		ug/L		10/25/19 16:00	10/31/19 14:45	1
Acenaphthene	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
2,4-Dinitrophenol	11	U	11		ug/L		10/25/19 16:00	10/31/19 14:45	1
4-Nitrophenol	11	U	11		ug/L		10/25/19 16:00	10/31/19 14:45	1
Dibenzofuran	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
2,4-Dinitrotoluene	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
Diethylphthalate	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
Fluorene	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
4-Chlorophenyl-phenyl ether	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
4-Nitroaniline	11	U	11		ug/L		10/25/19 16:00	10/31/19 14:45	1
4,6-Dinitro-2-methylphenol	11	U	11		ug/L		10/25/19 16:00	10/31/19 14:45	1
N-Nitrosodiphenylamine	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
1,2,4,5-Tetrachlorobenzene	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
4-Bromophenyl-phenylether	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
Hexachlorobenzene	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
Atrazine	11	U	11		ug/L		10/25/19 16:00	10/31/19 14:45	1
Pentachlorophenol	11	U	11		ug/L		10/25/19 16:00	10/31/19 14:45	1
Phenanthrene	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
Anthracene	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
Carbazole	11	U	11		ug/L		10/25/19 16:00	10/31/19 14:45	1
Di-n-butylphthalate	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
Fluoranthene	11	U	11		ug/L		10/25/19 16:00	10/31/19 14:45	1
Pyrene	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
Butylbenzylphthalate	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
3,3'-Dichlorobenzidine	11	U	11		ug/L		10/25/19 16:00	10/31/19 14:45	1
Benzo(a)anthracene	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
Chrysene	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
Bis(2-ethylhexyl)phthalate	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
Di-n-octylphthalate	11	U	11		ug/L		10/25/19 16:00	10/31/19 14:45	1
Benzo(b)fluoranthene	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
Benzo(k)fluoranthene	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
Benzo(a)pyrene	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
Indeno(1,2,3-cd)pyrene	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
Dibenzo(a,h)anthracene	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
Benzo(g,h,i)perylene	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1
2,3,4,6-Tetrachlorophenol	5.3	U	5.3		ug/L		10/25/19 16:00	10/31/19 14:45	1

Client Sample ID: PW-1(U) Discharge — Lab Sample ID: 460-194625-1

Date Collected: 10/22/19 15:20 **Matrix: Water**
Date Received: 10/22/19 20:40

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	7.6	J B	ug/L		2.17		10/25/19 16:00	10/31/19 14:45	1
Butane, 2-methoxy-2-methyl-	140	J N B	ug/L		2.66	994-05-8	10/25/19 16:00	10/31/19 14:45	1
Benzene, 1-ethyl-4-methyl-	3.0	J N	ug/L		6.41	622-96-8	10/25/19 16:00	10/31/19 14:45	1
Benzene, 1-ethyl-2-methyl-	2.8	J N	ug/L		6.64	611-14-3	10/25/19 16:00	10/31/19 14:45	1
Benzene, 1,2,3-trimethyl-	4.7	J N	ug/L		6.80	526-73-8	10/25/19 16:00	10/31/19 14:45	1
Unknown	8.3	J	ug/L		11.08		10/25/19 16:00	10/31/19 14:45	1
Phenol, 4,4'-(1-methylethylidene)bis-	4.5	J N	ug/L		15.53	80-05-7	10/25/19 16:00	10/31/19 14:45	1
Total Alkanes			ug/L			STL00989	10/25/19 16:00	10/31/19 14:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	53		40 - 110	10/25/19 16:00	10/31/19 14:45	1
Phenol-d5	56		10 - 130	10/25/19 16:00	10/31/19 14:45	1
Bis(2-chloroethyl)ether-d8	51		25 - 120	10/25/19 16:00	10/31/19 14:45	1
2-Chlorophenol-d4	72		20 - 130	10/25/19 16:00	10/31/19 14:45	1
4-Methylphenol-d8	51		25 - 125	10/25/19 16:00	10/31/19 14:45	1
Nitrobenzene-d5	56		20 - 125	10/25/19 16:00	10/31/19 14:45	1
2-Nitrophenol-d4	56		20 - 130	10/25/19 16:00	10/31/19 14:45	1
2,4-Dichlorophenol-d3	58		20 - 120	10/25/19 16:00	10/31/19 14:45	1
4-Chloroaniline-d4	35		1 - 146	10/25/19 16:00	10/31/19 14:45	1
Dimethylphthalate-d6	62		25 - 130	10/25/19 16:00	10/31/19 14:45	1
Acenaphthylene-d8	57		10 - 130	10/25/19 16:00	10/31/19 14:45	1
4-Nitrophenol-d4	60		10 - 150	10/25/19 16:00	10/31/19 14:45	1
Fluorene-d10	57		25 - 125	10/25/19 16:00	10/31/19 14:45	1
4,6-Dinitro-2-methylphenol-d2	47		10 - 130	10/25/19 16:00	10/31/19 14:45	1
Anthracene-d10	64		25 - 130	10/25/19 16:00	10/31/19 14:45	1
Pyrene-d10	54		15 - 130	10/25/19 16:00	10/31/19 14:45	1
Benzo(a)pyrene-d12	57		20 - 130	10/25/19 16:00	10/31/19 14:45	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**3.4**		2.5	2.2	ug/L		10/31/19 21:00	11/01/19 15:53	5
Cadmium	2.5	U	2.5	0.89	ug/L		10/31/19 21:00	11/01/19 15:53	5
Chromium	5.0	U	5.0	0.54	ug/L		10/31/19 21:00	11/01/19 15:53	5
Copper	**111**		5.0	2.6	ug/L		10/31/19 21:00	11/01/19 15:53	5
Lead	**2.5**		1.5	0.17	ug/L		10/31/19 21:00	11/01/19 15:53	5
Molybdenum	5.0	U	5.0	0.55	ug/L		10/31/19 21:00	11/01/19 15:53	5
Nickel	5.0	U	5.0	1.5	ug/L		10/31/19 21:00	11/01/19 15:53	5
Selenium	2.5	U	2.5	0.45	ug/L		10/31/19 21:00	11/01/19 15:53	5
Zinc	**34.6**		20.0	3.4	ug/L		10/31/19 21:00	11/01/19 15:53	5

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		10/30/19 11:29	10/30/19 13:59	1

Method: CVAA - 2.4/CVAA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.13	ug/L		10/30/19 09:37	10/30/19 15:23	1

Method: ICP-MS - 2.4/ICP-MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	20.0	U	20.0	3.2	ug/L		10/25/19 12:08	10/29/19 18:38	1

Client Sample ID: PW-1(U) Discharge — Lab Sample ID: 460-194625-1

Date Collected: 10/22/19 15:20 **Matrix: Water**
Date Received: 10/22/19 20:40

Method: ICP-MS - 2.4/ICP-MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	2.0	U	2.0	0.21	ug/L		10/25/19 12:08	10/30/19 17:25	1
Arsenic	**4.2**		1.0	0.39	ug/L		10/25/19 12:08	10/28/19 18:50	1
Barium	**391**		10.0	0.82	ug/L		10/25/19 12:08	10/29/19 18:38	1
Beryllium	1.0	U	1.0	0.095	ug/L		10/25/19 12:08	10/28/19 18:50	1
Cadmium	**0.084**	**J**	1.0	0.080	ug/L		10/25/19 12:08	10/29/19 18:38	1
Calcium	**16900**		500	123	ug/L		10/25/19 12:08	10/29/19 18:38	1
Chromium	2.0	U	2.0	0.46	ug/L		10/25/19 12:08	10/28/19 18:50	1
Cobalt	**22.9**		1.0	0.029	ug/L		10/25/19 12:08	10/28/19 18:50	1
Copper	**5.6**		2.0	0.33	ug/L		10/25/19 12:08	10/30/19 17:25	1
Iron	**26600**		200	28.1	ug/L		10/25/19 12:08	10/28/19 18:50	1
Lead	**0.66**	**J**	1.0	0.25	ug/L		10/25/19 12:08	10/30/19 17:25	1
Magnesium	**9260**		500	31.1	ug/L		10/25/19 12:08	10/28/19 18:50	1
Manganese	**2090**		1.0	0.35	ug/L		10/25/19 12:08	10/28/19 18:50	1
Nickel	**3.0**		1.0	0.17	ug/L		10/25/19 12:08	10/28/19 18:50	1
Potassium	**3000**		500	1.7	ug/L		10/25/19 12:08	10/28/19 18:50	1
Selenium	**11.4**		5.0	1.2	ug/L		10/25/19 12:08	10/28/19 18:50	1
Silver	1.0	U	1.0	0.031	ug/L		10/25/19 12:08	10/28/19 18:50	1
Sodium	**27300**		500	38.7	ug/L		10/25/19 12:08	10/29/19 18:38	1
Thallium	**0.22**	**J**	1.0	0.14	ug/L		10/25/19 12:08	10/30/19 17:25	1
Vanadium	**0.21**	**J**	5.0	0.16	ug/L		10/25/19 12:08	10/28/19 18:50	1
Zinc	**30.3**		2.0	0.98	ug/L		10/25/19 12:08	10/30/19 17:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.40**		0.10	0.068	mg/L			10/25/19 16:54	1
pH	**6.66**				SU			10/30/19 13:57	1
Corrosivity	**6.66**				SU			10/30/19 13:57	1
Total Suspended Solids	6.6	U	6.6	6.6	mg/L			10/28/19 07:33	1
Biochemical Oxygen Demand	**2.6**		1.0	1.0	mg/L			10/23/19 21:20	1
Cyanide	10.0	U	10.0	5.0	ug/L		11/01/19 13:00	11/01/19 15:57	1

Client Sample ID: TBGW_102219 — Lab Sample ID: 460-194625-2

Date Collected: 10/22/19 15:20 **Matrix: Water**
Date Received: 10/22/19 20:40

Method: Trace VOA - 2.4/Trace Volatiles

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.50	U	0.50		ug/L			10/29/19 01:55	1
Chloromethane	0.50	U	0.50		ug/L			10/29/19 01:55	1
Vinyl chloride	0.50	U	0.50		ug/L			10/29/19 01:55	1
Bromomethane	0.50	U	0.50		ug/L			10/29/19 01:55	1
Chloroethane	0.50	U	0.50		ug/L			10/29/19 01:55	1
Trichlorofluoromethane	0.50	U	0.50		ug/L			10/29/19 01:55	1
1,1-Dichloroethene	0.50	U	0.50		ug/L			10/29/19 01:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U	0.50		ug/L			10/29/19 01:55	1
Acetone	**5.4**		5.0		ug/L			10/29/19 01:55	1
Carbon disulfide	0.50	U	0.50		ug/L			10/29/19 01:55	1
Methyl acetate	0.50	U	0.50		ug/L			10/29/19 01:55	1
Methylene chloride	0.50	U	0.50		ug/L			10/29/19 01:55	1
trans-1,2-Dichloroethene	0.50	U	0.50		ug/L			10/29/19 01:55	1

Client Sample ID: TBGW_102219 Lab Sample ID: 460-194625-2

Date Collected: 10/22/19 15:20 **Matrix: Water**
Date Received: 10/22/19 20:40

Method: Trace VOA - 2.4/Trace Volatiles (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	0.50	U	0.50		ug/L			10/29/19 01:55	1
1,1-Dichloroethane	0.50	U	0.50		ug/L			10/29/19 01:55	1
cis-1,2-Dichloroethene	**0.14**	**J B**	0.50		ug/L			10/29/19 01:55	1
2-Butanone	5.0	U	5.0		ug/L			10/29/19 01:55	1
Bromochloromethane	0.50	U	0.50		ug/L			10/29/19 01:55	1
Chloroform	0.50	U	0.50		ug/L			10/29/19 01:55	1
1,1,1-Trichloroethane	0.50	U	0.50		ug/L			10/29/19 01:55	1
Cyclohexane	0.50	U	0.50		ug/L			10/29/19 01:55	1
Carbon tetrachloride	0.50	U	0.50		ug/L			10/29/19 01:55	1
Benzene	0.50	U	0.50		ug/L			10/29/19 01:55	1
1,2-Dichloroethane	0.50	U	0.50		ug/L			10/29/19 01:55	1
Trichloroethene	**0.085**	**J B**	0.50		ug/L			10/29/19 01:55	1
Methylcyclohexane	0.50	U	0.50		ug/L			10/29/19 01:55	1
1,2-Dichloropropane	0.50	U	0.50		ug/L			10/29/19 01:55	1
Bromodichloromethane	0.50	U	0.50		ug/L			10/29/19 01:55	1
cis-1,3-Dichloropropene	0.50	U	0.50		ug/L			10/29/19 01:55	1
4-Methyl-2-pentanone	5.0	U	5.0		ug/L			10/29/19 01:55	1
Toluene	0.50	U	0.50		ug/L			10/29/19 01:55	1
trans-1,3-Dichloropropene	0.50	U	0.50		ug/L			10/29/19 01:55	1
1,1,2-Trichloroethane	0.50	U	0.50		ug/L			10/29/19 01:55	1
Tetrachloroethene	0.50	U	0.50		ug/L			10/29/19 01:55	1
2-Hexanone	5.0	U	5.0		ug/L			10/29/19 01:55	1
Dibromochloromethane	0.50	U	0.50		ug/L			10/29/19 01:55	1
1,2-Dibromoethane	0.50	U	0.50		ug/L			10/29/19 01:55	1
Chlorobenzene	0.50	U	0.50		ug/L			10/29/19 01:55	1
Ethylbenzene	0.50	U	0.50		ug/L			10/29/19 01:55	1
o-Xylene	0.50	U	0.50		ug/L			10/29/19 01:55	1
m,p-Xylene	0.50	U	0.50		ug/L			10/29/19 01:55	1
Styrene	0.50	U	0.50		ug/L			10/29/19 01:55	1
Bromoform	0.50	U	0.50		ug/L			10/29/19 01:55	1
Isopropylbenzene	0.50	U	0.50		ug/L			10/29/19 01:55	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50		ug/L			10/29/19 01:55	1
1,3-Dichlorobenzene	0.50	U	0.50		ug/L			10/29/19 01:55	1
1,4-Dichlorobenzene	0.50	U	0.50		ug/L			10/29/19 01:55	1
1,2-Dichlorobenzene	0.50	U	0.50		ug/L			10/29/19 01:55	1
1,2-Dibromo-3-chloropropane	0.50	U	0.50		ug/L			10/29/19 01:55	1
1,2,4-Trichlorobenzene	0.50	U	0.50		ug/L			10/29/19 01:55	1
1,2,3-Trichlorobenzene	0.50	U	0.50		ug/L			10/29/19 01:55	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*0.63*	*J*	*ug/L*		*2.79*			*10/29/19 01:55*	*1*
Total Alkanes			*ug/L*			*STL00989*		*10/29/19 01:55*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Vinyl chloride-d3	*105*		*40 - 130*		*10/29/19 01:55*	*1*
Chloroethane-d5	*102*		*65 - 130*		*10/29/19 01:55*	*1*
1,1-Dichloroethene-d2	*86*		*60 - 125*		*10/29/19 01:55*	*1*
2-Butanone-d5	*117*		*40 - 130*		*10/29/19 01:55*	*1*
Chloroform-d	*105*		*70 - 125*		*10/29/19 01:55*	*1*
1,2-Dichloroethane-d4	*115*		*70 - 130*		*10/29/19 01:55*	*1*

Client Sample ID: TBGW_102219 Lab Sample ID: 460-194625-2

Date Collected: 10/22/19 15:20 **Matrix: Water**
Date Received: 10/22/19 20:40

Method: Trace VOA - 2.4/Trace Volatiles (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzene-d6	*112*		*70 - 125*		*10/29/19 01:55*	*1*
1,2-Dichloropropane-d6	*98*		*60 - 140*		*10/29/19 01:55*	*1*
Toluene-d8	*109*		*70 - 130*		*10/29/19 01:55*	*1*
trans-1,3-Dichloropropene-d4	*110*		*55 - 130*		*10/29/19 01:55*	*1*
2-Hexanone-d5	*130*		*45 - 130*		*10/29/19 01:55*	*1*
1,1,2,2-Tetrachloroethane-d2	*102*		*65 - 120*		*10/29/19 01:55*	*1*
1,2-Dichlorobenzene-d4	*109*		*80 - 120*		*10/29/19 01:55*	*1*

Client Sample ID: VHBLK01 Lab Sample ID: 460-194625-3

Date Collected: 10/24/19 00:00 **Matrix: Water**
Date Received: 10/22/19 20:40

Method: Trace VOA - 2.4/Trace Volatiles

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.50	U	0.50		ug/L			10/29/19 13:08	1
Chloromethane	0.50	U	0.50		ug/L			10/29/19 13:08	1
Vinyl chloride	0.50	U	0.50		ug/L			10/29/19 13:08	1
Bromomethane	0.50	U	0.50		ug/L			10/29/19 13:08	1
Chloroethane	0.50	U	0.50		ug/L			10/29/19 13:08	1
Trichlorofluoromethane	0.50	U	0.50		ug/L			10/29/19 13:08	1
1,1-Dichloroethene	0.50	U	0.50		ug/L			10/29/19 13:08	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U	0.50		ug/L			10/29/19 13:08	1
Acetone	5.0	U	5.0		ug/L			10/29/19 13:08	1
Carbon disulfide	0.50	U	0.50		ug/L			10/29/19 13:08	1
Methyl acetate	0.50	U	0.50		ug/L			10/29/19 13:08	1
Methylene chloride	0.50	U	0.50		ug/L			10/29/19 13:08	1
trans-1,2-Dichloroethene	0.50	U	0.50		ug/L			10/29/19 13:08	1
Methyl tert-butyl ether	0.50	U	0.50		ug/L			10/29/19 13:08	1
1,1-Dichloroethane	0.50	U	0.50		ug/L			10/29/19 13:08	1
cis-1,2-Dichloroethene	**0.099**	**J B**	0.50		ug/L			10/29/19 13:08	1
2-Butanone	5.0	U	5.0		ug/L			10/29/19 13:08	1
Bromochloromethane	0.50	U	0.50		ug/L			10/29/19 13:08	1
Chloroform	0.50	U	0.50		ug/L			10/29/19 13:08	1
1,1,1-Trichloroethane	0.50	U	0.50		ug/L			10/29/19 13:08	1
Cyclohexane	0.50	U	0.50		ug/L			10/29/19 13:08	1
Carbon tetrachloride	0.50	U	0.50		ug/L			10/29/19 13:08	1
Benzene	0.50	U	0.50		ug/L			10/29/19 13:08	1
1,2-Dichloroethane	0.50	U	0.50		ug/L			10/29/19 13:08	1
Trichloroethene	**0.15**	**J B**	0.50		ug/L			10/29/19 13:08	1
Methylcyclohexane	0.50	U	0.50		ug/L			10/29/19 13:08	1
1,2-Dichloropropane	0.50	U	0.50		ug/L			10/29/19 13:08	1
Bromodichloromethane	0.50	U	0.50		ug/L			10/29/19 13:08	1
cis-1,3-Dichloropropene	0.50	U	0.50		ug/L			10/29/19 13:08	1
4-Methyl-2-pentanone	5.0	U	5.0		ug/L			10/29/19 13:08	1
Toluene	0.50	U	0.50		ug/L			10/29/19 13:08	1
trans-1,3-Dichloropropene	0.50	U	0.50		ug/L			10/29/19 13:08	1
1,1,2-Trichloroethane	0.50	U	0.50		ug/L			10/29/19 13:08	1
Tetrachloroethene	0.50	U	0.50		ug/L			10/29/19 13:08	1
2-Hexanone	5.0	U	5.0		ug/L			10/29/19 13:08	1

