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April 24, 2017

Ms. Carolyn Bury - LU-9J
U.S. EPA Region 5
Corrective Action Section
77 West Jackson Boulevard
Chicago, IL 60604-3507

Re: Long-Term Monitoring Program
1st Quarter 2017 Data Report
Solutia Inc., W. G. Krummrich Plant, Sauget, IL

Dear Ms. Bury:

Enclosed please find the Long-Term Monitoring Program 1st Quarter 2017 Data Report for Solutia Inc.'s W. G. Krummrich Plant, Sauget, IL. Results from sampling of supplemental piezometers GWE-1D, 2D, and 3D and supplemental wells GWE-5D, ESL-MW-A and D1, and PM1D are also included in this report.

Per EPA's February 9, 2016, response to Solutia's December 23, 2015, submittal:

- sampling of supplemental piezometers GWE-5S and 5M and supplemental wells ESL-MW-C1 and PM1M has been discontinued; and
- the sampling frequency for supplemental piezometer GWE-1D and supplemental well ESL-MW-A has been reduced to the first and third quarters.

As noted in my e-mail dated January 31, 2017, Solutia will very shortly submit a "Periodic Technical Review" recommending changes to this groundwater monitoring program, along with similar Reviews for the other programs. One of those other Reviews will address Mississippi River surface water and sediment monitoring, the 1st quarter 2017 results of which are included in this submittal. Another such Review will address the related, "expanded" Chlorobenzene Process Area (CPA) monitoring program (began in 4th quarter 2012 after a "baseline" event in 4th quarter 2011).

If you have any questions or comments regarding this report, please contact me at (314) 674-3312 or gmrina@eastman.com

Sincerely,



Gerald M. Rinaldi
Manager, Remediation Services

Enclosure

cc: Distribution List

DISTRIBUTION LIST

**Long-Term Monitoring Program
1st Quarter 2017 Data Report
Solutia Inc., W. G. Krummrich Plant, Sauget, IL**

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GROUNDWATER MONITORING REPORT

GROUNDWATER MONITORING REPORT

**1st QUARTER 2017 DATA REPORT
LONG-TERM MONITORING PROGRAM
SOLUTIA INC., W.G. KRUMMRICH PLANT
SAUGET, ILLINOIS**

Prepared For: Solutia Inc.
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April 2017

140-3345

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1.0 INTRODUCTION

Golder Associates Inc. (Golder) is pleased to submit this report summarizing the 1st Quarter 2017 (1Q17) Long-Term Monitoring Program (LTMP) groundwater sampling activities at the Solutia Inc. (Solutia) W.G. Krummrich (WGK) plant (Site) in Sauget, Illinois. The plant is located at 500 Monsanto Avenue, Sauget, Illinois as shown on Figure 1.

The 1Q17 sampling event was performed in general accordance with the Revised LTMP Work Plan (Work Plan) (Solutia 2009). Work conducted during the LTMP is designed to evaluate the effectiveness of monitored natural attenuation (MNA). The effectiveness of MNA at the Site, is shown by the following:

- A clear and meaningful trend of decreasing contaminant mass
- Data that indirectly demonstrate the types and rates of natural attenuation process active at the Site
- Data that directly demonstrate the occurrence of biodegradation processes at the Site

The Work Plan addresses quarterly sampling requirements from the United States Environmental Protection Agency's (USEPA) February 26, 2008, Final Decision (USEPA, 2008). According to the Work Plan, ten (10) groundwater samples are to be collected from monitoring wells from two (2) source areas, former Benzene Storage Area and former Chlorobenzene Process Area; four (4) monitoring wells located downgradient of the former Benzene Storage Area; and four (4) monitoring wells located downgradient of the former Chlorobenzene Process Area. Monitoring wells are located in the Shallow Hydrogeologic Unit (SHU), Middle Hydrogeologic Unit (MHU) and Deep Hydrogeologic Unit (DHU). One (1) monitoring well is screened in the SHU at the former Benzene Storage Area. The remaining nine (9) wells are screened in the MHU and DHU. Analytical data from these wells are used to evaluate the attenuation processes in the America Bottoms aquifer, as impacted groundwater from these source areas migrates toward and discharges to the Mississippi River.

In addition to the monitoring wells specified in the Work Plan, the USEPA has also requested that groundwater samples be collected from additional monitoring wells and piezometers (supplemental wells) approximately 1.0 to 1.5 miles north of the Site. In response to Solutia's December 23, 2015, request, on February 9, 2016, the USEPA reduced the number of supplemental wells from eleven (11) to seven (7) for the first and third quarter sampling events and to five (5) for the second and fourth quarter sampling events.

The scope of work detailed in the Work Plan is summarized below.

Seventeen (17) monitoring wells and piezometers are sampled during the 1Q17 LTMP event. The locations of the monitoring wells, piezometers and source areas are shown on Figure 2 and the sample locations are included on the table below.



Area	Location Relative to Area	Sample Identification
Former Benzene Storage	Source Area Well	BSA-MW-1S
	Downgradient	BSA-MW-2D
		BSA-MW-3D
		BSA-MW-4D
		BSA-MW-5D
Former Chlorobenzene Process	Source Area Well	CPA-MW-1D
	Downgradient	CPA-MW-2D
		CPA-MW-3D
		CPA-MW-4D
		CPA-MW-5D
■ Supplemental Wells North of the Site	---	ESL-MW-A
		ESL-MW-D1
		GWE-1D
		GWE-2D
		GWE-3D
		GWE-5D
		PM1D

Water levels in the monitoring wells and piezometers are measured quarterly and total depths are measured in the 1st quarter of each year.

During the quarterly sampling events, monitoring wells and piezometers are sampled for the following volatile organic compound (VOC) analytes: benzene; chlorobenzene; 1,2-dichlorobenzene; 1,3-dichlorobenzene; and 1,4-dichlorobenzene. During the 1st and 3rd quarters, monitoring wells and piezometers are sampled for the following semi-volatile organic compound (SVOC) analytes: 4-chloroaniline (CPA-MW-3D, CPA-MW-4D and CPA-MW-5D); 2-chlorophenol (BSA and CPA wells); 1,2,4-trichlorobenzene (BSA and CPA wells); and 1,4-dioxane (BSA-MW-2D, BSA-MW-3D, BSA-MW-4D, and BSA-MW-5D). The following MNA parameters are sampled quarterly to evaluate active natural attenuation occurring at the Site:

- Electron Donors – total and dissolved organic carbon
- Electron Acceptors – iron, manganese, nitrate, sulfate
- Biodegradation Byproducts – carbon dioxide, chloride, methane
- Biodegradation Indicators – alkalinity

Microbial Insights BioTrap® samplers for Phospholipid Fatty Acid (PLFA) analysis and Stable Isotope Probes (SIPs) baited with benzene or chlorobenzene are deployed quarterly to demonstrate the occurrence of biodegradation occurring at the Site.



Mississippi River surface water and sediment samples are scheduled to be collected on a semi-annual basis (1st and 3rd quarter). To assess the impact of contaminated groundwater discharging into the river north of the Groundwater Migration Control System (GMCS), surface water and sediment samples were collected during the 1Q17 sampling event.

2.0 FIELD ACTIVITIES

Golder conducted 1Q17 sampling events between January 30 and February 2, 2017. Activities were performed in general accordance with the Work Plan.

2.1 Water Level Measurement

Prior to sampling during the 1Q17 event, Golder performed a synoptic round of water level measurements at 76 monitoring wells and piezometers on January 26 and January 27, 2017. DNAPL-K-7 was not accessible due to construction activities and was not included in water level measurements. The following monitoring well and piezometer series are included in the LTMP:

- BSA-series
- CPA-series
- ESL-series
- GM-series
- GWE-series
- K-series
- PS-MW-series
- PMA-series
- PM-series
- Piezometer clusters installed for Sauget Area 2 RI/FS and WGK CA-750 Environmental Indicator projects

An oil/water interface probe was used to measure the water level (to 0.01 feet) and, if present, detect and measure the thickness of non-aqueous phase liquid (NAPL). During the 1Q17 sampling event, NAPL was not detected in any of the monitoring wells or piezometers. Total depths are measured during the 1st quarter of each year. The 1Q17 well gauging information is shown on Table 1. The information collected from the MHU and the DHU was used to create a groundwater potentiometric surface map, as shown on Figure 3.

2.2 Groundwater Sample Collection

Monitoring wells and piezometers sampled during the 1Q17 LTMP event were purged and sampled using low-flow sampling techniques, low-density polyethylene tubing (LDPE) and a submersible or peristaltic pump (GWE-1D, GWE-2D and GWE-3D). The pump intake was placed at approximately the middle of the screened interval for each well. Purging was conducted at a rate of approximately 300 mL/min to reduce drawdown. Drawdown was measured throughout purging activities to ensure that it did not exceed 25% of



the distance between the pump intake and the top of the screen. Measurement of field parameters began once the flow rate and drawdown were stable. Parameters were measured for each system volume purged using a SmartTROLL™ multi-parameter meter. The system volume includes the volume of the tubing, the volume of the pump and the volume of flow-through cell containing the multi-parameter meter. Samples were collected after field parameters were stabilized within the ranges below for three (3) consecutive measurements:

- Dissolved Oxygen (DO): +/- 10% or +/- 0.2 mg/L, whichever is greatest
- Oxidation-Reduction Potential (ORP): +/- 20 mV
- pH: +/-0.2 standard units
- Specific Conductivity: +/- 3%

The flow rate was adjusted as needed to maintain approximately 300 mL/min during sampling activities. To reduce possible sample cross contamination, the flow-through cell was bypassed and gloves were replaced prior to sampling.

Sample bottles were provided by TestAmerica Laboratories, Inc. (TestAmerica) for the following analyses:

- VOCs – USEPA SW-846 Method 8260B
- SVOCs were analyzed using USEPA SW-846 Method 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)
- MNA parameters – alkalinity and carbon dioxide (USEPA Method 310.1), chloride (USEPA Method 352.5), total and dissolved iron and total and dissolved manganese (USEPA SW-846 Method 6010C), methane, ethane and ethylene (RSK-175), nitrate (USEPA Method 353.2), sulfate (USEPA Method 375.4), and total and dissolved organic carbon (USEPA Method 415.1)

VOC and SVOC sample bottles were filled first followed by gas sensitive parameters and general chemistry parameters. Ferrous iron was field analyzed with a HACH 890 Colorimeter and HACH AccuVac® ampules. Samples collected for ferrous iron and dissolved analyses were field filtered using an in-line 0.2 micron disposable filter. Groundwater purging and sampling forms are included in Appendix A.

2.3 Quality Assurance and Sample Handling

Four (4) analytical duplicates (AD), three (3) equipment blanks (EB) and three (3) matrix spike/matrix spike duplicate (MS/MSD) pairs were collected during the 1Q17 LTMP sampling event. Laboratory provided trip blanks were included in each cooler containing samples for VOC analysis, for a total of five (5) trip blanks. Sample bottles were labeled with the date and time of sample collection, sampler initials, analysis requested, preservative used, and sample identification based on the following nomenclature “AAA-MW#-MMYY-QA/QC” or “BBBB-MMYY-QA/QC” where:

- “**AAA**” denotes “Benzene Storage Area (BSA)”, “Chlorobenzene Process Area (CPA)”, “East St. Louis (ESL)”, or “Groundwater Elevation (GWE)” and “**MW#**” denotes “Monitoring Well Number”
- “**BBBB**” denotes PM1M or PM1D for monitoring wells installed in January 2015



- **“MMYY”** denotes month and year of sampling quarter, e.g.: February (1st quarter), 2017 (0217)
- **“QA/QC”** denotes QA/QC sample
 - **AD** – Analytical Duplicate
 - **EB** – Equipment Blank
 - **MS or MSD** – Matrix Spike or Matrix Spike Duplicate

Samples that were field filtered with an in-line 0.2 micron filter include “F(0.2)” prior to the “MMYY” portion of the sample identification. Sample information was recorded on a chain-of-custody (COC) that included project identification, sample identification, date and time of sample collection, analysis requested, preservative used, sample matrix and type, number of sample containers, sampler signature, and date COC was completed. Copies of the COCs are included in Appendix B.

Directly after sampling, sample bottles were placed in an iced cooler to maintain a sample temperature of approximately 4°C. Prior to sample shipment, samples and ice were placed inside two (2) contractor trash bags. The bags were tied and the cooler was sealed between the lid and sides with a signed and dated custody seal. Samples were shipped overnight via FedEx to the TestAmerica facility in Savannah, Georgia.

2.4 Biodegradation Sampling

Bio-Trap® and SIP results are evaluated to provide biodegradation potential information in the SHU, the MHU and the DHU. Bio-Trap® samplers and SIPs are passive sampling tools that collect microbes across the samplers membrane that is, after time, analyzed. SIPs are baited with a specially synthesized form of the contaminant (i.e., benzene, chlorobenzene) in order to measure the degradation of a specific contaminant.

Bio-Trap® samplers and SIPs, provided by Microbial Insights, Inc. in Rockford, Tennessee, were deployed on December 30, 2016 in monitoring wells downgradient of the former Chlorobenzene Process Area (CPA-MW-1D through CPA-MW-5D) and downgradient of the former Benzene Storage Area (BSA-MW-1S and BSA-MW-2D through BSA-MW-5D) for PLFA analysis. A benzene SIP was deployed in monitoring well BSA-MW-2D and a chlorobenzene SIP was deployed in monitoring well CPA-MW-3D. Bio-Trap® samplers and SIPs were weighted and fastened to a stainless steel cable. The cable was secured to the well cap and the Bio-Trap® or SIP was lowered into the well and placed in the middle of the well screen.

On January 26, 2017, Bio-Trap® samplers and SIPs were collected from the wells, placed in laboratory provided bags, labeled with appropriate well identification, placed in a cooler with ice, properly sealed, and shipped overnight to the Microbial Insights, Inc. facility in Rockford, Tennessee for analysis.



2.5 Surface Water and Sediment Monitoring

Surface water/sediment sampling is typically performed concurrent to the groundwater sampling event to confirm groundwater is discharging to the river at the time of sampling. In addition, the sampling is performed to assess the relationship between VOC and SVOC concentrations in the river and in groundwater. The surface water and sediment sampling was conducted on February 6, 2017. Fluid levels in groundwater monitoring wells CPA-MW-5D, BSA-MW-5D, and BSA-MW-4D were measured on February 6, 2017. The water level elevations were measured at the following:

- CPA-MW-5D (391.70 ft above mean sea level (AMSL))
- BSA-MW-4D (392.70 ft AMSL)
- BSA-MW-5D (393.26 ft AMSL)

The levels were higher than the Mississippi River on February 6, 2017 (~389.98 ft AMSL); therefore discharge to the river was confirmed.

Surface water and sediment samples were collected from three (3) locations, R2007-1 through R2007-3. Sample locations R2007-1 through R2007-3 can be seen on Figure 2. Coordinates for the three sample locations were preloaded into a Trimble Global Positioning System (GPS) unit, and used for navigation to the sample locations. Field personnel positioned the sampling boat at a point where the dredge was able to reach the river bed. Surface water samples were collected prior to sediment samples to collect a sample representing the water column above the sediments and reduce potential contamination from the sediments or the sampling system.

During the 1Q17 River sampling event, samples were analyzed for the following VOCs: benzene, chlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene, and the following SVOCs: 1,4-dioxane, 4-chloroaniline, 2-chlorophenol, and 1,2,4-trichlorobenzene.

QA/QC and shipping procedures were similar to those described above for groundwater sample collection.

The following field parameters were collected at the three (3) sample locations: temperature, pH, dissolved oxygen, and conductivity. Parameters were recorded using a YSI 556 MPS at a depth of one (1) foot below the water surface and recorded on field data forms.

Surface water samples were collected using LDPE tubing with weighted intake and a peristaltic pump. The pump intake was placed at the sediment-water interface (within one (1) foot of the river bottom). Tubing was fixed to the cable of the sediment sampler (ponar dredge) and lowered to the bottom of the river with the dredge. The flow rate was adjusted as needed to minimize volatilization. New tubing was used at each sample location. Sample bottles were provided by TestAmerica for VOC and SVOC analysis. VOC and SVOC sample bottles were filled directly from the tubing to reduce VOC and/or preservative loss. The unfiltered samples were submitted to the laboratory for analysis. Sampling forms are included in Appendix A.



Sediment samples were collected using a ponar grab sampler. The ponar grab sampler was deployed from a davit along the side of the boat, and raised and lowered with a winch. Prior to sampling, the grab sampler and other sampling devices (stainless steel bowl and spoon) were decontaminated with a distilled water and Alconox® wash, followed by a distilled water rinse. The ponar grab sampler was deployed multiple times to collect sufficient sample volume. Sediment samples were collected from the upper two (2) inches of the river bed. Upon recovery, the ponar grab sampler was opened and the sediment was moved to the stainless steel bowl. Samples for VOC analysis were obtained using a five (5) milliliter TerraCore® sampler, which was inserted into the sediment below the surface and carefully removed to prevent VOC loss.

COCs for surface water and sediment sampling are included in Appendix B.

2.6 Decontamination and Investigation Derived Waste

Sampling equipment was decontaminated prior to mobilizing to the Site, between sample locations and prior to demobilizing from the Site. Non-dedicated sampling equipment was decontaminated between samples with a non-phosphatic detergent solution and a deionized water rinse.

Investigation derived waste (IDW) was placed in 55-gallon drums, labeled with the generation date and staged for disposal by Solutia. IDW such as gloves and other disposable sampling equipment was bagged for disposal by Solutia.

3.0 QUALITY ASSURANCE

Sample results were provided by TestAmerica in electronic format and reviewed for quality and completeness by Golder in accordance with the Work Plan. Results were submitted in five (5) sample delivery groups (SDGs) as follows:

Sample Delivery Group (SDG)	Sample Identification
KPS185	PM1D-0217
	ESL-MW-D1-0217
	ESL-MW-A-0217
	CPA-MW-5D-0217
	1Q17 LTM Trip Blank #1
KPS186	GWE-5D-0217
	BSA-MW-5D-0217
	CPA-MW-4D-0217
	BSA-MW-4D-0217
	1Q17 LTM Trip Blank #2



Sample Delivery Group (SDG)	Sample Identification
KPS187	GWE-3D-0217
	GWE-2D-0217
	GWE-1D-0217
	BSA-MW-3D-0217
	BSA-MW-3D-0217-EB
	1Q17 LTM Trip Blank #3
KPS188	CPA-MW-3D-0217
	CPA-MW-3D-0217-AD
	BSA-MW-2D-0217
	CPA-MW-2D-0217
	CPA-MW-2D-0217-AD
	CPA-MW-1D-0217
	BSA-MW-1S-0217
	BSA-MW-1S-0217-EB
KRS018	1Q17 LTM Trip Blank #4
	SW-R2007-1-0217
	SW-R2007-2-0217
	SW-R2007-3-0217
	SW-R2007-1-0217-AD
	SW-R2007-1-0217-EB
	SED-R2007-1-0217
	SED-R2007-2-0217
	SED-R2007-3-0217
	SED-R2007-1-0217-AD
	1Q17 LTM River Trip Blank

Golder completed validation of the analytical data following the general guidelines in Section 4.4 Data Review and Validation of the Work Plan. The Work Plan specifies that the most recent versions of the national data validation guidelines be used for data review. The following guidelines were generally used:

- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, EPA-540-R-08-01, June 2008
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, EPA 540-R-10-011, January 2010

Although some data required qualifications due to quality control criteria that were not achieved, the data was deemed usable. The completeness for the data set was 100%. Qualifications are included in Appendix C.



4.0 OBSERVATIONS

Groundwater analytical data for VOCs and MNA parameters are discussed below and presented in Table 2 and 3, respectively. The groundwater analytical laboratory results including data validation reports are included in Appendix D.

4.1 Benzene

Benzene was detected in seven (7) of the seventeen (17) monitoring wells and piezometers at concentrations ranging from 1.3 µg/L (PM1D) to 47,000 µg/L (BSA-MW-2D). Benzene results are summarized below.

- Former Benzene Storage Area: Benzene was detected in the former Benzene Storage Area source area well (BSA-MW-1S) at a concentration of 32,000 µg/L.
- Downgradient of Former Benzene Storage Area: Benzene was detected in one (1) of four (4) wells downgradient of the former Benzene Storage Area with a concentration of 47,000 µg/L (BSA-MW-2D) in the DHU north of the GMCS.
- Former Chlorobenzene Process Area: Benzene was detected in the former Chlorobenzene Process Area source area well (CPA-MW-1D) at a concentration of 6,600 µg/L.
- Downgradient of Former Chlorobenzene Process Area: Benzene was not detected in the wells downgradient of the former Chlorobenzene Process Area.
- North of the Site: Benzene was detected in four (4) of five (5) wells and piezometers north of the Site at concentrations ranging from 1.3 µg/L (PM1D) to 17 µg/L (GWE-3D).

4.2 Chlorobenzenes (Total)

Total chlorobenzenes (i.e., sum of chlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene) were detected in sixteen (16) of the seventeen (17) wells at concentrations ranging from 1.9 µg/L (ESL-MW-A and GWE-1D) to 39,300 µg/L (CPA-MW-1D). Total chlorobenzenes results are summarized below.

- Former Benzene Storage Area: Total chlorobenzenes were not detected in the former Benzene Storage Area source area well (BSA-MW-1S).
- Downgradient of Former Benzene Storage Area: Total chlorobenzenes were detected in four (4) of four (4) wells downgradient of the former Benzene Storage Area with concentrations ranging from 101.2 µg/L (BSA-MW-5D) to 1,655 µg/L (BSA-MW-4D) in the DHU north of the GMCS.
- Former Chlorobenzene Process Area: Total chlorobenzenes were detected in the former Chlorobenzene Process Area source area well (CPA-MW-1D) at a concentration of 39,300 µg/L.
- Downgradient of Former Chlorobenzene Process Area: Total chlorobenzenes were detected in four (4) of four (4) wells downgradient of the former Chlorobenzene Process Area with concentrations ranging from 182.5 µg/L (CPA-MW-4D) to 29,850 / 28,830 µg/L (CPA-MW-2D and AD). Total chlorobenzenes were detected at a concentration of 1,600 µg/L (CPA-MW-5D) north of the GMCS.



- North of the Site: Total chlorobenzenes were detected in seven (7) of seven (7) wells and piezometers north of the Site with concentrations ranging from 1.9 µg/L (ESL-MW-A and GWE-1D) to 1,288 µg/L (GWE-3D).

4.3 Semi-Volatile Organic Compounds

On a semi-annual basis (1st and 3rd quarter) specific SVOCs are analyzed at various LTMP wells. The CPA and BSA wells included in the LTMP event were analyzed for 2-chlorophenol and 1,2,4-trichlorobenzene. In addition, wells BSA-MW-2D, BSA-MW-3D, BSA-MW-4D, and BSA-MW-5D were analyzed for 1,4-dioxane, while wells CPA-MW-3D, CPA-MW-4D and CPA-MW-5D were analyzed for 4-chloroaniline.

- Former Benzene Storage Area: 2-Chlorophenol and 1,2,4-trichlorobenzene were not detected in the former Benzene Storage Area source area well (BSA-MW-1S).
- Downgradient of Former Benzene Storage Area: 1,4-Dioxane was detected in BSA-MW-2D and BSA-MW-4D at concentrations of 12 µg/L and 13 µg/L respectively, downgradient of the former Benzene Storage Area. 2-Chlorophenol was detected in BSA-MW-3D and BSA-MW-4D at concentrations of 20 µg/L and 16 µg/L respectively, downgradient of the former Benzene Storage Area. 1,2,4-trichlorobenzene was not detected downgradient of the former Benzene Storage Area.
- Former Chlorobenzene Process Area: 1,2,4-Trichlorobenzene was detected in the former Chlorobenzene Process Area source area well (CPA-MW-1D) at a concentration of 480 µg/L.
- Downgradient of Former Chlorobenzene Process Area: 4-Chloroaniline was detected in CPA-MW-4D and CPA-MW-5D at concentrations of 120 µg/L and 19 µg/L respectively, downgradient of the former Chlorobenzene Process Area. 2-Chlorophenol was detected in CPA-MW-2D / CPA-MW-2D-AD and CPA-MW-5D at 31 / 37 µg/L and 23 µg/L respectively, downgradient of the former Chlorobenzene Process Area. 1,2,4-Trichlorobenzene was not detected downgradient of the former Chlorobenzene Process Area.

4.4 Surface Water and Sediment

Surface water and sediment samples were analyzed for the following VOCs: benzene, chlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene, along with the following SVOCs: 4-chloroaniline, 2-chlorophenol, 1,4-dioxane and 1,2,4-trichlorobenzene. Surface water and sediment analytical data are presented in Table 4 and 5, respectively. The surface water and sediment analytical laboratory results including data validation reports are included in Appendix E. There were no VOC or SVOC detections in the surface water samples and no SVOC detections in the surface water or sediment samples. Sediment samples were received at the laboratory with no preservatives in the sample vials and were therefore unusable.

4.5 Monitored Natural Attenuation

MNA parameter data for this quarter are presented in Table 3. Laboratory results for PLFA and SIP analysis are included in Appendix F. The SIP study (Appendix F) states the following:

- "The detection of ¹³C-enriched biomass and DIC confirmed that benzene biodegradation had occurred at BSA-MW-2D-0217 during the deployment period".



- “Evidence for biodegradation of chlorobenzene in CPA-MW-3D-0217 was inconclusive, as the ^{13}C -enriched biomass fell below the detection limit”.
- Dissolved inorganic carbon (DIC) data for BSA-MW-2D-0217 indicate that “benzene was mineralized under current site conditions.”
- Although DIC data for CPA-MW-3D-0217 indicate that “little to no chlorobenzene was mineralized during the deployment period,” the community structure contains contaminant-reducing bacteria.
- The PLFA analysis in the remaining BSA and CPA wells also show a community structure containing contaminant-reducing bacteria.

5.0 CLOSING

Golder appreciates the opportunity to assist Solutia Inc. with the Long-Term Monitoring Program sampling events. Please contact the undersigned if you need additional information.

Sincerely,

GOLDER ASSOCIATES INC.