Client Sample ID: VHBLK01 Lab Sample ID: 460-194625-3

Date Collected: 10/24/19 00:00 **Matrix: Water**
Date Received: 10/22/19 20:40

Method: Trace VOA - 2.4/Trace Volatiles (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromochloromethane	0.50	U	0.50		ug/L			10/29/19 13:08	1
1,2-Dibromoethane	0.50	U	0.50		ug/L			10/29/19 13:08	1
Chlorobenzene	0.50	U	0.50		ug/L			10/29/19 13:08	1
Ethylbenzene	0.50	U	0.50		ug/L			10/29/19 13:08	1
o-Xylene	0.50	U	0.50		ug/L			10/29/19 13:08	1
m,p-Xylene	0.50	U	0.50		ug/L			10/29/19 13:08	1
Styrene	0.50	U	0.50		ug/L			10/29/19 13:08	1
Bromoform	0.50	U	0.50		ug/L			10/29/19 13:08	1
Isopropylbenzene	0.50	U	0.50		ug/L			10/29/19 13:08	1
1,1,2,2-Tetrachloroethane	0.50	U	0.50		ug/L			10/29/19 13:08	1
1,3-Dichlorobenzene	0.50	U	0.50		ug/L			10/29/19 13:08	1
1,4-Dichlorobenzene	0.50	U	0.50		ug/L			10/29/19 13:08	1
1,2-Dichlorobenzene	0.50	U	0.50		ug/L			10/29/19 13:08	1
1,2-Dibromo-3-chloropropane	0.50	U	0.50		ug/L			10/29/19 13:08	1
1,2,4-Trichlorobenzene	0.50	U	0.50		ug/L			10/29/19 13:08	1
1,2,3-Trichlorobenzene	0.50	U	0.50		ug/L			10/29/19 13:08	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Cyclotetrasiloxane, octamethyl-	*0.69*	*J N*	*ug/L*		*11.54*	*556-67-2*		*10/29/19 13:08*	*1*
Total Alkanes			*ug/L*			*STL00989*		*10/29/19 13:08*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Vinyl chloride-d3	*111*		*40 - 130*		*10/29/19 13:08*	*1*
Chloroethane-d5	*108*		*65 - 130*		*10/29/19 13:08*	*1*
1,1-Dichloroethene-d2	*89*		*60 - 125*		*10/29/19 13:08*	*1*
2-Butanone-d5	*124*		*40 - 130*		*10/29/19 13:08*	*1*
Chloroform-d	*109*		*70 - 125*		*10/29/19 13:08*	*1*
1,2-Dichloroethane-d4	*117*		*70 - 130*		*10/29/19 13:08*	*1*
Benzene-d6	*118*		*70 - 125*		*10/29/19 13:08*	*1*
1,2-Dichloropropane-d6	*100*		*60 - 140*		*10/29/19 13:08*	*1*
Toluene-d8	*117*		*70 - 130*		*10/29/19 13:08*	*1*
trans-1,3-Dichloropropene-d4	*120*		*55 - 130*		*10/29/19 13:08*	*1*
2-Hexanone-d5	*122*		*45 - 130*		*10/29/19 13:08*	*1*
1,1,2,2-Tetrachloroethane-d2	*99*		*65 - 120*		*10/29/19 13:08*	*1*
1,2-Dichlorobenzene-d4	*110*		*80 - 120*		*10/29/19 13:08*	*1*

APPENDIX H

PFAS Analytical Results

Table H-1
October-November 2019 Semi-Annual Monitoring Program - Summary of PFAS
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

			Sample ID	AWC-E1(132)			AWC-E1(156)			AWC-E2(140)			AWC-E2(165)			B-3D			B-4DR			C-18D			C-18D			DDA-02			DDA-03		
			Sample Date	11/7/2019			11/7/2019			11/7/2019			11/7/2019			10/28/2019			10/25/2019			10/25/2019			10/25/2019			10/21/2019			10/22/2019		
			N=Normal, FD=Field Duplicate	N			N			N			N			N			N			N			FD			N			N		
Parameter	Unit	CAS	HA	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Perfluorohexanoic acid	ng/l	307-24-4	NE	40		2	40		2	26		2	27		2	55		2	78		5	46		5	42		5	23		2	27		2
Perfluoroheptanoic acid	ng/l	375-85-9	NE	26		2	26		2	17		2	17		2	36		2	39		5	29		5	27		5	18		2	22		2
Perfluoro-n-octanoic acid (PFOA)	ng/l	335-67-1	70	110		2	110		2	120		2	140		2	190		2	120		5	130		5	96		5	160		2	270		2
Perfluorononanoic acid	ng/l	375-95-1	NE	11		2	12		2	6.5		2	6.1		2	14		2	9.9		5	8.6	J+	5	8.6	J+	5	7.8	J+	2	6.2		2
Perfluorodecanoic acid	ng/l	335-76-2	NE	2.6		2	3		2	1.6	J	2	1.6	J	2	2.8		2		U	5		U	5		U	5	1.3	J	2	2.6		2
Perfluoroundecanoic acid	ng/l	2058-94-8	NE	0.85	J	2	0.97	J	2		U	2		U	2		U	2		U	5		U	5		U	5		U	2		U	2
Perfluorododecanoic acid	ng/l	307-55-1	NE		U	2		U	2		U	2		U	2		U	2		U	5		U	5		U	5		U	2		U	2
Perfluorotridecanoic acid	ng/l	72629-94-8	NE		U	2		U	2		U	2		U	2		U	2		U	5		U	5		U	5		U	2		U	2
Perfluorotetradecanoic acid	ng/l	376-06-7	NE		U	2		U	2		U	2		U	2		U	2		U	5		U	5		U	5		U	2		U	2
Perfluorobutanesulfonic acid (PFBS)	ng/l	375-73-5	NE	2.4		2	2.4		2	1.6	J	2	1.5	J	2	1.5	J	2	1.5	J	5		U	5	1.3	J	5	1.3	J	2	1	J	2
Perfluorohexanesulfonic acid (PFHxS)	ng/l	355-46-4	NE	7.5		2	7.9		2	12		2	16		2	13		2	1.9	J	5	3.1	J	5	2.1	J	5	15		2	26		2
Perfluoro-1-Octanesulfonate (PFOS)	ng/l	1763-23-1	70	17		2	17		2	9.5		2	14		2	14		2	3.3	J	5	10	J	5	5.9	J	5	18		2	31		2
N-methyl perfluorooctanesulfonamidoacetic Acid	ng/l	2355-31-9	NE		U	2		U	2		U	2		U	2		U	2		U	5		U	5		U	5		U	2		U	2
N-ethyl perfluorooctanesulfonamidoacetic Acid	ng/l	2991-50-6	NE		U	3		U	3		U	3		U	3		U	3		U	7		U	7		U	7		U	3		U	3
Total PFOA + PFOS	ng/l	NA	70	127			127			129.5			154			204			123.3			140			101.9			178			301		

Table H-1
October-November 2019 Semi-Annual Monitoring Program - Summary of PFAS
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

			Sample ID	DDA-06			DDA-07-TZ			DDA-07-US			DDA-08-TZ			DDA-10-US			DDA-10-US			DDA-11LS			DDA-12-TZ			DDA-12-US			DDA-15-T2		
			Sample Date	10/22/2019			10/23/2019			10/23/2019			10/23/2019			10/30/2019			10/30/2019			10/22/2019			10/21/2019			10/21/2019			10/28/2019		
			N=Normal, FD=Field Duplicate	N			N			N			N			N			FD			N			N			N			N		
Parameter	Unit	CAS	HA	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Perfluorohexanoic acid	ng/l	307-24-4	NE	55		5	23		5	27		2	24		5	81		5	97		5	13		2	53		2	46		2	44		5
Perfluoroheptanoic acid	ng/l	375-85-9	NE	39		5	13		5	21		2	20		5	63	J	5	130	J	5	8.8		2	32		2	31		2	31		5
Perfluoro-n-octanoic acid (PFOA)	ng/l	335-67-1	70	290		5	67		5	200		2	230		5	470	J	5	2000	J	50	59		2	190		2	170		2	200		5
Perfluorononanoic acid	ng/l	375-95-1	NE	15		5	6.2		5	10		2	6		5	13	J	5	89	J	5	4.2		2	7		2	8.6		2	12	J+	5
Perfluorodecanoic acid	ng/l	335-76-2	NE	1.3	J	5	1.6	J	5	1.1	J	2		U	5	7	J	5	46	J	5	0.82	J	2	0.61	J	2		U	2		U	5
Perfluoroundecanoic acid	ng/l	2058-94-8	NE		U	5		U	5		U	2		U	5		U	5	3.7	J	5		U	2		U	2		U	2		U	5
Perfluorododecanoic acid	ng/l	307-55-1	NE		U	5		U	5		U	2		U	5		U	5	1.3	J	5		U	2		U	2		U	2		U	5
Perfluorotridecanoic acid	ng/l	72629-94-8	NE		U	5		U	5		U	2		U	5		U	5		U	5		U	2		U	2		U	2		U	5
Perfluorotetradecanoic acid	ng/l	376-06-7	NE		U	5		U	5		U	2		U	5		U	5		U	5		U	2		U	2		U	2		U	5
Perfluorobutanesulfonic acid (PFBS)	ng/l	375-73-5	NE	1.5	J	5		U	5	1.5	J	2		U	5	2	J	5	2.4	J	5	0.67	J	2	0.84	J	2	1.1	J	2	1.4	J	5
Perfluorohexanesulfonic acid (PFHxS)	ng/l	355-46-4	NE	36		5		U	5	9.1		2	22		5	70	J	5	270	J	5	7.9		2	6.9		2	14		2	16		5
Perfluoro-1-Octanesulfonate (PFOS)	ng/l	1763-23-1	70	14		5	25		5	15		2	21		5	51	J	5	350	J	5	10		2	3.1		2	4.3		2	13		5
N-methyl perfluorooctanesulfonamidoacetic Acid	ng/l	2355-31-9	NE		U	5		U	5		U	2		U	5		U	5		U	5		U	2		U	2		U	2		U	5
N-ethyl perfluorooctanesulfonamidoacetic Acid	ng/l	2991-50-6	NE		U	8		U	7		U	3		U	8		U	7		U	7		U	3		U	3		U	3		U	8
Total PFOA + PFOS	ng/l	NA	70	304			92			215			251			521			2350			69			193.1			174.3			213		

Table H-1
October-November 2019 Semi-Annual Monitoring Program - Summary of PFAS
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

			Sample ID	DDA-16TZ			DDA-16US			DCG-10D			DCG-10S			DGC-2S			DGC-5 (40)			GA-101			MHW-1M			MW-18			MW-26N		
			Sample Date	10/22/2019			10/22/2019			10/7/2019			10/7/2019			10/23/2019			10/24/2019			10/9/2019			10/28/2019			10/15/2019			10/9/2019		
			N=Normal, FD=Field Duplicate	N			N			N			N			N			N			N			N			N			N		
Parameter	Unit	CAS	HA	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Perfluorohexanoic acid	ng/l	307-24-4	NE	24		5	29		5	15		2	17		2	36		2	49		5	39		2	47		2	30		2	45		2
Perfluoroheptanoic acid	ng/l	375-85-9	NE	14		5	25		5	10		2	13		2	29		2	34		5	26		2	23		2	23		2	27		2
Perfluoro-n-octanoic acid (PFOA)	ng/l	335-67-1	70	58		5	230		5	74		2	83		2	210		2	330		5	72		2	52		2	170		2	170		2
Perfluorononanoic acid	ng/l	375-95-1	NE	2.9	J	5	10		5	3.8		2	3.5		2	18		2	10		5	13		2	9.6		2	11		2	7.9		2
Perfluorodecanoic acid	ng/l	335-76-2	NE		U	5		U	5	2.6		2	3.2		2	1.1	J	2	3.4	J	5	1.3	J	2	4.1		2	2.6		2	7.1		2
Perfluoroundecanoic acid	ng/l	2058-94-8	NE		U	5		U	5	0.94	J	2		U	2		U	2		U	5		U	2		U	2	1.2	J	2		U	2
Perfluorododecanoic acid	ng/l	307-55-1	NE		U	5		U	5		U	2		U	2		U	2		U	5		U	2		U	2		U	2		U	2
Perfluorotridecanoic acid	ng/l	72629-94-8	NE		U	5		U	5		U	2		U	2		U	2		U	5		U	2		U	2		U	2		U	2
Perfluorotetradecanoic acid	ng/l	376-06-7	NE		U	5		U	5		U	2		U	2		U	2		U	5		U	2		U	2		U	2		U	2
Perfluorobutanesulfonic acid (PFBS)	ng/l	375-73-5	NE		U	5	1.4	J	5	0.64	J	2	0.53	J	2	1.4	J	2	2.1	J	5	1.2	J	2	2.7		2	3.2		2	1.6	J	2
Perfluorohexanesulfonic acid (PFHxS)	ng/l	355-46-4	NE	1.5	J	5	11		5	18		2	25		2	3.5		2	62		5	1.1	J	2	1.7	J	2	8.7		2	71		2
Perfluoro-1-Octanesulfonate (PFOS)	ng/l	1763-23-1	70	2.2	J	5	13		5	16		2	16		2	12		2	42		5	3		2	6.5		2	87		2	46		2
N-methyl perfluorooctanesulfonamidoacetic Acid	ng/l	2355-31-9	NE		U	5		U	5		U	2		U	2		U	2		U	5		U	2		U	2	0.7	J	2		U	2
N-ethyl perfluorooctanesulfonamidoacetic Acid	ng/l	2991-50-6	NE		U	8		U	8		U	3		U	3		U	3		U	8		U	3		U	3	1.7	J	3		U	3
Total PFOA + PFOS	ng/l	NA	70	60.2			243			90			99			222			372			75			58.5			257			216		

Table H-1
October-November 2019 Semi-Annual Monitoring Program - Summary of PFAS
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

			Sample ID	MW-26N_128			MW-26N_138			MW-34 (110)			MW-34 (124)			MW-34 (80)			PW-1 (U)			PZ-11-EXT			RT-1-UP			UPA-01			UPA-02D		
			Sample Date	10/17/2019			10/17/2019			10/15/2019			10/16/2019			10/15/2019			10/22/2019			10/24/2019			10/21/2019			10/21/2019			10/14/2019		
			N=Normal, FD=Field Duplicate	N			N			N			N			N			N			N			N			N			N		
Parameter	Unit	CAS	HA	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Perfluorohexanoic acid	ng/l	307-24-4	NE	65		2	61		2	15		2	16		2	15		2	28		5	35		5	2.1		2	37		2	23		2
Perfluoroheptanoic acid	ng/l	375-85-9	NE	40		2	40		2	11		2	11		2	10		2	19		5	23		5	0.51	J	2	24		2	14		2
Perfluoro-n-octanoic acid (PFOA)	ng/l	335-67-1	70	250		2	230		2	75		2	59		2	64		2	150		5	89		5	1	J	2	160		2	140		2
Perfluorononanoic acid	ng/l	375-95-1	NE	11		2	9.8		2	3.6		2	3.4		2	3.6		2	8.4		5	5.5	J+	5		U	2	6.6	J+	2	5.3		2
Perfluorodecanoic acid	ng/l	335-76-2	NE	12		2	12		2	0.93	J	2	0.82	J	2	0.74	J	2	1.5	J	5		U	5		U	2	4.2		2	1.1	J	2
Perfluoroundecanoic acid	ng/l	2058-94-8	NE		U	2		U	2		U	2		U	2		U	2		U	5		U	5		U	2	0.51	J	2		U	2
Perfluorododecanoic acid	ng/l	307-55-1	NE		U	2		U	2		U	2		U	2		U	2		U	5		U	5		U	2		U	2		U	2
Perfluorotridecanoic acid	ng/l	72629-94-8	NE		U	2		U	2		U	2		U	2		U	2		U	5		U	5		U	2		U	2		U	2
Perfluorotetradecanoic acid	ng/l	376-06-7	NE		U	2		U	2		U	2		U	2		U	2		U	5		U	5		U	2		U	2		U	2
Perfluorobutanesulfonic acid (PFBS)	ng/l	375-73-5	NE	1.9		2	1.8		2	1.6	J	2	1.6	J	2	1.9		2		U	5		U	5		U	2	0.83	J	2	1.1	J	2
Perfluorohexanesulfonic acid (PFHxS)	ng/l	355-46-4	NE	120		2	120		2	8.5		2	9		2	8		2	14		5	1.4	J	5		U	2	41		2	12		2
Perfluoro-1-Octanesulfonate (PFOS)	ng/l	1763-23-1	70	72		2	71		2	27		2	22		2	24		2	14		5	5.5		5		U	2	24		2	19		2
N-methyl perfluorooctanesulfonamidoacetic Acid	ng/l	2355-31-9	NE		U	2		U	2		U	2		U	2		U	2		U	5		U	5		U	2		U	2		U	2
N-ethyl perfluorooctanesulfonamidoacetic Acid	ng/l	2991-50-6	NE		U	3		U	3	0.52	J	3		U	3		U	3		U	8		U	8		U	3		U	3	1	J	3
Total PFOA + PFOS	ng/l	NA	70	322			301			102			81			88			164			94.5			1			184			159		

Table H-1
October-November 2019 Semi-Annual Monitoring Program - Summary of PFAS
Delaware Sand & Gravel Superfund Site
New Castle County, Delaware