Amanda W. Derhake, Ph.D., P.E.
Senior Engineer

Mark N. Haddock, R.G., P.E.
Principal, Senior Consultant



6.0 REFERENCES

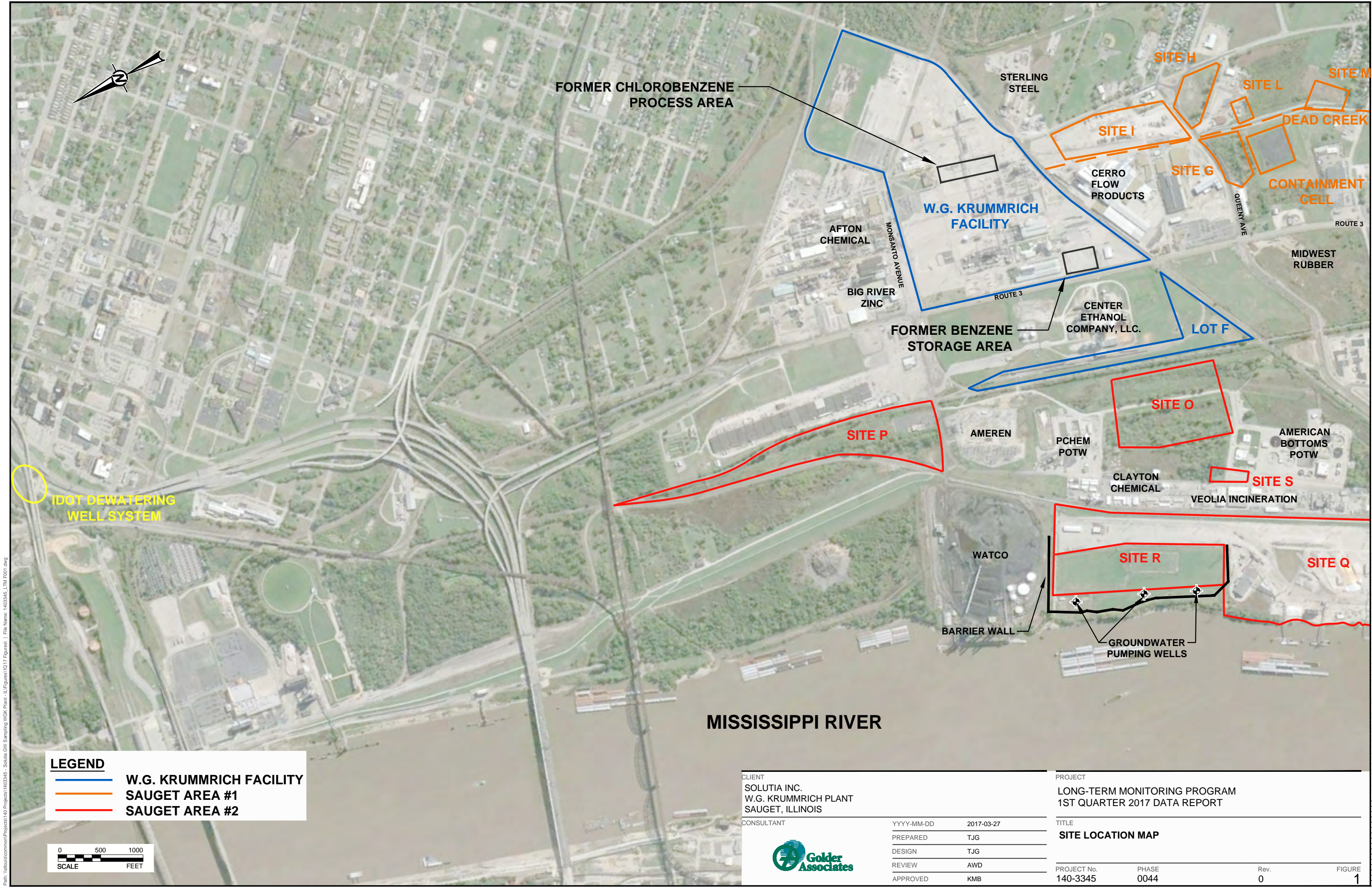
Solutia Inc., 2009. Revised Long Term Monitoring Program Work Plan, Solutia Inc., W.G. Krummrich Facility, Sauget, Illinois, May 2009.

USEPA, 2010. Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review.

USEPA, 2008. Contract Laboratory Program national Functional Guidelines for Superfund Organic Methods Data Review.

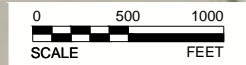
USEPA, 2008. Final Decision, Solutia Inc., Sauget, Illinois, February 2008.

FIGURES



LEGEND

- W.G. KRUMMRICH FACILITY
- SAUGET AREA #1
- SAUGET AREA #2

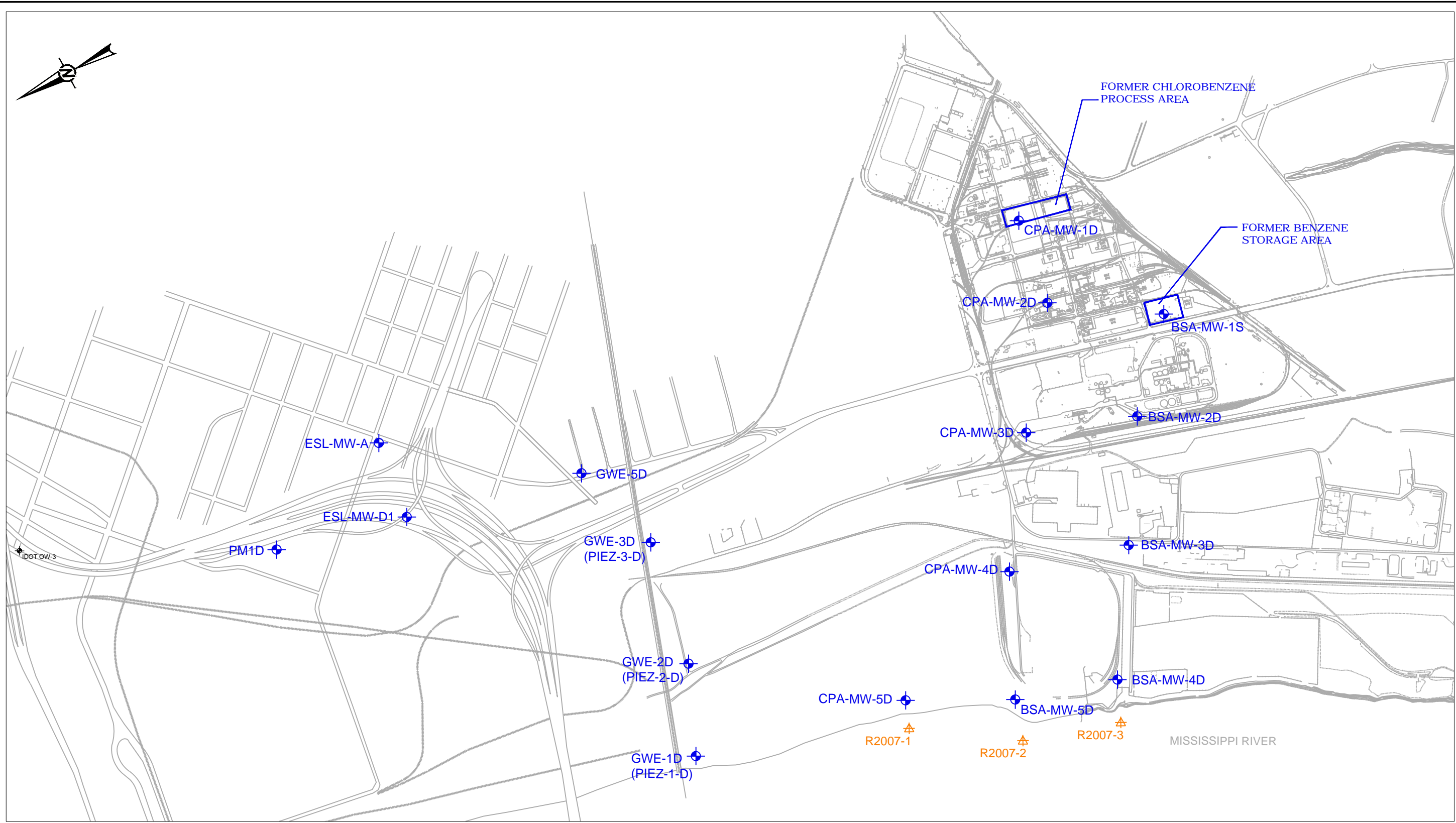


MISSISSIPPI RIVER

CLIENT		PROJECT	
SOLUTIA INC.		LONG-TERM MONITORING PROGRAM	
W.G. KRUMMRICH PLANT		1ST QUARTER 2017 DATA REPORT	
SAUGET, ILLINOIS			
CONSULTANT		TITLE	
		SITE LOCATION MAP	
YYYY-MM-DD	2017-03-27	PROJECT No.	140-3345
PREPARED	TJG	PHASE	0044
DESIGN	TJG	Rev.	0
REVIEW	AWD	FIGURE	1
APPROVED	KMB		



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



LEGEND

LONG-TERM MONITORING WELL LOCATION

LONG-TERM MONITORING SURFACE WATER/SEDIMENT SAMPLING LOCATION

- NOTES**
1. REFER TO TABLE 1 FOR MONITORING WELL CONSTRUCTION INFORMATION.
 2. "D", "M", OR "S" IN THE WELL IDENTIFICATION DESIGNATES DEEP HYDROGEOLOGIC UNIT (DHU), MIDDLE HYDROGEOLOGIC UNIT (MHU), OR SHALLOW HYDROGEOLOGIC UNIT (SHU), RESPECTIVELY.



CLIENT
SOLUTIA INC.
W.G. KRUMMRICH PLANT
SAUGET, ILLINOIS
CONSULTANT



YYYY-MM-DD	2017-04-04
PREPARED	SJD
DESIGN	SJD
REVIEW	AWD
APPROVED	KMB

PROJECT
LONG-TERM MONITORING PROGRAM
1ST QUARTER 2017 DATA REPORT

TITLE
LONG-TERM MONITORING PROGRAM WELL LOCATIONS

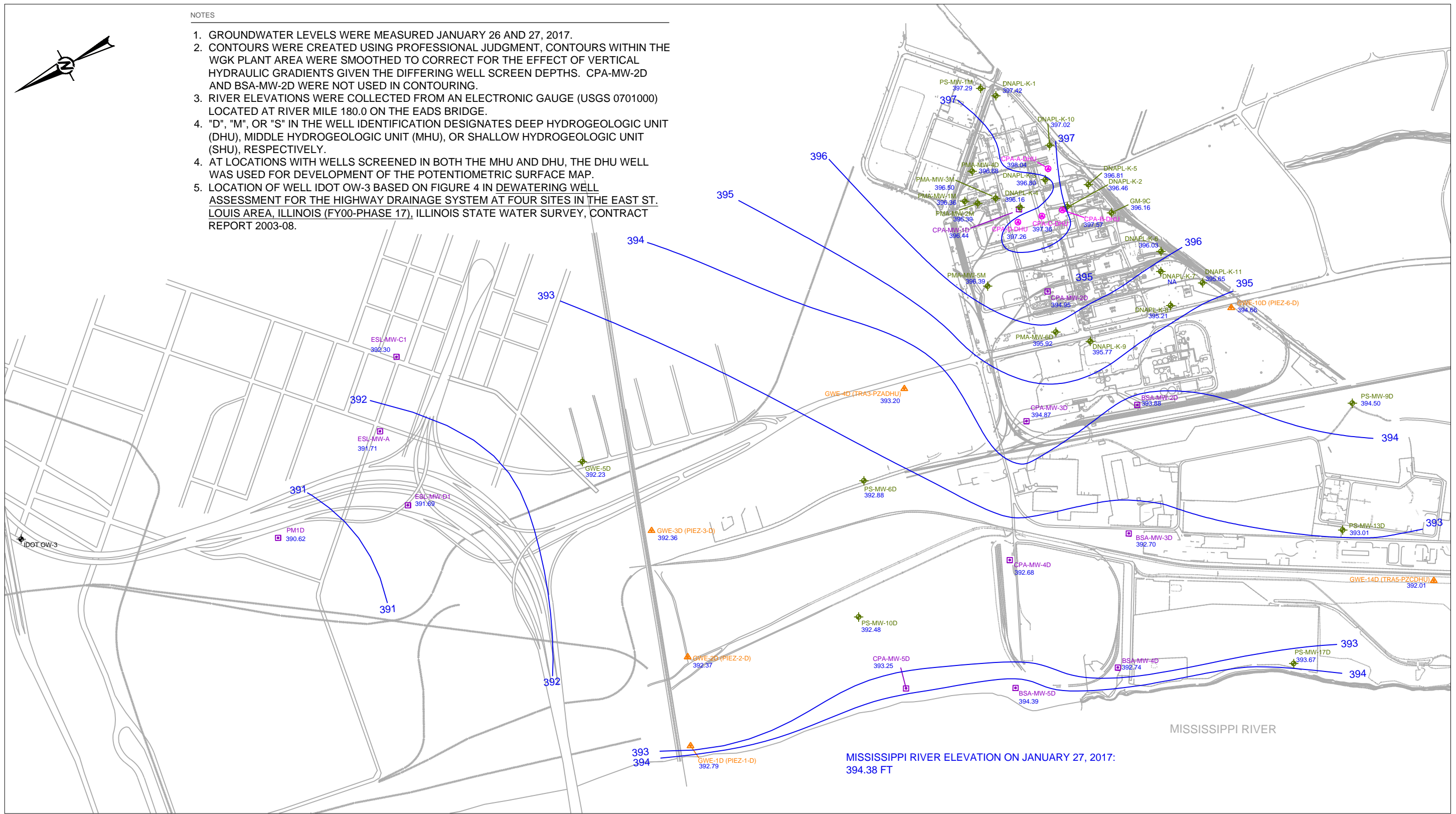
PROJECT No. 140-3345	PHASE: 0044	Rev. 0	FIGURE: 2
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Path: \\atlas\uscommon\Projects\140\Projects\1403345 - Solutia GW Sampling WGK Plant - IL\Figures\1Q17\Figures | File Name: 1403346_LTMP 2.dwg

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

NOTES

1. GROUNDWATER LEVELS WERE MEASURED JANUARY 26 AND 27, 2017.
2. CONTOURS WERE CREATED USING PROFESSIONAL JUDGMENT, CONTOURS WITHIN THE WGK PLANT AREA WERE SMOOTHED TO CORRECT FOR THE EFFECT OF VERTICAL HYDRAULIC GRADIENTS GIVEN THE DIFFERING WELL SCREEN DEPTHS. CPA-MW-2D AND BSA-MW-2D WERE NOT USED IN CONTOURING.
3. RIVER ELEVATIONS WERE COLLECTED FROM AN ELECTRONIC GAUGE (USGS 0701000) LOCATED AT RIVER MILE 180.0 ON THE EADS BRIDGE.
4. "D", "M", OR "S" IN THE WELL IDENTIFICATION DESIGNATES DEEP HYDROGEOLOGIC UNIT (DHU), MIDDLE HYDROGEOLOGIC UNIT (MHU), OR SHALLOW HYDROGEOLOGIC UNIT (SHU), RESPECTIVELY.
4. AT LOCATIONS WITH WELLS SCREENED IN BOTH THE MHU AND DHU, THE DHU WELL WAS USED FOR DEVELOPMENT OF THE POTENTIOMETRIC SURFACE MAP.
5. LOCATION OF WELL IDOT OW-3 BASED ON FIGURE 4 IN DEWATERING WELL ASSESSMENT FOR THE HIGHWAY DRAINAGE SYSTEM AT FOUR SITES IN THE EAST ST. LOUIS AREA, ILLINOIS (FY00-PHASE 17), ILLINOIS STATE WATER SURVEY, CONTRACT REPORT 2003-08.



LEGEND

- LONG-TERM MONITORING WELL USED FOR GROUNDWATER CONTOURING
- OTHER MONITORING WELL USED FOR GROUNDWATER CONTOURING
- PIEZOMETER CLUSTER USED FOR GROUNDWATER CONTOURING
- CPA MONITORING WELL USED FOR GROUNDWATER CONTOURING
- IDOT GROUNDWATER WELL
- APPROXIMATE GROUNDWATER ELEVATION CONTOUR (FT NAVD)



CLIENT
SOLUTIA INC.
W.G. KRUMMRICH PLANT
SAUGET, ILLINOIS
CONSULTANT

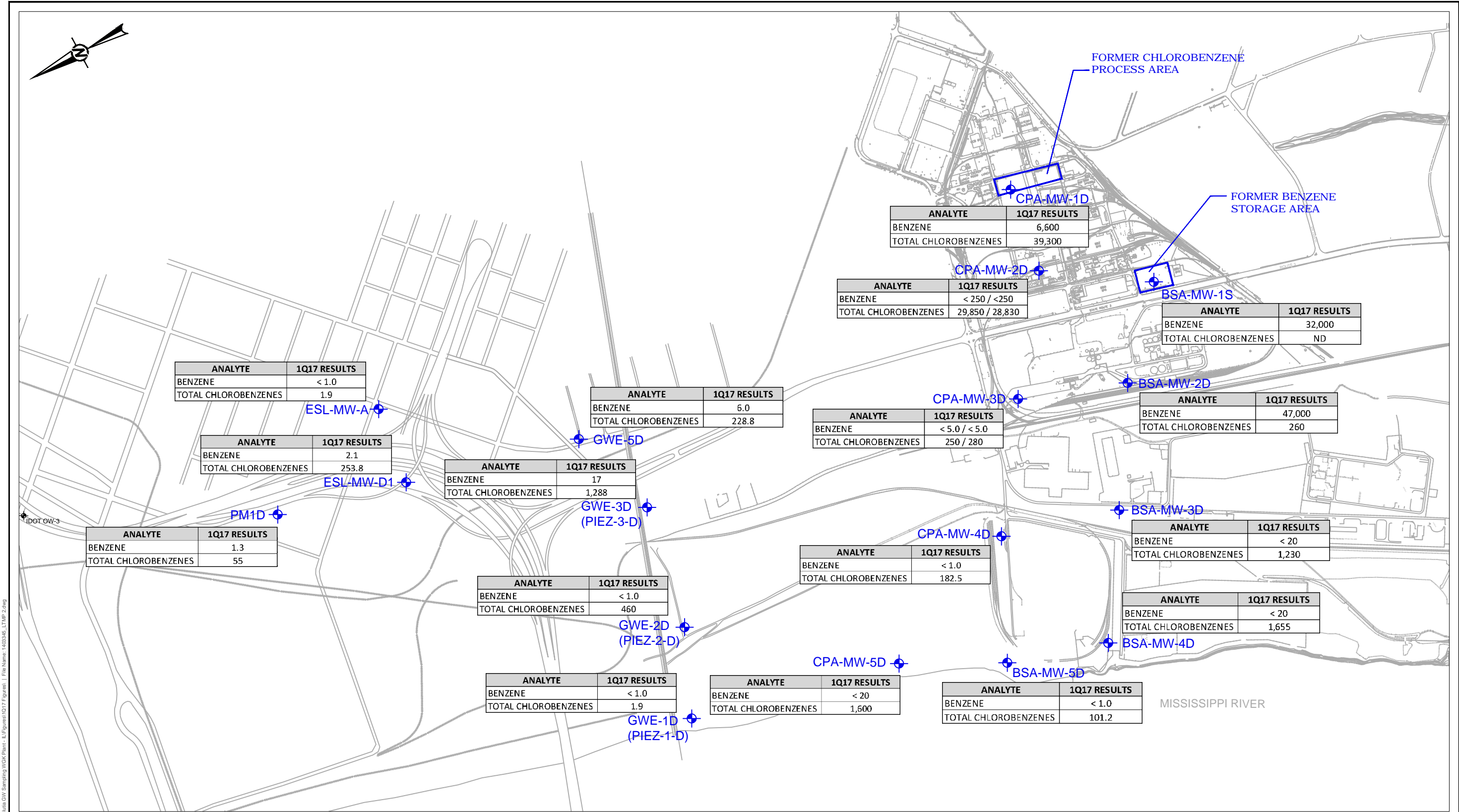


YYYY-MM-DD 2017-03-27
PREPARED TJG
DESIGN SJD
REVIEW AWD
APPROVED KMB

PROJECT
LONG-TERM MONITORING PROGRAM
1ST QUARTER 2017 DATA REPORT

TITLE
**POTENTIOMETRIC SURFACE MAP
MIDDLE/DEEP HYDROGEOLOGIC UNIT**

PROJECT No. 140-3345 PHASE: 0044 Rev. 0 FIGURE: 3



LEGEND

LONG-TERM MONITORING WELL LOCATION



- NOTES
1. TOTAL CHLOROBENZENES RESULTS INCLUDE THE SUM OF CHLOROBENZENE, 1,2-DICHLOROBENZENE, 1,3-DICHLOROBENZENE, AND 1,4-DICHLOROBENZENE.
 2. RESULTS SHOWN ARE IN $\mu\text{g/L}$.
 3. ND - NOT DETECTED.
 4. MULTIPLE SAMPLE RESULTS INDICATE DUPLICATE SAMPLES.
 4. "D", "M", OR "S" IN THE WELL IDENTIFICATION DESIGNATES DEEP HYDROGEOLOGIC UNIT (DHU), MIDDLE HYDROGEOLOGIC UNIT (MHU), OR SHALLOW HYDROGEOLOGIC UNIT (SHU), RESPECTIVELY.

CLIENT
SOLUTIA INC.
W.G. KRUMMRICH PLANT
SAUGET, ILLINOIS

CONSULTANT



YYYY-MM-DD	2017-04-04
PREPARED	SJD
DESIGN	SJD
REVIEW	AWD
APPROVED	KMB

PROJECT
LONG-TERM MONITORING PROGRAM
1ST QUARTER 2017 DATA REPORT

TITLE
BENZENE AND TOTAL CHLOROBENZENES RESULTS

PROJECT No. 140-3345	PHASE: 0044	Rev. 0	FIGURE: 4
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TABLES

Table 1
Monitoring Well Gauging Information
1Q17 Long-Term Monitoring Program
Solutia Inc., W.G. Krummrich Plant
Sauget, Illinois

Well Identification	Monitoring Well Construction Data						1Q17 - January 26 and January 27, 2017			
	Ground Surface Elevation ¹ (ft)	Top of Casing Elevation ¹ (ft)	Top of Screen Depth (ft bgs)	Bottom of Screen Depth (ft bgs)	Top of Screen Elevation ¹ (ft)	Bottom of Screen Elevation ¹ (ft)	Water Level (ft btoc)	Depth to NAPL (ft btoc)	Total Depth ² (ft btoc)	Water Level Elevation ¹ (ft)
SHU 395-380 ft NAVD 88										
BSA-MW-1S	409.49	412.31	19.68	24.68	389.81	384.81	17.03	NP	27.34	395.28
GWE-5S	408.47	408.05	17.91	27.91	390.56	380.56	15.75	NP	27.86	392.30
MHU 380-350 ft NAVD 88										
GWE-5M	408.59	408.20	48.10	58.10	360.49	350.49	15.94	NP	58.18	392.26
PMA-MW-1M	410.32	410.08	54.54	59.54	355.78	350.78	13.72	NP	59.63	396.36
PMA-MW-2M	412.26	411.93	56.87	61.87	355.39	350.39	15.54	NP	61.32	396.39
PMA-MW-3M	412.36	412.10	57.07	62.07	355.29	350.29	15.60	NP	61.54	396.50
PMA-MW-5M	411.27	410.97	52.17	57.17	359.10	354.10	14.58	NP	57.02	396.39
PS-MW-1M	409.37	412.59	37.78	42.78	371.59	366.59	15.30	NP	46.01	397.29
PM1M	413.07	412.80	51.64	61.41	361.43	351.66	22.21	NP	30.46	390.59
DHU 350 ft NAVD 88 - Bedrock										
BSA-MW-2D	412.00	415.13	68.92	73.92	343.08	338.08	21.25	NP	76.98	393.88
BSA-MW-3D	412.91	415.74	107.02	112.02	305.89	300.89	23.04	NP	114.74	392.70
BSA-MW-4D	425.00	424.69	118.54	123.54	306.46	301.46	31.95	NP	123.12	392.74
BSA-MW-5D	420.80	420.49	115.85	120.82	304.95	299.95	26.10	NP	120.87	394.39
CPA-A-DHU	413.95	416.24	108.00	113.30	305.95	300.65	18.20	NP	115.24	398.04
CPA-B-DHU	409.12	408.68	101.00	106.50	308.12	302.62	11.11	NP	105.53	397.57
CPA-C-DHU	408.92	408.57	101.00	106.00	307.92	302.92	11.21	NP	105.46	397.36
CPA-D-DHU	409.63	412.20	101.00	105.90	308.63	303.73	14.94	NP	108.25	397.26
CPA-MW-1D	408.62	412.23	66.12	71.12	342.50	337.50	15.79	NP	74.68	396.44
CPA-MW-2D	408.51	408.20	99.96	104.96	308.55	303.55	13.25	NP	104.61	394.95
CPA-MW-3D	410.87	410.67	108.20	113.20	302.67	297.67	15.80	NP	112.72	394.87
CPA-MW-4D	421.57	421.20	116.44	121.44	305.13	300.13	28.52	NP	120.93	392.68
CPA-MW-5D	411.03	413.15	107.63	112.63	303.40	298.40	19.90	NP	114.71	393.25
DNAPL-K-1	413.07	415.56	108.20	123.20	304.87	289.87	18.14	NP	123.03	397.42
DNAPL-K-2	407.94	407.72	97.63	112.63	310.31	295.31	11.26	NP	112.36	396.46
DNAPL-K-3	412.13	415.91	104.80	119.80	307.33	292.33	19.11	NP	123.23	396.80
DNAPL-K-4	409.48	412.53	102.55	117.55	306.93	291.93	16.37	NP	118.27	396.16
DNAPL-K-5	412.27	411.91	102.15	117.15	310.12	295.12	15.10	NP	116.45	396.81
DNAPL-K-6	410.43	410.09	102.47	117.47	307.96	292.96	14.06	NP	116.84	396.03
DNAPL-K-7	408.32	407.72	100.40	115.40	307.92	292.92	--	--	--	--
DNAPL-K-8	408.56	411.38	102.65	117.65	305.91	290.91	16.17	NP	117.53	395.21
DNAPL-K-9	406.45	405.97	97.42	112.42	309.03	294.03	10.20	NP	111.12	395.77
DNAPL-K-10	413.50	413.25	105.43	120.43	308.07	293.07	16.23	NP	120.11	397.02
DNAPL-K-11	412.20	411.78	105.46	120.46	306.74	291.74	16.13	NP	120.25	395.65
GM-9C	409.54	411.21	88.00	108.00	321.54	301.54	15.05	NP	108.16	396.16
GWE-1D	412.80	415.60	117.00	127.00	295.80	285.80	22.81	NP	126.95	392.79
GWE-2D	417.45	417.14	127.00	137.00	290.45	280.45	24.77	NP	136.62	392.37
GWE-3D	415.03	417.66	104.60	114.60	313.06	303.06	25.30	NP	114.86	392.36
GWE-4D	406.05	405.74	74.00	80.00	332.05	326.05	12.54	NP	78.74	393.20
GWE-5D	408.79	408.38	100.43	105.43	308.36	303.36	16.15	NP	105.12	392.23
GWE-10D	410.15	412.87	102.50	112.50	307.65	297.65	18.21	NP	114.76	394.66
GWE-14D	420.47	422.90	90.00	96.00	330.47	324.47	30.89	NP	96.98	392.01
ESL-MW-A	412.93	412.59	105.50	110.50	307.43	302.43	20.88	NP	109.87	391.71
ESL-MW-C1	410.09	409.79	104.00	109.00	306.09	301.09	17.49	NP	108.63	392.30
ESL-MW-D1	416.38	416.04	114.00	119.00	302.38	297.38	24.35	NP	119.24	391.69
PMA-MW-4D	411.22	410.88	68.84	73.84	342.38	337.38	14.20	NP	73.28	396.68
PMA-MW-6D	407.63	407.32	96.49	101.49	311.14	306.14	11.40	NP	101.19	395.92
PS-MW-6D	404.11	406.63	102.32	107.32	304.31	299.31	13.75	NP	109.77	392.88
PS-MW-9D	403.92	403.52	100.40	105.40	303.52	298.52	9.02	NP	105.21	394.50
PS-MW-10D	409.63	412.18	103.78	108.78	308.40	303.40	19.70	NP	111.36	392.48
PS-MW-13D	405.80	405.53	106.08	111.08	299.72	294.72	12.52	NP	110.60	393.01
PS-MW-17D	420.22	423.26	121.25	126.25	298.97	293.97	29.59	NP	133.88	393.67
SA2-MW-1D	403.79	406.03	105.01	115.01	301.02	291.02	21.78	NP	102.27	384.25
PM1D	413.41	412.78	101.42	106.45	311.99	306.96	22.16	NP	106.61	390.62

Notes

ft - feet

bgs - below ground surface

btoc - below top of casing

NP - no product observed

SHU - shallow hydrogeologic unit

MHU - middle hydrogeologic unit

DHU - deep hydrogeologic unit

-- - well not gauged

¹ - Elevation based on North American Vertical Datum (NAVD) 88 datum

² - Total depths are measured annually during the first quarter of each year

Prepared By: JS 1/27/2017

Checked By: TJG 2/3/2017

Reviewed By: AWD 04/13/2017

Table 2
Groundwater Analytical Results
1Q17 Long-Term Monitoring Program
Solutia Inc., W.G. Krummrich Plant
Sauget, Illinois

Sample Identification	Sample Date	VOCs (µg/L)					SVOCs (µg/L)			
		Benzene	Chlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	4-Chloroaniline*	2-Chlorophenol*	1,4-Dioxane*	1,2,4-Trichlorobenzene*
Benzene Storage Area										
BSA-MW-1S-0217	2/2/2017	32,000 D	<5,000	<5,000	<5,000	<5,000	NA	<9.7	NA	<9.7
BSA-MW-2D-0217	2/2/2017	47,000 D	260 D	<200	<200	<200	NA	<9.7	12	<9.7
BSA-MW-3D-0217	2/1/2017	<20	1,000 D	<20	<20	230 D	NA	20	<9.8	<9.8
BSA-MW-4D-0217	1/31/2017	<20	1,600 D	<20	<20	55 D	NA	16	13	<9.8
BSA-MW-5D-0217	1/31/2017	<1.0	100	<1.0	<1.0	1.2	NA	<9.8	<9.8	<9.8
Chlorobenzene Process Area										
CPA-MW-1D-0217	2/2/2017	6,600 D	19,000 D	10,000 D	1,300 D	9,000 D	NA	<9.8	NA	480 D
CPA-MW-2D-0217	2/2/2017	<250	29,000 D	<250	<250	850 D	NA	31	NA	<9.7
CPA-MW-2D-0217-AD	2/2/2017	<250	28,000 D	<250	<250	830 D	NA	37	NA	<9.7
CPA-MW-3D-0217	2/2/2017	<5.0	250 D	<5.0	<5.0	<5.0	<19	<9.6	NA	<9.6
CPA-MW-3D-0217-AD	2/2/2017	<5.0	280 D	<5.0	<5.0	<5.0	<20	<9.8	NA	<9.8
CPA-MW-4D-0217	1/31/2017	<1.0	180	<1.0	<1.0	2.5	120	<9.8	NA	<9.8
CPA-MW-5D-0217	1/30/2017	<20	1,600 D	<20	<20	<20	19	23	NA	<9.7
North of W.G. Krummrich Facility										
ESL-MW-A-0217	1/30/2017	<1.0	1.9	<1.0	<1.0	<1.0	NA	NA	NA	NA
ESL-MW-D1-0217	1/30/2017	2.1	220 D	3.0	1.8	29	NA	NA	NA	NA
GWE-1D-0217	2/1/2017	<1.0	1.9	<1.0	<1.0	<1.0	NA	NA	NA	NA
GWE-2D-0217	2/1/2017	<1.0	460 D	<1.0	<1.0	<1.0	NA	NA	NA	NA
GWE-3D-0217	2/1/2017	17 D	1,200 D	<10	<10	88 D	NA	NA	NA	NA
GWE-5D-0217	1/31/2017	6.0	200	3.8	1.1	25	NA	NA	NA	NA
PM1D-0217	1/30/2017	1.3	55	<1.0	<1.0	<1.0	NA	NA	NA	NA

Notes

VOCs - volatile organic compounds

SVOCs - semi-volatile organic compounds

* - samples are collected during the 1st and 3rd quarters

µg/L - micrograms per liter

< - result is non-detect, less than the reporting limit

D - compound analyzed at a dilution

AD - analytical duplicate

Bold - indicates concentration greater than reporting limit

Prepared By: ASB 03/07/2017

Checked By: TJG 04/04/2017

Reviewed By: AWD 04/13/2017

Table 3
Monitored Natural Attenuation Results
1Q17 Long-Term Monitoring Program
Solutia Inc., W.G. Krummrich Plant
Sauget, Illinois

Sample Identification	Sample Date	Monitored Natural Attenuation Parameters																
		Alkalinity (mg/L)	Carbon Dioxide (mg/L)	Chloride (mg/L)	Dissolved Oxygen (mg/L)	Ethane (ug/L)	Ethylene (ug/L)	Ferrous Iron (mg/L)	Iron (mg/L)	Iron, Dissolved (mg/L)	Manganese (mg/L)	Manganese, Dissolved (mg/L)	Methane (ug/L)	Nitrogen, Nitrate (mg/L)	Sulfate as SO4 (mg/L)	Total Organic Carbon (mg/L)	Dissolved Organic Carbon (mg/L)	ORP (mV)
Benzene Storage Area																		
BSA-MW-1S-0217	2/2/2017	1,200	150	320 D	0.08	<1.1	<1.0	>3.3	27	-	2.3	-	9,900	<0.050	<5.0	9.6	-	-105.51
BSA-MW-1S-F(0.2)-0217	2/2/2017	-	-	-	-	-	-	-	-	26	-	2.3	-	-	-	-	9.9	-
BSA-MW-2D-0217	2/2/2017	770	67	200 D	0.10	7.4	<1.0	>3.3	6.8	-	0.88	-	21,000	<0.050	<5.0	10	-	-80.11
BSA-MW-2D-F(0.2)-0217	2/2/2017	-	-	-	-	-	-	-	-	6.8	-	0.88	-	-	-	-	10	-
BSA-MW-3D-0217	2/1/2017	630	100	490 D	0.11	1.7	<1.0	>3.3	17	-	0.91	-	330	<0.050	25 D	2.8	-	-93.12
BSA-MW-3D-F(0.2)-0217	2/1/2017	-	-	-	-	-	-	-	-	17	-	0.90	-	-	-	-	4.1	-
BSA-MW-4D-0217	1/31/2017	530	45	220 D	0.16	2.3	<1.0	>3.3	7.6	-	0.54	-	67	<0.050	13 D	4.8	-	-79.90
BSA-MW-4D-F(0.2)-0217	1/31/2017	-	-	-	-	-	-	-	-	7.8	-	0.55	-	-	-	-	4.8	-
BSA-MW-5D-0217	1/31/2017	650	48	180 D	0.13	11	<1.0	>3.3	11	-	0.26	-	6,900	<0.050	<5.0	8.4	-	-108.16
BSA-MW-5D-F(0.2)-0217	1/31/2017	-	-	-	-	-	-	-	-	11	-	0.25	-	-	-	-	8.3	-
Chlorobenzene Process Area																		
CPA-MW-1D-0217	2/2/2017	860	11.0	150 D	0.06	19	<1.0	0	0.25	-	0.12	-	18,000	<0.050	<5.0	8.3	-	-94.82
CPA-MW-1D-F(0.2)-0217	2/2/2017	-	-	-	-	-	-	-	-	0.14	-	0.11	-	-	-	-	8.5	-
CPA-MW-2D-0217	2/2/2017	500	41	56 D	0.12	1.5	<1.0	>3.3	8.6	-	0.49	-	1,700	<0.050	24 D	6.3	-	-84.49
CPA-MW-2D-F(0.2)-0217	2/2/2017	-	-	-	-	-	-	-	-	8.5	-	0.49	-	-	-	-	6.2	-
CPA-MW-3D-0217	2/2/2017	570	59	110 D	0.11	11	<1.0	>3.3	12	-	0.65	-	9,700	<0.050	<5.0	6.8	-	-99.48
CPA-MW-3D-F(0.2)-0217	2/2/2017	-	-	-	-	-	-	-	-	13	-	0.70	-	-	-	-	7.2	-
CPA-MW-4D-0217	1/31/2017	670	56	96 D	0.12	17	<1.0	>3.3	16	-	0.43	-	16,000	<0.050	130 D	7.9	-	-117.17
CPA-MW-4D-F(0.2)-0217	1/31/2017	-	-	-	-	-	-	-	-	16	-	0.44	-	-	-	-	7.8	-
CPA-MW-5D-0217	1/30/2017	610	130	220 D	0.20	<1.1	<1.0	>3.3	21	-	0.86	-	21	<0.050	120 D	5.0	-	-63.57
CPA-MW-5D-F(0.2)-0217	1/30/2017	-	-	-	-	-	-	-	-	20	-	0.85	-	-	-	-	5.1	-
North of W.G. Krummrich Facility																		
ESL-MW-D1-0217	1/30/2017	390	45	83 D	0.12	<1.1	<1.0	>3.3	13	-	0.38	-	23	<0.050	480 D	2.8	-	-96.84
ESL-MW-D1-F(0.2)-0217	1/30/2017	-	-	-	-	-	-	-	-	13	-	0.38	-	-	-	-	2.7	-
ESL-MW-A-0217	1/30/2017	350	38	85 D	0.11	<1.1	<1.0	>3.3	13	-	0.42	-	3.9	0.28	610 D	3.5	-	-91.97
ESL-MW-A-F(0.2)-0217	1/30/2017	-	-	-	-	-	-	-	-	13	-	0.41	-	-	-	-	3.6	-
GWE-1D-0217	2/1/2017	500	110	71 D	0.06	<1.1	<1.0	-	19	-	1.00	-	8.2	<0.050	210 D	3.9	-	-109.15
GWE-1D-F(0.2)-0217	2/1/2017	-	-	-	-	-	-	-	-	18	-	0.97	-	-	-	-	3.9	-
GWE-2D-0217	2/1/2017	430	140	940 D	0.13	<1.1	<1.0	>3.3	38	-	0.94	-	29	<0.050	930 D	4.8	-	-54.81
GWE-2D-F(0.2)-0217	2/1/2017	-	-	-	-	-	-	-	-	38	-	0.93	-	-	-	-	4.9	-
GWE-3D-0217	2/1/2017	450	63	1,300 D	0.20	<1.1	<1.0	>3.3	27	-	0.85	-	42	<0.050	320 D	6.5	-	-81.86
GWE-3D-F(0.2)-0217	2/1/2017	-	-	-	-	-	-	-	-	27	-	0.87	-	-	-	-	6.4	-
GWE-5D-0217	1/31/2017	370	40	95 D	0.14	<1.1	<1.0	>3.3	14	-	0.42	-	62	<0.050	460 D	3.2	-	-88.11
GWE-5D-F(0.2)-0217	1/31/2017	-	-	-	-	-	-	-	-	15	-	0.43	-	-	-	-	3.2	-
PM1D-0217	1/30/2017	390	58	100 D	0.10	<1.1	<1	>3.3	14	-	0.45	-	40	<0.05	450 D	2.5	-	-129.70
PM1D-F(0.2)-0217	1/30/2017	-	-	-	-	-	-	-	-	14	-	0.45	-	-	-	-	2.5	-

Notes

Dissolved Oxygen (DO) and Oxidation Reduction Potential (ORP) values represent the final field measurements prior to sampling (In-Situ - SmartTrol™)

Ferrous Iron was field measured using a 0.2 µm field filtered sample (Hach DR-890 Colorimeter)

F(0.2) - sample was field filtered using a 0.2 µm filter during sample collection

µg/L - micrograms per liter

mg/L - milligrams per liter

mV - millivolts

< - result is non-detect, less than the reporting limit

"-" - not analyzed

D - compound analyzed at a dilution

Prepared By: ASB 03/07/2017

Checked By: RLS 03/09/2017

Reviewed By: AWD 04/13/2017

Table 4
Comprehensive Sediment Analytical Results -3Q08 to 1Q17
1Q17 Long-Term Monitoring Program
Solutia Inc., W.G. Krummrich Plant
Sauget, Illinois

Sample Identification	Chemical	Units	3rd Quarter 2008	1st Quarter 2009	3rd Quarter 2009	1st Quarter 2010	1st Quarter 2012	3rd Quarter 2015
			Result	Result	Result	Result	Result	Result
SED-R2007-1	Benzene	µg/kg	<4.6	<13	<5.3 J	<4.7	<7	<6.8
	Chlorobenzene	µg/kg	<4.6	<13	<5.3 J	<4.7	<7	<6.8
	1,2-Dichlorobenzene	µg/kg	<4.6	<13	<5.3 J	<4.7	<7	<6.8
	1,3-Dichlorobenzene	µg/kg	<4.6	<13	<5.3 J	<4.7	<7	<6.8
	1,4-Dichlorobenzene	µg/kg	<4.6	<13	<5.3 J	<4.7	<7	<6.8
	4-Chloroaniline	µg/kg	<840	<930	<840	<810	<830	<830
	2-Chlorophenol	µg/kg	<420	<470	<420	<410	<410	<410
	1,4-Dioxane	µg/kg	<420	<470	<420 J	<410	<410	<410
SED-R2007-2	1,2,4-Trichlorobenzene	µg/kg	<420	<470	<420	<410	<410	<410
	Benzene	µg/kg	<4.9	<4.8	<4.9	<5	<4.6	<4.0
	Chlorobenzene	µg/kg	<4.9	<4.8	<4.9	<5	<4.6	<4.0
	1,2-Dichlorobenzene	µg/kg	<4.9	<4.8	<4.9	<5	<4.6	<4.0
	1,3-Dichlorobenzene	µg/kg	<4.9	<4.8	<4.9	<5	<4.6	<4.0
	1,4-Dichlorobenzene	µg/kg	<4.9	<4.8	<4.9	<5	<4.6	<4.0
	4-Chloroaniline	µg/kg	<800	<790	<810	<780	<780	<810
	2-Chlorophenol	µg/kg	<400	<390	<400	<390	<390	<400
SED-R2007-3	1,4-Dioxane	µg/kg	<400	<390	<400	<390	<390	<400
	1,2,4-Trichlorobenzene	µg/kg	<400	<390	<400	<390	<390	<400
	Benzene	µg/kg	<4.8	<4	3.5 J	<5	<4.3	<3.8
	Chlorobenzene	µg/kg	4.4 J	2.9 J	72	<5	9.8	<3.8
	1,2-Dichlorobenzene	µg/kg	<4.8	<4	<4.7	<5	<4.3	<3.8
	1,3-Dichlorobenzene	µg/kg	<4.8	<4	<4.7	<5	<4.3	<3.8
	1,4-Dichlorobenzene	µg/kg	<4.8	<4	1.6 J	<5	<4.3	<3.8
	4-Chloroaniline	µg/kg	<680	<810	<730	<770	<770	<750
SED-R2007-3	2-Chlorophenol	µg/kg	<340	<400	<360	<390	<390	<380
	1,4-Dioxane	µg/kg	<340	<400	<360 J	<390	<390	<380
	1,2,4-Trichlorobenzene	µg/kg	<340	<400	<360	<390	<390	<380

Notes

Only the quarters during which river sampling occurred are shown

SED - Sediment

µg/kg - micrograms per kilogram

Bold indicates a detection

< - result is non-detect, less than the reporting limit

NS - not sampled

NA - not analyzed

J - indicates estimated value

Prepared by: SJD 04/12/2017

Checked by: JSI 04/13/2017

Reviewed by: AWD 04/13/2017

Table 4
Comprehensive Sediment Analytical Results -3Q08 to 1Q17
1Q17 Long-Term Monitoring Program
Solutia Inc., W.G. Krummrich Plant
Sauget, Illinois

Sample Identification	Chemical	Units	1st Quarter 2016	3rd Quarter 2016	1st Quarter 2017
			Result	Result	Result
SED-R2007-1	Benzene	µg/kg	<8.8	<5.4	NA
	Chlorobenzene	µg/kg	<8.8	<5.4	NA
	1,2-Dichlorobenzene	µg/kg	<8.8	<5.4	NA
	1,3-Dichlorobenzene	µg/kg	<8.8	<5.4	NA
	1,4-Dichlorobenzene	µg/kg	<8.8	<5.4	NA
	4-Chloroaniline	µg/kg	<900	<840	<2,500
	2-Chlorophenol	µg/kg	<450	<420	<1,300
	1,4-Dioxane	µg/kg	<450	<420	<1,300
SED-R2007-2	1,2,4-Trichlorobenzene	µg/kg	<450	<420	<1,300
	Benzene	µg/kg	1.2 J	<6.9	NA
	Chlorobenzene	µg/kg	<4.1	<6.9	NA
	1,2-Dichlorobenzene	µg/kg	<4.1	<6.9	NA
	1,3-Dichlorobenzene	µg/kg	<4.1	<6.9	NA
	1,4-Dichlorobenzene	µg/kg	<4.1	<6.9	NA
	4-Chloroaniline	µg/kg	<770	<1,100	<770
	2-Chlorophenol	µg/kg	<390	<560	<390
SED-R2007-3	1,4-Dioxane	µg/kg	<390	<560	<390
	1,2,4-Trichlorobenzene	µg/kg	<390	<560	<390
	Benzene	µg/kg	<7.6	NS	NA
	Chlorobenzene	µg/kg	<7.6	NS	NA
	1,2-Dichlorobenzene	µg/kg	<7.6	NS	NA
	1,3-Dichlorobenzene	µg/kg	<7.6	NS	NA
	1,4-Dichlorobenzene	µg/kg	<7.6	NS	NA
	4-Chloroaniline	µg/kg	<820	NS	<950
SED-R2007-3	2-Chlorophenol	µg/kg	<410	NS	<480
	1,4-Dioxane	µg/kg	<410	NS	<480
	1,2,4-Trichlorobenzene	µg/kg	<410	NS	<480

Notes

Only the quarters during which river sampling occurred are shown

SED - Sediment

µg/kg - micrograms per kilogram

Bold indicates a detection

< - result is non-detect, less than the reporting limit

NS - not sampled

NA - not analyzed

J - indicates estimated value

Prepared by: SJD 04/12/2017

Checked by: JSI 04/13/2017

Reviewed by: AWD 04/13/2017

Table 5
Comprehensive Surface Water Analytical Results -3Q08 to 1Q17
1Q17 Long-Term Monitoring Program
Solutia Inc., W.G. Krummrich Plant
Sauget, Illinois

Sample Identification	Chemical	Units	3rd Quarter 2008	1st Quarter 2009	3rd Quarter 2009	1st Quarter 2010	1st Quarter 2012	3rd Quarter 2015
			Result	Result	Result	Result	Result	Result
SW-R2007-1	Benzene	µg/L	<1	<1	<1	<1	<1	<1.0
	Chlorobenzene	µg/L	<1	<1	<1	<1	<1	<1.0
	1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1.0
	1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1.0
	1,4-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1.0
	4-Chloroaniline	µg/L	<19	<19	<19	<19	<19	<20
	2-Chlorophenol	µg/L	<9.7	<9.7	<9.5	<9.4	<9.5	<10
	1,4-Dioxane	µg/L	<9.7	<9.7	<9.5	<9.4	<9.5	<10
SW-R2007-2	1,2,4-Trichlorobenzene	µg/L	<9.7	<9.7	<9.5	<9.4	<9.5	<10
	Benzene	µg/L	<1	<1	<1	<1	<1	<1.0
	Chlorobenzene	µg/L	<1	<1	<1	<1	<1	<1.0
	1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1.0
	1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1.0
	1,4-Dichlorobenzene	µg/L	<1	<1	<1	0.35 J	<1	<1.0
	4-Chloroaniline	µg/L	<19	<19	<19	<19	<19	<19
	2-Chlorophenol	µg/L	<9.7	<9.7	<9.5	<9.4	<9.6	<9.6
SW-R2007-3	1,4-Dioxane	µg/L	<9.7	<9.7	<9.5	<9.4	<9.6	<9.6
	1,2,4-Trichlorobenzene	µg/L	<9.7	<9.7	<9.5	<9.4	<9.6	<9.6
	Benzene	µg/L	<1	<1	<1	<1	<1	<1.0
	Chlorobenzene	µg/L	<1	<1	<1	<1	<1	<1.0
	1,2-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1.0
	1,3-Dichlorobenzene	µg/L	<1	<1	<1	<1	<1	<1.0
	1,4-Dichlorobenzene	µg/L	<1	<1	<1	0.37 J	<1	<1.0
	4-Chloroaniline	µg/L	<19	<19	<19	<19	<19	<20
	2-Chlorophenol	µg/L	<9.7	<9.7	<9.5	<9.4	<9.5	<10
	1,4-Dioxane	µg/L	<9.7	<9.7	<9.5	<9.4	<9.5	<10
	1,2,4-Trichlorobenzene	µg/L	<9.7	<9.7	<9.5	<9.4	<9.5	<10

Notes

Only the quarters during which river sampling occurred are shown

SW - Surface Water

µg/L - micrograms per liter

Bold indicates a detection

< - result is non-detect, less than the reporting limit

NS - not sampled

J - indicates estimated value

Prepared by: SJD 04/12/2017

Checked by: JSI 04/13/2017

Reviewed by: AWD 04/13/2017

Table 5
Comprehensive Surface Water Analytical Results -3Q08 to 1Q17
1Q17 Long-Term Monitoring Program
Solutia Inc., W.G. Krummrich Plant
Sauget, Illinois

Sample Identification	Chemical	Units	1st Quarter 2016	3rd Quarter 2016	1st Quarter 2017
			Result	Result	Result
SW-R2007-1	Benzene	µg/L	<1.0	<1.0	<1.0
	Chlorobenzene	µg/L	<1.0	<1.0	<1.0
	1,2-Dichlorobenzene	µg/L	<1.0	<1.0	<1.0
	1,3-Dichlorobenzene	µg/L	<1.0	<1.0	<1.0
	1,4-Dichlorobenzene	µg/L	<1.0	<1.0	<1.0
	4-Chloroaniline	µg/L	<20	<20	<20
	2-Chlorophenol	µg/L	<9.9	<9.8	<9.9
	1,4-Dioxane	µg/L	<9.9	<9.8	<9.9
SW-R2007-2	1,2,4-Trichlorobenzene	µg/L	<9.9	<9.8	<9.9
	Benzene	µg/L	<1.0	<1.0	<1.0
	Chlorobenzene	µg/L	<1.0	<1.0	<1.0
	1,2-Dichlorobenzene	µg/L	<1.0	<1.0	<1.0
	1,3-Dichlorobenzene	µg/L	<1.0	<1.0	<1.0
	1,4-Dichlorobenzene	µg/L	<1.0	<1.0	<1.0
	4-Chloroaniline	µg/L	<20	<21	<20
	2-Chlorophenol	µg/L	<9.8	<10	<9.8
SW-R2007-3	1,4-Dioxane	µg/L	<9.8	<10	<9.8
	1,2,4-Trichlorobenzene	µg/L	<9.8	<10	<9.8
	Benzene	µg/L	<1.0	<1.0	<1.0
	Chlorobenzene	µg/L	<1.0	<1.0	<1.0
	1,2-Dichlorobenzene	µg/L	<1.0	<1.0	<1.0
	1,3-Dichlorobenzene	µg/L	<1.0	<1.0	<1.0
	1,4-Dichlorobenzene	µg/L	<1.0	<1.0	<1.0
	4-Chloroaniline	µg/L	<20	<20	<20
SW-R2007-3	2-Chlorophenol	µg/L	<9.9	<9.9	<9.9
	1,4-Dioxane	µg/L	<9.9	<9.9	<9.9
	1,2,4-Trichlorobenzene	µg/L	<9.9	<9.9	<9.9
	1,2,4-Trichlorobenzene	µg/L	<9.9	<9.9	<9.9

Notes

Only the quarters during which river sampling occurred are shown

SW - Surface Water

µg/L - micrograms per liter

Bold indicates a detection

< - result is non-detect, less than the reporting limit

NS - not sampled

J - indicates estimated value

Prepared by: SJD 04/12/2017

Checked by: JSI 04/13/2017

Reviewed by: AWD 04/13/2017

APPENDIX A
GROUNDWATER PURGING AND SAMPLING FORMS
(On CD)

Project Information:

Operator Name SJD
Company Name Golder Associates
Project Name W.G. Krummrich
Site Name LTM

Pump Information:

Pump Model/Type SS Monsoon
Tubing Type LDPE
Tubing Diameter 0.19 in
Tubing Length 31.00 ft
Pump Placement from TOC 25.00 ft

Well Information:

Well Id BSA-MW-1S
Well Diameter 2 in
Well Total Depth 27.34 ft
Depth to Top of Screen 22.50 ft
Screen Length 5 ft
Depth to Water 16.82 ft

Pumping Information:

Final Pumping Rate 300 mL/min
System Volume 363 mL
Calculated Sample Rate 72 sec
Sample Rate 72 sec
Stabilized Drawdown 0.00 ft

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [μ S/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	15:16:44	16.54	7.30	2784.04	4.43	0.12	-79.93
	15:17:57	16.77	7.21	2787.31	4.71	0.10	-88.33
	15:19:10	16.93	7.16	2829.81	4.69	0.09	-95.96
	15:20:22	17.00	7.13	2832.81	4.11	0.08	-101.10
	15:21:34	17.03	7.11	2883.85	4.08	0.08	-105.51
Variance in Last 3 Readings		0.16	-0.05	42.50	-0.02	-0.01	7.64
		0.07	-0.03	3.00	-0.58	-0.01	-5.14
		0.03	-0.02	51.04	-0.03	0.00	-4.41

Notes:

Project Information:

Operator Name SJD
Company Name Golder Associates
Project Name W.G. Krummrich
Site Name LTM

Pump Information:

Pump Model/Type SS Monsoon
Tubing Type LDPE
Tubing Diameter 0.19 in
Tubing Length 80.55 ft
Pump Placement from TOC 74.55 ft

Well Information:

Well Id BSA-MW-2D
Well Diameter 2 in
Well Total Depth 76.98 ft
Depth to Top of Screen 72.05 ft
Screen Length 5 ft
Depth to Water 20.88 ft

Pumping Information:

Final Pumping Rate 300 mL/min
System Volume 639 mL
Calculated Sample Rate 127 sec
Sample Rate 127 sec
Stabilized Drawdown 0.00 ft

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [μ S/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	10:31:41	15.14	6.96	1963.08	2.02	0.16	-69.37
	10:33:48	15.07	6.96	1972.94	1.96	0.13	-73.60
	10:35:55	15.28	6.96	1989.06	1.86	0.10	-76.47
	10:38:02	15.33	6.96	1978.97	1.91	0.10	-78.37
	10:40:09	15.15	6.96	1993.01	1.85	0.10	-80.11
Variance in Last 3 Readings		0.21	0.00	16.12	-0.10	-0.03	-2.87
		0.05	0.00	-10.09	0.05	0.00	-1.9
		-0.18	0.00	14.04	-0.06	0.00	-1.74

Notes:

Project Information:

Operator Name SJD
Company Name Golder Associates
Project Name W.G. Krummrich
Site Name LTM

Pump Information:

Pump Model/Type SS Monsoon
Tubing Type LDPE
Tubing Diameter 0.19 in
Tubing Length 118.35 ft
Pump Placement from TOC 112.35 ft

Well Information:

Well Id BSA-MW-3D
Well Diameter 2 in
Well Total Depth 114.75 ft
Depth to Top of Screen 109.85 ft
Screen Length 5 ft
Depth to Water 22.44 ft

Pumping Information:

Final Pumping Rate 300 mL/min
System Volume 850 mL
Calculated Sample Rate 180 sec
Sample Rate 180 sec
Stabilized Drawdown 0.00 ft

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [μ S/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	14:25:53	15.98	6.87	2744.65	18.8	0.15	-85.37
	14:28:42	15.96	6.87	2733.42	10.7	0.14	-88.39
	14:31:31	15.95	6.87	2744.21	8.30	0.12	-90.40
	14:34:20	15.91	6.88	2732.82	7.42	0.11	-91.95
	14:37:09	15.91	6.88	2720.70	6.44	0.11	-93.12
Variance in Last 3 Readings		-0.01	0.00	10.79	-2.40	-0.02	-2.01
		-0.04	0.01	-11.39	-0.88	-0.01	-1.55
		0.00	0.00	-12.12	-0.98	0.00	-1.17

Notes:

Project Information:

Operator Name SJD
Company Name Golder Associates
Project Name W.G. Krummrich
Site Name LTM

Pump Information:

Pump Model/Type SS Monsoon
Tubing Type LDPE
Tubing Diameter 0.19 in
Tubing Length 126.73 ft
Pump Placement from TOC 120.73 ft

Well Information:

Well Id BSA-MW-4D
Well Diameter 2 in
Well Total Depth 123.13 ft
Depth to Top of Screen 118.23 ft
Screen Length 5 ft
Depth to Water 31.44 ft

Pumping Information:

Final Pumping Rate 300 mL/min
System Volume 897 mL
Calculated Sample Rate 179 sec
Sample Rate 179 sec
Stabilized Drawdown 0.00 ft

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [μ S/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	14:27:35	15.97	7.15	1498.17	3.01	0.35	-55.61
	14:30:34	16.09	7.08	1501.71	2.84	0.23	-67.07
	14:33:34	16.09	7.06	1501.48	2.32	0.19	-73.44
	14:36:33	16.14	7.05	1496.67	1.74	0.17	-77.30
	14:39:32	16.20	7.05	1493.82	2.35	0.16	-79.90
Variance in Last 3 Readings		0.00	-0.02	-0.23	-0.52	-0.04	-6.37
		0.05	-0.01	-4.81	-0.58	-0.02	-3.86
		0.06	0.00	-2.85	0.61	-0.01	-2.60

Notes:

Project Information:

Operator Name SJD
Company Name Golder Associates
Project Name W.G. Krummrich
Site Name LTM

Pump Information:

Pump Model/Type SS Monsoon
Tubing Type LDPE
Tubing Diameter 0.19 in
Tubing Length 124.04 ft
Pump Placement from TOC 118.04 ft

Well Information:

Well Id BSA-MW-5D
Well Diameter 2 in
Well Total Depth 120.87 ft
Depth to Top of Screen 115.54 ft
Screen Length 5 ft
Depth to Water 25.75 ft

Pumping Information:

Final Pumping Rate 300 mL/min
System Volume 882 mL
Calculated Sample Rate 176 sec
Sample Rate 176 sec
Stabilized Drawdown 0.00 ft

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [μ S/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	11:37:20	16.36	7.06	1589.34	6.88	0.28	-91.43
	11:40:16	16.48	7.06	1579.26	4.74	0.21	-102.10
	11:43:12	16.49	7.06	1571.66	3.85	0.17	-106.95
	11:46:08	16.49	7.06	1567.62	3.45	0.15	-109.05
	11:49:04	16.52	7.04	1595.49	3.01	0.13	-108.16
Variance in Last 3 Readings		0.01	0.00	-7.60	-0.89	-0.04	-4.85
		0.00	0.00	-4.04	-0.40	-0.02	-2.10
		0.03	-0.02	27.87	-0.44	-0.02	0.89

Notes:

Project Information:

Operator Name SJD
Company Name Golder Associates
Project Name W.G. Krummrich
Site Name LTM

Pump Information:

Pump Model/Type SS Monsoon
Tubing Type LDPE
Tubing Diameter 0.19 in
Tubing Length 73.32 ft
Pump Placement from TOC 68.32 ft

Well Information:

Well Id CPA-MW-1D
Well Diameter 2 in
Well Total Depth 74.68 ft
Depth to Top of Screen 65.82 ft
Screen Length 5 ft
Depth to Water 15.75 ft

Pumping Information:

Final Pumping Rate 300 mL/min
System Volume 599 mL
Calculated Sample Rate 119 sec
Sample Rate 119 sec
Stabilized Drawdown 0.00 ft

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [μ S/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	14:02:58	18.37	7.97	1994.43	3.78	0.09	-62.45
	14:04:57	18.40	8.04	1982.63	3.31	0.08	-73.52
	14:06:56	18.37	8.10	1982.58	3.27	0.07	-82.36
	14:08:55	18.23	8.16	1985.39	3.31	0.06	-90.03
	14:10:54	18.26	8.20	1977.02	3.24	0.06	-94.82
Variance in Last 3 Readings		-0.03	0.06	-0.05	-0.04	-0.01	-8.84
		-0.14	0.06	2.81	0.04	-0.01	-7.67
		0.03	0.04	-8.37	-0.07	0.00	-4.79

Notes:



2/2/2017

Low-Flow System
ISI Low-Flow Log**Project Information:**

Operator Name SJD
Company Name Golder Associates
Project Name W.G. Krummrich
Site Name LTM

Pump Information:

Pump Model/Type SS Monsoon
Tubing Type LDPE
Tubing Diameter 0.19 in
Tubing Length 108.15 ft
Pump Placement from TOC 102.15 ft

Well Information:

Well Id CPA-MW-2D
Well Diameter 2 in
Well Total Depth 104.61 ft
Depth to Top of Screen 99.65 ft
Screen Length 5 ft
Depth to Water 13.07 ft

Pumping Information:

Final Pumping Rate 300 mL/min
System Volume 793 mL
Calculated Sample Rate 158 sec
Sample Rate 158 sec
Stabilized Drawdown 0.00 ft

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [μ S/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	12:12:25	17.46	7.02	1178.71	9.42	0.19	-69.31
	12:15:03	17.57	7.02	1204.92	8.99	0.16	-75.64
	12:17:41	17.66	7.03	1210.51	8.67	0.15	-80.09
	12:20:19	17.61	7.04	1213.50	5.94	0.13	-82.85
	12:22:57	17.43	7.05	1211.98	4.53	0.12	-84.49
Variance in Last 3 Readings		0.09	0.01	5.59	-0.32	-0.01	-4.45
		-0.05	0.01	2.99	-2.73	-0.02	-2.76
		-0.18	0.01	-1.52	-1.41	-0.01	-1.64

Notes:

Project Information:

Operator Name SJD
Company Name Golder Associates
Project Name W.G. Krummrich
Site Name LTM

Pump Information:

Pump Model/Type SS Monsoon
Tubing Type LDPE
Tubing Diameter 0.19 in
Tubing Length 116.50 ft
Pump Placement from TOC 110.50 ft

Well Information:

Well Id CPA-MW-3D
Well Diameter 2 in
Well Total Depth 112.75 ft
Depth to Top of Screen 108.00 ft
Screen Length 5 ft
Depth to Water 15.39 ft

Pumping Information:

Final Pumping Rate 300 mL/min
System Volume 840 mL
Calculated Sample Rate 167 sec
Sample Rate 167 sec
Stabilized Drawdown 0.00 ft

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [μ S/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	9:04:00	15.33	6.97	1490.83	2.12	0.15	-92.77
	9:06:47	15.28	6.98	1473.22	2.07	0.14	-94.92
	9:09:34	15.47	6.98	1449.35	1.98	0.13	-96.87
	9:12:23	15.46	6.99	1439.66	1.88	0.12	-98.19
	9:15:10	15.58	6.99	1427.56	1.84	0.11	-99.48
Variance in Last 3 Readings		0.19	0.00	-23.87	-0.09	-0.01	-1.95
		-0.01	0.01	-9.69	-0.10	-0.01	-1.32
		0.12	0.00	-12.10	-0.04	-0.01	-1.29

Notes:

Project Information:

Operator Name SJD
Company Name Golder Associates
Project Name W.G. Krummrich
Site Name LTM

Pump Information:

Pump Model/Type SS Monsoon
Tubing Type LDPE
Tubing Diameter 0.19 in
Tubing Length 124.57 ft
Pump Placement from TOC 118.57 ft

Well Information:

Well Id CPA-MW-4D
Well Diameter 2 in
Well Total Depth 120.91 ft
Depth to Top of Screen 116.07 ft
Screen Length 5 ft
Depth to Water 27.84 ft

Pumping Information:

Final Pumping Rate 300 mL/min
System Volume 885 mL
Calculated Sample Rate 180 sec
Sample Rate 180 sec
Stabilized Drawdown 0.00 ft

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [μ S/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	13:11:35	15.85	7.04	1896.33	5.05	0.20	-98.51
	13:14:31	15.97	7.03	1877.86	4.08	0.16	-107.48
	13:17:27	16.05	7.02	1895.81	3.05	0.13	-112.26
	13:20:23	16.09	7.02	1898.06	3.37	0.13	-115.08
	13:23:19	16.09	7.02	1894.77	2.61	0.12	-117.17
Variance in Last 3 Readings		0.08	-0.01	17.95	-1.03	-0.03	-4.78
		0.04	0.00	2.25	0.32	0.00	-2.82
		0.00	0.00	-3.29	-0.76	-0.01	-2.09

Notes:



1/30/2017

Low-Flow System
ISI Low-Flow Log**Project Information:**

Operator Name SJD
Company Name Golder Associates
Project Name W.G. Krummrich
Site Name LTM

Pump Information:

Pump Model/Type SS Monsoon
Tubing Type LDPE
Tubing Diameter 0.19 in
Tubing Length 118.5
Pump Placement from TOC 112.25 ft

Well Information:

Well Id CPA-MW-5D
Well Diameter 2 in
Well Total Depth 114.71 ft
Depth to Top of Screen 109.75 ft
Screen Length 5 ft
Depth to Water 19.32 ft

Pumping Information:

Final Pumping Rate 300 mL/min
System Volume 849mL
Calculated Sample Rate 169 sec
Sample Rate 169 sec
Stabilized Drawdown 0.00 ft

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [μ S/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	15:00:30	15.23	6.77	1958.79	4.79	0.29	-44.71
	15:03:19	15.24	6.75	1967.38	3.77	0.25	-53.10
	15:06:08	15.23	6.75	1968.41	2.79	0.22	-58.07
	15:08:57	15.18	6.74	1967.71	2.59	0.21	-61.31
	15:11:46	15.15	6.74	1964.80	3.68	0.20	-63.57
Variance in Last 3 Readings		-0.01	0.00	1.03	-0.98	-0.03	-4.97
		-0.05	-0.01	-0.70	-0.2	-0.01	-3.24
		-0.03	0.00	-2.91	1.09	-0.01	-2.26

Notes:

Project Information:

Operator Name SJD
Company Name Golder Associates
Project Name W.G. Krummrich
Site Name LTM

Pump Information:

Pump Model/Type SS Monsoon
Tubing Type LDPE
Tubing Diameter 0.19 in
Tubing Length 112.50 ft
Pump Placement from TOC 107.47 ft

Well Information:

Well Id ESL-MW-A
Well Diameter 2 in
Well Total Depth 109.86 ft
Depth to Top of Screen 105.16 ft
Screen Length 5 ft
Depth to Water 20.60 ft

Pumping Information:

Final Pumping Rate 300 mL/min
System Volume 817 mL
Calculated Sample Rate 163 sec
Sample Rate 163 sec
Stabilized Drawdown 0.00 ft

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [μ S/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	13:30:08	15.33	7.03	1985.42	16.1	0.15	-87.67
	13:32:51	15.33	7.03	1969.95	15.2	0.14	-88.60
	13:35:34	15.46	7.03	1960.88	12.8	0.12	-89.93
	13:38:17	15.50	7.03	1952.14	11.1	0.12	-91.09
	13:41:00	15.54	7.04	1932.51	9.62	0.11	-91.97
Variance in Last 3 Readings		0.13	0.00	-9.07	-2.40	-0.02	-1.33
		0.04	0.00	-8.74	-1.70	0.00	-1.16
		0.04	0.01	-19.63	-1.48	-0.01	-0.88

Notes:



1/30/2017

Low-Flow System
ISI Low-Flow Log**Project Information:**

Operator Name SJD
Company Name Golder Associates
Project Name W.G. Krummrich
Site Name LTM

Pump Information:

Pump Model/Type SS Monsoon
Tubing Type LDPE
Tubing Diameter 0.19 in
Tubing Length 121.78 ft
Pump Placement from TOC 116.16 ft

Well Information:

Well Id ESL-MW-D1
Well Diameter 2 in
Well Total Depth 119.21 ft
Depth to Top of Screen 113.66 ft
Screen Length 5 ft
Depth to Water 24.12 ft

Pumping Information:

Final Pumping Rate 300 mL/min
System Volume 869 mL
Calculated Sample Rate 173 sec
Sample Rate 173 sec
Stabilized Drawdown 0.00 ft

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [μ S/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	12:01:03	15.10	6.98	1705.55	5.59	0.19	-62.43
	12:03:56	15.46	7.00	1734.68	2.65	0.16	-79.01
	12:06:49	15.77	7.01	1760.07	1.72	0.14	-89.17
	12:09:42	15.82	7.02	1769.65	1.52	0.13	-94.17
	12:12:35	15.73	7.02	1776.91	1.37	0.12	-96.84
Variance in Last 3 Readings		0.31	0.01	25.39	-0.93	-0.02	-10.16
		0.05	0.01	9.58	-0.20	-0.01	-5.00
		-0.09	0.00	7.26	-0.15	-0.01	-2.67

Notes:

Project Information:

Operator Name SJD
Company Name Golder Associates
Project Name W.G. Krummrich
Site Name LTM

Pump Information:

Pump Model/Type Peristaltic
Tubing Type LDPE
Tubing Diameter 0.17 in
Tubing Length 130 ft
Pump Placement from TOC 124.80 ft

Well Information:

Well Id GWE-1D
Well Diameter 1 in
Well Total Depth 126.95
Depth to Top of Screen 119.80 ft
Screen Length 10 ft
Depth to Water 23.31 ft

Pumping Information:

Final Pumping Rate 300 mL/min
System Volume 670 mL
Calculated Sample Rate 134 sec
Sample Rate 134 sec
Stabilized Drawdown 0.00 ft

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [μ S/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	13:03:39	14.33	6.97	1638.30	20.5	0.06	-107.92
	13:05:53	14.29	6.98	1634.79	22.1	0.07	-108.53
	13:08:07	14.29	6.98	1639.52	16.6	0.06	-108.84
	13:10:21	14.21	6.98	1634.95	10.8	0.06	-108.94
	13:12:35	14.24	6.98	1642.36	9.40	0.06	-109.15
Variance in Last 3 Readings		0.00	0.00	4.73	-5.50	-0.01	-0.31
		-0.08	0.00	-4.57	-5.80	0.00	-0.1
		0.03	0.00	7.41	-1.40	0.00	-0.21

Notes:

Project Information:

Operator Name SJD
Company Name Golder Associates
Project Name W.G. Krummrich
Site Name LTM

Pump Information:

Pump Model/Type Peristaltic
Tubing Type LDPE
Tubing Diameter 0.17 in
Tubing Length 138.00 ft
Pump Placement from TOC 131.69 ft

Well Information:

Well Id GWE-2D
Well Diameter 1 in
Well Total Depth 136.62 ft
Depth to Top of Screen 126.69 ft
Screen Length 10 ft
Depth to Water 24.70 ft

Pumping Information:

Final Pumping Rate 300 mL/min
System Volume 706 mL
Calculated Sample Rate 141 sec
Sample Rate 141 sec
Stabilized Drawdown 0.00 ft

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [μ S/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	10:35:29	14.13	6.99	3403.46	3.31	0.26	-46.48
	10:37:50	14.20	6.96	3399.03	2.96	0.19	-49.07
	10:40:11	14.29	6.94	3421.79	3.40	0.16	-51.36
	10:42:32	14.47	6.93	3447.88	3.17	0.15	-53.30
	10:44:53	14.24	6.90	3661.86	4.19	0.13	-54.81
Variance in Last 3 Readings		0.09	-0.02	22.76	0.44	-0.03	-2.29
		0.18	-0.01	26.09	-0.23	-0.01	-1.94
		-0.23	-0.03	213.98	1.02	-0.02	-1.51

Notes:

Project Information:

Operator Name SJD
Company Name Golder Associates
Project Name W.G. Krummrich
Site Name LTM

Pump Information:

Pump Model/Type Peristaltic
Tubing Type LDPE
Tubing Diameter 0.17 in
Tubing Length 116.0 ft
Pump Placement from TOC 112.23 ft

Well Information:

Well Id GWE-3D
Well Diameter 1 in
Well Total Depth 114.86 ft
Depth to Top of Screen 107.23 ft
Screen Length 10 ft
Depth to Water 24.82 ft

Pumping Information:

Final Pumping Rate 300 mL/min
System Volume 607 mL
Calculated Sample Rate 182 sec
Sample Rate 182 sec
Stabilized Drawdown 0.00 ft

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [μ S/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	9:24:03	13.94	6.86	5034.33	2.97	0.26	-68.90
	9:27:05	13.98	6.87	5052.04	2.68	0.24	-74.62
	9:30:07	14.11	6.87	5089.23	3.20	0.22	-78.27
	9:33:09	14.12	6.88	5102.93	2.01	0.20	-80.48
	9:36:11	14.12	6.88	5105.38	1.51	0.20	-81.86
Variance in Last 3 Readings		0.13	0.00	37.19	0.52	-0.02	-3.65
		0.01	0.01	13.70	-1.19	-0.02	-2.21
		0.00	0.00	2.45	-0.50	0.00	-1.38

Notes:



1/31/2017

Low-Flow System
ISI Low-Flow Log**Project Information:**

Operator Name SJD
Company Name Golder Associates
Project Name W.G. Krummrich
Site Name LTM

Pump Information:

Pump Model/Type SS Monsoon
Tubing Type LDPE
Tubing Diameter 0.17 in
Tubing Length 108.52 ft
Pump Placement from TOC 102.52 ft

Well Information:

Well Id GWE-5D
Well Diameter 2 in
Well Total Depth 105.12 ft
Depth to Top of Screen 100.02 ft
Screen Length 5 ft
Depth to Water 15.78 ft

Pumping Information:

Final Pumping Rate 300 mL/min
System Volume 674 mL
Calculated Sample Rate 134 sec
Sample Rate 134 sec
Stabilized Drawdown 0.00 ft

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [μ S/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	10:04:14	15.56	6.94	1701.31	10.8	0.23	-74.49
	10:06:28	15.54	6.95	1700.41	7.17	0.20	-82.79
	10:08:42	15.64	6.93	1695.00	6.13	0.17	-85.13
	10:10:56	15.67	6.92	1697.08	5.43	0.16	-86.41
	10:13:10	15.71	6.93	1698.12	4.87	0.14	-88.11
Variance in Last 3 Readings		0.10	-0.02	-5.41	-1.04	-0.03	-2.34
		0.03	-0.01	2.08	-0.70	-0.01	-1.28
		0.04	0.01	1.04	-0.56	-0.02	-1.70

Notes:

Project Information:

Operator Name SJD
Company Name Golder Associates
Project Name W.G. Krummrich
Site Name LTM

Pump Information:

Pump Model/Type SS Monsoon
Tubing Type LDPE
Tubing Diameter 0.19 in
Tubing Length 112.00 ft
Pump Placement from TOC 103.29 ft

Well Information:

Well Id PM1D
Well Diameter 2 in
Well Total Depth 106.61 ft
Depth to Top of Screen 100.79 ft
Screen Length 5 ft
Depth to Water 21.95 ft

Pumping Information:

Final Pumping Rate 300 mL/min
System Volume 814 mL
Calculated Sample Rate 162 sec
Sample Rate 162 sec
Stabilized Drawdown 0.00 ft

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [μ S/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	10:47:29	14.83	7.01	1667.36	3.74	0.13	-132.55
	10:50:11	14.88	7.00	1662.11	3.31	0.12	-131.25
	10:52:53	14.93	7.00	1658.04	2.85	0.11	-130.04
	10:55:35	14.86	7.00	1661.07	2.79	0.10	-129.72
	10:58:17	15.12	7.00	1655.95	-	0.10	-128.20
Variance in Last 3 Readings		0.05	0.00	-4.07	-0.46	-0.01	1.21
		-0.07	0.00	3.03	-0.06	-0.01	0.32
		0.26	0.00	-5.12	#VALUE!	0.00	1.52

Notes:

APPENDIX B
CHAINS-OF-CUSTODY

(On CD)

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Phone (912) 354-7858 Fax (912) 352-0165

Chain of Custody Record

TestAmerica

Client Information Client Contact: <u>Samartha Dicenzo</u> Phone: <u>636-724-9191</u> Company: <u>Golder Associates Inc.</u>		Lab PM Kersey, Michele R E-Mail: <u>michele.kersey@testamericainc.com</u>		Carrier Tracking No(s) 680-80709-33145 1		GOC No 680-80709-33145 1	
Address 920 South Main Street Suite 100 City: <u>St. Charles</u> State: <u>MO</u> Zip: <u>63301</u> Phone: <u>636-724-9191</u> Email: <u>michele.kersey@golder.com</u>		Due Date Requested: TAT Requested (days): <u>Standard</u> PO #: <u>68004114</u> Project #: <u>88004114</u> Site: <u>WGK River Sampling 1017</u>		Analysis Requested Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/>		Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Ancher S - H2SO4 H - Ascorbic Acid T - TSP Dodecylhydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4.5 L - EDA Z - other (specify) Other:	
Sample Identification SW-R2007-1-0117-0217 SW-R2007-2-0117-0217 SW-R2007-3-0117-0217 SW-R2007-3-0117-0217-MSD SW-R2007-3-0117-0217-AD SW-R2007-1-0117-0217-EB SED-R2007-0117 SED-R2007-1-0117-0217 SED-R2007-2-0117-0217 SED-R2007-3-0117-0217		Sample Date 2/6/17 1250 1200 1030 1030 1030 1250 1330 1250 1200 1030		Sample Type (C=comp, G=grab) G 1 1 1 1 1 1 1 1 1 1 1		Matrix (Water, Solid, Other) Water Water Water Water Water Water Water Water Solid Solid Solid	
Sample Date 2/6/17 1250 1200 1030 1030 1030 1250 1330 1250 1200 1030		Sample Time 1250 1200 1030 1030 1030 1250 1330 1250 1200 1030		Preservation Code 1 1 1 1 1 1 1 1 1 1 1 1		Field Filtered Sample (Yes or No) N N N N N N N N N N N N	
Sample Date 2/6/17 1250 1200 1030 1030 1030 1250 1330 1250 1200 1030		Sample Time 1250 1200 1030 1030 1030 1250 1330 1250 1200 1030		Preservation Code 1 1 1 1 1 1 1 1 1 1 1 1		Field Filtered Sample (Yes or No) N N N N N N N N N N N N	
Sample Date 2/6/17 1250 1200 1030 1030 1030 1250 1330 1250 1200 1030		Sample Time 1250 1200 1030 1030 1030 1250 1330 1250 1200 1030		Preservation Code 1 1 1 1 1 1 1 1 1 1 1 1		Field Filtered Sample (Yes or No) N N N N N N N N N N N N	
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Chain of Custody Record

TestAmerica

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APPENDIX C
QUALITY ASSURANCE REPORT

(On CD)



QUALITY ASSURANCE REPORT

QUALITY ASSURANCE REPORT

1st QUARTER 2017
LONG-TERM MONITORING PROGRAM
SOLUTIA INC. W.G. KRUMMRICH PLANT
SAUGET, ILLINOIS

Prepared For: Solutia Inc.
575 Maryville Centre Drive
St. Louis, MO 63141 USA

Submitted By: Golder Associates Inc.
820 S. Main Street, Suite 100
St. Charles, MO 63301 USA

April 2017

140-3345

A world of
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1.0 INTRODUCTION

Golder Associates Inc. (Golder) completed a review of analytical data for the groundwater, surface water, and sediment samples collected January 30 through February 6, 2017 at the Solutia Inc. (Solutia) W.G. Krummrich (WGK) plant (Site) in Sauget, Illinois. Golder collected a total of twenty three (23) samples from groundwater monitoring wells and piezometers and eleven (11) samples from three river sampling locations as part of the 1st Quarter 2017 (1Q17) Long-Term Monitoring Program (LTMP). Seventeen (17) groundwater samples, six (6) surface water and five (5) sediment samples, five (5) trip blanks, three (3) equipment blanks (EB), four (4) analytical duplicates (AD), and three (3) matrix spike/matrix spike duplicate (MS/MSD) pairs were prepared. Groundwater monitoring locations were located at the WGK facility or approximately 1.0 to 1.5 miles north of the Site. Surface water and sediment river sampling locations were located approximately 1 mile west-northwest of the Site. The samples were submitted to the TestAmerica Laboratories, Inc. (TestAmerica) facility located in Savannah, Georgia for analysis using United States Environmental Protection Agency (USEPA) methods, standard methods and USEPA SW-846 test methods. Samples submitted to TestAmerica were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), total and dissolved metals, dissolved gases, and general chemistry parameters. The analytical results were placed into five (5) sample delivery groups (SDGs) and described in the table below:

Sample Delivery Group (SDG)	Sample Identification
KPS185	PM1D-0217
	ESL-MW-D1-0217
	ESL-MW-A-0217
	CPA-MW-5D-0217
	1Q17 LTM Trip Blank #1
KPS186	GWE-5D-0217
	BSA-MW-5D-0217
	CPA-MW-4D-0217
	BSA-MW-4D-0217
	1Q17 LTM Trip Blank #2
KPS187	GWE-3D-0217
	GWE-2D-0217
	GWE-1D-0217
	BSA-MW-3D-0217
	BSA-MW-3D-0217-EB
	1Q17 LTM Trip Blank #3



Sample Delivery Group (SDG)	Sample Identification
KPS188	CPA-MW-3D-0217
	CPA-MW-3D-0217-AD
	BSA-MW-2D-0217
	CPA-MW-2D-0217
	CPA-MW-2D-0217-AD
	CPA-MW-1D-0217
	BSA-MW-1S-0217
	BSA-MW-1S-0217-EB
	1Q17 LTM Trip Blank #4
KRS018	SW-R2007-1-0217
	SW-R2007-2-0217
	SW-R2007-3-0217
	SW-R2007-1-0217-AD
	SW-R2007-1-0217-EB
	SED-R2007-1-0217
	SED-R2007-2-0217
	SED-R2007-3-0217
	SED-R2007-1-0217-AD
	1Q17 LTM River Trip Blank

The samples were collected and analyzed in general accordance with the Revised Long-Term Monitoring Program (LTMP) Work Plan (Work Plan) (Solutia 2009). Groundwater samples were analyzed for VOCs, SVOCs, total and dissolved metals, dissolved gases, and general chemistry parameters. The general chemistry parameters included chloride, nitrate, sulfate, total organic carbon (TOC), alkalinity, carbon dioxide, and dissolved organic carbon (DOC). Five (5) trip blanks, three (3) EBs, four (4) ADs, and three (3) MS/MSD pairs were submitted and analyzed for VOC and SVOC analysis. The following analytical methods used are from USEPA document SW-846, Test Methods for Evaluating Solid Waste, Revision 6 contained in Final Update III August 2002 and listed below:

- VOCs were analyzed using USEPA SW-846 Method 8260B Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)
- SVOCs were analyzed using USEPA SW-846 Method 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)
- Total and Dissolved Iron and Manganese were analyzed by USEPA SW-846 Method 6010C Inductively Coupled Plasma-Atomic Emission Spectrometry

The following standard methods were used to analyze monitored natural attenuation (MNA) parameters:

- Dissolved Gases analyzed by Method RSK-175
- Alkalinity and Free Carbon Dioxide analyzed by USEPA Method 310.1 by Titration
- Chloride analyzed by USEPA Method 325.2 by Automated Colorimetry



- Nitrogen, Nitrate analyzed by USEPA Method 353.2 by Automated Colorimetry
- Sulfate analyzed by USEPA Method 375.4 by Spectrophotometer
- Total and Dissolved Organic Carbon analyzed by USEPA Method 415.1

Golder completed validation of the analytical data following the general guidelines in Section 4.4 Data Review and Validation of the Work Plan. The Work Plan specifies that the most recent versions of the national data validation guidelines be used for data review. The following guidelines were generally used:

- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, EPA-540-R-08-01, June 2008
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, EPA 540-R-10-011, January 2010

These documents are hereafter referred to as the "functional guidelines". If there was a conflict between the functional guidelines and the quality control criteria specified in the analytical method, the method-specific criteria were used. The SDGs were prepared as a Level IV data report package containing quality control information and raw data. Golder completed Level III review of 100% of the analytical data and Level IV review of 10% of the analytical data.