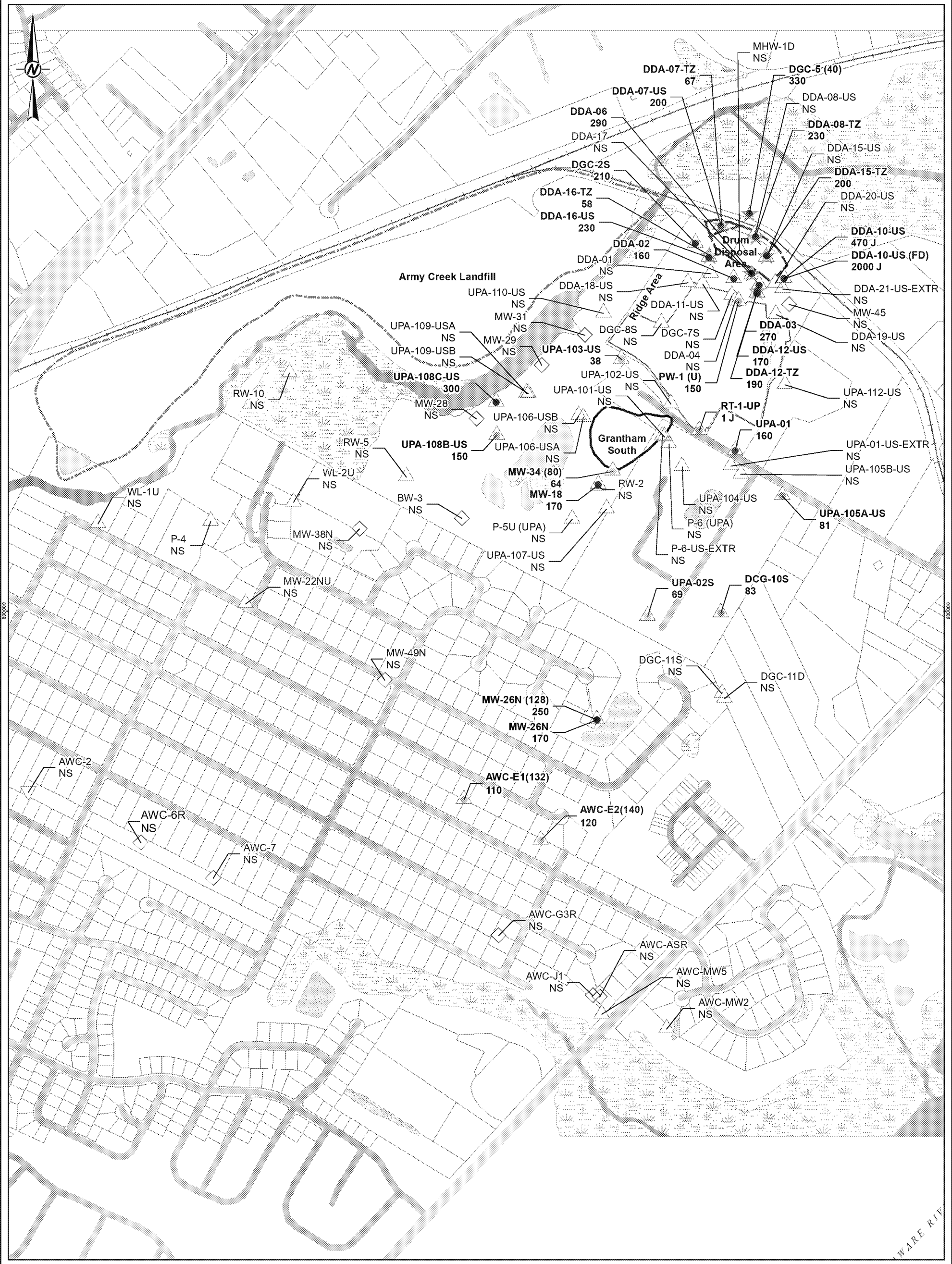
			Sample ID	UPA-02S			UPA-03D			UPA-103-US			UPA-105A-LS			UPA-105A-LS			UPA-105A-US			UPA-108B-LS			UPA-108B-US			UPA-108C-US		
			Sample Date	10/14/2019			10/14/2019			10/7/2019			10/18/2019			10/18/2019			10/18/2019			10/10/2019			10/10/2019			10/16/2019		
			N=Normal, FD=Field Duplicate	N			N			N			N			FD			N			N			N			N		
Parameter	Unit	CAS	HA	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Perfluorohexanoic acid	ng/l	307-24-4	NE	31		2	32		2	26		2	17		2	15		2	15		2	27		2	35		2	38		2
Perfluoroheptanoic acid	ng/l	375-85-9	NE	22		2	22		2	15		2	11		2	10		2	10		2	18		2	23		2	31		2
Perfluoro-n-octanoic acid (PFOA)	ng/l	335-67-1	70	69		2	170		2	38		2	100		2	100		2	81		2	190		2	150		2	300		2
Perfluorononanoic acid	ng/l	375-95-1	NE	7.3		2	7.6		2	5		2	3.8		2	3.3		2	2.6		2	4.6		2	10		2	15		2
Perfluorodecanoic acid	ng/l	335-76-2	NE		U	2	9.4		2	1.2	J	2	1.7	J	2	1.9		2	2.4		2	1.2	J	2	3.4		2		U	2
Perfluoroundecanoic acid	ng/l	2058-94-8	NE		U	2	0.64	J	2		U	2		U	2		U	2		U	2		U	2	2.2		2		U	2
Perfluorododecanoic acid	ng/l	307-55-1	NE		U	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2
Perfluorotridecanoic acid	ng/l	72629-94-8	NE		U	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2
Perfluorotetradecanoic acid	ng/l	376-06-7	NE		U	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2
Perfluorobutanesulfonic acid (PFBS)	ng/l	375-73-5	NE	2.8		2	1.3	J	2	1.4	J	2	0.68	J	2	0.63	J	2	0.53	J	2	2.3		2	5		2	3.6		2
Perfluorohexanesulfonic acid (PFHxS)	ng/l	355-46-4	NE	3.2		2	65		2	1.8		2	19		2	16		2	21		2	13		2	14		2	26		2
Perfluoro-1-Octanesulfonate (PFOS)	ng/l	1763-23-1	70	1.5	J	2	42		2	4.9		2	14		2	14		2	15		2	100		2	100		2	43		2
N-methyl perfluorooctanesulfonamidoacetic Acid	ng/l	2355-31-9	NE		U	2		U	2		U	2		U	2		U	2		U	2		U	2	0.75	J	2		U	2
N-ethyl perfluorooctanesulfonamidoacetic Acid	ng/l	2991-50-6	NE		U	3		U	3		U	3		U	3		U	3		U	3	0.67	J	3	8.1		3	0.47	J	3
Total PFOA + PFOS	ng/l	NA	70	70.5			212			42.9			114			114			96			290			250			343		

Notes:
Green highlight = Concentration exceeds HA

Abbreviations:
HA = the May 19, 2016 USEPA health advisory (HA) of 70 nanograms per liter (ng/l; parts per trillion [ppt]) for perfluorooctanoic acid (PFOA), perfluorooctane sulfonate (PFOS), and/or the combined concentrations of PFOA and PFOS

ng/L = nanograms per liter
Qual = interpreted qualifier
RL = reporting limit
NE = standard does not exist
PFCs = perfluorinated compounds
Qualifiers:
J: Estimated result
J+: Estimated result, biased high
U: Non-detect result

Prepared by: KS
Checked by: BPC
Reviewed by: TAM



LEGEND

- Columbia Monitoring Location
- Transition Zone Monitoring Location
- Upper Sand Monitoring Location
- Upper Sand and Lower Sand Monitoring Location
- Lower Sand Monitoring Location

PFOA Detections

- <40
- 40 - 70
- 70 - 150
- >150
- **23** PFOA Concentrations (ng/L)

0 175 350

1 " = 600 feet Feet

NOTE(S)

1. PFOA = PERFLUOROOCTANOIC ACID
2. NG/L = NANOGRAMS PER LITER
3. * INDICATED DATA NOT USED FOR CONTOURING
4. LOCATIONS OF WELLS AND BORINGS ARE BASED ON SURVEY BY TAYLOR WISEMAN & TAYLOR (REVISED 2019).

REFERENCE(S)

1. BASE DATA TAKEN FROM NEW CASTLE COUNTY DELAWARE, DEPARTMENT OF LAND USE, "EPARCEL VIEW MAP" WEB SITE GIS DATA DOWNLOAD. DATA ACQUIRED 07/29/2013.

CLIENT

DELAWARE SAND & GRAVEL SUPERFUND SITE
NEW CASTLE COUNTY, DELAWARE

PROJECT

SEMI-ANNUAL REPORT

CONSULTANT

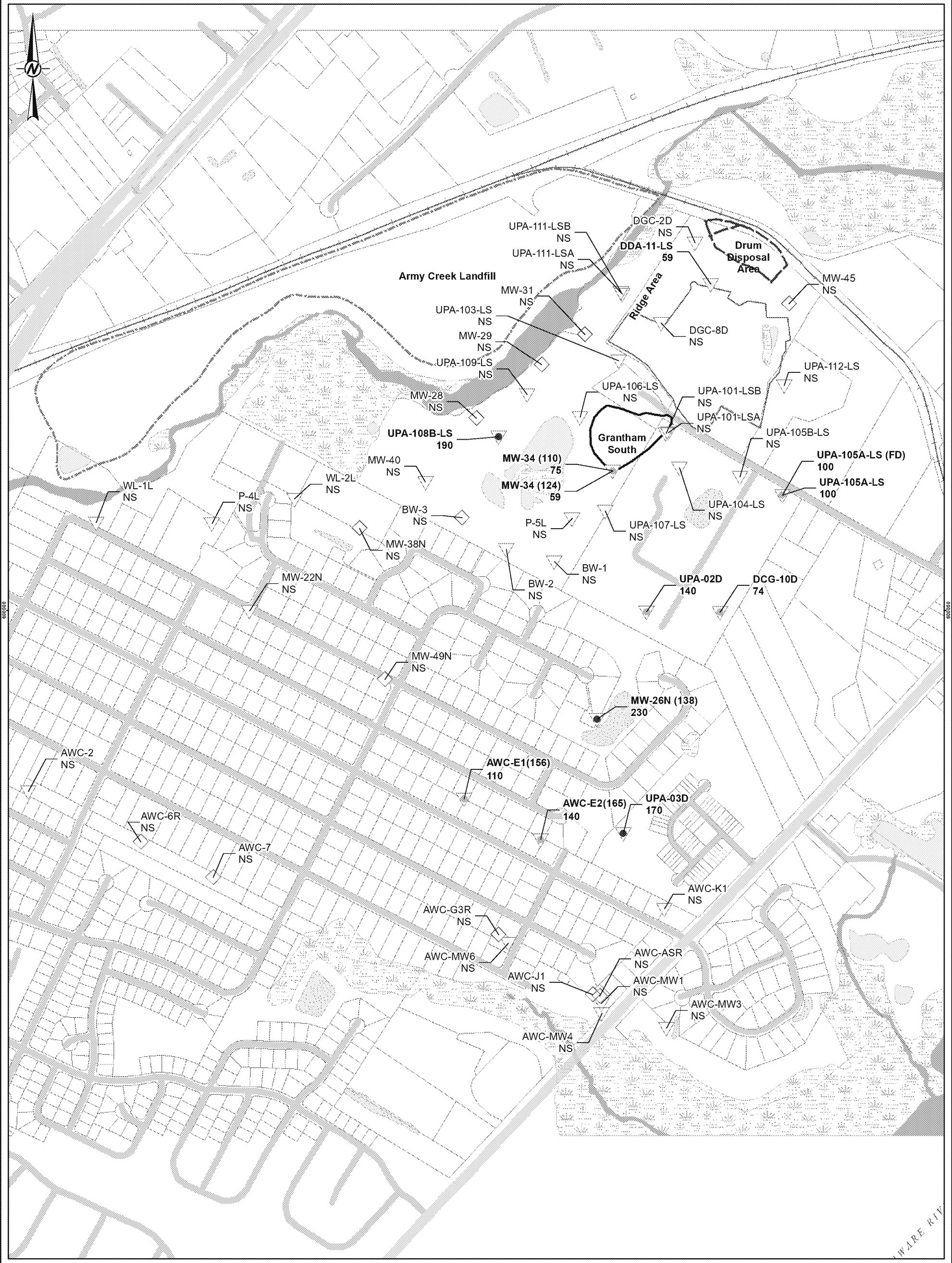
GOLDER

YYYY-MM-DD	2/28/2020
DESIGNED	BPC
PREPARED	SHL
REVIEWED	TAM
APPROVED	TAM

TITLE

PFOA
UPA UPPER SAND
OCTOBER 2019

PROJECT NO.	CONTROL	REV.	FIGURE
013605214	-	-	H-2A



LEGEND

- Columbia Monitoring Location
- Transition Zone Monitoring Location
- Upper Sand Monitoring Location
- Upper Sand and Lower Sand Monitoring Location
- Lower Sand Monitoring Location

PFOA Detections

- <40
- 40 - 70
- 70 - 150
- >150

23 PFOA Concentrations (ng/L)

0 175 350

1 " = 600 feet Feet

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2. NG/L = NANOGRAMS PER LITER
3. * INDICATED DATA NOT USED FOR CONTOURING
4. LOCATIONS OF WELLS AND BORINGS ARE BASED ON SURVEY BY TAYLOR WISEMAN & TAYLOR (REVISED 2019).

REFERENCE(S)

1. BASE DATA TAKEN FROM NEW CASTLE COUNTY DELAWARE, DEPARTMENT OF LAND USE, "EPARCEL VIEW MAP" WEB SITE GIS DATA DOWNLOAD. DATA ACQUIRED 07/29/2013.

CLIENT
DELAWARE SAND & GRAVEL SUPERFUND SITE
NEW CASTLE COUNTY, DELAWARE

PROJECT
SEMI-ANNUAL REPORT

CONSULTANT
GOLDER

YYYY-MM-DD	2/28/2020
DESIGNED	BPC
PREPARED	SHL
REVIEWED	TAM
APPROVED	TAM

TITLE
PFOA
UPA LOWER SAND
OCTOBER 2019

PROJECT NO.	CONTROL	REV.	FIGURE
013605214	-	-	H-2B

Data Quality Assessment
October 2019 Semi-Annual Groundwater Monitoring Event
Delaware Sand and Gravel Superfund Site
New Castle, DE

This report presents the findings of the data quality assessment performed on the analyses of environmental samples collected for the per- and polyfluorinated alkyl substances (PFAS) October 2019 Groundwater Monitoring Event. The groundwater monitoring was conducted at the Delaware Sand and Gravel (DS&G) Superfund Site (Site), located in New Castle, Delaware. Samples for this Monitoring Event were collected between October 7, 2019 and November 7, 2019. The chemical data for samples collected at the Site were evaluated to identify data quality issues which could affect the use of the data for decision making purposes. A total of 47 primary samples and the following Quality Assurance/Quality Control (QA/QC) samples were collected:

- Fifteen (15) trip blanks;
- Two (2) equipment rinsate blanks;
- Three (3) field blanks;
- Three (3) matrix spike / matrix spike duplicate (MS/MSD) pairs; and
- Three (3) field duplicate samples.

All samples were analyzed for a select list of fourteen (14) PFAS compounds[1] by Eurofins Lancaster Laboratories of Lancaster, Pennsylvania utilizing the following methodology:

- PFAS by United States Environmental Protection Agency (USEPA) Method 537, Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS), Version 1.1, modified (2009).

Information regarding the sample point identifications, analytical methods, Quality Control (QC) samples, sampling dates, an[1]d contract laboratory sample delivery group (SDG) designations are summarized in Table 1.

There is not yet a recognized voluntary standard method for the analysis of PFAS using isotope dilution. The data validator used the acceptance criteria in the project SAP, laboratory SOP, and professional judgement informed by the USEPA Contract Laboratory Program (CLP) National Functional Guidelines (NFG) for Organic Superfund Methods Data Review and USEPA CLP NFG for High Resolution Superfund Methods Data Review validation guidance as the basis for accepting or qualifying the data,. as applicable to the above listed analytical method. In general, chemical results for the samples collected at the Site were qualified on the basis of outlying precision or

[1] Reported PFAS compounds include: Perfluorobutane Sulfonate, Perfluorohexanoic acid, Perfluorohexane Sulfonate, Perfluoroheptanoic acid, Perfluoro-n-octanoic acid (PFOA), Perfluoro-1-Octanesulfonate (PFOS), Perfluorononanoic acid, Perfluorodecanoic acid, Perfluoroundecanoic acid, Perfluorododecanoic acid, Perfluorotridecanoic acid, Perfluorotetradecanoic acid, N-methyl perfluorooctanesulfonamidoacetic Acid, and N-ethyl perfluorooctanesulfonamidoacetic Acid

accuracy parameters, or on the basis of professional judgment. The following definitions provide a brief explanation of the qualifiers which may have been assigned to data during the data evaluation process.

J	The analyte is present; however, the reported value may not be accurate or precise.
J+	The analyte is present; however, the reported value may not be accurate or precise. The result is biased high.

The data generated during this Monitoring Event met the QC criteria established in the respective analytical methods and CLP guidelines, except as noted below. Qualifications may not have been required for all samples. Table 2 summarizes detailed qualifications applied to the data.

- Certain detected results were qualified as estimated, biased high (J+) when an associated isotope dilution standard recovery was above QC criteria.
- Certain detected results were qualified as estimated without bias (J) when an associated isotope dilution standard recovery was below QC criteria and the detection was between the MDL and RL.
- Certain detected results were qualified as estimated without bias (J) when an associated isotope dilution standard recovery was above QC criteria and the detection was between the MDL and the RL, and an associated internal standard peak area was below QC criteria.
- Certain detected results were qualified as estimated (J) when an associated MS/MSD recovery and/or RPD were outside of QC criteria and field duplicate precision was outside of QC criteria.
- Certain detected results were qualified as estimated (J) when field duplicate precision was outside of QC criteria.

Based on the data evaluations and data quality assessment, the analytical data for samples collected at the Site were determined to be acceptable (including estimated data) for their intended use. Generally acceptable levels of accuracy and precision, based on LCS, MS/MSD, field duplicate and surrogate recoveries, were achieved for the data. In addition, the data completeness (i.e. the ratio of the amount of valid data obtained to the amount expected, including estimated data, was 100%.