Data that has been qualified by the data validator has been added to the laboratory report. The qualifiers indicate data that did not meet acceptance criteria and corrective actions were not successful or not performed. Laboratory data qualifiers are defined below:

- U – The analyte was analyzed for but not was not detected

Golder data qualifiers are defined below:

- D – The analyte was analyzed at a dilution

Sections 2 and 3 summarize the specific instances where quality control criteria in the functional guidelines were not met. As specified in the functional guidelines, if the non-adherence to quality control criteria is slight, professional judgment was used in qualification of the data. However, if the non-adherence is significant, qualification and rejection of the data may be necessary. A summary of qualified data is provided in Section 5.0.

2.0 VOLATILE ORGANIC COMPOUNDS

Samples were collected from seventeen (17) groundwater monitoring locations and three (3) river sampling locations and analyzed for VOCs. Analytical duplicate samples were collected from four (4) sampling locations, CPA-MW-2D, CPA-MW-3D, SW-R2007-1, and SED-R2007-1. Three (3) EBs and five (5) trip blanks were also prepared and shipped for laboratory analysis. The samples were submitted to TestAmerica, placed into five (5) data packages or SDGs (KPS185, KPS186, KPS187, KPS188, and KRS018) and were prepared and analyzed using SW-846 Method 8260B. Samples were validated in general accordance with the functional guidelines. Results of the validation are summarized below.



2.1 Receipt Condition and Sample Holding Times

The SDG Case Narrative, chain-of-custody, login sample receipt checklist, and analysis dates were reviewed to verify analytical method holding times and proper preservation upon sampling. A summary of affected SDGs is provided below.

KPS185, KPS186, KPS187, and KPS188 – Samples were received at temperatures below the $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ criteria. The samples in these SDGs were otherwise received in good condition and data qualification was not required.

KRS018 - Sediment samples were received at the laboratory with no preservatives in the sample vials and were therefore unusable.

2.2 Blanks

Laboratory and field blanks, including trip blanks, method blanks and equipment blanks are prepared and analyzed to determine if contamination occurred as a result of laboratory or field activities.

Five (5) laboratory prepared trip blanks were shipped and analyzed for VOCs during the 1Q17 event to evaluate whether cross contamination occurred during sample shipment. Results for contaminants of concern for the received trip blanks were non-detect.

Laboratory method blanks were performed for each laboratory system as outlined for each analytical method to evaluate whether cross contamination occurred during laboratory analysis activities. Results for the method blanks were non-detect.

Three (3) EBs were collected during the 1Q17 event to assess the effectiveness of the decontamination procedure. Detections were noted in the following EBs:

- BSA-MW-3D-0217-EB (SDG KPS187): chlorobenzene at $1.1\ \mu\text{g/L}$
- BSA-MW-1S-0217-EB (SDG KPS188): benzene at $140\ \mu\text{g/L}$, chlorobenzene at $3.6\ \mu\text{g/L}$, 1,2-dichlorobenzene at $2.9\ \mu\text{g/L}$, and 1,4-dichlorobenzene at $2.8\ \mu\text{g/L}$

The samples associated with the EBs were not qualified based on the 5Xs concentration criteria.

2.3 Surrogate Spike Recoveries

Samples to be analyzed for VOCs were spiked with surrogate compounds: 4-bromofluorobenzene, 1,2-dichloroethane-d4, dibromofluoromethane, and toluene-d8, prior to analysis, to evaluate overall laboratory performance. Surrogate recoveries were within control limits.



2.4 Laboratory Control Sample Recoveries

A laboratory control sample (LCS) is analyzed on each laboratory system to evaluate the analytical method accuracy and laboratory performance. LCS recoveries were within acceptance criteria.

2.5 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples

MS/MSD samples are analyzed to determine long term precision and accuracy of the analytical method on various matrices. One (1) MS/MSD pair is sampled for every twenty (20) field samples. Three (3) MS/MSD pairs were collected during the 1Q17 event associated with samples BSA-MW-5D, SW-R2007-3, and SED-R2007-3. MS/MSD accuracy and precision data met criteria; therefore qualification was not required.

2.6 Analytical Duplicates

One (1) AD is collected for every ten (10) field samples to determine the overall precision of field and laboratory methods. Four (4) ADs were collected during the 1Q17 event associated with samples CPA-MW-2D, CPA-MW-3D, SW-R2007-1, and SED-R2007-1. The relative percent difference (RPD) between the samples and the associated ADs did not exceed 25%; therefore, data qualification was not required.

2.7 Internal Standard Responses

Internal standard performance criteria ensure that GC/MS sensitivity and response are stable during each analysis. Internal standard area counts did not vary by more than a factor of two (2) from the associated 12 hour calibration standard. Internal standard retention times did not vary more than +/-30 seconds from the retention time of the associated 12 hour calibration standard. Data qualification was not required.

2.8 Results Reported From Dilutions

Several VOC samples required dilutions due to high levels of target analytes. Reporting limits were adjusted to reflect the dilution. Result qualifications are shown in Section 5.0.

3.0 SEMI-VOLATILE ORGANIC COMPOUNDS

Samples were collected from seventeen (17) groundwater monitoring locations and three (3) river sampling locations and analyzed for SVOCs. Analytical duplicate samples were collected from four (4) sampling locations, CPA-MW-2D, CPA-MW-3D, SW-R2007-1, and SED-R2007-1. Three (3) EBs were also prepared and shipped for laboratory analysis. The samples were submitted to TestAmerica, placed into five (5) data packages or SDGs (KPS185, KPS186, KPS187, KPS188, and KRS018) and were prepared and analyzed using SW-846 Method 8270D. Samples were validated in general accordance with the functional guidelines. Results of the validation are summarized below.



3.1 Receipt Condition and Sample Holding Times

The SDG Case Narrative, chain-of-custody, login sample receipt checklist, and analysis dates were reviewed to verify analytical method holding times and proper preservation upon sampling. A summary of affected SDGs is provided below.

KPS185, KPS186, KPS187, and KPS188 – Samples were received at temperatures below the $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ criteria. The samples in these SDGs, and in KRS018, were otherwise received in good condition and data qualification was not required.

3.2 Blanks

Laboratory and field blanks, including method blanks and equipment blanks are prepared and analyzed to determine if contamination occurred as a result of laboratory or field activities.

Laboratory method blanks were performed for each laboratory system as outlined for each analytical method to evaluate whether cross contamination occurred during laboratory analysis activities. Results for the method blanks were non-detect.

Three (3) EBs were collected during the 1Q17 event, associated with sample BSA-MW-1S, BSA-MW-3D and SED-R2007-1 to assess the effectiveness of the decontamination procedure. Results for the EBs were non-detect.

3.3 Surrogate Spike Recoveries

Samples to be analyzed for SVOCs were spiked with surrogate compounds: 2-fluorobiphenyl, 2-fluorophenol, nitrobenzene-d5, phenol-d5, terphenyl-d14, and 2,4,6-tribromophenol, prior to analysis, to evaluate overall laboratory performance. Surrogate recoveries were within control limits.

3.4 Laboratory Control Sample Recoveries

A LCS is analyzed on each laboratory system to evaluate the analytical method accuracy and laboratory performance. LCS recoveries were within acceptance criteria.

3.5 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples

MS/MSD samples are analyzed to determine long term precision and accuracy of the analytical method on various matrices. One (1) MS/MSD pair is sampled for every twenty (20) field samples. Three (3) MS/MSD pairs were collected during the 1Q17 event associated with samples BSA-MW-5D, SW-R2007-3, and SED-R2007-3. Some MS/MSD data for these samples was outside acceptance criteria. Since MS/MSD data alone cannot be used to evaluate the precision and accuracy of data, qualification was not required.



3.6 Analytical Duplicates

One (1) AD is collected for every ten (10) field samples to determine the overall precision of field and laboratory methods. Four (4) ADs were collected during the 1Q17 event associated with samples CPA-MW-2D, CPA-MW-3D, SW-R2007-1, and SED-R2007-1. The relative percent difference (RPD) between the samples and the associated ADs did not exceed 25%; therefore, data qualification was not required.

3.7 Internal Standard Responses

Internal standard performance criteria ensure that GC/MS sensitivity and response are stable during each analysis. Internal standard area counts did not vary by more than a factor of two (2) from the associated 12 hour calibration standard. Internal standard retention times did not vary more than ± 30 seconds from the retention time of the associated 12 hour calibration standard. Data qualification was not required.

3.8 Results Reported From Dilutions

Sample CPA-MW-1D-0217 required dilution due to high levels of 1,2,4-trichlorobenzene. Reporting limits were adjusted to reflect the dilution. Result qualifications are shown in Section 5.0.

4.0 INORGANICS AND GENERAL CHEMISTRY

Samples were collected from seventeen (17) groundwater monitoring locations and analyzed for inorganics and general chemistry. The samples were submitted to TestAmerica, placed into five (5) data packages or SDGs (KPS185, KPS186, KPS187, KPS188, and KRS018), and were prepared and analyzed using the following methods:

- Total and Dissolved Iron and Manganese analyzed by Method 6010C Inductively Coupled Plasma-Atomic Emission Spectrometry
- Dissolved Gases analyzed by Method RSK-175
- Alkalinity and Free Carbon Dioxide analyzed by USEPA Method 310.1 by Titration
- Chloride analyzed by USEPA Method 325.2 by Automated Colorimetry
- Nitrogen, Nitrate analyzed by USEPA Method 353.2 by Automated Colorimetry
- Sulfate analyzed by USEPA Method 375.4 by Spectrophotometer
- Total and Dissolved Organic Carbon analyzed by USEPA Method 415.1

Samples were validated in general accordance with the functional guidelines. Results of the validation are summarized below.

4.1 Receipt Condition and Sample Holding Times

The SDG Case Narrative, chain-of-custody, login sample receipt checklist, and analysis dates were reviewed to verify analytical method holding times and proper preservation upon sampling. A summary of affected SDGs is provided below.



KPS185, KPS186, KPS187, and KPS188 – Samples were received at temperatures below the $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ criteria. The samples were otherwise received in good condition and data qualification was not required.

4.2 Blanks

Laboratory method blanks are prepared and analyzed to determine if contamination occurred as a result of laboratory activities.

Laboratory method blanks were performed for each laboratory system as outlined for each analytical method to evaluate whether cross contamination occurred during laboratory analysis activities. Results for the method blanks were non-detect.

4.3 Laboratory Control Sample Recoveries

A LCS is analyzed on each laboratory system to evaluate the analytical method accuracy and laboratory performance. LCS recoveries were within acceptance criteria; therefore, data qualification was not required.

4.4 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples

MS/MSD samples are analyzed to determine long term precision and accuracy of the analytical method on various matrices. Although MS/MSD analysis was not required for inorganic and general chemistry per the Work Plan, the laboratory spiked groundwater samples BSA-MW-2D, GWE-5D, and ESL-MW-D1 for various analytes. Some MS/MSD data for these samples was outside acceptance criteria. Since MS/MSD data alone cannot be used to evaluate the precision and accuracy of data, data qualification was not required for associated samples.

4.5 Results Reported From Dilutions

Samples in each SDG required dilutions due to high levels of target analytes. Reporting limits were adjusted to reflect the dilution. Result qualifications are shown in Section 5.0.

5.0 SUMMARY

Golder validated the data collected during the 1Q17 sampling event from the Solutia Inc. WGK plant in general accordance with the Work Plan and USEPA functional guidelines. Although some data required qualifications due to quality control criteria that were not achieved, the data were deemed usable. Where a positive result was qualified as estimated, the analyte should be considered present. Similarly, a result that was qualified as an estimated reporting limit should be considered not present for the purposes of this program, although the limit itself may not be precise. The completeness for the entire data set was 100%.

**Qualification Summary Table**

Quality Control Issue	Compound(s)	Qualifier	Samples Affected
Compounds analyzed at a dilution	Benzene, Chlorobenzene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2,4-Trichlorobenzene, Chloride, and Sulfate	D	PM1D, ESL-MW-A, ESL-MW-D1, GWE-1D, GWE-2D, GWE-3D, GWE-5D, BSA-MW-1S, BSA-MW-2D, BSA-MW-3D, BSA-MW-4D, BSA-MW-5D, CPA-MW-1D, CPA-MW-2D, CPA-MW-2D-AD, CPA-MW-3D, CPA-MW-3D-AD, CPA-MW-4D, CPA-MW-5D



6.0 REFERENCES

Solutia Inc., 2009. Revised Long Term Monitoring Program Work Plan, Solutia Inc., W.G. Krummrich Facility, Sauget, Illinois, May 2009.

USEPA, 2010. Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review.

USEPA, 2008. Contract Laboratory Program national Functional Guidelines for Superfund Organic Methods Data Review.

APPENDIX D
GROUNDWATER ANALYTICAL RESULTS
(INCLUDING DATA VALIDATION REPORTS)

(On CD)



Level IV Data Validation Summary
Solutia Inc., W.G. Krummrich, Sauget, Illinois
1Q17 Long-Term Monitoring Program

Company Name: Golder Associates
Project Name: WGK-1Q17 LTM
Reviewer: A. Derhake
Laboratory: TestAmerica
SDG#: KPS185
Matrix: Water

Project Manager: A. Derhake
Project Number: 140-3345
Sample Date: February 2017

Analytical Method: VOC (8260B), SVOC (8270D), Dissolved Gases (RSK-175), Metals (6010C), Alkalinity (310.1), Chloride (325.2), Nitrogen, Nitrate-Nitrite (353.2), Sulfate (375.4), TOC (415.1), and DOC (415.1)

Sample Names: PM1D-0217, PM1D-F(0.2)-0217, ESL-MW-D1-0217, ESL-MW-D1-F(0.2)-0217, ESL-MW-A-0217, ESL-MW-A-F(0.2)-0217, CPA-MW-5D-0217, CPA-MW-5D-F(0.2)-0217, 1Q17 LTM Trip Blank #1

Field Information**YES NO NA**

- a) Sampling dates noted? ☒ ☐ ☐
- b) Does the laboratory narrative indicate deficiencies? ☒ ☐ ☐

Comments:

VOC: Samples ESL-MW-D1 and CPA-MW-5D required dilution prior to analysis, reporting limits were adjusted accordingly.

SVOC: No deficiencies noted.

Dissolved Gases: Insufficient volume to perform MS/MSD associated with batch 468340.

Metals: No deficiencies noted.

Alkalinity: No deficiencies noted.

Chloride: Chloride exceeded the recovery criteria low for the MS and MSD associated with batch 468131.

Samples PM1D, ESL-MW-D1, ESL-MW-A, and CPA-MW-5D required dilution prior to analysis, reporting limits were adjusted accordingly.

Nitrate-Nitrite as Nitrogen: No deficiencies noted.

Sulfate: Sulfate exceeded the recovery criteria low for the MS and MSD of samples PM1D and ESL-MW-D1 in batch 467635.

Samples PM1D, ESL-MW-D1, ESL-MW-A and CPA-MW-5D required dilution prior to analysis, reporting limits were adjusted accordingly.

TOC: No deficiencies noted.

DOC: No deficiencies noted.

Chain-of-Custody (COC)**YES NO NA**

- a) Was the COC signed by both field and laboratory personnel? ☒ ☐ ☐
- b) Were samples received in good condition? ☒ ☐ ☐

Comments: Samples were received at 1.3°C, outside the 4°C ± 2°C criteria.

**General****YES NO NA**

- a) Were hold times met for sample analysis? ☒ ☐ ☐
- b) Were the correct preservatives used? ☒ ☐ ☐
- c) Was the correct method used? ☒ ☐ ☐
- d) Any sample dilutions noted? ☒ ☐ ☐

Comments: Detections in diluted analysis were qualified.**GC/MS Instrument Performance Check (IPC) and Internal Standards (IS)****YES NO NA**

- a) IPC analyzed at the appropriate frequency and met the appropriate standards? ☒ ☐ ☐
- b) Does BFB meet the ion abundance criteria? ☒ ☐ ☐
- c) Internal Standard retention times and areas met appropriate criteria? ☒ ☐ ☐

Comments: None**Calibrations****YES NO NA**

- a) Initial calibration analyzed at the appropriate frequency and met the appropriate standards? ☒ ☐ ☐
- b) Continuing calibrations analyzed at the appropriate frequency and met the appropriate standards? ☒ ☐ ☐
- c) Initial calibration verifications and blanks analyzed at the appropriate frequency and met the appropriate standards? ☐ ☒ ☐
- d) Continuing calibration verifications and blanks analyzed at the appropriate frequency and met the appropriate standards? ☐ ☒ ☐

Comments: Some compounds did not meet calibration requirements; however, calibration criteria were met by analytes of interest. No data qualification was required.**Blanks****YES NO NA**

- a) Were blanks (trip, equipment, method) performed at required frequency? ☒ ☐ ☐
- b) Were analytes detected in any blanks? ☐ ☒ ☐

Comments: None**Matrix Spike/Matrix Spike Duplicate (MS/MSD)****YES NO NA**

- a) Was MS/MSD accuracy criteria met? ☐ ☒ ☐
- b) Was MS/MSD precision criteria met? ☒ ☐ ☐

Comments: Sulfate exceeded the recovery criteria low for MS and MSD of samples PM1D and ESL-MW-D1 in batch 467635. Data was not qualified on MS/MSD data alone.**Laboratory Control Sample (LCS)****YES NO NA**

- a) LCS analyzed at the appropriate frequency and met appropriate standards? ☒ ☐ ☐

Comments: None**Surrogate (System Monitoring) Compounds****YES NO NA**

- a) Surrogate compounds analyzed at the appropriate frequency and met appropriate standards? ☒ ☐ ☐

Comments: None

**Duplicates****YES NO NA**

a) Were field duplicates collected?

☐ ☒ ☐

b) Was field duplicate precision criteria met?

☐ ☐ ☒**Comments:** None**Additional Comments:** None**Qualifications:**

Quality Control Issue	Compound(s)	Qualifier	Samples Affected
Compounds analyzed at a dilution	Chlorobenzene, Chloride, and Sulfate	D	PM1D, ESL-MW-D1, ESL-MW-A, CPA-MW-5D

SDG KPS185

Sample Results from:

**PM1D
ESL-MW-A
ESL-MW-D1
CPA-MW-5D**

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404

Tel: (912)354-7858

TestAmerica Job ID: 680-134783-1

TestAmerica Sample Delivery Group: KPS185

Client Project/Site: 1Q17 LTM GW Sampling-1403345

Revision: 3

For:

Solutia Inc.

575 Maryville Centre Dr.

Saint Louis, Missouri 63141

Attn: Mr. Jerry Rinaldi

Kathryn Smith

Authorized for release by:

3/15/2017 12:44:00 PM

Kathryn Smith, Senior Project Manager

(912)354-7858

kathy.smith@testamericainc.com

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The test results in this report meet all 2003 NELAP and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

*KWP
4/10/17*

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Case Narrative

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1
SDG: KPS185

Job ID: 680-134783-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Solutia Inc.

Project: 1Q17 LTM GW Sampling-1403345

Report Number: 680-134783-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT

The samples were received on 01/31/2017; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 1.3° C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples PM1D-0217 (680-134783-1), ESL-MW-D1-0217 (680-134783-3), ESL-MW-A-0217 (680-134783-5), CPA-MW-5D-0217 (680-134783-7) and 1Q17 LTM Trip Blank #1 (680-134783-9) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 02/08/2017 and 02/09/2017.

Samples ESL-MW-D1-0217 (680-134783-3)[2X] and CPA-MW-5D-0217 (680-134783-7)[20X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SEMIVOLATILE ORGANIC COMPOUNDS (AQUEOUS)

Sample CPA-MW-5D-0217 (680-134783-7) was analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 02/02/2017 and analyzed on 02/03/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED GASES

Samples PM1D-0217 (680-134783-1), ESL-MW-D1-0217 (680-134783-3), ESL-MW-A-0217 (680-134783-5) and CPA-MW-5D-0217 (680-134783-7) were analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 02/09/2017.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-468340. Laboratory Control Samples and Laboratory Control Samples Duplicate were performed to demonstrate precision.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP)

Samples PM1D-F(0.2)-0217 (680-134783-2), ESL-MW-D1-F(0.2)-0217 (680-134783-4), ESL-MW-A-F(0.2)-0217 (680-134783-6) and CPA-MW-5D-F(0.2)-0217 (680-134783-8) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 02/02/2017 and analyzed on 02/04/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP)

Samples PM1D-0217 (680-134783-1), ESL-MW-D1-0217 (680-134783-3), ESL-MW-A-0217 (680-134783-5) and CPA-MW-5D-0217 (680-134783-7) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 02/02/2017 and analyzed on 02/04/2017.

AWD
4/10/17

Case Narrative

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1
SDG: KPS185

Job ID: 680-134783-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ALKALINITY

Samples PM1D-0217 (680-134783-1), ESL-MW-D1-0217 (680-134783-3), ESL-MW-A-0217 (680-134783-5) and CPA-MW-5D-0217 (680-134783-7) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 02/01/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

CHLORIDE

Samples PM1D-0217 (680-134783-1), ESL-MW-D1-0217 (680-134783-3), ESL-MW-A-0217 (680-134783-5) and CPA-MW-5D-0217 (680-134783-7) were analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 02/07/2017.

Chloride recovered low for the MS/MSD of sample 680-134870-2 in batch 680-468131.

Samples PM1D-0217 (680-134783-1)[5X], ESL-MW-D1-0217 (680-134783-3)[2X], ESL-MW-A-0217 (680-134783-5)[2X] and CPA-MW-5D-0217 (680-134783-7)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

NITRATE-NITRITE AS NITROGEN

Samples PM1D-0217 (680-134783-1), ESL-MW-D1-0217 (680-134783-3), ESL-MW-A-0217 (680-134783-5) and CPA-MW-5D-0217 (680-134783-7) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 01/31/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SULFATE

Samples PM1D-0217 (680-134783-1), ESL-MW-D1-0217 (680-134783-3), ESL-MW-A-0217 (680-134783-5) and CPA-MW-5D-0217 (680-134783-7) were analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 02/02/2017 and 02/03/2017.

Sulfate recovered low for the MS/MSD of sample PM1D-0217 (680-134783-1) in batch 680-467635.

Sulfate recovered low for the MS/MSD of sample ESL-MW-D1-0217 (680-134783-3) in batch 680-467635.

Samples PM1D-0217 (680-134783-1)[20X], ESL-MW-D1-0217 (680-134783-3)[20X], ESL-MW-A-0217 (680-134783-5)[20X] and CPA-MW-5D-0217 (680-134783-7)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL ORGANIC CARBON

Samples PM1D-0217 (680-134783-1), ESL-MW-D1-0217 (680-134783-3), ESL-MW-A-0217 (680-134783-5) and CPA-MW-5D-0217 (680-134783-7) were analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 02/07/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED ORGANIC CARBON (DOC)

Samples PM1D-F(0.2)-0217 (680-134783-2), ESL-MW-D1-F(0.2)-0217 (680-134783-4), ESL-MW-A-F(0.2)-0217 (680-134783-6) and CPA-MW-5D-F(0.2)-0217 (680-134783-8) were analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 02/11/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1
SDG: KPS185

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-134783-1	PM1D-0217	Water	01/30/17 10:58	01/31/17 09:27
680-134783-2	PM1D-F(0.2)-0217	Water	01/30/17 10:58	01/31/17 09:27
680-134783-3	ESL-MW-D1-0217	Water	01/30/17 12:15	01/31/17 09:27
680-134783-4	ESL-MW-D1-F(0.2)-0217	Water	01/30/17 12:15	01/31/17 09:27
680-134783-5	ESL-MW-A-0217	Water	01/30/17 13:45	01/31/17 09:27
680-134783-6	ESL-MW-A-F(0.2)-0217	Water	01/30/17 13:45	01/31/17 09:27
680-134783-7	CPA-MW-5D-0217	Water	01/30/17 15:11	01/31/17 09:27
680-134783-8	CPA-MW-5D-F(0.2)-0217	Water	01/30/17 15:11	01/31/17 09:27
680-134783-9	1Q17 LTM Trip Blank #1	Water	01/30/17 00:00	01/31/17 09:27

AMP
4/10/17
TestAmerica Savannah

Method Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1
SDG: KPS185

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
310.1	Alkalinity	MCAWW	TAL SAV
325.2	Chloride	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV
375.4	Sulfate	MCAWW	TAL SAV
415.1	TOC	MCAWW	TAL SAV
415.1	DOC	MCAWW	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

AWP
4/10/17
TestAmerica Savannah

Definitions/Glossary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1
SDG: KPS185

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

AMP
4/10/17
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1
SDG: KPS185

Client Sample ID: PM1D-0217

Lab Sample ID: 680-134783-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Benzene	1.3		1.0		ug/L	1			8260B	Total/NA
Chlorobenzene	55		1.0		ug/L	1			8260B	Total/NA
Methane	40		0.58		ug/L	1			RSK-175	Total/NA
Iron	14		0.050		mg/L	1			6010C	Total Recoverable
Manganese	0.45		0.010		mg/L	1			6010C	Total Recoverable
Chloride	100	D	5.0		mg/L	5			325.2	Total/NA
Sulfate	450	D	100		mg/L	20			375.4	Total/NA
Total Organic Carbon	2.5		1.0		mg/L	1			415.1	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Alkalinity	390		5.0		mg/L	1			310.1	Total/NA
Carbon Dioxide, Free	58		5.0		mg/L	1			310.1	Total/NA

Client Sample ID: PM1D-F(0.2)-0217

Lab Sample ID: 680-134783-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Iron, Dissolved	14		0.050		mg/L	1			6010C	Dissolved
Manganese, Dissolved	0.45		0.010		mg/L	1			6010C	Dissolved
Dissolved Organic Carbon	2.5		1.0		mg/L	1			415.1	Dissolved

Client Sample ID: ESL-MW-D1-0217

Lab Sample ID: 680-134783-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Benzene	2.1		1.0		ug/L	1			8260B	Total/NA
1,2-Dichlorobenzene	3.0		1.0		ug/L	1			8260B	Total/NA
1,3-Dichlorobenzene	1.8		1.0		ug/L	1			8260B	Total/NA
1,4-Dichlorobenzene	29		1.0		ug/L	1			8260B	Total/NA
Chlorobenzene - DL	220	D	2.0		ug/L	2			8260B	Total/NA
Methane	23		0.58		ug/L	1			RSK-175	Total/NA
Iron	13		0.050		mg/L	1			6010C	Total Recoverable
Manganese	0.38		0.010		mg/L	1			6010C	Total Recoverable
Chloride	83	D	2.0		mg/L	2			325.2	Total/NA
Sulfate	480	D	100		mg/L	20			375.4	Total/NA
Total Organic Carbon	2.8		1.0		mg/L	1			415.1	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Alkalinity	390		5.0		mg/L	1			310.1	Total/NA
Carbon Dioxide, Free	45		5.0		mg/L	1			310.1	Total/NA

Client Sample ID: ESL-MW-D1-F(0.2)-0217

Lab Sample ID: 680-134783-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Iron, Dissolved	13		0.050		mg/L	1			6010C	Dissolved
Manganese, Dissolved	0.38		0.010		mg/L	1			6010C	Dissolved
Dissolved Organic Carbon	2.7		1.0		mg/L	1			415.1	Dissolved

Client Sample ID: ESL-MW-A-0217

Lab Sample ID: 680-134783-5

This Detection Summary does not include radiochemical test results.

KMP d/10/17
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1
SDG: KPS185

Client Sample ID: ESL-MW-A-0217 (Continued)

Lab Sample ID: 680-134783-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	1.9		1.0		ug/L	1		8260B	Total/NA
Methane	3.9		0.58		ug/L	1		RSK-175	Total/NA
Iron	13		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.42		0.010		mg/L	1		6010C	Total Recoverable
Chloride	85	D	2.0		mg/L	2		325.2	Total/NA
Nitrate as N	0.28		0.050		mg/L	1		353.2	Total/NA
Sulfate	610	D	100		mg/L	20		375.4	Total/NA
Total Organic Carbon	3.5		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	350		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	38		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: ESL-MW-A-F(0.2)-0217

Lab Sample ID: 680-134783-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	13		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.41		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	3.6		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: CPA-MW-5D-0217

Lab Sample ID: 680-134783-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	1600	D	20		ug/L	20		8260B	Total/NA
2-Chlorophenol	23		9.7		ug/L	1		8270D	Total/NA
Methane	21		0.58		ug/L	1		RSK-175	Total/NA
Iron	21		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.86		0.010		mg/L	1		6010C	Total Recoverable
Chloride	220	D	5.0		mg/L	5		325.2	Total/NA
Sulfate	120	D	25		mg/L	5		375.4	Total/NA
Total Organic Carbon	5.0		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	610		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	130		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: CPA-MW-5D-F(0.2)-0217

Lab Sample ID: 680-134783-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	20		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.85		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	5.1		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: 1Q17 LTM Trip Blank #1

Lab Sample ID: 680-134783-9

No Detections.

This Detection Summary does not include radiochemical test results.

KMD 4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1
SDG: KPS185

Client Sample ID: PM1D-0217

Lab Sample ID: 680-134783-1

Date Collected: 01/30/17 10:58

Matrix: Water

Date Received: 01/31/17 09:27

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.3		1.0		ug/L			02/08/17 21:26	1
Chlorobenzene	55		1.0		ug/L			02/08/17 21:26	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/08/17 21:26	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/08/17 21:26	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/08/17 21:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 120		02/08/17 21:26	1
1,2-Dichloroethane-d4 (Surr)	101		73 - 131		02/08/17 21:26	1
Dibromofluoromethane (Surr)	106		80 - 122		02/08/17 21:26	1
4-Bromofluorobenzene (Surr)	94		80 - 120		02/08/17 21:26	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			02/09/17 14:44	1
Ethylene	1.0	U	1.0		ug/L			02/09/17 14:44	1
Methane	40		0.58		ug/L			02/09/17 14:44	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	14		0.050		mg/L		02/02/17 11:01	02/04/17 05:05	1
Manganese	0.45		0.010		mg/L		02/02/17 11:01	02/04/17 05:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	100	D	5.0		mg/L			02/07/17 12:35	5
Nitrate as N	0.050	U	0.050		mg/L			01/31/17 12:30	1
Sulfate	450	D	100		mg/L			02/03/17 07:26	20
Total Organic Carbon	2.5		1.0		mg/L			02/07/17 17:02	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	390		5.0		mg/L			02/01/17 15:38	1
Carbon Dioxide, Free	58		5.0		mg/L			02/01/17 15:38	1

KMD 4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1
SDG: KPS185

Client Sample ID: PM1D-F(0.2)-0217

Lab Sample ID: 680-134783-2

Date Collected: 01/30/17 10:58

Matrix: Water

Date Received: 01/31/17 09:27

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	14		0.050		mg/L		02/02/17 11:01	02/04/17 05:10	1
Manganese, Dissolved	0.45		0.010		mg/L		02/02/17 11:01	02/04/17 05:10	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	2.5		1.0		mg/L			02/11/17 03:08	1

RMD 4/10/17

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1
SDG: KPS185

Client Sample ID: ESL-MW-D1-0217

Lab Sample ID: 680-134783-3

Date Collected: 01/30/17 12:15

Matrix: Water

Date Received: 01/31/17 09:27

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	2.1		1.0		ug/L			02/08/17 21:47	1
1,2-Dichlorobenzene	3.0		1.0		ug/L			02/08/17 21:47	1
1,3-Dichlorobenzene	1.8		1.0		ug/L			02/08/17 21:47	1
1,4-Dichlorobenzene	29		1.0		ug/L			02/08/17 21:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 120		02/08/17 21:47	1
1,2-Dichloroethane-d4 (Surr)	92		73 - 131		02/08/17 21:47	1
Dibromofluoromethane (Surr)	98		80 - 122		02/08/17 21:47	1
4-Bromofluorobenzene (Surr)	92		80 - 120		02/08/17 21:47	1

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	220	D	2.0		ug/L			02/09/17 10:49	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 120		02/09/17 10:49	2
1,2-Dichloroethane-d4 (Surr)	95		73 - 131		02/09/17 10:49	2
Dibromofluoromethane (Surr)	102		80 - 122		02/09/17 10:49	2
4-Bromofluorobenzene (Surr)	95		80 - 120		02/09/17 10:49	2

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			02/09/17 14:57	1
Ethylene	1.0	U	1.0		ug/L			02/09/17 14:57	1
Methane	23		0.58		ug/L			02/09/17 14:57	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	13		0.050		mg/L		02/02/17 11:01	02/04/17 05:14	1
Manganese	0.38		0.010		mg/L		02/02/17 11:01	02/04/17 05:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	83	D	2.0		mg/L			02/07/17 11:38	2
Nitrate as N	0.050	U	0.050		mg/L			01/31/17 12:27	1
Sulfate	480	D	100		mg/L			02/02/17 15:16	20
Total Organic Carbon	2.8		1.0		mg/L			02/07/17 20:30	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	390		5.0		mg/L			02/01/17 15:48	1
Carbon Dioxide, Free	45		5.0		mg/L			02/01/17 15:48	1

AMD 4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1
SDG: KPS185

Client Sample ID: ESL-MW-D1-F(0.2)-0217

Lab Sample ID: 680-134783-4

Date Collected: 01/30/17 12:15

Matrix: Water

Date Received: 01/31/17 09:27

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	13		0.050		mg/L		02/02/17 11:01	02/04/17 05:29	1
Manganese, Dissolved	0.38		0.010		mg/L		02/02/17 11:01	02/04/17 05:29	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	2.7		1.0		mg/L			02/11/17 04:01	1

AWD 4/10/17

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1
SDG: KPS185

Client Sample ID: ESL-MW-A-0217

Lab Sample ID: 680-134783-5

Date Collected: 01/30/17 13:45

Matrix: Water

Date Received: 01/31/17 09:27

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			02/09/17 10:29	1
Chlorobenzene	1.9		1.0		ug/L			02/09/17 10:29	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/09/17 10:29	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/09/17 10:29	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/09/17 10:29	1

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120					02/09/17 10:29	1
1,2-Dichloroethane-d4 (Surr)	85		73 - 131					02/09/17 10:29	1
Dibromofluoromethane (Surr)	89		80 - 122					02/09/17 10:29	1
4-Bromofluorobenzene (Surr)	96		80 - 120					02/09/17 10:29	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			02/09/17 15:10	1
Ethylene	1.0	U	1.0		ug/L			02/09/17 15:10	1
Methane	3.9		0.58		ug/L			02/09/17 15:10	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	13		0.050		mg/L		02/02/17 11:01	02/04/17 05:33	1
Manganese	0.42		0.010		mg/L		02/02/17 11:01	02/04/17 05:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	85	D	2.0		mg/L			02/07/17 11:38	2
Nitrate as N	0.28		0.050		mg/L			01/31/17 12:32	1
Sulfate	610	D	100		mg/L			02/03/17 07:55	20
Total Organic Carbon	3.5		1.0		mg/L			02/07/17 20:47	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	350		5.0		mg/L			02/01/17 15:56	1
Carbon Dioxide, Free	38		5.0		mg/L			02/01/17 15:56	1

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TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1
SDG: KPS185

Client Sample ID: ESL-MW-A-F(0.2)-0217

Lab Sample ID: 680-134783-6

Date Collected: 01/30/17 13:45

Matrix: Water

Date Received: 01/31/17 09:27

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	13		0.050		mg/L		02/02/17 11:01	02/04/17 05:38	1
Manganese, Dissolved	0.41		0.010		mg/L		02/02/17 11:01	02/04/17 05:38	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	3.6		1.0		mg/L			02/11/17 04:18	1

AMP 4/10/17

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1
SDG: KPS185

Client Sample ID: CPA-MW-5D-0217

Lab Sample ID: 680-134783-7

Date Collected: 01/30/17 15:11

Matrix: Water

Date Received: 01/31/17 09:27

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	20	U	20		ug/L			02/08/17 22:28	20
Chlorobenzene	1600	D	20		ug/L			02/08/17 22:28	20
1,2-Dichlorobenzene	20	U	20		ug/L			02/08/17 22:28	20
1,3-Dichlorobenzene	20	U	20		ug/L			02/08/17 22:28	20
1,4-Dichlorobenzene	20	U	20		ug/L			02/08/17 22:28	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 120		02/08/17 22:28	20
1,2-Dichloroethane-d4 (Surr)	80		73 - 131		02/08/17 22:28	20
Dibromofluoromethane (Surr)	81		80 - 122		02/08/17 22:28	20
4-Bromofluorobenzene (Surr)	95		80 - 120		02/08/17 22:28	20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	9.7	U	9.7		ug/L		02/02/17 16:01	02/03/17 19:44	1
2-Chlorophenol	23		9.7		ug/L		02/02/17 16:01	02/03/17 19:44	1
4-Chloroaniline	19	U	19		ug/L		02/02/17 16:01	02/03/17 19:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	85		39 - 124	02/02/17 16:01	02/03/17 19:44	1
2-Fluorobiphenyl	74		32 - 113	02/02/17 16:01	02/03/17 19:44	1
2-Fluorophenol	57		26 - 109	02/02/17 16:01	02/03/17 19:44	1
Terphenyl-d14	50		10 - 126	02/02/17 16:01	02/03/17 19:44	1
Phenol-d5	61		27 - 110	02/02/17 16:01	02/03/17 19:44	1
Nitrobenzene-d5	72		32 - 118	02/02/17 16:01	02/03/17 19:44	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			02/09/17 15:23	1
Ethylene	1.0	U	1.0		ug/L			02/09/17 15:23	1
Methane	21		0.58		ug/L			02/09/17 15:23	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	21		0.050		mg/L		02/02/17 11:01	02/04/17 05:43	1
Manganese	0.86		0.010		mg/L		02/02/17 11:01	02/04/17 05:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	220	D	5.0		mg/L			02/07/17 12:33	5
Nitrate as N	0.050	U	0.050		mg/L			01/31/17 12:33	1
Sulfate	120	D	25		mg/L			02/03/17 07:29	5
Total Organic Carbon	5.0		1.0		mg/L			02/07/17 21:05	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	610		5.0		mg/L			02/01/17 16:08	1
Carbon Dioxide, Free	130		5.0		mg/L			02/01/17 16:08	1

AMP
2/1/17

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1
SDG: KPS185

Client Sample ID: CPA-MW-5D-F(0.2)-0217

Lab Sample ID: 680-134783-8

Date Collected: 01/30/17 15:11

Matrix: Water

Date Received: 01/31/17 09:27

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	20		0.050		mg/L		02/02/17 11:01	02/04/17 05:47	1
Manganese, Dissolved	0.85		0.010		mg/L		02/02/17 11:01	02/04/17 05:47	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	5.1		1.0		mg/L			02/11/17 04:39	1

AMB
4/10/17

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1
SDG: KPS185

Client Sample ID: 1Q17 LTM Trip Blank #1

Lab Sample ID: 680-134783-9

Date Collected: 01/30/17 00:00

Matrix: Water

Date Received: 01/31/17 09:27

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			02/08/17 19:43	1
Chlorobenzene	1.0	U	1.0		ug/L			02/08/17 19:43	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/08/17 19:43	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/08/17 19:43	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/08/17 19:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		02/08/17 19:43	1
1,2-Dichloroethane-d4 (Surr)	89		73 - 131		02/08/17 19:43	1
Dibromofluoromethane (Surr)	91		80 - 122		02/08/17 19:43	1
4-Bromofluorobenzene (Surr)	92		80 - 120		02/08/17 19:43	1

AMP
2/1/17

TestAmerica Savannah

Surrogate Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1
SDG: KPS185

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	12DCE (73-131)	DBFM (80-122)	BFB (80-120)
680-134783-1	PM1D-0217	101	101	106	94
680-134783-3	ESL-MW-D1-0217	102	92	98	92
680-134783-3 - DL	ESL-MW-D1-0217	101	95	102	95
680-134783-5	ESL-MW-A-0217	100	85	89	96
680-134783-7	CPA-MW-5D-0217	101	80	81	95
680-134783-9	1Q17 LTM Trip Blank #1	99	89	91	92
LCS 680-468284/3	Lab Control Sample	99	90	95	97
LCS 680-468311/4	Lab Control Sample	100	81	91	97
LCSD 680-468284/5	Lab Control Sample Dup	97	94	99	96
LCSD 680-468311/5	Lab Control Sample Dup	102	80	89	98
MB 680-468284/9	Method Blank	99	103	103	94
MB 680-468311/9	Method Blank	98	99	100	94

Surrogate Legend

TOL = Toluene-d8 (Surr)
12DCE = 1,2-Dichloroethane-d4 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TBP (39-124)	FBP (32-113)	2FP (26-109)	TPH (10-126)	PHL (27-110)	NBZ (32-118)
680-134783-7	CPA-MW-5D-0217	85	74	57	50	61	72
LCS 680-467545/12-A	Lab Control Sample	80	72	64	67	62	71
MB 680-467545/11-A	Method Blank	83	70	62	62	60	69

Surrogate Legend

TBP = 2,4,6-Tribromophenol
FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol
TPH = Terphenyl-d14
PHL = Phenol-d5
NBZ = Nitrobenzene-d5

AWP 4/11/17

TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1
SDG: KPS185

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

Lab Sample ID: MB 680-468284/9

Matrix: Water

Analysis Batch: 468284

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	1.0	U	1.0		ug/L			02/08/17 19:23	1
Chlorobenzene	1.0	U	1.0		ug/L			02/08/17 19:23	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/08/17 19:23	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/08/17 19:23	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/08/17 19:23	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	99		80 - 120		02/08/17 19:23	1
1,2-Dichloroethane-d4 (Surr)	103		73 - 131		02/08/17 19:23	1
Dibromofluoromethane (Surr)	103		80 - 122		02/08/17 19:23	1
4-Bromofluorobenzene (Surr)	94		80 - 120		02/08/17 19:23	1

Lab Sample ID: LCS 680-468284/3

Matrix: Water

Analysis Batch: 468284

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	50.2		ug/L		100	80 - 120
Chlorobenzene	50.0	50.1		ug/L		100	80 - 120
1,2-Dichlorobenzene	50.0	51.0		ug/L		102	80 - 120
1,3-Dichlorobenzene	50.0	50.4		ug/L		101	80 - 120
1,4-Dichlorobenzene	50.0	51.0		ug/L		102	80 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	99		80 - 120
1,2-Dichloroethane-d4 (Surr)	90		73 - 131
Dibromofluoromethane (Surr)	95		80 - 122
4-Bromofluorobenzene (Surr)	97		80 - 120

Lab Sample ID: LCSD 680-468284/5

Matrix: Water

Analysis Batch: 468284

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	
								RPD	Limit
Benzene	50.0	50.9		ug/L		102	80 - 120	1	20
Chlorobenzene	50.0	50.5		ug/L		101	80 - 120	1	20
1,2-Dichlorobenzene	50.0	49.6		ug/L		99	80 - 120	3	20
1,3-Dichlorobenzene	50.0	50.2		ug/L		100	80 - 120	0	20
1,4-Dichlorobenzene	50.0	49.8		ug/L		100	80 - 120	2	20

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	97		80 - 120
1,2-Dichloroethane-d4 (Surr)	94		73 - 131
Dibromofluoromethane (Surr)	99		80 - 122
4-Bromofluorobenzene (Surr)	96		80 - 120

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1
SDG: KPS185

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

Lab Sample ID: MB 680-468311/9

Matrix: Water

Analysis Batch: 468311

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			02/09/17 08:46	1
Chlorobenzene	1.0	U	1.0		ug/L			02/09/17 08:46	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/09/17 08:46	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/09/17 08:46	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/09/17 08:46	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		02/09/17 08:46	1
1,2-Dichloroethane-d4 (Surr)	99		73 - 131		02/09/17 08:46	1
Dibromofluoromethane (Surr)	100		80 - 122		02/09/17 08:46	1
4-Bromofluorobenzene (Surr)	94		80 - 120		02/09/17 08:46	1

Lab Sample ID: LCS 680-468311/4

Matrix: Water

Analysis Batch: 468311

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	49.2		ug/L		98	80 - 120
Chlorobenzene	50.0	50.2		ug/L		100	80 - 120
1,2-Dichlorobenzene	50.0	51.5		ug/L		103	80 - 120
1,3-Dichlorobenzene	50.0	51.8		ug/L		104	80 - 120
1,4-Dichlorobenzene	50.0	51.0		ug/L		102	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	100		80 - 120
1,2-Dichloroethane-d4 (Surr)	81		73 - 131
Dibromofluoromethane (Surr)	91		80 - 122
4-Bromofluorobenzene (Surr)	97		80 - 120

Lab Sample ID: LCSD 680-468311/5

Matrix: Water

Analysis Batch: 468311

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	49.7		ug/L		99	80 - 120	1	20
Chlorobenzene	50.0	50.8		ug/L		102	80 - 120	1	20
1,2-Dichlorobenzene	50.0	51.5		ug/L		103	80 - 120	0	20
1,3-Dichlorobenzene	50.0	51.6		ug/L		103	80 - 120	0	20
1,4-Dichlorobenzene	50.0	51.4		ug/L		103	80 - 120	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	102		80 - 120
1,2-Dichloroethane-d4 (Surr)	80		73 - 131
Dibromofluoromethane (Surr)	89		80 - 122
4-Bromofluorobenzene (Surr)	98		80 - 120


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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1
SDG: KPS185

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

Lab Sample ID: MB 680-467545/11-A
Matrix: Water
Analysis Batch: 467761

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 467545

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	10	U	10		ug/L		02/02/17 16:01	02/03/17 19:20	1
2-Chlorophenol	10	U	10		ug/L		02/02/17 16:01	02/03/17 19:20	1
4-Chloroaniline	20	U	20		ug/L		02/02/17 16:01	02/03/17 19:20	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	83		39 - 124	02/02/17 16:01	02/03/17 19:20	1
2-Fluorobiphenyl	70		32 - 113	02/02/17 16:01	02/03/17 19:20	1
2-Fluorophenol	62		26 - 109	02/02/17 16:01	02/03/17 19:20	1
Terphenyl-d14	62		10 - 126	02/02/17 16:01	02/03/17 19:20	1
Phenol-d5	60		27 - 110	02/02/17 16:01	02/03/17 19:20	1
Nitrobenzene-d5	69		32 - 118	02/02/17 16:01	02/03/17 19:20	1

Lab Sample ID: LCS 680-467545/12-A
Matrix: Water
Analysis Batch: 467761

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 467545

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trichlorobenzene	100	66.2		ug/L		66	33 - 130
2-Chlorophenol	100	68.6		ug/L		69	39 - 130
4-Chloroaniline	100	56.6		ug/L		57	42 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol	80		39 - 124
2-Fluorobiphenyl	72		32 - 113
2-Fluorophenol	64		26 - 109
Terphenyl-d14	67		10 - 126
Phenol-d5	62		27 - 110
Nitrobenzene-d5	71		32 - 118

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-468340/7
Matrix: Water
Analysis Batch: 468340

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			02/09/17 10:03	1
Ethylene	1.0	U	1.0		ug/L			02/09/17 10:03	1
Methane	0.58	U	0.58		ug/L			02/09/17 10:03	1
Methane (TCD)	390	U	390		ug/L			02/09/17 10:03	1

Lab Sample ID: LCS 680-468340/3
Matrix: Water
Analysis Batch: 468340

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	288	284		ug/L		98	75 - 125

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1
SDG: KPS185

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCS 680-468340/3
Matrix: Water
Analysis Batch: 468340

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylene	269	268		ug/L		99	75 - 125

Lab Sample ID: LCS 680-468340/5
Matrix: Water
Analysis Batch: 468340

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane (TCD)	1920	1830		ug/L		95	75 - 125

Lab Sample ID: LCSD 680-468340/6
Matrix: Water
Analysis Batch: 468340

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane (TCD)	1920	1810		ug/L		94	75 - 125	2	30

Lab Sample ID: LCSD 680-468340/8
Matrix: Water
Analysis Batch: 468340

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	288	296		ug/L		103	75 - 125	4	30
Ethylene	269	279		ug/L		104	75 - 125	4	30

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-467537/1-A
Matrix: Water
Analysis Batch: 467842

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 467537

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.050	U	0.050		mg/L		02/02/17 11:01	02/04/17 03:40	1
Iron, Dissolved	0.050	U	0.050		mg/L		02/02/17 11:01	02/04/17 03:40	1
Manganese	0.010	U	0.010		mg/L		02/02/17 11:01	02/04/17 03:40	1
Manganese, Dissolved	0.010	U	0.010		mg/L		02/02/17 11:01	02/04/17 03:40	1

Lab Sample ID: LCS 680-467537/2-A
Matrix: Water
Analysis Batch: 467842

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 467537

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	5.00	5.07		mg/L		101	80 - 120
Iron, Dissolved	5.00	5.07		mg/L		101	80 - 120
Manganese	0.500	0.533		mg/L		107	80 - 120
Manganese, Dissolved	0.500	0.533		mg/L		107	80 - 120

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1
SDG: KPS185

Method: 310.1 - Alkalinity

Lab Sample ID: MB 680-467469/7
Matrix: Water
Analysis Batch: 467469

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0		mg/L			02/01/17 15:21	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			02/01/17 15:21	1

Lab Sample ID: LCS 680-467469/8
Matrix: Water
Analysis Batch: 467469

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	250	253		mg/L		101	80 - 120

Lab Sample ID: LCSD 680-467469/34
Matrix: Water
Analysis Batch: 467469

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	250	264		mg/L		106	80 - 120	4	30

Method: 325.2 - Chloride

Lab Sample ID: MB 680-468131/1
Matrix: Water
Analysis Batch: 468131

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0		mg/L			02/07/17 11:23	1

Lab Sample ID: LCS 680-468131/2
Matrix: Water
Analysis Batch: 468131

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	26.2		mg/L		105	85 - 115

Lab Sample ID: LCSD 680-468131/5
Matrix: Water
Analysis Batch: 468131

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	25.0	26.1		mg/L		104	85 - 115	0	30

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-467226/13
Matrix: Water
Analysis Batch: 467226

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			01/31/17 12:22	1

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1
SDG: KPS185

Method: 353.2 - Nitrogen, Nitrate-Nitrite (Continued)

Lab Sample ID: LCS 680-467226/16
Matrix: Water
Analysis Batch: 467226

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.500	0.553		mg/L		111	75 - 125
Nitrate Nitrite as N	1.00	1.07		mg/L		107	90 - 110
Nitrite as N	0.500	0.517		mg/L		103	90 - 110

Lab Sample ID: 680-134783-3 MS
Matrix: Water
Analysis Batch: 467226

Client Sample ID: ESL-MW-D1-0217
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.050	U	0.500	0.554		mg/L		111	75 - 125
Nitrate Nitrite as N	0.050	U	1.00	1.09		mg/L		109	90 - 110
Nitrite as N	0.050	U	0.500	0.536		mg/L		107	90 - 110

Lab Sample ID: 680-134783-3 MSD
Matrix: Water
Analysis Batch: 467226

Client Sample ID: ESL-MW-D1-0217
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	0.050	U	0.500	0.566		mg/L		113	75 - 125	2	30
Nitrate Nitrite as N	0.050	U	1.00	1.10		mg/L		110	90 - 110	0	10
Nitrite as N	0.050	U	0.500	0.534		mg/L		107	90 - 110	0	10

Method: 375.4 - Sulfate

Lab Sample ID: MB 680-467635/5
Matrix: Water
Analysis Batch: 467635

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	5.0	U	5.0		mg/L			02/02/17 15:16	1

Lab Sample ID: LCS 680-467635/6
Matrix: Water
Analysis Batch: 467635

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	20.3		mg/L		101	75 - 125

Lab Sample ID: LCSD 680-467635/10
Matrix: Water
Analysis Batch: 467635

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	20.0	20.4		mg/L		102	75 - 125	1	30

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1
SDG: KPS185

Method: 375.4 - Sulfate (Continued)

Lab Sample ID: 680-134783-1 MS

Matrix: Water

Analysis Batch: 467635

Client Sample ID: PM1D-0217

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	450		20.0	452	4	mg/L		24	75 - 125

Lab Sample ID: 680-134783-1 MSD

Matrix: Water

Analysis Batch: 467635

Client Sample ID: PM1D-0217

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	450		20.0	416	4	mg/L		-161	75 - 125	9	30

Lab Sample ID: 680-134783-3 MS

Matrix: Water

Analysis Batch: 467635

Client Sample ID: ESL-MW-D1-0217

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	480		20.0	483	4	mg/L		26	75 - 125

Lab Sample ID: 680-134783-3 MSD

Matrix: Water

Analysis Batch: 467635

Client Sample ID: ESL-MW-D1-0217

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	480		20.0	482	4	mg/L		21	75 - 125	0	30

Method: 415.1 - DOC

Lab Sample ID: MB 680-468704/2

Matrix: Water

Analysis Batch: 468704

Client Sample ID: Method Blank

Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.0	U	1.0		mg/L			02/11/17 02:20	1

Lab Sample ID: LCS 680-468704/3

Matrix: Water

Analysis Batch: 468704

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	20.0	21.4		mg/L		107	80 - 120

Lab Sample ID: LCSD 680-468704/4

Matrix: Water

Analysis Batch: 468704

Client Sample ID: Lab Control Sample Dup

Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	20.0	21.6		mg/L		108	80 - 120	1	20

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1
SDG: KPS185

Method: 415.1 - DOC (Continued)

Lab Sample ID: 680-134783-2 MS
Matrix: Water
Analysis Batch: 468704

Client Sample ID: PM1D-F(0.2)-0217
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	2.5		20.0	24.1		mg/L		108	80 - 120

Lab Sample ID: 680-134783-2 MSD
Matrix: Water
Analysis Batch: 468704

Client Sample ID: PM1D-F(0.2)-0217
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	2.5		20.0	24.0		mg/L		107	80 - 120	0	20

Method: 415.1 - TOC

Lab Sample ID: MB 680-468191/2
Matrix: Water
Analysis Batch: 468191

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.0	U	1.0		mg/L			02/07/17 16:16	1

Lab Sample ID: LCS 680-468191/3
Matrix: Water
Analysis Batch: 468191

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	20.0	21.1		mg/L		105	80 - 120

Lab Sample ID: LCSD 680-468191/4
Matrix: Water
Analysis Batch: 468191

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	20.0	21.1		mg/L		106	80 - 120	0	25

Lab Sample ID: 680-134783-1 MS
Matrix: Water
Analysis Batch: 468191

Client Sample ID: PM1D-0217
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	2.5		20.0	24.8		mg/L		112	80 - 120

Lab Sample ID: 680-134783-1 MSD
Matrix: Water
Analysis Batch: 468191

Client Sample ID: PM1D-0217
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	2.5		20.0	24.6		mg/L		111	80 - 120	1	25

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TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1
SDG: KPS185