Table 1
Sample Point Identifications
October 2019 PFAS Groundwater Monitoring Event
Deleware Sand Gravel Superfund Site
New Castle, Delaware

						Parameters / Methods
SDG	***Field Identification***	***Matrix***	***Lab Identification***	***QC Samples***	***Collection Date***	***PFAS via E537 Mod***
DSG13	UPA-103-US	WG	1170070	--	10/7/2019	X
DSG13	DGC-10D	WG	1170071	--	10/7/2019	X
DSG13	DGC-10S	WG	1170072	--	10/7/2019	X
DSG13	TBGW_100719	WQ	1170073	TB	10/7/2019	X
DSG13	MW-26N	WG	1171864	--	10/9/2019	X
DSG13	GA-101	WG	1171865	--	10/9/2019	X
DSG13	TBGW_100919	WQ	1171866	TB	10/9/2019	X
DSG13	UPA-108B-US	WG	1173757	--	10/10/2019	X
DSG13	UPA-108B-LS	WG	1173758	--	10/10/2019	X
DSG13	TBGW_101019	WQ	1173759	TB	10/10/2019	X
DSG13	UPA-13D	WG	1174883	--	10/14/2019	X
DSG13	UPA-02S	WG	1174884	--	10/14/2019	X
DSG13	UPA-02D	WG	1174885	--	10/14/2019	X
DSG13	TBGW_101419	WQ	1174886	TB	10/14/2019	X
DSG13	MW-18	WG	1176069	--	10/15/2019	X
DSG13	MW-34 (80)	WG	1176070	--	10/15/2019	X
DSG13	MW-34 (110)	WG	1176071	--	10/15/2019	X
DSG13	TBGW_101519	WQ	1176072	TB	10/15/2019	X
DSG14	MW-34 (124)	WG	1177177	--	10/16/2019	X
DSG14	UPA-108C-US	WG	1177178	--	10/16/2019	X
DSG14	TBGW_101619	WQ	1177179	TB	10/16/2019	X
DSG14	MW-26N_128	WG	1178912	--	10/17/2019	X
DSG14	MW-26N_138	WG	1178913	--	10/17/2019	X
DSG14	MW-26N_3X	WG	1178914	--	10/17/2019	X
DSG14	UPA-105A-LS	WG	1180209	--	10/18/2019	X
DSG14	UPA-105A-US	WG	1180210	MS/MSD	10/18/2019	X
DSG14	FDGW_101819	WG	1180213	FD (UPA-105A-LS)	10/18/2019	X
DSG14	FBGW_101819	WQ	1180214	FB	10/18/2019	X
DSG14	TBGW_101819	WQ	1180215	TB	10/18/2019	X
DSG14	RT-1-UP	WG	1180248	--	10/21/2019	X
DSG14	UPA-01	WG	1180249	--	10/21/2019	X
DSG14	DDA-12-TZ	WG	1180250	--	10/21/2019	X
DSG14	DDA-12-US	WG	1180251	--	10/21/2019	X
DSG14	DDA-02	WG	1180252	--	10/21/2019	X
DSG14	TBGW_102119	WQ	1180253	TB	10/21/2019	X
DSG15	DDA-03	WG	1183075	--	10/22/2019	X
DSG15	DDA-06	WG	1183076	--	10/22/2019	X
DSG15	DDA-11LS	WG	1183077	--	10/22/2019	X
DSG15	DDA-16TZ	WG	1183078	--	10/22/2019	X
DSG15	DDA-16US	WG	1183079	--	10/22/2019	X
DSG15	PW-1 (U)	WG	1183080	--	10/22/2019	X
DSG15	TBGW_102219	WQ	1183081	TB	10/22/2019	X
DSG15	DGC-2S	WG	1184509	--	10/22/2019	X
DSG15	DDA-07-TZ	WG	1184510	--	10/23/2019	X
DSG15	DDA-07-US	WG	1184511	--	10/23/2019	X
DSG15	DDA-08-TZ	WG	1184512	--	10/23/2019	X
DSG15	TBGW_102319	WQ	1184513	TB	10/23/2019	X
DSG15	DGC-5 (40)	WG	1185316	--	10/24/2019	X
DSG15	PZ-11-EXT	WG	1185317	--	10/24/2019	X
DSG15	TBGW_102419	WQ	1185318	TB	10/24/2019	X
DSG15	C-18D	WG	1186963	--	10/25/2019	X
DSG15	B-4DR	WG	1186964	MS/MSD	10/25/2019	X

Table 1
Sample Point Identifications
October 2019 PFAS Groundwater Monitoring Event
Deleware Sand Gravel Superfund Site
New Castle, Delaware

						Parameters / Methods
SDG	***Field Identification***	***Matrix***	***Lab Identification***	***QC Samples***	***Collection Date***	***PFAS via E537 Mod***
DSG15	RBGW_102519	WQ	1186967	RB	10/25/2019	X
DSG15	FDGW_102519	WG	1186968	FD (C-18D)	10/25/2019	X
DSG15	FBGW_102519	WQ	1186969	FB	10/25/2019	X
DSG15	TBGW_102519	WQ	1186970	TB	10/25/2019	X
DSG16	B-3D	WG	1187535	--	10/28/2019	X
DSG16	MHW-1M	WG	1187536	--	10/28/2019	X
DSG16	DDA-15-T2	WG	1187537	--	10/28/2019	X
DSG16	TBGW_102819	WQ	1187538	TB	10/28/2019	X
DSG16	DDA-10-US	WG	1189209	MS/MSD	10/30/2019	X
DSG16	FDGW_103019	WG	1189212	FD (DDA-10-US)	10/30/2019	X
DSG16	FBGW_103019	WQ	1189213	FB	10/30/2019	X
DSG16	RBGW_103019	WQ	1189214	RB	10/30/2019	X
DSG16	TBGW_103019	WQ	1189215	TB	10/30/2019	X
DSG16	AWC-E1(132)	WG	1198570	--	11/7/2019	X
DSG16	AWC-E1(156)	WG	1198571	--	11/7/2019	X
DSG16	AWC-E2(156)	WG	1198572	--	11/7/2019	X
DSG16	AWC-E2(165)	WG	1198573	--	11/7/2019	X
DSG16	TBGW-110719	WQ	1198574	TB	11/7/2019	X

Abbreviations:
FB - Field Blank
FD - Field Duplicate
MS - Matrix Spike
MSD - Matrix Spike Duplicate
PFAS - Per- and Polyfluorinated Alkyl Substances
RB - Rinsate Blank
SDG - Sample Delivery Group
TB - Trip Blank
WG - Groundwater
WQ - Water, Quality Control

Table 2
Data Qualifications
October 2019 PFAS Groundwater Monitoring Event
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

SDG	*Sample Name*	*Constituent*	*New Result*	*New RL*	*Qualifier*	*Reason*
DSG13	MW-18	NMeFOSAA	--	--	J	Isotope dilution standard recovery below QC criteria; Result detected between MDL and RL
DSG14	UPA-01	Perfluorononanoic acid	--	--	J+	Isotope dilution standard recovery above QC criteria
DSG14	DDA-02	Perfluorononanoic acid	--	--	J+	Isotope dilution standard recovery above QC criteria
DSG15	C-18D	Perfluorooctanesulfonic acid	--	--	J	Field duplicate precision outside of QC criteria
DSG15	FDGW_102519	Perfluorooctanesulfonic acid	--	--	J	Field duplicate precision outside of QC criteria
DSG15	PZ-11-EXT	Perfluorononanoic acid	--	--	J+	Isotope dilution standard recovery above QC criteria
DSG15	C-18D	Perfluorononanoic acid	--	--	J+	Isotope dilution standard recovery above QC criteria
DSG15	FDGW_102519	Perfluorononanoic acid	--	--	J+	Isotope dilution standard recovery above QC criteria
DSG16	DDA-10-US	Perfluoroheptanoic acid	--	--	J	Field duplicate precision outside of QC criteria
DSG16	DDA-10-US	Perfluorodecanoic acid	--	--	J	Field duplicate precision outside of QC criteria
DSG16	FDGW_103019	Perfluoroheptanoic acid	--	--	J	Field duplicate precision outside of QC criteria
DSG16	FDGW_103019	Perfluorodecanoic acid	--	--	J	Field duplicate precision outside of QC criteria
DSG16	DDA-15-T2	Perfluorononanoic acid	--	--	J+	Isotope dilution standard recovery above QC criteria
DSG16	AWC-E2(165)	Perfluorobutanesulfonic acid	--	--	J	Isotope dilution standard recovery above QC criteria, result detected below RL; Internal standard peak area below QC criteria.
DSG16	DDA-10-US	Perfluorohexanesulfonic acid	--	--	J	MS recovery above QC criteria, RPD outside of QC criteria; Field duplicate precision outside of QC criteria
DSG16	DDA-10-US	Perfluorononanoic acid	--	--	J	MS recovery above QC criteria, RPD outside of QC criteria; Field duplicate precision outside of QC criteria
DSG16	DDA-10-US	Perfluorooctanesulfonic acid	--	--	J	MS recovery above QC criteria, RPD outside of QC criteria; Field duplicate precision outside of QC criteria
DSG16	FDGW_103019	Perfluorohexanesulfonic acid	--	--	J	MS recovery above QC criteria, RPD outside of QC criteria; Field duplicate precision outside of QC criteria
DSG16	FDGW_103019	Perfluorononanoic acid	--	--	J	MS recovery above QC criteria, RPD outside of QC criteria; Field duplicate precision outside of QC criteria
DSG16	FDGW_103019	Perfluorooctanesulfonic acid	--	--	J	MS recovery above QC criteria, RPD outside of QC criteria; Field duplicate precision outside of QC criteria
DSG16	DDA-10-US	Perfluorooctanoic acid	--	--	J	MS/MSD RPD outside of QC criteria; Field duplicate precision outside of QC criteria
DSG16	FDGW_103019	Perfluorooctanoic acid	--	--	J	MS/MSD RPD outside of QC criteria; Field duplicate precision outside of QC criteria

Table 2
Data Qualifications
October 2019 PFAS Groundwater Monitoring Event
Delaware Sand and Gravel Superfund Site
New Castle, Delaware

SDG	*Sample Name*	*Constituent*	*New Result*	*New RL*	*Qualifier*	*Reason*
All SDGs	All samples	All results	-	--	-	Laboratory-applied U-qualifiers indicating non-detect results and J-qualifiers indicating results Below the reporting limit are retained unless other qualifications are indicated in this table. All other laboratory qualifiers are removed.

Abbreviations:
MDL - Method Detection Limit
MS - Matrix Spike
MSD - Matrix Spike Duplicate
QC - Quality Control
RL - Reporting Limit
RPD - Relative Percent Difference
SDG - Sample Delivery Group

Qualifier Definitions:
J: Estimated Result
J+: Estimated Result, Biased High

ED_004821A_00011884-00627

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Analysis Report

REVISED

Sample Description: **UPA-103-US Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/07/2019 19:43
Collection Date/Time: 10/07/2019 10:25
SDG#: DSG13-01

Golder Associates Incorporated
ELLE Sample #: GW 1170070
ELLE Group #: 2068051
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	N.D.	0.44	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	0.53	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	1.4 J	0.44	1
14473	Perfluorodecanoic acid	335-76-2	1.2 J	0.44	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1
14473	Perfluoroheptanoic acid	375-85-9	15	0.44	1
14473	Perfluorohexanesulfonic acid	355-46-4	1.8	0.44	1
14473	Perfluorohexanoic acid	307-24-4	26	0.44	1
14473	Perfluorononanoic acid	375-95-1	5.0	0.44	1
14473	Perfluorooctanesulfonic acid	1763-23-1	4.9	0.44	1
14473	Perfluorooctanoic acid	335-67-1	38	0.44	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.44	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.44	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19291009	10/21/2019 16:17	Danielle D McCully	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19291009	10/18/2019 07:00	Pamela Rothharpt	1

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Analysis Report

REVISED

Sample Description: **DCG-10D Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/07/2019 19:43
Collection Date/Time: 10/07/2019 14:15
SDG#: DSG13-02

Golder Associates Incorporated
ELLE Sample #: GW 1170071
ELLE Group #: 2068051
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.43	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.52	1
14473	Perfluorobutanesulfonic acid	375-73-5	0.64 J	0.43	1
14473	Perfluorodecanoic acid	335-76-2	2.6	0.43	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1
14473	Perfluoroheptanoic acid	375-85-9	10	0.43	1
14473	Perfluorohexanesulfonic acid	355-46-4	18	0.43	1
14473	Perfluorohexanoic acid	307-24-4	15	0.43	1
14473	Perfluorononanoic acid	375-95-1	3.8	0.43	1
14473	Perfluorooctanesulfonic acid	1763-23-1	16	0.43	1
14473	Perfluorooctanoic acid	335-67-1	74	0.43	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.43	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.43	1
14473	Perfluoroundecanoic acid	2058-94-8	0.94 J	0.43	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19291009	10/21/2019 16:26	Danielle D McCully	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19291009	10/18/2019 07:00	Pamela Rothharpt	1

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Analysis Report

REVISED

Sample Description: **DCG-10S Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/07/2019 19:43
Collection Date/Time: 10/07/2019 15:15
SDG#: DSG13-03

Golder Associates Incorporated
ELLE Sample #: GW 1170072
ELLE Group #: 2068051
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.45	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.54	1
14473	Perfluorobutanesulfonic acid	375-73-5	0.53 J	0.45	1
14473	Perfluorodecanoic acid	335-76-2	3.2	0.45	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1
14473	Perfluoroheptanoic acid	375-85-9	13	0.45	1
14473	Perfluorohexanesulfonic acid	355-46-4	25	0.45	1
14473	Perfluorohexanoic acid	307-24-4	17	0.45	1
14473	Perfluorononanoic acid	375-95-1	3.5	0.45	1
14473	Perfluorooctanesulfonic acid	1763-23-1	16	0.45	1
14473	Perfluorooctanoic acid	335-67-1	83	0.45	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.45	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.45	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19291009	10/21/2019 16:35	Danielle D McCully	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19291009	10/18/2019 07:00	Pamela Rothharpt	1

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Analysis Report

REVISED

Sample Description: **TBGW_100719 Water DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/07/2019 19:43
Collection Date/Time: 10/07/2019
SDG#: DSG13-04TB

Golder Associates Incorporated
ELLE Sample #: GW 1170073
ELLE Group #: 2068051
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.45	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.54	1
14473	Perfluorobutanesulfonic acid	375-73-5	N.D.	0.45	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1
14473	Perfluoroheptanoic acid	375-85-9	N.D.	0.45	1
14473	Perfluorohexanesulfonic acid	355-46-4	N.D.	0.45	1
14473	Perfluorohexanoic acid	307-24-4	N.D.	0.45	1
14473	Perfluorononanoic acid	375-95-1	N.D.	0.45	1
14473	Perfluorooctanesulfonic acid	1763-23-1	N.D.	0.45	1
14473	Perfluorooctanoic acid	335-67-1	N.D.	0.45	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.45	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.45	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19291009	10/21/2019 16:44	Danielle D McCully	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19291009	10/18/2019 07:00	Pamela Rothharpt	1

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Analysis Report

Sample Description: **MW-26N Grab Groundwater DS & G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/09/2019 17:39
Collection Date/Time: 10/09/2019 11:45
SDG#: DSG13-05

Golder Associates Incorporated
ELLE Sample #: GW 1171864
ELLE Group #: 2068491
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.44	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.53	1
14473	Perfluorobutanesulfonic acid	375-73-5	1.6 J	0.44	1
14473	Perfluorodecanoic acid	335-76-2	7.1	0.44	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1
14473	Perfluoroheptanoic acid	375-85-9	27	0.44	1
14473	Perfluorohexanesulfonic acid	355-46-4	71	0.44	1
14473	Perfluorohexanoic acid	307-24-4	45	0.44	1
14473	Perfluorononanoic acid	375-95-1	7.9	0.44	1
14473	Perfluorooctanesulfonic acid	1763-23-1	46	0.44	1
14473	Perfluorooctanoic acid	335-67-1	170	0.44	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.44	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.44	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19294034	10/23/2019 20:46	Christine E Dolman	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19294034	10/21/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **GA-101 Grab Groundwater DS & G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/09/2019 17:39
Collection Date/Time: 10/09/2019 14:00
SDG#: DSG13-06

Golder Associates Incorporated
ELLE Sample #: GW 1171865
ELLE Group #: 2068491
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.46	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.55	1
14473	Perfluorobutanesulfonic acid	375-73-5	1.2 J	0.46	1
14473	Perfluorodecanoic acid	335-76-2	1.3 J	0.46	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.46	1
14473	Perfluoroheptanoic acid	375-85-9	26	0.46	1
14473	Perfluorohexanesulfonic acid	355-46-4	1.1 J	0.46	1
14473	Perfluorohexanoic acid	307-24-4	39	0.46	1
14473	Perfluorononanoic acid	375-95-1	13	0.46	1
14473	Perfluorooctanesulfonic acid	1763-23-1	3.0	0.46	1
14473	Perfluorooctanoic acid	335-67-1	72	0.46	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.46	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.46	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.46	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19294034	10/23/2019 20:55	Christine E Dolman	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19294034	10/21/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **TBGW_100919 Water DS & G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/09/2019 17:39
Collection Date/Time: 10/09/2019
SDG#: DSG13-07TB

Golder Associates Incorporated
ELLE Sample #: GW 1171866
ELLE Group #: 2068491
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.45	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.54	1
14473	Perfluorobutanesulfonic acid	375-73-5	N.D.	0.45	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1
14473	Perfluoroheptanoic acid	375-85-9	N.D.	0.45	1
14473	Perfluorohexanesulfonic acid	355-46-4	N.D.	0.45	1
14473	Perfluorohexanoic acid	307-24-4	N.D.	0.45	1
14473	Perfluorononanoic acid	375-95-1	N.D.	0.45	1
14473	Perfluorooctanesulfonic acid	1763-23-1	N.D.	0.45	1
14473	Perfluorooctanoic acid	335-67-1	0.45 J	0.45	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.45	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.45	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19294034	10/23/2019 21:04	Christine E Dolman	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19294034	10/21/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **UPA-108B-US Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/10/2019 18:53
Collection Date/Time: 10/10/2019 10:00
SDG#: DSG13-08

Golder Associates Incorporated
ELLE Sample #: GW 1173757
ELLE Group #: 2068937
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	8.1	0.44	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	0.75 J	0.53	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	5.0	0.44	1
14473	Perfluorodecanoic acid	335-76-2	3.4	0.44	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1
14473	Perfluoroheptanoic acid	375-85-9	23	0.44	1
14473	Perfluorohexanesulfonic acid	355-46-4	14	0.44	1
14473	Perfluorohexanoic acid	307-24-4	35	0.44	1
14473	Perfluorononanoic acid	375-95-1	10	0.44	1
14473	Perfluorooctanesulfonic acid	1763-23-1	100	0.44	1
14473	Perfluorooctanoic acid	335-67-1	150	0.44	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.44	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.44	1
14473	Perfluoroundecanoic acid	2058-94-8	2.2	0.44	1

The sample injection standard 13C3-PFBA peak area was outside of the QC limits for both the initial injection and the re-injection. The values here are from the initial injection of the sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19294034	10/23/2019 21:41	Christine E Dolman	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19294034	10/21/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **UPA-108B-LS Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/10/2019 18:53
Collection Date/Time: 10/10/2019 10:35
SDG#: DSG13-09

Golder Associates Incorporated
ELLE Sample #: GW 1173758
ELLE Group #: 2068937
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	0.67 J	0.46	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	0.55	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	2.3	0.46	1
14473	Perfluorodecanoic acid	335-76-2	1.2 J	0.46	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.46	1
14473	Perfluoroheptanoic acid	375-85-9	18	0.46	1
14473	Perfluorohexanesulfonic acid	355-46-4	13	0.46	1
14473	Perfluorohexanoic acid	307-24-4	27	0.46	1
14473	Perfluorononanoic acid	375-95-1	4.6	0.46	1
14473	Perfluorooctanesulfonic acid	1763-23-1	100	0.46	1
14473	Perfluorooctanoic acid	335-67-1	190	0.46	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.46	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.46	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.46	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19294034	10/23/2019 21:50	Christine E Dolman	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19294034	10/21/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **TBGW_101019 Water DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/10/2019 18:53
Collection Date/Time: 10/10/2019
SDG#: DSG13-10TB

Golder Associates Incorporated
ELLE Sample #: WW 1173759
ELLE Group #: 2068937
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.45	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.54	1
14473	Perfluorobutanesulfonic acid	375-73-5	N.D.	0.45	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1
14473	Perfluoroheptanoic acid	375-85-9	N.D.	0.45	1
14473	Perfluorohexanesulfonic acid	355-46-4	N.D.	0.45	1
14473	Perfluorohexanoic acid	307-24-4	N.D.	0.45	1
14473	Perfluorononanoic acid	375-95-1	N.D.	0.45	1
14473	Perfluorooctanesulfonic acid	1763-23-1	N.D.	0.45	1
14473	Perfluorooctanoic acid	335-67-1	N.D.	0.45	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.45	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.45	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19294034	10/23/2019 22:08	Christine E Dolman	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19294034	10/21/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **UPA-03D Grab Groundwater DS+G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/14/2019 18:27
Collection Date/Time: 10/14/2019 09:55
SDG#: DSG13-11

Golder Associates Incorporated
ELLE Sample #: GW 1174883
ELLE Group #: 2069175
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.45	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.55	1
14473	Perfluorobutanesulfonic acid	375-73-5	1.3 J	0.45	1
14473	Perfluorodecanoic acid	335-76-2	9.4	0.45	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1
14473	Perfluoroheptanoic acid	375-85-9	22	0.45	1
14473	Perfluorohexanesulfonic acid	355-46-4	65	0.45	1
14473	Perfluorohexanoic acid	307-24-4	32	0.45	1
14473	Perfluorononanoic acid	375-95-1	7.6	0.45	1
14473	Perfluorooctanesulfonic acid	1763-23-1	42	0.45	1
14473	Perfluorooctanoic acid	335-67-1	170	0.45	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.45	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.45	1
14473	Perfluoroundecanoic acid	2058-94-8	0.64 J	0.45	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19294034	10/23/2019 22:27	Christine E Dolman	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19294034	10/21/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **UPA-02S Grab Groundwater DS+G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/14/2019 18:27
Collection Date/Time: 10/14/2019 12:25
SDG#: DSG13-12

Golder Associates Incorporated
ELLE Sample #: GW 1174884
ELLE Group #: 2069175
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	N.D.	0.43	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	0.52	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	2.8	0.43	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	0.43	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1
14473	Perfluoroheptanoic acid	375-85-9	22	0.43	1
14473	Perfluorohexanesulfonic acid	355-46-4	3.2	0.43	1
14473	Perfluorohexanoic acid	307-24-4	31	0.43	1
14473	Perfluorononanoic acid	375-95-1	7.3	0.43	1
14473	Perfluorooctanesulfonic acid	1763-23-1	1.5 J	0.43	1
14473	Perfluorooctanoic acid	335-67-1	69	0.43	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.43	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.43	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.43	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19294034	10/23/2019 22:36	Christine E Dolman	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19294034	10/21/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **UPA-02D Grab Groundwater DS+G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/14/2019 18:27
Collection Date/Time: 10/14/2019 12:25
SDG#: DSG13-13

Golder Associates Incorporated
ELLE Sample #: GW 1174885
ELLE Group #: 2069175
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	1.0 J	0.45	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	0.54	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	1.1 J	0.45	1
14473	Perfluorodecanoic acid	335-76-2	1.1 J	0.45	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1
14473	Perfluoroheptanoic acid	375-85-9	14	0.45	1
14473	Perfluorohexanesulfonic acid	355-46-4	12	0.45	1
14473	Perfluorohexanoic acid	307-24-4	23	0.45	1
14473	Perfluorononanoic acid	375-95-1	5.3	0.45	1
14473	Perfluorooctanesulfonic acid	1763-23-1	19	0.45	1
14473	Perfluorooctanoic acid	335-67-1	140	0.45	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.45	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.45	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19294034	10/23/2019 22:45	Christine E Dolman	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19294034	10/21/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **TBGW_101419 Water DS+G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/14/2019 18:27
Collection Date/Time: 10/14/2019
SDG#: DSG13-14TB

Golder Associates Incorporated
ELLE Sample #: GW 1174886
ELLE Group #: 2069175
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.46	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.55	1
14473	Perfluorobutanesulfonic acid	375-73-5	N.D.	0.46	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	0.46	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.46	1
14473	Perfluoroheptanoic acid	375-85-9	N.D.	0.46	1
14473	Perfluorohexanesulfonic acid	355-46-4	N.D.	0.46	1
14473	Perfluorohexanoic acid	307-24-4	N.D.	0.46	1
14473	Perfluorononanoic acid	375-95-1	N.D.	0.46	1
14473	Perfluorooctanesulfonic acid	1763-23-1	N.D.	0.46	1
14473	Perfluorooctanoic acid	335-67-1	N.D.	0.46	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.46	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.46	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.46	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19294034	10/23/2019 22:54	Christine E Dolman	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19294034	10/21/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **MW-18 Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Golder Associates Incorporated
ELLE Sample #: GW 1176069
ELLE Group #: 2069407
Matrix: Groundwater

Submittal Date/Time: 10/15/2019 19:13
Collection Date/Time: 10/15/2019 10:25
SDG#: DSG13-15

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	1.7 J	0.45	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	0.70 J	0.54	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	3.2	0.45	1
14473	Perfluorodecanoic acid	335-76-2	2.6	0.45	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1
14473	Perfluoroheptanoic acid	375-85-9	23	0.45	1
14473	Perfluorohexanesulfonic acid	355-46-4	8.7	0.45	1
14473	Perfluorohexanoic acid	307-24-4	30	0.45	1
14473	Perfluorononanoic acid	375-95-1	11	0.45	1
14473	Perfluorooctanesulfonic acid	1763-23-1	87	0.45	1
14473	Perfluorooctanoic acid	335-67-1	170	0.45	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.45	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.45	1
14473	Perfluoroundecanoic acid	2058-94-8	1.2 J	0.45	1

The recovery for extraction standard d3-NMeFOSAA is outside of the QC acceptance limits as noted on the QC Summary. The following action was taken:
The sample was re-extracted outside of the method holding time and the reocvery for extraction standards was within the QC acceptance limits. The data is reported from the initial trial and both sets of data are included in the data package.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19294034	10/23/2019 23:49	Christine E Dolman	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19294034	10/21/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **MW-34 (80) Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/15/2019 19:13
Collection Date/Time: 10/15/2019 12:05
SDG#: DSG13-16

Golder Associates Incorporated
ELLE Sample #: GW 1176070
ELLE Group #: 2069407
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.45	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.54	1
14473	Perfluorobutanesulfonic acid	375-73-5	1.9	0.45	1
14473	Perfluorodecanoic acid	335-76-2	0.74 J	0.45	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1
14473	Perfluoroheptanoic acid	375-85-9	10	0.45	1
14473	Perfluorohexanesulfonic acid	355-46-4	8.0	0.45	1
14473	Perfluorohexanoic acid	307-24-4	15	0.45	1
14473	Perfluorononanoic acid	375-95-1	3.6	0.45	1
14473	Perfluorooctanesulfonic acid	1763-23-1	24	0.45	1
14473	Perfluorooctanoic acid	335-67-1	64	0.45	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.45	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.45	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19294034	10/23/2019 23:58	Christine E Dolman	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19294034	10/21/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **MW-34 (110) Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/15/2019 19:13
Collection Date/Time: 10/15/2019 15:05
SDG#: DSG13-17

Golder Associates Incorporated
ELLE Sample #: GW 1176071
ELLE Group #: 2069407
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	0.52 J	0.45	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	0.54	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	1.6 J	0.45	1
14473	Perfluorodecanoic acid	335-76-2	0.93 J	0.45	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1
14473	Perfluoroheptanoic acid	375-85-9	11	0.45	1
14473	Perfluorohexanesulfonic acid	355-46-4	8.5	0.45	1
14473	Perfluorohexanoic acid	307-24-4	15	0.45	1
14473	Perfluorononanoic acid	375-95-1	3.6	0.45	1
14473	Perfluorooctanesulfonic acid	1763-23-1	27	0.45	1
14473	Perfluorooctanoic acid	335-67-1	75	0.45	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.45	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.45	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19294034	10/24/2019 00:07	Christine E Dolman	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19294034	10/21/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **TBGW_101519 Water DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/15/2019 19:13
Collection Date/Time: 10/15/2019
SDG#: DSG13-18TB

Golder Associates Incorporated
ELLE Sample #: GW 1176072
ELLE Group #: 2069407
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	N.D.	0.46	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	0.55	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	N.D.	0.46	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	0.46	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.46	1
14473	Perfluoroheptanoic acid	375-85-9	N.D.	0.46	1
14473	Perfluorohexanesulfonic acid	355-46-4	N.D.	0.46	1
14473	Perfluorohexanoic acid	307-24-4	N.D.	0.46	1
14473	Perfluorononanoic acid	375-95-1	N.D.	0.46	1
14473	Perfluorooctanesulfonic acid	1763-23-1	N.D.	0.46	1
14473	Perfluorooctanoic acid	335-67-1	0.47 J	0.46	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.46	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.46	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.46	1

The recovery for the extraction standard d5-NEtFOSAA is outside the QC acceptance limits as noted on the QC Summary.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19294034	10/24/2019 00:16	Christine E Dolman	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19294034	10/21/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **MW-34 (124) Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/16/2019 19:06
Collection Date/Time: 10/16/2019 10:15
SDG#: DSG14-01

Golder Associates Incorporated
ELLE Sample #: GW 1177177
ELLE Group #: 2069680
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	N.D.	0.45	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	0.54	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	1.6 J	0.45	1
14473	Perfluorodecanoic acid	335-76-2	0.82 J	0.45	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1
14473	Perfluoroheptanoic acid	375-85-9	11	0.45	1
14473	Perfluorohexanesulfonic acid	355-46-4	9.0	0.45	1
14473	Perfluorohexanoic acid	307-24-4	16	0.45	1
14473	Perfluorononanoic acid	375-95-1	3.4	0.45	1
14473	Perfluorooctanesulfonic acid	1763-23-1	22	0.45	1
14473	Perfluorooctanoic acid	335-67-1	59	0.45	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.45	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.45	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19296012	10/29/2019 22:43	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19296012	10/23/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **UPA-108C-US Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/16/2019 19:06
Collection Date/Time: 10/16/2019 14:30
SDG#: DSG14-02

Golder Associates Incorporated
ELLE Sample #: GW 1177178
ELLE Group #: 2069680
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	0.47 J	0.44	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	0.53	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	3.6	0.44	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	0.44	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1
14473	Perfluoroheptanoic acid	375-85-9	31	0.44	1
14473	Perfluorohexanesulfonic acid	355-46-4	26	0.44	1
14473	Perfluorohexanoic acid	307-24-4	38	0.44	1
14473	Perfluorononanoic acid	375-95-1	15	0.44	1
14473	Perfluorooctanesulfonic acid	1763-23-1	43	0.44	1
14473	Perfluorooctanoic acid	335-67-1	300	0.44	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.44	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.44	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1

The sample injection internal standard peak areas were outside of the QC limits for both the initial injection and the re-injection. The values here are from the initial injection of the sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19296012	10/29/2019 22:52	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19296012	10/23/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **TBGW_101619 Water DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/16/2019 19:06
Collection Date/Time: 10/16/2019
SDG#: DSG14-03TB

Golder Associates Incorporated
ELLE Sample #: GW 1177179
ELLE Group #: 2069680
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.46	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.55	1
14473	Perfluorobutanesulfonic acid	375-73-5	N.D.	0.46	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	0.46	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.46	1
14473	Perfluoroheptanoic acid	375-85-9	N.D.	0.46	1
14473	Perfluorohexanesulfonic acid	355-46-4	N.D.	0.46	1
14473	Perfluorohexanoic acid	307-24-4	N.D.	0.46	1
14473	Perfluorononanoic acid	375-95-1	N.D.	0.46	1
14473	Perfluorooctanesulfonic acid	1763-23-1	N.D.	0.46	1
14473	Perfluorooctanoic acid	335-67-1	N.D.	0.46	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.46	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.46	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.46	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19296012	10/29/2019 23:01	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19296012	10/23/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **MW-26N_128 Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/17/2019 17:58
Collection Date/Time: 10/17/2019 11:00
SDG#: DSG14-04

Golder Associates Incorporated
ELLE Sample #: GW 1178912
ELLE Group #: 2070005
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	N.D.	0.45	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	0.54	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	1.9	0.45	1
14473	Perfluorodecanoic acid	335-76-2	12	0.45	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1
14473	Perfluoroheptanoic acid	375-85-9	40	0.45	1
14473	Perfluorohexanesulfonic acid	355-46-4	120	0.45	1
14473	Perfluorohexanoic acid	307-24-4	65	0.45	1
14473	Perfluorononanoic acid	375-95-1	11	0.45	1
14473	Perfluorooctanesulfonic acid	1763-23-1	72	0.45	1
14473	Perfluorooctanoic acid	335-67-1	250	0.45	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.45	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.45	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1

The sample injection internal standard peak areas were outside of the QC limits for both the initial injection and the re-injection. The values here are from the initial injection of the sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19296013	10/27/2019 03:28	Brian Kiser	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19296013	10/23/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **MW-26N_138 Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/17/2019 17:58
Collection Date/Time: 10/17/2019 12:00
SDG#: DSG14-05

Golder Associates Incorporated
ELLE Sample #: GW 1178913
ELLE Group #: 2070005
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	N.D.	0.45	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	0.54	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	1.8	0.45	1
14473	Perfluorodecanoic acid	335-76-2	12	0.45	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1
14473	Perfluoroheptanoic acid	375-85-9	40	0.45	1
14473	Perfluorohexanesulfonic acid	355-46-4	120	0.45	1
14473	Perfluorohexanoic acid	307-24-4	61	0.45	1
14473	Perfluorononanoic acid	375-95-1	9.8	0.45	1
14473	Perfluorooctanesulfonic acid	1763-23-1	71	0.45	1
14473	Perfluorooctanoic acid	335-67-1	230	0.45	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.45	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.45	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19296013	10/27/2019 03:46	Devon M Whooley	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19296013	10/23/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **MW-26N_3X Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/17/2019 17:58
Collection Date/Time: 10/17/2019 14:30
SDG#: DSG14-06

Golder Associates Incorporated
ELLE Sample #: GW 1178914
ELLE Group #: 2070005
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	N.D.	0.43	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	0.51	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	1.7	0.43	1
14473	Perfluorodecanoic acid	335-76-2	8.0	0.43	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1
14473	Perfluoroheptanoic acid	375-85-9	29	0.43	1
14473	Perfluorohexanesulfonic acid	355-46-4	72	0.43	1
14473	Perfluorohexanoic acid	307-24-4	45	0.43	1
14473	Perfluorononanoic acid	375-95-1	7.9	0.43	1
14473	Perfluorooctanesulfonic acid	1763-23-1	47	0.43	1
14473	Perfluorooctanoic acid	335-67-1	180	0.43	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.43	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.43	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.43	1

The sample injection internal standard peak areas were outside of the QC limits for both the initial injection and the re-injection. The values here are from the initial injection of the sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19296013	10/27/2019 03:55	Brian Kiser	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19296013	10/23/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **UPA-105A-LS Grab Groundwater**

Project Name: **DE Sand and Gravel Superfund Site**

Golder Associates Incorporated
ELLE Sample #: GW 1180209
ELLE Group #: 2070260
Matrix: Groundwater

Submittal Date/Time: 10/18/2019 19:56
Collection Date/Time: 10/18/2019 10:50
SDG#: DSG14-07

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.44	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.53	1
14473	Perfluorobutanesulfonic acid	375-73-5	0.68 J	0.44	1
14473	Perfluorodecanoic acid	335-76-2	1.7 J	0.44	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1
14473	Perfluoroheptanoic acid	375-85-9	11	0.44	1
14473	Perfluorohexanesulfonic acid	355-46-4	19	0.44	1
14473	Perfluorohexanoic acid	307-24-4	17	0.44	1
14473	Perfluorononanoic acid	375-95-1	3.8	0.44	1
14473	Perfluorooctanesulfonic acid	1763-23-1	14	0.44	1
14473	Perfluorooctanoic acid	335-67-1	100	0.44	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.44	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.44	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19297015	10/30/2019 18:45	Devon M Whooley	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19297015	10/24/2019 17:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **UPA-105A-US Grab Groundwater**

Project Name: **DE Sand and Gravel Superfund Site**

Golder Associates Incorporated
ELLE Sample #: GW 1180210
ELLE Group #: 2070260
Matrix: Groundwater

Submittal Date/Time: 10/18/2019 19:56
Collection Date/Time: 10/18/2019 11:00
SDG#: DSG14-08BKG

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.45	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.54	1
14473	Perfluorobutanesulfonic acid	375-73-5	0.53 J	0.45	1
14473	Perfluorodecanoic acid	335-76-2	2.4	0.45	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1
14473	Perfluoroheptanoic acid	375-85-9	10	0.45	1
14473	Perfluorohexanesulfonic acid	355-46-4	21	0.45	1
14473	Perfluorohexanoic acid	307-24-4	15	0.45	1
14473	Perfluorononanoic acid	375-95-1	2.6	0.45	1
14473	Perfluorooctanesulfonic acid	1763-23-1	15	0.45	1
14473	Perfluorooctanoic acid	335-67-1	81	0.45	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.45	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.45	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19297015	10/30/2019 18:54	Devon M Whooley	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19297015	10/24/2019 17:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **UPA-105A-US_MS Grab Groundwater**

Project Name: **DE Sand and Gravel Superfund Site**

Golder Associates Incorporated
ELLE Sample #: GW 1180211
ELLE Group #: 2070260
Matrix: Groundwater

Submittal Date/Time: 10/18/2019 19:56
Collection Date/Time: 10/18/2019 11:00
SDG#: DSG14-08MS

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	20	0.46	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	20	0.55	1
14473	Perfluorobutanesulfonic acid	375-73-5	20	0.46	1
14473	Perfluorodecanoic acid	335-76-2	22	0.46	1
14473	Perfluorododecanoic acid	307-55-1	25	0.46	1
14473	Perfluoroheptanoic acid	375-85-9	31	0.46	1
14473	Perfluorohexanesulfonic acid	355-46-4	40	0.46	1
14473	Perfluorohexanoic acid	307-24-4	37	0.46	1
14473	Perfluorononanoic acid	375-95-1	24	0.46	1
14473	Perfluorooctanesulfonic acid	1763-23-1	33	0.46	1
14473	Perfluorooctanoic acid	335-67-1	100	0.46	1
14473	Perfluorotetradecanoic acid	376-06-7	24	0.46	1
14473	Perfluorotridecanoic acid	72629-94-8	23	0.46	1
14473	Perfluoroundecanoic acid	2058-94-8	22	0.46	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19297015	10/30/2019 19:03	Devon M Whooley	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19297015	10/24/2019 17:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **UPA-105A-US_MSD Grab Groundwater**

Project Name: **DE Sand and Gravel Superfund Site**

Golder Associates Incorporated
ELLE Sample #: GW 1180212
ELLE Group #: 2070260
Matrix: Groundwater

Submittal Date/Time: 10/18/2019 19:56
Collection Date/Time: 10/18/2019 11:00
SDG#: DSG14-08MSD