GC/MS VOA

Analysis Batch: 468284

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134783-1	PM1D-0217	Total/NA	Water	8260B	
680-134783-3	ESL-MW-D1-0217	Total/NA	Water	8260B	
680-134783-7	CPA-MW-5D-0217	Total/NA	Water	8260B	
680-134783-9	1Q17 LTM Trip Blank #1	Total/NA	Water	8260B	
MB 680-468284/9	Method Blank	Total/NA	Water	8260B	
LCS 680-468284/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-468284/5	Lab Control Sample Dup	Total/NA	Water	8260B	

Analysis Batch: 468311

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134783-3 - DL	ESL-MW-D1-0217	Total/NA	Water	8260B	
680-134783-5	ESL-MW-A-0217	Total/NA	Water	8260B	
MB 680-468311/9	Method Blank	Total/NA	Water	8260B	
LCS 680-468311/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-468311/5	Lab Control Sample Dup	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 467545

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134783-7	CPA-MW-5D-0217	Total/NA	Water	3520C	
MB 680-467545/11-A	Method Blank	Total/NA	Water	3520C	
LCS 680-467545/12-A	Lab Control Sample	Total/NA	Water	3520C	

Analysis Batch: 467761

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134783-7	CPA-MW-5D-0217	Total/NA	Water	8270D	467545
MB 680-467545/11-A	Method Blank	Total/NA	Water	8270D	467545
LCS 680-467545/12-A	Lab Control Sample	Total/NA	Water	8270D	467545

GC VOA

Analysis Batch: 468340

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134783-1	PM1D-0217	Total/NA	Water	RSK-175	
680-134783-3	ESL-MW-D1-0217	Total/NA	Water	RSK-175	
680-134783-5	ESL-MW-A-0217	Total/NA	Water	RSK-175	
680-134783-7	CPA-MW-5D-0217	Total/NA	Water	RSK-175	
MB 680-468340/7	Method Blank	Total/NA	Water	RSK-175	
LCS 680-468340/3	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-468340/5	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-468340/6	Lab Control Sample Dup	Total/NA	Water	RSK-175	
LCSD 680-468340/8	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Metals

Prep Batch: 467537

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134783-1	PM1D-0217	Total Recoverable	Water	3005A	
680-134783-2	PM1D-F(0.2)-0217	Dissolved	Water	3005A	

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TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1
SDG: KPS185

Metals (Continued)

Prep Batch: 467537 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134783-3	ESL-MW-D1-0217	Total Recoverable	Water	3005A	
680-134783-4	ESL-MW-D1-F(0.2)-0217	Dissolved	Water	3005A	
680-134783-5	ESL-MW-A-0217	Total Recoverable	Water	3005A	
680-134783-6	ESL-MW-A-F(0.2)-0217	Dissolved	Water	3005A	
680-134783-7	CPA-MW-5D-0217	Total Recoverable	Water	3005A	
680-134783-8	CPA-MW-5D-F(0.2)-0217	Dissolved	Water	3005A	
MB 680-467537/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-467537/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 467842

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134783-1	PM1D-0217	Total Recoverable	Water	6010C	467537
680-134783-2	PM1D-F(0.2)-0217	Dissolved	Water	6010C	467537
680-134783-3	ESL-MW-D1-0217	Total Recoverable	Water	6010C	467537
680-134783-4	ESL-MW-D1-F(0.2)-0217	Dissolved	Water	6010C	467537
680-134783-5	ESL-MW-A-0217	Total Recoverable	Water	6010C	467537
680-134783-6	ESL-MW-A-F(0.2)-0217	Dissolved	Water	6010C	467537
680-134783-7	CPA-MW-5D-0217	Total Recoverable	Water	6010C	467537
680-134783-8	CPA-MW-5D-F(0.2)-0217	Dissolved	Water	6010C	467537
MB 680-467537/1-A	Method Blank	Total Recoverable	Water	6010C	467537
LCS 680-467537/2-A	Lab Control Sample	Total Recoverable	Water	6010C	467537

General Chemistry

Analysis Batch: 467226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134783-1	PM1D-0217	Total/NA	Water	353.2	
680-134783-3	ESL-MW-D1-0217	Total/NA	Water	353.2	
680-134783-5	ESL-MW-A-0217	Total/NA	Water	353.2	
680-134783-7	CPA-MW-5D-0217	Total/NA	Water	353.2	
MB 680-467226/13	Method Blank	Total/NA	Water	353.2	
LCS 680-467226/16	Lab Control Sample	Total/NA	Water	353.2	
680-134783-3 MS	ESL-MW-D1-0217	Total/NA	Water	353.2	
680-134783-3 MSD	ESL-MW-D1-0217	Total/NA	Water	353.2	

Analysis Batch: 467469

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134783-1	PM1D-0217	Total/NA	Water	310.1	
680-134783-3	ESL-MW-D1-0217	Total/NA	Water	310.1	
680-134783-5	ESL-MW-A-0217	Total/NA	Water	310.1	
680-134783-7	CPA-MW-5D-0217	Total/NA	Water	310.1	
MB 680-467469/7	Method Blank	Total/NA	Water	310.1	
LCS 680-467469/8	Lab Control Sample	Total/NA	Water	310.1	
LCSD 680-467469/34	Lab Control Sample Dup	Total/NA	Water	310.1	

Analysis Batch: 467635

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134783-1	PM1D-0217	Total/NA	Water	375.4	
680-134783-3	ESL-MW-D1-0217	Total/NA	Water	375.4	
680-134783-5	ESL-MW-A-0217	Total/NA	Water	375.4	

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QC Association Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1
SDG: KPS185

General Chemistry (Continued)

Analysis Batch: 467635 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134783-7	CPA-MW-5D-0217	Total/NA	Water	375.4	
MB 680-467635/5	Method Blank	Total/NA	Water	375.4	
LCS 680-467635/6	Lab Control Sample	Total/NA	Water	375.4	
LCSD 680-467635/10	Lab Control Sample Dup	Total/NA	Water	375.4	
680-134783-1 MS	PM1D-0217	Total/NA	Water	375.4	
680-134783-1 MSD	PM1D-0217	Total/NA	Water	375.4	
680-134783-3 MS	ESL-MW-D1-0217	Total/NA	Water	375.4	
680-134783-3 MSD	ESL-MW-D1-0217	Total/NA	Water	375.4	

Analysis Batch: 468131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134783-1	PM1D-0217	Total/NA	Water	325.2	
680-134783-3	ESL-MW-D1-0217	Total/NA	Water	325.2	
680-134783-5	ESL-MW-A-0217	Total/NA	Water	325.2	
680-134783-7	CPA-MW-5D-0217	Total/NA	Water	325.2	
MB 680-468131/1	Method Blank	Total/NA	Water	325.2	
LCS 680-468131/2	Lab Control Sample	Total/NA	Water	325.2	
LCSD 680-468131/5	Lab Control Sample Dup	Total/NA	Water	325.2	

Analysis Batch: 468191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134783-1	PM1D-0217	Total/NA	Water	415.1	
680-134783-3	ESL-MW-D1-0217	Total/NA	Water	415.1	
680-134783-5	ESL-MW-A-0217	Total/NA	Water	415.1	
680-134783-7	CPA-MW-5D-0217	Total/NA	Water	415.1	
MB 680-468191/2	Method Blank	Total/NA	Water	415.1	
LCS 680-468191/3	Lab Control Sample	Total/NA	Water	415.1	
LCSD 680-468191/4	Lab Control Sample Dup	Total/NA	Water	415.1	
680-134783-1 MS	PM1D-0217	Total/NA	Water	415.1	
680-134783-1 MSD	PM1D-0217	Total/NA	Water	415.1	

Analysis Batch: 468704

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134783-2	PM1D-F(0.2)-0217	Dissolved	Water	415.1	
680-134783-4	ESL-MW-D1-F(0.2)-0217	Dissolved	Water	415.1	
680-134783-6	ESL-MW-A-F(0.2)-0217	Dissolved	Water	415.1	
680-134783-8	CPA-MW-5D-F(0.2)-0217	Dissolved	Water	415.1	
MB 680-468704/2	Method Blank	Dissolved	Water	415.1	
LCS 680-468704/3	Lab Control Sample	Dissolved	Water	415.1	
LCSD 680-468704/4	Lab Control Sample Dup	Dissolved	Water	415.1	
680-134783-2 MS	PM1D-F(0.2)-0217	Dissolved	Water	415.1	
680-134783-2 MSD	PM1D-F(0.2)-0217	Dissolved	Water	415.1	

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Lab Chronicle

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1
SDG: KPS185

Client Sample ID: PM1D-0217

Lab Sample ID: 680-134783-1

Date Collected: 01/30/17 10:58

Matrix: Water

Date Received: 01/31/17 09:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	468284	02/08/17 21:26	CEJ	TAL SAV
Total/NA	Analysis	RSK-175		1	468340	02/09/17 14:44	JJW	TAL SAV
Total Recoverable	Prep	3005A			467537	02/02/17 11:01	AJR	TAL SAV
Total Recoverable	Analysis	6010C		1	467842	02/04/17 05:05	BCB	TAL SAV
Total/NA	Analysis	310.1		1	467469	02/01/17 15:38	JCM	TAL SAV
Total/NA	Analysis	325.2		5	468131	02/07/17 12:35	ALS	TAL SAV
Total/NA	Analysis	353.2		1	467226	01/31/17 12:30	GRX	TAL SAV
Total/NA	Analysis	375.4		20	467635	02/03/17 07:26	ALS	TAL SAV
Total/NA	Analysis	415.1		1	468191	02/07/17 17:02	KLD	TAL SAV

Client Sample ID: PM1D-F(0.2)-0217

Lab Sample ID: 680-134783-2

Date Collected: 01/30/17 10:58

Matrix: Water

Date Received: 01/31/17 09:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			467537	02/02/17 11:01	AJR	TAL SAV
Dissolved	Analysis	6010C		1	467842	02/04/17 05:10	BCB	TAL SAV
Dissolved	Analysis	415.1		1	468704	02/11/17 03:08	KLD	TAL SAV

Client Sample ID: ESL-MW-D1-0217

Lab Sample ID: 680-134783-3

Date Collected: 01/30/17 12:15

Matrix: Water

Date Received: 01/31/17 09:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	468284	02/08/17 21:47	CEJ	TAL SAV
Total/NA	Analysis	8260B	DL	2	468311	02/09/17 10:49	CEJ	TAL SAV
Total/NA	Analysis	RSK-175		1	468340	02/09/17 14:57	JJW	TAL SAV
Total Recoverable	Prep	3005A			467537	02/02/17 11:01	AJR	TAL SAV
Total Recoverable	Analysis	6010C		1	467842	02/04/17 05:14	BCB	TAL SAV
Total/NA	Analysis	310.1		1	467469	02/01/17 15:48	JCM	TAL SAV
Total/NA	Analysis	325.2		2	468131	02/07/17 11:38	ALS	TAL SAV
Total/NA	Analysis	353.2		1	467226	01/31/17 12:27	GRX	TAL SAV
Total/NA	Analysis	375.4		20	467635	02/02/17 15:16	ALS	TAL SAV
Total/NA	Analysis	415.1		1	468191	02/07/17 20:30	KLD	TAL SAV

Client Sample ID: ESL-MW-D1-F(0.2)-0217

Lab Sample ID: 680-134783-4

Date Collected: 01/30/17 12:15

Matrix: Water

Date Received: 01/31/17 09:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			467537	02/02/17 11:01	AJR	TAL SAV

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TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1
SDG: KPS185

Client Sample ID: ESL-MW-D1-F(0.2)-0217

Lab Sample ID: 680-134783-4

Date Collected: 01/30/17 12:15

Matrix: Water

Date Received: 01/31/17 09:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	6010C		1	467842	02/04/17 05:29	BCB	TAL SAV
Dissolved	Analysis	415.1		1	468704	02/11/17 04:01	KLD	TAL SAV

Client Sample ID: ESL-MW-A-0217

Lab Sample ID: 680-134783-5

Date Collected: 01/30/17 13:45

Matrix: Water

Date Received: 01/31/17 09:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	468311	02/09/17 10:29	CEJ	TAL SAV
Total/NA	Analysis	RSK-175		1	468340	02/09/17 15:10	JJW	TAL SAV
Total Recoverable	Prep	3005A			467537	02/02/17 11:01	AJR	TAL SAV
Total Recoverable	Analysis	6010C		1	467842	02/04/17 05:33	BCB	TAL SAV
Total/NA	Analysis	310.1		1	467469	02/01/17 15:56	JCM	TAL SAV
Total/NA	Analysis	325.2		2	468131	02/07/17 11:38	ALS	TAL SAV
Total/NA	Analysis	353.2		1	467226	01/31/17 12:32	GRX	TAL SAV
Total/NA	Analysis	375.4		20	467635	02/03/17 07:55	ALS	TAL SAV
Total/NA	Analysis	415.1		1	468191	02/07/17 20:47	KLD	TAL SAV

Client Sample ID: ESL-MW-A-F(0.2)-0217

Lab Sample ID: 680-134783-6

Date Collected: 01/30/17 13:45

Matrix: Water

Date Received: 01/31/17 09:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			467537	02/02/17 11:01	AJR	TAL SAV
Dissolved	Analysis	6010C		1	467842	02/04/17 05:38	BCB	TAL SAV
Dissolved	Analysis	415.1		1	468704	02/11/17 04:18	KLD	TAL SAV

Client Sample ID: CPA-MW-5D-0217

Lab Sample ID: 680-134783-7

Date Collected: 01/30/17 15:11

Matrix: Water

Date Received: 01/31/17 09:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		20	468284	02/08/17 22:28	CEJ	TAL SAV
Total/NA	Prep	3520C			467545	02/02/17 16:01	RBS	TAL SAV
Total/NA	Analysis	8270D		1	467761	02/03/17 19:44	JEM	TAL SAV
Total/NA	Analysis	RSK-175		1	468340	02/09/17 15:23	JJW	TAL SAV
Total Recoverable	Prep	3005A			467537	02/02/17 11:01	AJR	TAL SAV
Total Recoverable	Analysis	6010C		1	467842	02/04/17 05:43	BCB	TAL SAV
Total/NA	Analysis	310.1		1	467469	02/01/17 16:08	JCM	TAL SAV
Total/NA	Analysis	325.2		5	468131	02/07/17 12:33	ALS	TAL SAV
Total/NA	Analysis	353.2		1	467226	01/31/17 12:33	GRX	TAL SAV


 TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1
SDG: KPS185

Client Sample ID: CPA-MW-5D-0217

Lab Sample ID: 680-134783-7

Date Collected: 01/30/17 15:11

Matrix: Water

Date Received: 01/31/17 09:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	375.4		5	467635	02/03/17 07:29	ALS	TAL SAV
Total/NA	Analysis	415.1		1	468191	02/07/17 21:05	KLD	TAL SAV

Client Sample ID: CPA-MW-5D-F(0.2)-0217

Lab Sample ID: 680-134783-8

Date Collected: 01/30/17 15:11

Matrix: Water

Date Received: 01/31/17 09:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			467537	02/02/17 11:01	AJR	TAL SAV
Dissolved	Analysis	6010C		1	467842	02/04/17 05:47	BCB	TAL SAV
Dissolved	Analysis	415.1		1	468704	02/11/17 04:39	KLD	TAL SAV

Client Sample ID: 1Q17 LTM Trip Blank #1

Lab Sample ID: 680-134783-9

Date Collected: 01/30/17 00:00

Matrix: Water

Date Received: 01/31/17 09:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	468284	02/08/17 19:43	CEJ	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

AMD 4/10/17
TestAmerica Savannah

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-134783-1

SDG Number: KPS185

Login Number: 134783

List Source: TestAmerica Savannah

List Number: 1

Creator: Banda, Christy S

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Certification Summary

Client: Solutia Inc.

Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134783-1

SDG: KPS185

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-17
A2LA	ISO/IEC 17025		399.01	02-28-17
Alabama	State Program	4	41450	06-30-17
Alaska (UST)	State Program	10	UST-104	11-05-17
Arizona	State Program	9	AZ808	12-14-17
Arkansas DEQ	State Program	6	88-0692	02-01-18
California	State Program	9	2939	06-30-17
Colorado	State Program	8	N/A	12-31-17
Connecticut	State Program	1	PH-0161	03-31-17 *
Florida	NELAP	4	E87052	06-30-17
GA Dept. of Agriculture	State Program	4	N/A	06-12-17
Georgia	State Program	4	N/A	06-30-17
Georgia	State Program	4	803	06-30-17
Guam	State Program	9	15-005r	04-16-17 *
Hawaii	State Program	9	N/A	06-30-17
Illinois	NELAP	5	200022	11-30-17
Indiana	State Program	5	N/A	06-30-17
Iowa	State Program	7	353	06-30-17
Kentucky (DW)	State Program	4	90084	12-31-17
Kentucky (UST)	State Program	4	18	06-30-17
Kentucky (WW)	State Program	4	90084	12-31-17
L-A-B	DoD ELAP		L2463	09-22-19
Louisiana	NELAP	6	30690	06-30-17
Louisiana (DW)	NELAP	6	LA160019	12-31-17
Maine	State Program	1	GA00006	09-24-18
Maryland	State Program	3	250	12-31-17
Massachusetts	State Program	1	M-GA006	06-30-17
Michigan	State Program	5	9925	06-30-17
Mississippi	State Program	4	N/A	06-30-16 *
Nebraska	State Program	7	TestAmerica-Savannah	06-30-17
New Jersey	NELAP	2	GA769	06-30-17
New Mexico	State Program	6	N/A	06-30-17
New York	NELAP	2	10842	03-31-17 *
North Carolina (DW)	State Program	4	13701	07-31-17
North Carolina (WW/SW)	State Program	4	269	12-31-17
Oklahoma	State Program	6	9984	08-31-17
Pennsylvania	NELAP	3	68-00474	06-30-17
Puerto Rico	State Program	2	GA00006	12-31-17
South Carolina	State Program	4	98001	06-30-17
Tennessee	State Program	4	TN02961	06-30-17
Texas	NELAP	6	T104704185-16-9	11-30-17
US Fish & Wildlife	Federal		LE058448-0	10-31-17
USDA	Federal		SAV 3-04	06-11-17
Virginia	NELAP	3	460161	06-14-17
Washington	State Program	10	C805	06-10-17
West Virginia (DW)	State Program	3	9950C	12-31-17
West Virginia DEP	State Program	3	094	06-30-17
Wisconsin	State Program	5	999819810	08-31-17
Wyoming	State Program	8	8TMS-L	06-30-16 *

* Certification renewal pending - certification considered valid.

AMB 4/10/17
TestAmerica Savannah



**Level IV Data Validation Summary
Solutia Inc., W.G. Krummrich, Sauget, Illinois
1Q17 Long-Term Monitoring Program**

Company Name: Golder Associates
Project Name: WGK-1Q17 LTM
Reviewer: A. Derhake
Laboratory: TestAmerica
SDG#: KPS186
Matrix: Water

Project Manager: A. Derhake
Project Number: 140-3345
Sample Date: February 2017

Analytical Method: VOC (8260B), SVOC (8270D), Dissolved Gases (RSK-175), Metals (6010C), Alkalinity (310.1), Chloride (325.2), Nitrogen, Nitrate-Nitrite (353.2), Sulfate (375.4), TOC (415.1), and DOC (415.1)

Sample Names: GWE-5D-0217, GWE-5D-F(0.2)-0217, BSA-MW-5D-0217, BSA-MW-5D-F(0.2)-0217, CPA-MW-4D-0217, CPA-MW-4D-F(0.2)-0217, BSA-MW-4D-0217, BSA-MW-4D-F(0.2)-0217, 1Q17 LTM Trip Blank #2

Field Information**YES NO NA**

- a) Sampling dates noted? ☒ ☐ ☐
- b) Does the laboratory narrative indicate deficiencies? ☒ ☐ ☐

Comments:

VOC: Insufficient volume to perform MS/MSD associated with batch 468513.

Sample BSA-MW-4D required dilution prior to analysis, reporting limits were adjusted accordingly.

SVOC: No deficiencies noted.

Dissolved Gases: Insufficient volume to perform MS/MSD associated with batch 468340.

The CCV standards associated with batch 468923 were outside acceptance limits in the initial data and the re-analysis, both sets of data were qualified and reported.

Metals: No deficiencies noted.

Alkalinity: No deficiencies noted.

Chloride: Samples GWE-5D, BSA-MW-5D, CPA-MW-4D, and BSA-MW-4D required dilution prior to analysis, reporting limits were adjusted accordingly.

Nitrate-Nitrite as Nitrogen: No deficiencies noted.

Sulfate: Samples GWE-5D, CPA-MW-4D, and BSA-MW-4D required dilution prior to analysis, reporting limits were adjusted accordingly.

TOC: No deficiencies noted.

DOC: No deficiencies noted.

Chain-of-Custody (COC)**YES NO NA**

- a) Was the COC signed by both field and laboratory personnel? ☒ ☐ ☐
- b) Were samples received in good condition? ☒ ☐ ☐

Comments: Samples were received at 0.3°C and 0.9°C, outside the 4°C ± 2°C criteria.

**General****YES NO NA**

- a) Were hold times met for sample analysis?
- b) Were the correct preservatives used?
- c) Was the correct method used?
- d) Any sample dilutions noted?

☒ ☐ ☐

☒ ☐ ☐

☒ ☐ ☐

☒ ☐ ☐

Comments: Detections in diluted analysis were qualified.

GC/MS Instrument Performance Check (IPC) and Internal Standards (IS)**YES NO NA**

- a) IPC analyzed at the appropriate frequency and met the appropriate standards?
- b) Does BFB meet the ion abundance criteria?
- c) Internal Standard retention times and areas met appropriate criteria?

☒ ☐ ☐

☒ ☐ ☐

☒ ☐ ☐

Comments: None

Calibrations**YES NO NA**

- a) Initial calibration analyzed at the appropriate frequency and met the appropriate standards?
- b) Continuing calibrations analyzed at the appropriate frequency and met the appropriate standards?
- c) Initial calibration verifications and blanks analyzed at the appropriate frequency and met the appropriate standards?
- d) Continuing calibration verifications and blanks analyzed at the appropriate frequency and met the appropriate standards?

☒ ☐ ☐

☒ ☐ ☐

☐ ☒ ☐

☐ ☒ ☐

Comments: Some compounds did not meet calibration requirements; however, calibration criteria were met by analytes of interest. No data qualification was required.

Blanks**YES NO NA**

- a) Were blanks (trip, equipment, method) performed at required frequency?
- b) Were analytes detected in any blanks?

☒ ☐ ☐

☐ ☒ ☐

Comments: None

Matrix Spike/Matrix Spike Duplicate (MS/MSD)**YES NO NA**

- a) Was MS/MSD accuracy criteria met?
- b) Was MS/MSD precision criteria met?

☒ ☐ ☐

☒ ☐ ☐

Comments: None

Laboratory Control Sample (LCS)**YES NO NA**

- a) LCS analyzed at the appropriate frequency and met appropriate standards?

☒ ☐ ☐

Comments: None

Surrogate (System Monitoring) Compounds**YES NO NA**

- a) Surrogate compounds analyzed at the appropriate frequency and met appropriate standards?

☒ ☐ ☐

Comments: None

**Duplicates****YES NO NA**

a) Were field duplicates collected?

☐ ☒ ☐

b) Was field duplicate precision criteria met?

☐ ☐ ☒**Comments:** None**Additional Comments:** None**Qualifications:**

Quality Control Issue	Compound(s)	Qualifier	Samples Affected
Compounds analyzed at a dilution	Chlorobenzene, 1,4-Dichlorobenzene, Chloride, and Sulfate	D	BSA-MW-4D, GWE-5D, BSA-MW-5D, and CPA-MW-4D

SDG KPS186

Sample Results from:

**GWE-5D
BSA-MW-5D
CPA-MW-4D
BSA-MW-4D**

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-134841-1
TestAmerica Sample Delivery Group: KPS186
Client Project/Site: 1Q17 LTM GW Sampling-1403345
Revision: 1

For:
Solutia Inc.
575 Maryville Centre Dr.
Saint Louis, Missouri 63141

Attn: Mr. Jerry Rinaldi

Kathryn Smith

Authorized for release by:
4/7/2017 6:25:46 PM

Kathryn Smith, Manager of Project Management
(912)354-7858
kathy.smith@testamericainc.com

LINKS

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results through

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www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

*KMS
4/10/17*

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Case Narrative

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

Job ID: 680-134841-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Solutia Inc.

Project: 1Q17 LTM GW Sampling-1403345

Report Number: 680-134841-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

This report was revised on 4/7/17 to correct the carbon dioxide method blank detection that was an error.

RECEIPT

The samples were received on 02/01/2017; the samples arrived in good condition, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.3° C and 0.9° C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples GWE-5D-0217 (680-134841-1), BSA-MW-5D-0217 (680-134841-3), CPA-MW-4D-0217 (680-134841-5), BSA-MW-4D-0217 (680-134841-7) and 1Q17 LTM Trip Blank #2 (680-134841-9) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 02/09/2017 and 02/10/2017.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-468513.

Sample BSA-MW-4D-0217 (680-134841-7)[20X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SEMIVOLATILE ORGANIC COMPOUNDS (AQUEOUS)

Samples BSA-MW-5D-0217 (680-134841-3), CPA-MW-4D-0217 (680-134841-5) and BSA-MW-4D-0217 (680-134841-7) were analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 02/02/2017 and analyzed on 02/03/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED GASES

Samples GWE-5D-0217 (680-134841-1), BSA-MW-5D-0217 (680-134841-3), CPA-MW-4D-0217 (680-134841-5) and BSA-MW-4D-0217 (680-134841-7) were analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 02/09/2017, 02/14/2017 and 02/17/2017.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-468340. Laboratory Control Samples and Laboratory Control Samples Duplicate were performed to demonstrate precision.

The closing continuing calibration verification (CCV) standards associated with batch 680-468923 failed to meet acceptance limits. The samples BSA-MW-5D-0217 (680-134841-3), CPA-MW-4D-0217 (680-134841-5) and BSA-MW-4D-0217 (680-134841-7) were re-analyzed following a successful CCV and produced similar results but were outside of their analytical holding time. Both sets of data have been qualified and reported.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP)

Case Narrative

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

Job ID: 680-134841-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

Samples GWE-5D-F(0.2)-0217 (680-134841-2), BSA-MW-5D-F(0.2)-0217 (680-134841-4), CPA-MW-4D-F(0.2)-0217 (680-134841-6) and BSA-MW-4D-F(0.2)-0217 (680-134841-8) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 02/02/2017 and analyzed on 02/04/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP)

Samples GWE-5D-0217 (680-134841-1), BSA-MW-5D-0217 (680-134841-3), CPA-MW-4D-0217 (680-134841-5) and BSA-MW-4D-0217 (680-134841-7) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 02/02/2017 and analyzed on 02/04/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ALKALINITY

Samples GWE-5D-0217 (680-134841-1), BSA-MW-5D-0217 (680-134841-3), CPA-MW-4D-0217 (680-134841-5) and BSA-MW-4D-0217 (680-134841-7) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 02/02/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

CHLORIDE

Samples GWE-5D-0217 (680-134841-1), BSA-MW-5D-0217 (680-134841-3), CPA-MW-4D-0217 (680-134841-5) and BSA-MW-4D-0217 (680-134841-7) were analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 02/07/2017.

Samples GWE-5D-0217 (680-134841-1)[5X], BSA-MW-5D-0217 (680-134841-3)[5X], CPA-MW-4D-0217 (680-134841-5)[5X] and BSA-MW-4D-0217 (680-134841-7)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

NITRATE-NITRITE AS NITROGEN

Samples GWE-5D-0217 (680-134841-1), BSA-MW-5D-0217 (680-134841-3), CPA-MW-4D-0217 (680-134841-5) and BSA-MW-4D-0217 (680-134841-7) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 02/01/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SULFATE

Samples GWE-5D-0217 (680-134841-1), BSA-MW-5D-0217 (680-134841-3), CPA-MW-4D-0217 (680-134841-5) and BSA-MW-4D-0217 (680-134841-7) were analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 02/03/2017.