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	20	0.45	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	23	0.54	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	20	0.45	1
14473	Perfluorodecanoic acid	335-76-2	25	0.45	1
14473	Perfluorododecanoic acid	307-55-1	23	0.45	1
14473	Perfluoroheptanoic acid	375-85-9	32	0.45	1
14473	Perfluorohexanesulfonic acid	355-46-4	41	0.45	1
14473	Perfluorohexanoic acid	307-24-4	39	0.45	1
14473	Perfluorononanoic acid	375-95-1	26	0.45	1
14473	Perfluorooctanesulfonic acid	1763-23-1	32	0.45	1
14473	Perfluorooctanoic acid	335-67-1	100	0.45	1
14473	Perfluorotetradecanoic acid	376-06-7	23	0.45	1
14473	Perfluorotridecanoic acid	72629-94-8	23	0.45	1
14473	Perfluoroundecanoic acid	2058-94-8	25	0.45	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19297015	10/30/2019 19:12	Devon M Whooley	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19297015	10/24/2019 17:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **FDGW_101819 Grab Groundwater**

Project Name: **DE Sand and Gravel Superfund Site**

Golder Associates Incorporated
ELLE Sample #: GW 1180213
ELLE Group #: 2070260
Matrix: Groundwater

Submittal Date/Time: 10/18/2019 19:56
Collection Date/Time: 10/18/2019
SDG#: DSG14-09FD

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	N.D.	0.46	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	0.55	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	0.63 J	0.46	1
14473	Perfluorodecanoic acid	335-76-2	1.9	0.46	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.46	1
14473	Perfluoroheptanoic acid	375-85-9	10	0.46	1
14473	Perfluorohexanesulfonic acid	355-46-4	16	0.46	1
14473	Perfluorohexanoic acid	307-24-4	15	0.46	1
14473	Perfluorononanoic acid	375-95-1	3.3	0.46	1
14473	Perfluorooctanesulfonic acid	1763-23-1	14	0.46	1
14473	Perfluorooctanoic acid	335-67-1	100	0.46	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.46	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.46	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.46	1

The recovery for extraction standard(s) is outside of the QC acceptance limits in the associated method blank as noted on the QC Summary.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19305001	11/04/2019 12:08	Danielle D McCully	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	2	19305001	11/01/2019 07:00	Pamela Rothharpt	1

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Analysis Report

Sample Description: **FBGW_101819 Grab Water**

Project Name: **DE Sand and Gravel Superfund Site**

Golder Associates Incorporated
ELLE Sample #: GW 1180214
ELLE Group #: 2070260
Matrix: Water

Submittal Date/Time: 10/18/2019 19:56
Collection Date/Time: 10/18/2019 15:45
SDG#: DSG14-10FB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.44	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.53	1
14473	Perfluorobutanesulfonic acid	375-73-5	N.D.	0.44	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	0.44	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1
14473	Perfluoroheptanoic acid	375-85-9	N.D.	0.44	1
14473	Perfluorohexanesulfonic acid	355-46-4	N.D.	0.44	1
14473	Perfluorohexanoic acid	307-24-4	N.D.	0.44	1
14473	Perfluorononanoic acid	375-95-1	N.D.	0.44	1
14473	Perfluorooctanesulfonic acid	1763-23-1	N.D.	0.44	1
14473	Perfluorooctanoic acid	335-67-1	N.D.	0.44	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.44	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.44	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19297015	10/30/2019 19:31	Devon M Whooley	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19297015	10/24/2019 17:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **TBGW_101819 Water**

Project Name: **DE Sand and Gravel Superfund Site**

Golder Associates Incorporated
ELLE Sample #: GW 1180215
ELLE Group #: 2070260
Matrix: Water

Submittal Date/Time: 10/18/2019 19:56
Collection Date/Time: 10/18/2019
SDG#: DSG14-11TB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	N.D.	0.45	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	0.54	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	N.D.	0.45	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1
14473	Perfluoroheptanoic acid	375-85-9	N.D.	0.45	1
14473	Perfluorohexanesulfonic acid	355-46-4	N.D.	0.45	1
14473	Perfluorohexanoic acid	307-24-4	N.D.	0.45	1
14473	Perfluorononanoic acid	375-95-1	N.D.	0.45	1
14473	Perfluorooctanesulfonic acid	1763-23-1	N.D.	0.45	1
14473	Perfluorooctanoic acid	335-67-1	N.D.	0.45	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.45	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.45	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1

The recovery for labeled compound used as extraction standards is outside of QC acceptance limits as noted on the QC Summary.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19297015	10/30/2019 19:49	Devon M Whooley	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19297015	10/24/2019 17:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **RT-1-UP Grab Groundwater**

Project Name: **DE Sand and Gravel Superfund Site**

Golder Associates Incorporated
ELLE Sample #: GW 1180248
ELLE Group #: 2070264
Matrix: Groundwater

Submittal Date/Time: 10/21/2019 18:48
Collection Date/Time: 10/21/2019 10:00
SDG#: DSG14-12

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.45	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.54	1
14473	Perfluorobutanesulfonic acid	375-73-5	N.D.	0.45	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1
14473	Perfluoroheptanoic acid	375-85-9	0.51 J	0.45	1
14473	Perfluorohexanesulfonic acid	355-46-4	N.D.	0.45	1
14473	Perfluorohexanoic acid	307-24-4	2.1	0.45	1
14473	Perfluorononanoic acid	375-95-1	N.D.	0.45	1
14473	Perfluorooctanesulfonic acid	1763-23-1	N.D.	0.45	1
14473	Perfluorooctanoic acid	335-67-1	1.0 J	0.45	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.45	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.45	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19303020	11/01/2019 15:30	Danielle D McCully	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19303020	10/30/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **UPA-01 Grab Groundwater**

Project Name: **DE Sand and Gravel Superfund Site**

Golder Associates Incorporated
ELLE Sample #: GW 1180249
ELLE Group #: 2070264
Matrix: Groundwater

Submittal Date/Time: 10/21/2019 18:48
Collection Date/Time: 10/21/2019 11:35
SDG#: DSG14-13

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	N.D.	0.44	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	0.53	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	0.83 J	0.44	1
14473	Perfluorodecanoic acid	335-76-2	4.2	0.44	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1
14473	Perfluoroheptanoic acid	375-85-9	24	0.44	1
14473	Perfluorohexanesulfonic acid	355-46-4	41	0.44	1
14473	Perfluorohexanoic acid	307-24-4	37	0.44	1
14473	Perfluorononanoic acid	375-95-1	6.6 J+	0.44	1
14473	Perfluorooctanesulfonic acid	1763-23-1	24	0.44	1
14473	Perfluorooctanoic acid	335-67-1	160	0.44	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.44	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.44	1
14473	Perfluoroundecanoic acid	2058-94-8	0.51 J	0.44	1

The sample injection internal standard peak areas were outside of the QC limits for both the initial injection and the re-injection. The values here are from the initial injection of the sample.

The recovery for labeled compound used as extraction standards is outside of QC acceptance limits as noted on the QC Summary due to the matrix of the sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19303020	11/01/2019 15:39	Danielle D McCully	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19303020	10/30/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **DDA-12-TZ Grab Groundwater**

Project Name: **DE Sand and Gravel Superfund Site**

Golder Associates Incorporated
ELLE Sample #: GW 1180250
ELLE Group #: 2070264
Matrix: Groundwater

Submittal Date/Time: 10/21/2019 18:48
Collection Date/Time: 10/21/2019 15:45
SDG#: DSG14-14

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	N.D.	0.47	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	0.56	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	0.84 J	0.47	1
14473	Perfluorodecanoic acid	335-76-2	0.61 J	0.47	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.47	1
14473	Perfluoroheptanoic acid	375-85-9	32	0.47	1
14473	Perfluorohexanesulfonic acid	355-46-4	6.9	0.47	1
14473	Perfluorohexanoic acid	307-24-4	53	0.47	1
14473	Perfluorononanoic acid	375-95-1	7.0	0.47	1
14473	Perfluorooctanesulfonic acid	1763-23-1	3.1	0.47	1
14473	Perfluorooctanoic acid	335-67-1	190	0.47	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.47	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.47	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.47	1

The sample injection internal standard peak areas were outside of the QC limits for both the initial injection and the re-injection. The values here are from the initial injection of the sample.

The recovery for labeled compound used as extraction standards is outside of QC acceptance limits as noted on the QC Summary due to the matrix of the sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19303020	11/01/2019 15:48	Danielle D McCully	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19303020	10/30/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **DDA-12-US Grab Groundwater**

Project Name: **DE Sand and Gravel Superfund Site**

Golder Associates Incorporated
ELLE Sample #: GW 1180251
ELLE Group #: 2070264
Matrix: Groundwater

Submittal Date/Time: 10/21/2019 18:48
Collection Date/Time: 10/21/2019 11:20
SDG#: DSG14-15

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	N.D.	0.45	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	0.54	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	1.1 J	0.45	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1
14473	Perfluoroheptanoic acid	375-85-9	31	0.45	1
14473	Perfluorohexanesulfonic acid	355-46-4	14	0.45	1
14473	Perfluorohexanoic acid	307-24-4	46	0.45	1
14473	Perfluorononanoic acid	375-95-1	8.6	0.45	1
14473	Perfluorooctanesulfonic acid	1763-23-1	4.3	0.45	1
14473	Perfluorooctanoic acid	335-67-1	170	0.45	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.45	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.45	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1

The sample injection internal standard peak areas were outside of the QC limits for both the initial injection and the re-injection. The values here are from the initial injection of the sample.

The recovery for labeled compound used as extraction standards is outside of QC acceptance limits as noted on the QC Summary due to the matrix of the sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19303020	11/01/2019 15:57	Danielle D McCully	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19303020	10/30/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **DDA-02 Grab Groundwater**

Project Name: **DE Sand and Gravel Superfund Site**

Golder Associates Incorporated
ELLE Sample #: GW 1180252
ELLE Group #: 2070264
Matrix: Groundwater

Submittal Date/Time: 10/21/2019 18:48
Collection Date/Time: 10/21/2019 13:40
SDG#: DSG14-16

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	N.D.	0.45	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	0.54	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	1.3 J	0.45	1
14473	Perfluorodecanoic acid	335-76-2	1.3 J	0.45	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1
14473	Perfluoroheptanoic acid	375-85-9	18	0.45	1
14473	Perfluorohexanesulfonic acid	355-46-4	15	0.45	1
14473	Perfluorohexanoic acid	307-24-4	23	0.45	1
14473	Perfluorononanoic acid	375-95-1	7.8 J+	0.45	1
14473	Perfluorooctanesulfonic acid	1763-23-1	18	0.45	1
14473	Perfluorooctanoic acid	335-67-1	160	0.45	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.45	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.45	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1

The sample injection internal standard peak areas were outside of the QC limits for both the initial injection and the re-injection. The values here are from the initial injection of the sample.

The recovery for labeled compound used as extraction standards is outside of QC acceptance limits as noted on the QC Summary due to the matrix of the sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19303020	11/01/2019 16:06	Danielle D McCully	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19303020	10/30/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **TBGW_102119 Water**

Project Name: **DE Sand and Gravel Superfund Site**

Golder Associates Incorporated
ELLE Sample #: GW 1180253
ELLE Group #: 2070264
Matrix: Water

Submittal Date/Time: 10/21/2019 18:48
Collection Date/Time: 10/21/2019
SDG#: DSG14-17TB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.44	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.53	1
14473	Perfluorobutanesulfonic acid	375-73-5	N.D.	0.44	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	0.44	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1
14473	Perfluoroheptanoic acid	375-85-9	N.D.	0.44	1
14473	Perfluorohexanesulfonic acid	355-46-4	N.D.	0.44	1
14473	Perfluorohexanoic acid	307-24-4	N.D.	0.44	1
14473	Perfluorononanoic acid	375-95-1	N.D.	0.44	1
14473	Perfluorooctanesulfonic acid	1763-23-1	N.D.	0.44	1
14473	Perfluorooctanoic acid	335-67-1	N.D.	0.44	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.44	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.44	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19303020	11/01/2019 16:24	Danielle D McCully	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19303020	10/30/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **DDA-03 Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/22/2019 20:25
Collection Date/Time: 10/22/2019 10:40
SDG#: DSG15-01

Golder Associates Incorporated
ELLE Sample #: GW 1183075
ELLE Group #: 2070811
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	N.D.	0.45	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	0.54	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	1.0 J	0.45	1
14473	Perfluorodecanoic acid	335-76-2	2.6	0.45	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1
14473	Perfluoroheptanoic acid	375-85-9	22	0.45	1
14473	Perfluorohexanesulfonic acid	355-46-4	26	0.45	1
14473	Perfluorohexanoic acid	307-24-4	27	0.45	1
14473	Perfluorononanoic acid	375-95-1	6.2	0.45	1
14473	Perfluorooctanesulfonic acid	1763-23-1	31	0.45	1
14473	Perfluorooctanoic acid	335-67-1	270	0.45	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.45	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.45	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19304001	11/08/2019 15:10	Christine E Dolman	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19304001	10/31/2019 07:00	Pamela Rothharpt	1

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Analysis Report

Sample Description: **DDA-06 Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/22/2019 20:25
Collection Date/Time: 10/22/2019 12:20
SDG#: DSG15-02

Golder Associates Incorporated
ELLE Sample #: GW 1183076
ELLE Group #: 2070811
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	N.D.	1.2	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	1.5	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	1.5 J	1.2	1
14473	Perfluorodecanoic acid	335-76-2	1.3 J	1.2	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	1.2	1
14473	Perfluoroheptanoic acid	375-85-9	39	1.2	1
14473	Perfluorohexanesulfonic acid	355-46-4	36	1.2	1
14473	Perfluorohexanoic acid	307-24-4	55	1.2	1
14473	Perfluorononanoic acid	375-95-1	15	1.2	1
14473	Perfluorooctanesulfonic acid	1763-23-1	14	1.2	1
14473	Perfluorooctanoic acid	335-67-1	290	1.2	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	1.2	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	1.2	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	1.2	1

The recovery for extraction standard d5-NEtFOSAA is outside of the QC acceptance limits as noted on the QC Summary.

Reporting limits were raised due to interference from the sample matrix.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19304001	11/08/2019 15:19	Christine E Dolman	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19304001	10/31/2019 07:00	Pamela Rothharpt	1

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Analysis Report

Sample Description: **DDA-11LS Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/22/2019 20:25
Collection Date/Time: 10/22/2019 10:45
SDG#: DSG15-03

Golder Associates Incorporated
ELLE Sample #: GW 1183077
ELLE Group #: 2070811
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.46	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.55	1
14473	Perfluorobutanesulfonic acid	375-73-5	0.67 J	0.46	1
14473	Perfluorodecanoic acid	335-76-2	0.82 J	0.46	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.46	1
14473	Perfluoroheptanoic acid	375-85-9	8.8	0.46	1
14473	Perfluorohexanesulfonic acid	355-46-4	7.9	0.46	1
14473	Perfluorohexanoic acid	307-24-4	13	0.46	1
14473	Perfluorononanoic acid	375-95-1	4.2	0.46	1
14473	Perfluorooctanesulfonic acid	1763-23-1	10	0.46	1
14473	Perfluorooctanoic acid	335-67-1	59	0.46	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.46	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.46	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.46	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19304001	11/08/2019 15:28	Christine E Dolman	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19304001	10/31/2019 07:00	Pamela Rothharpt	1

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Analysis Report

Sample Description: **DDA-16TZ Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/22/2019 20:25
Collection Date/Time: 10/22/2019 13:05
SDG#: DSG15-04

Golder Associates Incorporated
ELLE Sample #: GW 1183078
ELLE Group #: 2070811
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	N.D.	1.2	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	1.5	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	N.D.	1.2	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	1.2	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	1.2	1
14473	Perfluoroheptanoic acid	375-85-9	14	1.2	1
14473	Perfluorohexanesulfonic acid	355-46-4	1.5 J	1.2	1
14473	Perfluorohexanoic acid	307-24-4	24	1.2	1
14473	Perfluorononanoic acid	375-95-1	2.9 J	1.2	1
14473	Perfluorooctanesulfonic acid	1763-23-1	2.2 J	1.2	1
14473	Perfluorooctanoic acid	335-67-1	58	1.2	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	1.2	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	1.2	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	1.2	1

Reporting limits were raised due to interference from the sample matrix.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19304001	11/08/2019 15:37	Christine E Dolman	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19304001	10/31/2019 07:00	Pamela Rothharpt	1

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Analysis Report

Sample Description: **DDA-16US Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/22/2019 20:25
Collection Date/Time: 10/22/2019 13:35
SDG#: DSG15-05

Golder Associates Incorporated
ELLE Sample #: GW 1183079
ELLE Group #: 2070811
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	N.D.	1.2	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	1.5	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	1.4 J	1.2	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	1.2	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	1.2	1
14473	Perfluoroheptanoic acid	375-85-9	25	1.2	1
14473	Perfluorohexanesulfonic acid	355-46-4	11	1.2	1
14473	Perfluorohexanoic acid	307-24-4	29	1.2	1
14473	Perfluorononanoic acid	375-95-1	10	1.2	1
14473	Perfluorooctanesulfonic acid	1763-23-1	13	1.2	1
14473	Perfluorooctanoic acid	335-67-1	230	1.2	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	1.2	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	1.2	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	1.2	1

Reporting limits were raised due to interference from the sample matrix.

The recovery for extraction standards is outside of the QC acceptance limits as noted on the QC Summary.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19304001	11/08/2019 15:46	Christine E Dolman	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19304001	10/31/2019 07:00	Pamela Rothharpt	1

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Analysis Report

Sample Description: **PW-1 (U) Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/22/2019 20:25
Collection Date/Time: 10/22/2019 15:15
SDG#: DSG15-06

Golder Associates Incorporated
ELLE Sample #: GW 1183080
ELLE Group #: 2070811
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	N.D.	1.2	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	1.5	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	N.D.	1.2	1
14473	Perfluorodecanoic acid	335-76-2	1.5 J	1.2	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	1.2	1
14473	Perfluoroheptanoic acid	375-85-9	19	1.2	1
14473	Perfluorohexanesulfonic acid	355-46-4	14	1.2	1
14473	Perfluorohexanoic acid	307-24-4	28	1.2	1
14473	Perfluorononanoic acid	375-95-1	8.4	1.2	1
14473	Perfluorooctanesulfonic acid	1763-23-1	14	1.2	1
14473	Perfluorooctanoic acid	335-67-1	150	1.2	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	1.2	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	1.2	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	1.2	1

The recovery for extraction standards is outside of the QC acceptance limits as noted on the QC Summary.

Reporting limits were raised due to interference from the sample matrix.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19304001	11/08/2019 15:55	Christine E Dolman	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19304001	10/31/2019 07:00	Pamela Rothharpt	1

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Analysis Report

Sample Description: **TBGW_102219 Water DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/22/2019 20:25
Collection Date/Time: 10/22/2019
SDG#: DSG15-07TB

Golder Associates Incorporated
ELLE Sample #: GW 1183081
ELLE Group #: 2070811
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.45	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.53	1
14473	Perfluorobutanesulfonic acid	375-73-5	N.D.	0.45	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1
14473	Perfluoroheptanoic acid	375-85-9	N.D.	0.45	1
14473	Perfluorohexanesulfonic acid	355-46-4	N.D.	0.45	1
14473	Perfluorohexanoic acid	307-24-4	N.D.	0.45	1
14473	Perfluorononanoic acid	375-95-1	N.D.	0.45	1
14473	Perfluorooctanesulfonic acid	1763-23-1	N.D.	0.45	1
14473	Perfluorooctanoic acid	335-67-1	N.D.	0.45	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.45	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.45	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19304001	11/08/2019 16:04	Christine E Dolman	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19304001	10/31/2019 07:00	Pamela Rothharpt	1

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Analysis Report

Sample Description: **DGC-2S Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/23/2019 19:01
Collection Date/Time: 10/23/2019 10:40
SDG#: DSG15-08

Golder Associates Incorporated
ELLE Sample #: GW 1184509
ELLE Group #: 2071118
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.46	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.55	1
14473	Perfluorobutanesulfonic acid	375-73-5	1.4 J	0.46	1
14473	Perfluorodecanoic acid	335-76-2	1.1 J	0.46	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.46	1
14473	Perfluoroheptanoic acid	375-85-9	29	0.46	1
14473	Perfluorohexanesulfonic acid	355-46-4	3.5	0.46	1
14473	Perfluorohexanoic acid	307-24-4	36	0.46	1
14473	Perfluorononanoic acid	375-95-1	18	0.46	1
14473	Perfluorooctanesulfonic acid	1763-23-1	12	0.46	1
14473	Perfluorooctanoic acid	335-67-1	210	0.46	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.46	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.46	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.46	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19305015	11/08/2019 19:15	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19305015	11/02/2019 08:00	Isaac Phillips-Cary	1

Sample Description: **DDA-07-TZ Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/23/2019 19:01
Collection Date/Time: 10/23/2019 10:05
SDG#: DSG15-09

Golder Associates Incorporated
ELLE Sample #: GW 1184510
ELLE Group #: 2071118
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	N.D.	1.2	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	1.5	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	N.D.	1.2	1
14473	Perfluorodecanoic acid	335-76-2	1.6 J	1.2	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	1.2	1
14473	Perfluoroheptanoic acid	375-85-9	13	1.2	1
14473	Perfluorohexanesulfonic acid	355-46-4	N.D.	1.2	1
14473	Perfluorohexanoic acid	307-24-4	23	1.2	1
14473	Perfluorononanoic acid	375-95-1	6.2	1.2	1
14473	Perfluorooctanesulfonic acid	1763-23-1	25	1.2	1
14473	Perfluorooctanoic acid	335-67-1	67	1.2	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	1.2	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	1.2	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	1.2	1

The sample injection standard peak areas were outside of the QC limits for both the initial injection and the re-injection. The values here are from the initial injection of the sample.

Reporting limits were raised due to interference from the sample matrix.

The recovery for extraction standard d5-NEtFOSAA is outside of the QC acceptance limits as noted on the QC Summary.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19305015	11/08/2019 19:24	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19305015	11/02/2019 08:00	Isaac Phillips-Cary	1

Sample Description: **DDA-07-US Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/23/2019 19:01
Collection Date/Time: 10/23/2019 11:00
SDG#: DSG15-10

Golder Associates Incorporated
ELLE Sample #: GW 1184511
ELLE Group #: 2071118
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	N.D.	0.45	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	0.54	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	1.5 J	0.45	1
14473	Perfluorodecanoic acid	335-76-2	1.1 J	0.45	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1
14473	Perfluoroheptanoic acid	375-85-9	21	0.45	1
14473	Perfluorohexanesulfonic acid	355-46-4	9.1	0.45	1
14473	Perfluorohexanoic acid	307-24-4	27	0.45	1
14473	Perfluorononanoic acid	375-95-1	10	0.45	1
14473	Perfluorooctanesulfonic acid	1763-23-1	15	0.45	1
14473	Perfluorooctanoic acid	335-67-1	200	0.45	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.45	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.45	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1

The sample injection standard peak areas were outside of the QC limits for both the initial injection and the re-injection. The values here are from the initial injection of the sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19305015	11/08/2019 19:33	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19305015	11/02/2019 08:00	Isaac Phillips-Cary	1

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Analysis Report

Sample Description: **DDA-08-TZ Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/23/2019 19:01
Collection Date/Time: 10/23/2019 12:00
SDG#: DSG15-11

Golder Associates Incorporated
ELLE Sample #: GW 1184512
ELLE Group #: 2071118
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	N.D.	1.2	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	1.5	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	N.D.	1.2	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	1.2	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	1.2	1
14473	Perfluoroheptanoic acid	375-85-9	20	1.2	1
14473	Perfluorohexanesulfonic acid	355-46-4	22	1.2	1
14473	Perfluorohexanoic acid	307-24-4	24	1.2	1
14473	Perfluorononanoic acid	375-95-1	6.0	1.2	1
14473	Perfluorooctanesulfonic acid	1763-23-1	21	1.2	1
14473	Perfluorooctanoic acid	335-67-1	230	1.2	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	1.2	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	1.2	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	1.2	1

Reporting limits were raised due to interference from the sample matrix.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19305015	11/08/2019 19:51	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19305015	11/02/2019 08:00	Isaac Phillips-Cary	1

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Analysis Report

Sample Description: **TBGW_102319 Water DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/23/2019 19:01
Collection Date/Time: 10/23/2019
SDG#: DSG15-12TB

Golder Associates Incorporated
ELLE Sample #: GW 1184513
ELLE Group #: 2071118
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.45	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.54	1
14473	Perfluorobutanesulfonic acid	375-73-5	N.D.	0.45	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1
14473	Perfluoroheptanoic acid	375-85-9	N.D.	0.45	1
14473	Perfluorohexanesulfonic acid	355-46-4	N.D.	0.45	1
14473	Perfluorohexanoic acid	307-24-4	N.D.	0.45	1
14473	Perfluorononanoic acid	375-95-1	N.D.	0.45	1
14473	Perfluorooctanesulfonic acid	1763-23-1	N.D.	0.45	1
14473	Perfluorooctanoic acid	335-67-1	N.D.	0.45	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.45	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.45	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19305015	11/08/2019 20:00	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19305015	11/02/2019 08:00	Isaac Phillips-Cary	1

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Analysis Report

Sample Description: **DGC-5 (40) Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/24/2019 18:27
Collection Date/Time: 10/24/2019 10:30
SDG#: DSG15-13

Golder Associates Incorporated
ELLE Sample #: GW 1185316
ELLE Group #: 2071302
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	1.2	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	1.5	1
14473	Perfluorobutanesulfonic acid	375-73-5	2.1 J	1.2	1
14473	Perfluorodecanoic acid	335-76-2	3.4 J	1.2	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	1.2	1
14473	Perfluoroheptanoic acid	375-85-9	34	1.2	1
14473	Perfluorohexanesulfonic acid	355-46-4	62	1.2	1
14473	Perfluorohexanoic acid	307-24-4	49	1.2	1
14473	Perfluorononanoic acid	375-95-1	10	1.2	1
14473	Perfluorooctanesulfonic acid	1763-23-1	42	1.2	1
14473	Perfluorooctanoic acid	335-67-1	330	1.2	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	1.2	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	1.2	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	1.2	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19308022	11/11/2019 15:44	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19308022	11/04/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **PZ-11-EXT Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/24/2019 18:27
Collection Date/Time: 10/24/2019 11:00
SDG#: DSG15-14

Golder Associates Incorporated
ELLE Sample #: GW 1185317
ELLE Group #: 2071302
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	N.D.	1.2	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	1.5	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	N.D.	1.2	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	1.2	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	1.2	1
14473	Perfluoroheptanoic acid	375-85-9	23	1.2	1
14473	Perfluorohexanesulfonic acid	355-46-4	1.4 J	1.2	1
14473	Perfluorohexanoic acid	307-24-4	35	1.2	1
14473	Perfluorononanoic acid	375-95-1	5.5 J+	1.2	1
14473	Perfluorooctanesulfonic acid	1763-23-1	5.5	1.2	1
14473	Perfluorooctanoic acid	335-67-1	89	1.2	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	1.2	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	1.2	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	1.2	1

The recovery for the labeled compound used as extraction standards is outside the QC acceptance limits as noted on the QC Summary. The following action was taken: The sample was reextracted outside holding time. Both sets of data are reported and included in the data package.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19308022	11/11/2019 15:53	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19308022	11/04/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **TBGW_102419 Water DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/24/2019 18:27
Collection Date/Time: 10/24/2019
SDG#: DSG15-15TB

Golder Associates Incorporated
ELLE Sample #: GW 1185318
ELLE Group #: 2071302
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.45	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.54	1
14473	Perfluorobutanesulfonic acid	375-73-5	N.D.	0.45	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1
14473	Perfluoroheptanoic acid	375-85-9	N.D.	0.45	1
14473	Perfluorohexanesulfonic acid	355-46-4	N.D.	0.45	1
14473	Perfluorohexanoic acid	307-24-4	N.D.	0.45	1
14473	Perfluorononanoic acid	375-95-1	N.D.	0.45	1
14473	Perfluorooctanesulfonic acid	1763-23-1	N.D.	0.45	1
14473	Perfluorooctanoic acid	335-67-1	N.D.	0.45	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.45	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.45	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19308022	11/11/2019 16:02	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19308022	11/04/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **C-18D Grab Groundwater**
DE Sand and Gravel Superfund Site

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/25/2019 19:57
Collection Date/Time: 10/25/2019 10:20
SDG#: DSG15-16

Golder Associates Incorporated
ELLE Sample #: GW 1186963
ELLE Group #: 2071601
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	N.D.	1.2	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	1.5	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	N.D.	1.2	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	1.2	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	1.2	1
14473	Perfluoroheptanoic acid	375-85-9	29	1.2	1
14473	Perfluorohexanesulfonic acid	355-46-4	3.1 J	1.2	1
14473	Perfluorohexanoic acid	307-24-4	46	1.2	1
14473	Perfluorononanoic acid	375-95-1	8.6 J+	1.2	1
14473	Perfluorooctanesulfonic acid	1763-23-1	10 J	1.2	1
14473	Perfluorooctanoic acid	335-67-1	130	1.2	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	1.2	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	1.2	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	1.2	1

The recovery for the labeled compound used as extraction standards is outside the QC acceptance limits as noted on the QC Summary. The following action was taken: The sample was reextracted outside holding time. Both sets of data are reported and included in the data package.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19308022	11/11/2019 16:11	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19308022	11/04/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **B-4DR Grab Groundwater**
DE Sand and Gravel Superfund Site

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/25/2019 19:57
Collection Date/Time: 10/25/2019 10:00
SDG#: DSG15-17BKG

Golder Associates Incorporated
ELLE Sample #: GW 1186964
ELLE Group #: 2071601
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	N.D.	1.2	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	1.5	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	1.5 J	1.2	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	1.2	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	1.2	1
14473	Perfluoroheptanoic acid	375-85-9	39	1.2	1
14473	Perfluorohexanesulfonic acid	355-46-4	1.9 J	1.2	1
14473	Perfluorohexanoic acid	307-24-4	78	1.2	1
14473	Perfluorononanoic acid	375-95-1	9.9	1.2	1
14473	Perfluorooctanesulfonic acid	1763-23-1	3.3 J	1.2	1
14473	Perfluorooctanoic acid	335-67-1	120	1.2	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	1.2	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	1.2	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	1.2	1

The recovery for the sample injection standard and the labeled compound used as extraction standards is outside the QC acceptance limits as noted on the QC Summary. The recovery for the sample injection standard and the labeled compound used as extraction standards is also outside the QC acceptance limits in the associated matrix spike and matrix spike duplicate, indicating a matrix effect.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19308022	11/11/2019 16:20	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19308022	11/04/2019 16:00	Anthony C Polaski	1

Sample Description: **B-4DR MS Grab Groundwater DE Sand and Gravel Superfund Site**

Project Name: **DE Sand and Gravel Superfund Site**

Golder Associates Incorporated
ELLE Sample #: GW 1186965
ELLE Group #: 2071601
Matrix: Groundwater

Submittal Date/Time: 10/25/2019 19:57
Collection Date/Time: 10/25/2019 10:00
SDG#: DSG15-17MS

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	62	1.2	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	58	1.5	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	52	1.2	1
14473	Perfluorodecanoic acid	335-76-2	60	1.2	1
14473	Perfluorododecanoic acid	307-55-1	57	1.2	1
14473	Perfluoroheptanoic acid	375-85-9	98	1.2	1
14473	Perfluorohexanesulfonic acid	355-46-4	54	1.2	1
14473	Perfluorohexanoic acid	307-24-4	140	1.2	1
14473	Perfluorononanoic acid	375-95-1	69	1.2	1
14473	Perfluorooctanesulfonic acid	1763-23-1	47	1.2	1
14473	Perfluorooctanoic acid	335-67-1	170	1.2	1
14473	Perfluorotetradecanoic acid	376-06-7	52	1.2	1
14473	Perfluorotridecanoic acid	72629-94-8	53	1.2	1
14473	Perfluoroundecanoic acid	2058-94-8	57	1.2	1

The recovery for the sample injection standard and the labeled compound used as extraction standards is outside the QC acceptance limits as noted on the QC Summary. The recovery for the sample injection standard and the labeled compound used as extraction standards is also outside the QC acceptance limits in the associated matrix spike and matrix spike duplicate, indicating a matrix effect.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19308022	11/11/2019 16:29	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19308022	11/04/2019 16:00	Anthony C Polaski	1

Sample Description: **B-4DR MSD Grab Groundwater DE Sand and Gravel Superfund Site**

Project Name: **DE Sand and Gravel Superfund Site**

Golder Associates Incorporated
ELLE Sample #: GW 1186966
ELLE Group #: 2071601
Matrix: Groundwater

Submittal Date/Time: 10/25/2019 19:57
Collection Date/Time: 10/25/2019 10:00
SDG#: DSG15-17MSD

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	62	1.2	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	63	1.5	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	53	1.2	1
14473	Perfluorodecanoic acid	335-76-2	61	1.2	1
14473	Perfluorododecanoic acid	307-55-1	59	1.2	1
14473	Perfluoroheptanoic acid	375-85-9	99	1.2	1
14473	Perfluorohexanesulfonic acid	355-46-4	57	1.2	1
14473	Perfluorohexanoic acid	307-24-4	140	1.2	1
14473	Perfluorononanoic acid	375-95-1	70	1.2	1
14473	Perfluorooctanesulfonic acid	1763-23-1	49	1.2	1
14473	Perfluorooctanoic acid	335-67-1	180	1.2	1
14473	Perfluorotetradecanoic acid	376-06-7	56	1.2	1
14473	Perfluorotridecanoic acid	72629-94-8	53	1.2	1
14473	Perfluoroundecanoic acid	2058-94-8	57	1.2	1

The recovery for the sample injection standard and the labeled compound used as extraction standards is outside the QC acceptance limits as noted on the QC Summary. The recovery for the sample injection standard and the labeled compound used as extraction standards is also outside the QC acceptance limits in the associated matrix spike and matrix spike duplicate, indicating a matrix effect.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19308022	11/11/2019 16:38	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19308022	11/04/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **RBGW_102519 Grab Groundwater DE Sand and Gravel Superfund Site**

Project Name: **DE Sand and Gravel Superfund Site**

Golder Associates Incorporated
ELLE Sample #: GW 1186967
ELLE Group #: 2071601
Matrix: Groundwater

Submittal Date/Time: 10/25/2019 19:57
Collection Date/Time: 10/25/2019 10:25
SDG#: DSG15-18RB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.46	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.56	1
14473	Perfluorobutanesulfonic acid	375-73-5	N.D.	0.46	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	0.46	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.46	1
14473	Perfluoroheptanoic acid	375-85-9	N.D.	0.46	1
14473	Perfluorohexanesulfonic acid	355-46-4	N.D.	0.46	1
14473	Perfluorohexanoic acid	307-24-4	N.D.	0.46	1
14473	Perfluorononanoic acid	375-95-1	N.D.	0.46	1
14473	Perfluorooctanesulfonic acid	1763-23-1	N.D.	0.46	1
14473	Perfluorooctanoic acid	335-67-1	N.D.	0.46	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.46	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.46	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.46	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19308022	11/11/2019 16:47	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19308022	11/04/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **FDGW_102519 Grab Groundwater DE Sand and Gravel Superfund Site**

Project Name: **DE Sand and Gravel Superfund Site**

Golder Associates Incorporated
ELLE Sample #: GW 1186968
ELLE Group #: 2071601
Matrix: Groundwater

Submittal Date/Time: 10/25/2019 19:57
Collection Date/Time: 10/25/2019
SDG#: DSG15-19FD

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	N.D.	1.2	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	1.5	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	1.3 J	1.2	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	1.2	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	1.2	1
14473	Perfluoroheptanoic acid	375-85-9	27	1.2	1
14473	Perfluorohexanesulfonic acid	355-46-4	2.1 J	1.2	1
14473	Perfluorohexanoic acid	307-24-4	42	1.2	1
14473	Perfluorononanoic acid	375-95-1	8.6 J+	1.2	1
14473	Perfluorooctanesulfonic acid	1763-23-1	5.9 J	1.2	1
14473	Perfluorooctanoic acid	335-67-1	96	1.2	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	1.2	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	1.2	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	1.2	1

The recovery for the labeled compound used as extraction standards is outside the QC acceptance limits as noted on the QC Summary. The following action was taken: The sample was reextracted outside holding time. Both sets of data are reported and included in the data package.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19308022	11/11/2019 17:05	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19308022	11/04/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **FBGW_102519 Grab Groundwater DE Sand and Gravel Superfund Site**

Project Name: **DE Sand and Gravel Superfund Site**

Golder Associates Incorporated
ELLE Sample #: GW 1186969
ELLE Group #: 2071601
Matrix: Groundwater

Submittal Date/Time: 10/25/2019 19:57
Collection Date/Time: 10/25/2019 15:00
SDG#: DSG15-20FB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.43	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.52	1
14473	Perfluorobutanesulfonic acid	375-73-5	N.D.	0.43	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	0.43	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1
14473	Perfluoroheptanoic acid	375-85-9	N.D.	0.43	1
14473	Perfluorohexanesulfonic acid	355-46-4	N.D.	0.43	1
14473	Perfluorohexanoic acid	307-24-4	N.D.	0.43	1
14473	Perfluorononanoic acid	375-95-1	N.D.	0.43	1
14473	Perfluorooctanesulfonic acid	1763-23-1	N.D.	0.43	1
14473	Perfluorooctanoic acid	335-67-1	N.D.	0.43	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.43	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.43	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.43	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19308022	11/11/2019 17:14	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19308022	11/04/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **TBGW_102519 Water**
DE Sand and Gravel Superfund Site

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/25/2019 19:57
Collection Date/Time: 10/25/2019
SDG#: DSG15-21TB

Golder Associates Incorporated
ELLE Sample #: GW 1186970
ELLE Group #: 2071601
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.44	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.53	1
14473	Perfluorobutanesulfonic acid	375-73-5	N.D.	0.44	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	0.44	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1
14473	Perfluoroheptanoic acid	375-85-9	N.D.	0.44	1
14473	Perfluorohexanesulfonic acid	355-46-4	N.D.	0.44	1
14473	Perfluorohexanoic acid	307-24-4	N.D.	0.44	1
14473	Perfluorononanoic acid	375-95-1	N.D.	0.44	1
14473	Perfluorooctanesulfonic acid	1763-23-1	N.D.	0.44	1
14473	Perfluorooctanoic acid	335-67-1	N.D.	0.44	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.44	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.44	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19308022	11/11/2019 17:23	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19308022	11/04/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **B-3D Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/28/2019 18:25
Collection Date/Time: 10/28/2019 09:40
SDG#: DSG16-01

Golder Associates Incorporated
ELLE Sample #: GW 1187535
ELLE Group #: 2071717
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	N.D.	0.45	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	0.54	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	1.5 J	0.45	1
14473	Perfluorodecanoic acid	335-76-2	2.8	0.45	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1
14473	Perfluoroheptanoic acid	375-85-9	36	0.45	1
14473	Perfluorohexanesulfonic acid	355-46-4	13	0.45	1
14473	Perfluorohexanoic acid	307-24-4	55	0.45	1
14473	Perfluorononanoic acid	375-95-1	14	0.45	1
14473	Perfluorooctanesulfonic acid	1763-23-1	14	0.45	1
14473	Perfluorooctanoic acid	335-67-1	190	0.45	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.45	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.45	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1

The sample injection internal standard peak areas were outside of the QC limits for both the initial injection and the re-injection. The values here are from the initial injection of the sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19308022	11/11/2019 17:32	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19308022	11/04/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **MHW-1M Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/28/2019 18:25
Collection Date/Time: 10/28/2019 10:00
SDG#: DSG16-02

Golder Associates Incorporated
ELLE Sample #: GW 1187536
ELLE Group #: 2071717
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	N.D.	0.44	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	0.53	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	2.7	0.44	1
14473	Perfluorodecanoic acid	335-76-2	4.1	0.44	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1
14473	Perfluoroheptanoic acid	375-85-9	23	0.44	1
14473	Perfluorohexanesulfonic acid	355-46-4	1.7 J	0.44	1
14473	Perfluorohexanoic acid	307-24-4	47	0.44	1
14473	Perfluorononanoic acid	375-95-1	9.6	0.44	1
14473	Perfluorooctanesulfonic acid	1763-23-1	6.5	0.44	1
14473	Perfluorooctanoic acid	335-67-1	52	0.44	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.44	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.44	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1

The sample injection internal standard peak areas were outside of the QC limits for both the initial injection and the re-injection. The values here are from the initial injection of the sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19308022	11/11/2019 17:42	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19308022	11/04/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **DDA-15-T2 Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/28/2019 18:25
Collection Date/Time: 10/28/2019 13:40
SDG#: DSG16-03

Golder Associates Incorporated
ELLE Sample #: GW 1187537
ELLE Group #: 2071717
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	N.D.	1.2	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	1.5	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	1.4 J	1.2	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	1.2	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	1.2	1
14473	Perfluoroheptanoic acid	375-85-9	31	1.2	1
14473	Perfluorohexanesulfonic acid	355-46-4	16	1.2	1
14473	Perfluorohexanoic acid	307-24-4	44	1.2	1
14473	Perfluorononanoic acid	375-95-1	12 J+	1.2	1
14473	Perfluorooctanesulfonic acid	1763-23-1	13	1.2	1
14473	Perfluorooctanoic acid	335-67-1	200	1.2	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	1.2	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	1.2	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	1.2	1

The recovery for the labeled compound used as extraction standards is outside the QC acceptance limits as noted on the QC Summary. The following action was taken: The sample was reextracted outside holding time. Both sets of data are reported and included in the data package.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19308022	11/12/2019 05:02	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19308022	11/04/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **TBGW-102819 Water DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/28/2019 18:25
Collection Date/Time: 10/28/2019
SDG#: DSG16-04TB

Golder Associates Incorporated
ELLE Sample #: GW 1187538
ELLE Group #: 2071717
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.45	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.54	1
14473	Perfluorobutanesulfonic acid	375-73-5	N.D.	0.45	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1
14473	Perfluoroheptanoic acid	375-85-9	N.D.	0.45	1
14473	Perfluorohexanesulfonic acid	355-46-4	N.D.	0.45	1
14473	Perfluorohexanoic acid	307-24-4	N.D.	0.45	1
14473	Perfluorononanoic acid	375-95-1	N.D.	0.45	1
14473	Perfluorooctanesulfonic acid	1763-23-1	N.D.	0.45	1
14473	Perfluorooctanoic acid	335-67-1	N.D.	0.45	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.45	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.45	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19308022	11/11/2019 18:00	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19308022	11/04/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **DDA-10-US Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/30/2019 18:09
Collection Date/Time: 10/30/2019 11:35
SDG#: DSG16-05BKG

Golder Associates Incorporated
ELLE Sample #: GW 1189209
ELLE Group #: 2072044
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	1.2	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	1.5	1
14473	Perfluorobutanesulfonic acid	375-73-5	2.0 J	1.2	1
14473	Perfluorodecanoic acid	335-76-2	7.0 J	1.2	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	1.2	1
14473	Perfluoroheptanoic acid	375-85-9	63 J	1.2	1
14473	Perfluorohexanesulfonic acid	355-46-4	70 J	1.2	1
14473	Perfluorohexanoic acid	307-24-4	81	1.2	1
14473	Perfluorononanoic acid	375-95-1	13 J	1.2	1
14473	Perfluorooctanesulfonic acid	1763-23-1	51 J	1.2	1
14473	Perfluorooctanoic acid	335-67-1	470 J	1.2	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	1.2	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	1.2	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	1.2	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19310014	11/13/2019 00:07	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19310014	11/06/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **DDA-10-US MS Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/30/2019 18:09
Collection Date/Time: 10/30/2019 11:35
SDG#: DSG16-05MS

Golder Associates Incorporated
ELLE Sample #: GW 1189210
ELLE Group #: 2072044
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	62	1.2	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	59	1.5	1
14473	Perfluorobutanesulfonic acid	375-73-5	59	1.2	1
14473	Perfluorodecanoic acid	335-76-2	96	1.2	1
14473	Perfluorododecanoic acid	307-55-1	68	1.2	1
14473	Perfluoroheptanoic acid	375-85-9	150	1.2	1
14473	Perfluorohexanesulfonic acid	355-46-4	220	1.2	1
14473	Perfluorohexanoic acid	307-24-4	160	1.2	1
14473	Perfluorononanoic acid	375-95-1	110	1.2	1
14473	Perfluorooctanesulfonic acid	1763-23-1	230	1.2	1
14473	Perfluorooctanoic acid	335-67-1	1,200 E	1.2	1
14473	Perfluorotetradecanoic acid	376-06-7	68	1.2	1
14473	Perfluorotridecanoic acid	72629-94-8	67	1.2	1
14473	Perfluoroundecanoic acid	2058-94-8	66	1.2	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19310014	11/13/2019 00:17	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19310014	11/06/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **DDA-10-US MSD Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/30/2019 18:09
Collection Date/Time: 10/30/2019 11:35
SDG#: DSG16-05MSD

Golder Associates Incorporated
ELLE Sample #: GW 1189211
ELLE Group #: 2072044
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	60	1.2	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	66	1.5	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	60	1.2	1
14473	Perfluorodecanoic acid	335-76-2	74	1.2	1
14473	Perfluorododecanoic acid	307-55-1	65	1.2	1
14473	Perfluoroheptanoic acid	375-85-9	120	1.2	1
14473	Perfluorohexanesulfonic acid	355-46-4	130	1.2	1
14473	Perfluorohexanoic acid	307-24-4	150	1.2	1
14473	Perfluorononanoic acid	375-95-1	74	1.2	1
14473	Perfluorooctanesulfonic acid	1763-23-1	96	1.2	1
14473	Perfluorooctanoic acid	335-67-1	500	1.2	1
14473	Perfluorotetradecanoic acid	376-06-7	65	1.2	1
14473	Perfluorotridecanoic acid	72629-94-8	58	1.2	1
14473	Perfluoroundecanoic acid	2058-94-8	62	1.2	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19310014	11/13/2019 00:26	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19310014	11/06/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **FDGW_103019 Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/30/2019 18:09
Collection Date/Time: 10/30/2019
SDG#: DSG16-06FD

Golder Associates Incorporated
ELLE Sample #: GW 1189212
ELLE Group #: 2072044
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	N.D.	1.2	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	1.5	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	2.4 J	1.2	1
14473	Perfluorodecanoic acid	335-76-2	46 J	1.2	1
14473	Perfluorododecanoic acid	307-55-1	1.3 J	1.2	1
14473	Perfluoroheptanoic acid	375-85-9	130 J	1.2	1
14473	Perfluorohexanesulfonic acid	355-46-4	270 J	1.2	1
14473	Perfluorohexanoic acid	307-24-4	97	1.2	1
14473	Perfluorononanoic acid	375-95-1	89 J	1.2	1
14473	Perfluorooctanesulfonic acid	1763-23-1	350 J	1.2	1
14473	Perfluorooctanoic acid	335-67-1	2,000 J	12	10
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	1.2	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	1.2	1
14473	Perfluoroundecanoic acid	2058-94-8	3.7 J	1.2	1

The recovery for labeled compound used as extraction standards is outside of QC acceptance limits as noted on the QC Summary.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19310014	11/13/2019 00:44	Jason W Knight	1
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19310014	11/14/2019 08:26	Danielle D McCully	10
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19310014	11/06/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **FBGW_103019 Grab Water DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/30/2019 18:09
Collection Date/Time: 10/30/2019 14:35
SDG#: DSG16-07FB

Golder Associates Incorporated
ELLE Sample #: GW 1189213
ELLE Group #: 2072044
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.45	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.53	1
14473	Perfluorobutanesulfonic acid	375-73-5	N.D.	0.45	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	0.45	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.45	1
14473	Perfluoroheptanoic acid	375-85-9	N.D.	0.45	1
14473	Perfluorohexanesulfonic acid	355-46-4	N.D.	0.45	1
14473	Perfluorohexanoic acid	307-24-4	N.D.	0.45	1
14473	Perfluorononanoic acid	375-95-1	N.D.	0.45	1
14473	Perfluorooctanesulfonic acid	1763-23-1	N.D.	0.45	1
14473	Perfluorooctanoic acid	335-67-1	N.D.	0.45	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.45	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.45	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.45	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19310014	11/13/2019 00:53	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19310014	11/06/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **RBGW_103019 Grab Water DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/30/2019 18:09
Collection Date/Time: 10/30/2019 14:40
SDG#: DSG16-08RB

Golder Associates Incorporated
ELLE Sample #: GW 1189214
ELLE Group #: 2072044
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.44	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.53	1
14473	Perfluorobutanesulfonic acid	375-73-5	N.D.	0.44	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	0.44	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1
14473	Perfluoroheptanoic acid	375-85-9	N.D.	0.44	1
14473	Perfluorohexanesulfonic acid	355-46-4	N.D.	0.44	1
14473	Perfluorohexanoic acid	307-24-4	N.D.	0.44	1
14473	Perfluorononanoic acid	375-95-1	N.D.	0.44	1
14473	Perfluorooctanesulfonic acid	1763-23-1	N.D.	0.44	1
14473	Perfluorooctanoic acid	335-67-1	N.D.	0.44	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.44	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.44	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19310014	11/13/2019 01:02	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19310014	11/06/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **TBGW_103019 Water DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 10/30/2019 18:09
Collection Date/Time: 10/30/2019
SDG#: DSG16-09TB

Golder Associates Incorporated
ELLE Sample #: GW 1189215
ELLE Group #: 2072044
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.44	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.53	1
14473	Perfluorobutanesulfonic acid	375-73-5	N.D.	0.44	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	0.44	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1
14473	Perfluoroheptanoic acid	375-85-9	N.D.	0.44	1
14473	Perfluorohexanesulfonic acid	355-46-4	N.D.	0.44	1
14473	Perfluorohexanoic acid	307-24-4	N.D.	0.44	1
14473	Perfluorononanoic acid	375-95-1	N.D.	0.44	1
14473	Perfluorooctanesulfonic acid	1763-23-1	N.D.	0.44	1
14473	Perfluorooctanoic acid	335-67-1	N.D.	0.44	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.44	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.44	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19310014	11/13/2019 01:11	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19310014	11/06/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **AWC-E1(132) Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 11/07/2019 18:02
Collection Date/Time: 11/07/2019 10:20
SDG#: DSG16-10

Golder Associates Incorporated
ELLE Sample #: GW 1198570
ELLE Group #: 2073935
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.44	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.53	1
14473	Perfluorobutanesulfonic acid	375-73-5	2.4	0.44	1
14473	Perfluorodecanoic acid	335-76-2	2.6	0.44	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1
14473	Perfluoroheptanoic acid	375-85-9	26	0.44	1
14473	Perfluorohexanesulfonic acid	355-46-4	7.5	0.44	1
14473	Perfluorohexanoic acid	307-24-4	40	0.44	1
14473	Perfluorononanoic acid	375-95-1	11	0.44	1
14473	Perfluorooctanesulfonic acid	1763-23-1	17	0.44	1
14473	Perfluorooctanoic acid	335-67-1	110	0.44	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.44	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.44	1
14473	Perfluoroundecanoic acid	2058-94-8	0.85 J	0.44	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19316026	11/18/2019 23:13	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19316026	11/12/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **AWC-E1(156) Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 11/07/2019 18:02
Collection Date/Time: 11/07/2019 11:05
SDG#: DSG16-11

Golder Associates Incorporated
ELLE Sample #: GW 1198571
ELLE Group #: 2073935
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.43	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.52	1
14473	Perfluorobutanesulfonic acid	375-73-5	2.4	0.43	1
14473	Perfluorodecanoic acid	335-76-2	3.0	0.43	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1
14473	Perfluoroheptanoic acid	375-85-9	26	0.43	1
14473	Perfluorohexanesulfonic acid	355-46-4	7.9	0.43	1
14473	Perfluorohexanoic acid	307-24-4	40	0.43	1
14473	Perfluorononanoic acid	375-95-1	12	0.43	1
14473	Perfluorooctanesulfonic acid	1763-23-1	17	0.43	1
14473	Perfluorooctanoic acid	335-67-1	110	0.43	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.43	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.43	1
14473	Perfluoroundecanoic acid	2058-94-8	0.97 J	0.43	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19316026	11/18/2019 23:22	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19316026	11/12/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **AWC-E2(140) Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 11/07/2019 18:02
Collection Date/Time: 11/07/2019 12:00
SDG#: DSG16-12

Golder Associates Incorporated
ELLE Sample #: GW 1198572
ELLE Group #: 2073935
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.51	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.61	1
14473	Perfluorobutanesulfonic acid	375-73-5	1.6 J	0.51	1
14473	Perfluorodecanoic acid	335-76-2	1.6 J	0.51	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.51	1
14473	Perfluoroheptanoic acid	375-85-9	17	0.51	1
14473	Perfluorohexanesulfonic acid	355-46-4	12	0.51	1
14473	Perfluorohexanoic acid	307-24-4	26	0.51	1
14473	Perfluorononanoic acid	375-95-1	6.5	0.51	1
14473	Perfluorooctanesulfonic acid	1763-23-1	9.5	0.51	1
14473	Perfluorooctanoic acid	335-67-1	120	0.51	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.51	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.51	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.51	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19324019	11/22/2019 20:13	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	2	19324019	11/20/2019 16:00	Anthony C Polaski	1

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Analysis Report

Sample Description: **AWC-E2(165) Grab Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 11/07/2019 18:02
Collection Date/Time: 11/07/2019 13:10
SDG#: DSG16-13

Golder Associates Incorporated
ELLE Sample #: GW 1198573
ELLE Group #: 2073935
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA	2991-50-6	N.D.	0.44	1
	NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.				
14473	NMeFOSAA	2355-31-9	N.D.	0.53	1
	NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.				
14473	Perfluorobutanesulfonic acid	375-73-5	1.5 J	0.44	1
14473	Perfluorodecanoic acid	335-76-2	1.6 J	0.44	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.44	1
14473	Perfluoroheptanoic acid	375-85-9	17	0.44	1
14473	Perfluorohexanesulfonic acid	355-46-4	16	0.44	1
14473	Perfluorohexanoic acid	307-24-4	27	0.44	1
14473	Perfluorononanoic acid	375-95-1	6.1	0.44	1
14473	Perfluorooctanesulfonic acid	1763-23-1	14	0.44	1
14473	Perfluorooctanoic acid	335-67-1	140	0.44	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.44	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.44	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.44	1

The sample injection internal standard peak areas were outside of the QC limits for both the initial injection and the re-injection. The values here are from the initial injection of the sample.

The recovery for labeled compound used as extraction standards is outside of QC acceptance limits as noted on the QC Summary due to the matrix of the sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19316026	11/18/2019 23:40	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19316026	11/12/2(	›laski	1

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Analysis Report

Sample Description: **TBGW-110719 Groundwater DS&G**

Project Name: **DE Sand and Gravel Superfund Site**

Submittal Date/Time: 11/07/2019 18:02
Collection Date/Time: 11/07/2019
SDG#: DSG16-14TB

Golder Associates Incorporated
ELLE Sample #: GW 1198574
ELLE Group #: 2073935
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
LC/MS/MS Miscellaneous	**EPA 537 Version 1.1 Modified**		**ng/l**	**ng/l**	
14473	NEtFOSAA NEtFOSAA is the acronym for N-ethyl perfluorooctanesulfonamidoacetic Acid.	2991-50-6	N.D.	0.43	1
14473	NMeFOSAA NMeFOSAA is the acronym for N-methyl perfluorooctanesulfonamidoacetic Acid.	2355-31-9	N.D.	0.51	1
14473	Perfluorobutanesulfonic acid	375-73-5	N.D.	0.43	1
14473	Perfluorodecanoic acid	335-76-2	N.D.	0.43	1
14473	Perfluorododecanoic acid	307-55-1	N.D.	0.43	1
14473	Perfluoroheptanoic acid	375-85-9	N.D.	0.43	1
14473	Perfluorohexanesulfonic acid	355-46-4	N.D.	0.43	1
14473	Perfluorohexanoic acid	307-24-4	N.D.	0.43	1
14473	Perfluorononanoic acid	375-95-1	N.D.	0.43	1
14473	Perfluorooctanesulfonic acid	1763-23-1	N.D.	0.43	1
14473	Perfluorooctanoic acid	335-67-1	1.2 J	0.43	1
14473	Perfluorotetradecanoic acid	376-06-7	N.D.	0.43	1
14473	Perfluorotridecanoic acid	72629-94-8	N.D.	0.43	1
14473	Perfluoroundecanoic acid	2058-94-8	N.D.	0.43	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14473	PFAS in Water by LC/MS/MS	EPA 537 Version 1.1 Modified	1	19316026	11/18/2019 23:49	Jason W Knight	1
14091	PFAS Water Prep	EPA 537 Version 1.1 Modified	1	19316026	11/12/2019 16:00	Anthony C Polaski	1

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