Samples GWE-5D-0217 (680-134841-1)[20X], CPA-MW-4D-0217 (680-134841-5)[5X] and BSA-MW-4D-0217 (680-134841-7)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL ORGANIC CARBON

Samples GWE-5D-0217 (680-134841-1), BSA-MW-5D-0217 (680-134841-3), CPA-MW-4D-0217 (680-134841-5) and BSA-MW-4D-0217 (680-134841-7) were analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 02/07/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED ORGANIC CARBON (DOC)

Samples GWE-5D-F(0.2)-0217 (680-134841-2), BSA-MW-5D-F(0.2)-0217 (680-134841-4), CPA-MW-4D-F(0.2)-0217 (680-134841-6) and BSA-MW-4D-F(0.2)-0217 (680-134841-8) were analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 02/11/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Solutia Inc.

Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1

SDG: KPS186

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-134841-1	GWE-5D-0217	Water	01/31/17 10:14	02/01/17 09:00
680-134841-2	GWE-5D-F(0.2)-0217	Water	01/31/17 10:14	02/01/17 09:00
680-134841-3	BSA-MW-5D-0217	Water	01/31/17 11:48	02/01/17 09:00
680-134841-4	BSA-MW-5D-F(0.2)-0217	Water	01/31/17 11:48	02/01/17 09:00
680-134841-5	CPA-MW-4D-0217	Water	01/31/17 13:23	02/01/17 09:00
680-134841-6	CPA-MW-4D-F(0.2)-0217	Water	01/31/17 13:23	02/01/17 09:00
680-134841-7	BSA-MW-4D-0217	Water	01/31/17 14:40	02/01/17 09:00
680-134841-8	BSA-MW-4D-F(0.2)-0217	Water	01/31/17 14:40	02/01/17 09:00
680-134841-9	1Q17 LTM Trip Blank #2	Water	01/31/17 00:00	02/01/17 09:00

ARM 4/10/17
TestAmerica Savannah

Method Summary

Client: Solutia Inc.

Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1

SDG: KPS186

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
310.1	Alkalinity	MCAWW	TAL SAV
325.2	Chloride	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV
375.4	Sulfate	MCAWW	TAL SAV
415.1	TOC	MCAWW	TAL SAV
415.1	DOC	MCAWW	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

AMM 4/10/17

TestAmerica Savannah

Definitions/Glossary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
F1	MS and/or MSD Recovery is outside acceptance limits.

GC VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
H	Sample was prepped or analyzed beyond the specified holding time

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)


 TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

Client Sample ID: GWE-5D-0217

Lab Sample ID: 680-134841-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	6.0		1.0		ug/L	1		8260B	Total/NA
Chlorobenzene	200		1.0		ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	3.8		1.0		ug/L	1		8260B	Total/NA
1,3-Dichlorobenzene	1.1		1.0		ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	25		1.0		ug/L	1		8260B	Total/NA
Methane	62		0.58		ug/L	1		RSK-175	Total/NA
Iron	14		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.42		0.010		mg/L	1		6010C	Total Recoverable
Chloride	95	D	5.0		mg/L	5		325.2	Total/NA
Sulfate	460	D	100		mg/L	20		375.4	Total/NA
Total Organic Carbon	3.2		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	370		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	40		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: GWE-5D-F(0.2)-0217

Lab Sample ID: 680-134841-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	15		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.43		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	3.2		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: BSA-MW-5D-0217

Lab Sample ID: 680-134841-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	100		1.0		ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	1.2		1.0		ug/L	1		8260B	Total/NA
Ethane	11		1.1		ug/L	1		RSK-175	Total/NA
Methane (TCD)	6900		390		ug/L	1		RSK-175	Total/NA
Ethane - RA	11		1.1		ug/L	1		RSK-175	Total/NA
Methane (TCD) - RA	7000		390		ug/L	1		RSK-175	Total/NA
Iron	11		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.26		0.010		mg/L	1		6010C	Total Recoverable
Chloride	180	D	5.0		mg/L	5		325.2	Total/NA
Total Organic Carbon	8.4		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	650		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	48		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: BSA-MW-5D-F(0.2)-0217

Lab Sample ID: 680-134841-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	11		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.25		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	8.3		1.0		mg/L	1		415.1	Dissolved

This Detection Summary does not include radiochemical test results.

KMD 4/10/17
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

Client Sample ID: CPA-MW-4D-0217

Lab Sample ID: 680-134841-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	180		1.0		ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	2.5		1.0		ug/L	1		8260B	Total/NA
4-Chloroaniline	120		20		ug/L	1		8270D	Total/NA
Ethane	17		1.1		ug/L	1		RSK-175	Total/NA
Methane (TCD)	16000		390		ug/L	1		RSK-175	Total/NA
Ethane - RA	16 H		1.1		ug/L	1		RSK-175	Total/NA
Methane (TCD) - RA	14000 H		390		ug/L	1		RSK-175	Total/NA
Iron	16		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.43		0.010		mg/L	1		6010C	Total Recoverable
Chloride	96	D	5.0		mg/L	5		325.2	Total/NA
Sulfate	130	D	25		mg/L	5		375.4	Total/NA
Total Organic Carbon	7.9		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	670		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	56		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: CPA-MW-4D-F(0.2)-0217

Lab Sample ID: 680-134841-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	16		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.44		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	7.8		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: BSA-MW-4D-0217

Lab Sample ID: 680-134841-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	1600	D	20		ug/L	20		8260B	Total/NA
1,4-Dichlorobenzene	55	D	20		ug/L	20		8260B	Total/NA
1,4-Dioxane	13		9.8		ug/L	1		8270D	Total/NA
2-Chlorophenol	16		9.8		ug/L	1		8270D	Total/NA
Ethane	2.3		1.1		ug/L	1		RSK-175	Total/NA
Methane	67		0.58		ug/L	1		RSK-175	Total/NA
Ethane - RA	3.0 H		1.1		ug/L	1		RSK-175	Total/NA
Methane - RA	64 H		0.58		ug/L	1		RSK-175	Total/NA
Iron	7.6		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.54		0.010		mg/L	1		6010C	Total Recoverable
Chloride	220	D	5.0		mg/L	5		325.2	Total/NA
Sulfate	13	D	10		mg/L	2		375.4	Total/NA
Total Organic Carbon	4.8		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	530		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	45		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: BSA-MW-4D-F(0.2)-0217

Lab Sample ID: 680-134841-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	7.8		0.050		mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

AWD 4/10/17
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

Client Sample ID: BSA-MW-4D-F(0.2)-0217 (Continued)

Lab Sample ID: 680-134841-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese, Dissolved	0.55		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	4.8		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: 1Q17 LTM Trip Blank #2

Lab Sample ID: 680-134841-9

No Detections.

This Detection Summary does not include radiochemical test results.

KMD 4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

Client Sample ID: GWE-5D-0217

Lab Sample ID: 680-134841-1

Date Collected: 01/31/17 10:14

Matrix: Water

Date Received: 02/01/17 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	6.0		1.0		ug/L			02/10/17 15:19	1
Chlorobenzene	200		1.0		ug/L			02/10/17 15:19	1
1,2-Dichlorobenzene	3.8		1.0		ug/L			02/10/17 15:19	1
1,3-Dichlorobenzene	1.1		1.0		ug/L			02/10/17 15:19	1
1,4-Dichlorobenzene	25		1.0		ug/L			02/10/17 15:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 120		02/10/17 15:19	1
1,2-Dichloroethane-d4 (Surr)	88		73 - 131		02/10/17 15:19	1
Dibromofluoromethane (Surr)	94		80 - 122		02/10/17 15:19	1
4-Bromofluorobenzene (Surr)	92		80 - 120		02/10/17 15:19	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			02/09/17 17:58	1
Ethylene	1.0	U	1.0		ug/L			02/09/17 17:58	1
Methane	62		0.58		ug/L			02/09/17 17:58	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	14		0.050		mg/L		02/02/17 11:01	02/04/17 03:49	1
Manganese	0.42		0.010		mg/L		02/02/17 11:01	02/04/17 03:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	95	D	5.0		mg/L			02/07/17 12:35	5
Nitrate as N	0.050	U	0.050		mg/L			02/01/17 16:17	1
Sulfate	460	D	100		mg/L			02/03/17 07:29	20
Total Organic Carbon	3.2		1.0		mg/L			02/07/17 21:22	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	370		5.0		mg/L			02/02/17 19:30	1
Carbon Dioxide, Free	40		5.0		mg/L			02/02/17 19:30	1

AWD 4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

Client Sample ID: GWE-5D-F(0.2)-0217

Lab Sample ID: 680-134841-2

Date Collected: 01/31/17 10:14

Matrix: Water

Date Received: 02/01/17 09:00

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	15		0.050		mg/L		02/02/17 11:01	02/04/17 04:13	1
Manganese, Dissolved	0.43		0.010		mg/L		02/02/17 11:01	02/04/17 04:13	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	3.2		1.0		mg/L			02/11/17 04:59	1

AWD 4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

Client Sample ID: BSA-MW-5D-0217

Lab Sample ID: 680-134841-3

Date Collected: 01/31/17 11:48

Matrix: Water

Date Received: 02/01/17 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			02/09/17 11:10	1
Chlorobenzene	100		1.0		ug/L			02/09/17 11:10	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/09/17 11:10	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/09/17 11:10	1
1,4-Dichlorobenzene	1.2		1.0		ug/L			02/09/17 11:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		02/09/17 11:10	1
1,2-Dichloroethane-d4 (Surr)	105		73 - 131		02/09/17 11:10	1
Dibromofluoromethane (Surr)	107		80 - 122		02/09/17 11:10	1
4-Bromofluorobenzene (Surr)	93		80 - 120		02/09/17 11:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	9.8	U	9.8		ug/L		02/02/17 16:01	02/03/17 22:07	1
1,4-Dioxane	9.8	U	9.8		ug/L		02/02/17 16:01	02/03/17 22:07	1
2-Chlorophenol	9.8	U F1	9.8		ug/L		02/02/17 16:01	02/03/17 22:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	81		39 - 124	02/02/17 16:01	02/03/17 22:07	1
2-Fluorobiphenyl	71		32 - 113	02/02/17 16:01	02/03/17 22:07	1
2-Fluorophenol	54		26 - 109	02/02/17 16:01	02/03/17 22:07	1
Terphenyl-d14	29		10 - 126	02/02/17 16:01	02/03/17 22:07	1
Phenol-d5	59		27 - 110	02/02/17 16:01	02/03/17 22:07	1
Nitrobenzene-d5	68		32 - 118	02/02/17 16:01	02/03/17 22:07	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	11		1.1		ug/L			02/14/17 17:29	1
Ethylene	1.0	U	1.0		ug/L			02/14/17 17:29	1
Methane (TCD)	6900		390		ug/L			02/14/17 17:29	1

Method: RSK-175 - Dissolved Gases (GC) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	11	H	1.1		ug/L			02/17/17 13:10	1
Ethylene	1.0	U H	1.0		ug/L			02/17/17 13:10	1
Methane (TCD)	7000	H	390		ug/L			02/17/17 13:10	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	11		0.050		mg/L		02/02/17 11:01	02/04/17 04:18	1
Manganese	0.26		0.010		mg/L		02/02/17 11:01	02/04/17 04:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	180	P	5.0		mg/L			02/07/17 11:40	5
Nitrate as N	0.050	U	0.050		mg/L			02/01/17 16:19	1
Sulfate	5.0	U	5.0		mg/L			02/03/17 07:54	1
Total Organic Carbon	8.4		1.0		mg/L			02/07/17 21:37	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	650		5.0		mg/L			02/02/17 19:42	1

TestAmerica Savannah
RMO 4/10/17
4/7/2017

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

Client Sample ID: BSA-MW-5D-0217

Lab Sample ID: 680-134841-3

Date Collected: 01/31/17 11:48

Matrix: Water

Date Received: 02/01/17 09:00

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon Dioxide, Free	48		5.0		mg/L			02/02/17 19:42	1

1
2
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11
12
13
14
15

AWD d11017
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

Client Sample ID: BSA-MW-5D-F(0.2)-0217

Lab Sample ID: 680-134841-4

Date Collected: 01/31/17 11:48

Matrix: Water

Date Received: 02/01/17 09:00

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	11		0.050		mg/L		02/02/17 11:01	02/04/17 04:32	1
Manganese, Dissolved	0.25		0.010		mg/L		02/02/17 11:01	02/04/17 04:32	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	8.3		1.0		mg/L			02/11/17 05:17	1

AND 4/10/17

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

Client Sample ID: CPA-MW-4D-0217

Lab Sample ID: 680-134841-5

Date Collected: 01/31/17 13:23

Matrix: Water

Date Received: 02/01/17 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			02/09/17 11:30	1
Chlorobenzene	180		1.0		ug/L			02/09/17 11:30	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/09/17 11:30	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/09/17 11:30	1
1,4-Dichlorobenzene	2.5		1.0		ug/L			02/09/17 11:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		02/09/17 11:30	1
1,2-Dichloroethane-d4 (Surr)	108		73 - 131		02/09/17 11:30	1
Dibromofluoromethane (Surr)	111		80 - 122		02/09/17 11:30	1
4-Bromofluorobenzene (Surr)	94		80 - 120		02/09/17 11:30	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	9.8	U	9.8		ug/L		02/02/17 16:01	02/03/17 22:30	1
2-Chlorophenol	9.8	U	9.8		ug/L		02/02/17 16:01	02/03/17 22:30	1
4-Chloroaniline	120		20		ug/L		02/02/17 16:01	02/03/17 22:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	73		39 - 124	02/02/17 16:01	02/03/17 22:30	1
2-Fluorobiphenyl	62		32 - 113	02/02/17 16:01	02/03/17 22:30	1
2-Fluorophenol	51		26 - 109	02/02/17 16:01	02/03/17 22:30	1
Terphenyl-d14	24		10 - 126	02/02/17 16:01	02/03/17 22:30	1
Phenol-d5	54		27 - 110	02/02/17 16:01	02/03/17 22:30	1
Nitrobenzene-d5	58		32 - 118	02/02/17 16:01	02/03/17 22:30	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	17		1.1		ug/L			02/14/17 17:42	1
Ethylene	1.0	U	1.0		ug/L			02/14/17 17:42	1
Methane (TCD)	16000		390		ug/L			02/14/17 17:42	1

Method: RSK-175 - Dissolved Gases (GC) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	46 H		1.1		ug/L			02/17/17 13:23	1
Ethylene	1.0 U H		1.0		ug/L			02/17/17 13:23	1
Methane (TCD)	14000 H		390		ug/L			02/17/17 13:23	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	16		0.050		mg/L		02/02/17 11:01	02/04/17 04:37	1
Manganese	0.43		0.010		mg/L		02/02/17 11:01	02/04/17 04:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	96	D	5.0		mg/L			02/07/17 12:36	5
Nitrate as N	0.050	U	0.050		mg/L			02/01/17 16:38	1
Sulfate	130	D	25		mg/L			02/03/17 07:29	5
Total Organic Carbon	7.9		1.0		mg/L			02/07/17 21:55	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	670		5.0		mg/L			02/02/17 19:54	1

TestAmerica Savannah
AMD 4/10/17
4/7/2017

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

Client Sample ID: CPA-MW-4D-0217

Lab Sample ID: 680-134841-5

Date Collected: 01/31/17 13:23

Matrix: Water

Date Received: 02/01/17 09:00

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon Dioxide, Free	56		5.0		mg/L			02/02/17 19:54	1

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AWD 4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

Client Sample ID: CPA-MW-4D-F(0.2)-0217

Lab Sample ID: 680-134841-6

Date Collected: 01/31/17 13:23

Matrix: Water

Date Received: 02/01/17 09:00

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	16		0.050		mg/L		02/02/17 11:01	02/04/17 04:41	1
Manganese, Dissolved	0.44		0.010		mg/L		02/02/17 11:01	02/04/17 04:41	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	7.8		1.0		mg/L			02/11/17 05:37	1

AMO 4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

Client Sample ID: BSA-MW-4D-0217

Lab Sample ID: 680-134841-7

Date Collected: 01/31/17 14:40

Matrix: Water

Date Received: 02/01/17 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	20	U	20		ug/L			02/09/17 12:32	20
Chlorobenzene	1600	D	20		ug/L			02/09/17 12:32	20
1,2-Dichlorobenzene	20	U	20		ug/L			02/09/17 12:32	20
1,3-Dichlorobenzene	20	U	20		ug/L			02/09/17 12:32	20
1,4-Dichlorobenzene	55	D	20		ug/L			02/09/17 12:32	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		02/09/17 12:32	20
1,2-Dichloroethane-d4 (Surr)	103		73 - 131		02/09/17 12:32	20
Dibromofluoromethane (Surr)	105		80 - 122		02/09/17 12:32	20
4-Bromofluorobenzene (Surr)	95		80 - 120		02/09/17 12:32	20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	9.8	U	9.8		ug/L		02/02/17 16:01	02/03/17 22:54	1
1,4-Dioxane	13		9.8		ug/L		02/02/17 16:01	02/03/17 22:54	1
2-Chlorophenol	16		9.8		ug/L		02/02/17 16:01	02/03/17 22:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	79		39 - 124	02/02/17 16:01	02/03/17 22:54	1
2-Fluorobiphenyl	68		32 - 113	02/02/17 16:01	02/03/17 22:54	1
2-Fluorophenol	56		26 - 109	02/02/17 16:01	02/03/17 22:54	1
Terphenyl-d14	31		10 - 126	02/02/17 16:01	02/03/17 22:54	1
Phenol-d5	62		27 - 110	02/02/17 16:01	02/03/17 22:54	1
Nitrobenzene-d5	66		32 - 118	02/02/17 16:01	02/03/17 22:54	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	2.3		1.1		ug/L			02/14/17 17:55	1
Ethylene	1.0	U	1.0		ug/L			02/14/17 17:55	1
Methane	67		0.58		ug/L			02/14/17 17:55	1

Method: RSK-175 - Dissolved Gases (GC) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	3.0	H	1.1		ug/L			02/17/17 13:36	1
Ethylene	1.0	U H	1.0		ug/L			02/17/17 13:36	1
Methane	64	H	0.58		ug/L			02/17/17 13:36	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	7.6		0.050		mg/L		02/02/17 11:01	02/04/17 04:46	1
Manganese	0.54		0.010		mg/L		02/02/17 11:01	02/04/17 04:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	220	D	5.0		mg/L			02/07/17 11:40	5
Nitrate as N	0.050	U	0.050		mg/L			02/01/17 16:13	1
Sulfate	13	D	10		mg/L			02/03/17 08:01	2
Total Organic Carbon	4.8		1.0		mg/L			02/07/17 22:15	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	530		5.0		mg/L			02/02/17 20:04	1

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AND 4/10/17
4/7/2017

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

Client Sample ID: BSA-MW-4D-0217

Lab Sample ID: 680-134841-7

Date Collected: 01/31/17 14:40

Matrix: Water

Date Received: 02/01/17 09:00

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon Dioxide, Free	45		5.0		mg/L			02/02/17 20:04	1

1

2

3

4

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mm 4/6/17
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Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

Client Sample ID: BSA-MW-4D-F(0.2)-0217

Lab Sample ID: 680-134841-8

Date Collected: 01/31/17 14:40

Matrix: Water

Date Received: 02/01/17 09:00

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	7.8		0.050		mg/L		02/02/17 11:01	02/04/17 04:51	1
Manganese, Dissolved	0.55		0.010		mg/L		02/02/17 11:01	02/04/17 04:51	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	4.8		1.0		mg/L			02/11/17 05:58	1

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TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

Client Sample ID: 1Q17 LTM Trip Blank #2

Lab Sample ID: 680-134841-9

Date Collected: 01/31/17 00:00

Matrix: Water

Date Received: 02/01/17 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)										
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene	1.0	U	1.0		ug/L			02/09/17 09:06	1	
Chlorobenzene	1.0	U	1.0		ug/L			02/09/17 09:06	1	
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/09/17 09:06	1	
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/09/17 09:06	1	
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/09/17 09:06	1	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
Toluene-d8 (Surr)	99		80 - 120					02/09/17 09:06	1	
1,2-Dichloroethane-d4 (Surr)	92		73 - 131					02/09/17 09:06	1	
Dibromofluoromethane (Surr)	93		80 - 122					02/09/17 09:06	1	
4-Bromofluorobenzene (Surr)	94		80 - 120					02/09/17 09:06	1	

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Surrogate Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	12DCE (73-131)	DBFM (80-122)	BFB (80-120)
680-134841-1	GWE-5D-0217	102	88	94	92
680-134841-3	BSA-MW-5D-0217	99	105	107	93
680-134841-3 MS	BSA-MW-5D-0217	101	104	113	99
680-134841-3 MSD	BSA-MW-5D-0217	100	106	113	99
680-134841-5	CPA-MW-4D-0217	100	108	111	94
680-134841-7	BSA-MW-4D-0217	98	103	105	95
680-134841-9	1Q17 LTM Trip Blank #2	99	92	93	94
LCS 680-468311/4	Lab Control Sample	100	81	91	97
LCS 680-468513/5	Lab Control Sample	102	96	103	95
LCSD 680-468311/5	Lab Control Sample Dup	102	80	89	98
LCSD 680-468513/6	Lab Control Sample Dup	100	89	98	96
MB 680-468311/9	Method Blank	98	99	100	94
MB 680-468513/10	Method Blank	98	101	105	93

Surrogate Legend

TOL = Toluene-d8 (Surr)
12DCE = 1,2-Dichloroethane-d4 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TBP (39-124)	FBP (32-113)	2FP (26-109)	TPH (10-126)	PHL (27-110)	NBZ (32-118)
680-134841-3	BSA-MW-5D-0217	81	71	54	29	59	68
680-134841-3 MS	BSA-MW-5D-0217	81	72	62	35	65	68
680-134841-3 MSD	BSA-MW-5D-0217	80	70	57	32	60	66
680-134841-5	CPA-MW-4D-0217	73	62	51	24	54	58
680-134841-7	BSA-MW-4D-0217	79	68	56	31	62	66
LCS 680-467545/12-A	Lab Control Sample	80	72	64	67	62	71
MB 680-467545/11-A	Method Blank	83	70	62	62	60	69

Surrogate Legend

TBP = 2,4,6-Tribromophenol
FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol
TPH = Terphenyl-d14
PHL = Phenol-d5
NBZ = Nitrobenzene-d5

AMP 4/10/17

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

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

Lab Sample ID: MB 680-468311/9

Matrix: Water

Analysis Batch: 468311

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U			1.0		ug/L			02/09/17 08:46	1
Chlorobenzene	1.0	U			1.0		ug/L			02/09/17 08:46	1
1,2-Dichlorobenzene	1.0	U			1.0		ug/L			02/09/17 08:46	1
1,3-Dichlorobenzene	1.0	U			1.0		ug/L			02/09/17 08:46	1
1,4-Dichlorobenzene	1.0	U			1.0		ug/L			02/09/17 08:46	1

Surrogate	MB	MB	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98				80 - 120		02/09/17 08:46	1
1,2-Dichloroethane-d4 (Surr)	99				73 - 131		02/09/17 08:46	1
Dibromofluoromethane (Surr)	100				80 - 122		02/09/17 08:46	1
4-Bromofluorobenzene (Surr)	94				80 - 120		02/09/17 08:46	1

Lab Sample ID: LCS 680-468311/4

Matrix: Water

Analysis Batch: 468311

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike	LCS	LCS	Result	Qualifier	Unit	D	%Rec	%Rec.	Limits
Benzene	Added	Result	Qualifier			ug/L		98		80 - 120
Chlorobenzene	50.0	49.2				ug/L		100		80 - 120
1,2-Dichlorobenzene	50.0	50.2				ug/L		103		80 - 120
1,3-Dichlorobenzene	50.0	51.5				ug/L		104		80 - 120
1,4-Dichlorobenzene	50.0	51.8				ug/L		102		80 - 120

Surrogate	LCS	LCS	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	100				80 - 120
1,2-Dichloroethane-d4 (Surr)	81				73 - 131
Dibromofluoromethane (Surr)	91				80 - 122
4-Bromofluorobenzene (Surr)	97				80 - 120

Lab Sample ID: LCSD 680-468311/5

Matrix: Water

Analysis Batch: 468311

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike	LCSD	LCSD	Result	Qualifier	Unit	D	%Rec	%Rec.	Limits	RPD	Limit
Benzene	Added	Result	Qualifier			ug/L		99		80 - 120	1	20
Chlorobenzene	50.0	49.7				ug/L		102		80 - 120	1	20
1,2-Dichlorobenzene	50.0	50.8				ug/L		103		80 - 120	0	20
1,3-Dichlorobenzene	50.0	51.5				ug/L		103		80 - 120	0	20
1,4-Dichlorobenzene	50.0	51.6				ug/L		103		80 - 120	1	20

Surrogate	LCSD	LCSD	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	102				80 - 120
1,2-Dichloroethane-d4 (Surr)	80				73 - 131
Dibromofluoromethane (Surr)	89				80 - 122
4-Bromofluorobenzene (Surr)	98				80 - 120

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

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

Lab Sample ID: 680-134841-3 MS

Matrix: Water

Analysis Batch: 468311

Client Sample ID: BSA-MW-5D-0217

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	1.0	U	50.0	52.0		ug/L		104	80 - 120
Chlorobenzene	100		50.0	150		ug/L		99	80 - 120
1,2-Dichlorobenzene	1.0	U	50.0	50.4		ug/L		100	80 - 120
1,3-Dichlorobenzene	1.0	U	50.0	51.2		ug/L		102	80 - 120
1,4-Dichlorobenzene	1.2		50.0	51.7		ug/L		101	80 - 120
Surrogate	MS %Recovery	MS Qualifier	Limits						
Toluene-d8 (Surr)	101		80 - 120						
1,2-Dichloroethane-d4 (Surr)	104		73 - 131						
Dibromofluoromethane (Surr)	113		80 - 122						
4-Bromofluorobenzene (Surr)	99		80 - 120						

Lab Sample ID: 680-134841-3 MSD

Matrix: Water

Analysis Batch: 468311

Client Sample ID: BSA-MW-5D-0217

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Benzene	1.0	U	50.0	51.6		ug/L		103	80 - 120	1	20
Chlorobenzene	100		50.0	148		ug/L		96	80 - 120	1	20
1,2-Dichlorobenzene	1.0	U	50.0	52.0		ug/L		103	80 - 120	3	20
1,3-Dichlorobenzene	1.0	U	50.0	52.1		ug/L		104	80 - 120	2	20
1,4-Dichlorobenzene	1.2		50.0	52.7		ug/L		103	80 - 120	2	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
Toluene-d8 (Surr)	100		80 - 120								
1,2-Dichloroethane-d4 (Surr)	106		73 - 131								
Dibromofluoromethane (Surr)	113		80 - 122								
4-Bromofluorobenzene (Surr)	99		80 - 120								

Lab Sample ID: MB 680-468513/10

Matrix: Water

Analysis Batch: 468513

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			02/10/17 09:10	1
Chlorobenzene	1.0	U	1.0		ug/L			02/10/17 09:10	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/10/17 09:10	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/10/17 09:10	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/10/17 09:10	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120					02/10/17 09:10	1
1,2-Dichloroethane-d4 (Surr)	101		73 - 131					02/10/17 09:10	1
Dibromofluoromethane (Surr)	105		80 - 122					02/10/17 09:10	1
4-Bromofluorobenzene (Surr)	93		80 - 120					02/10/17 09:10	1

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

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

Lab Sample ID: LCS 680-468513/5

Matrix: Water

Analysis Batch: 468513

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	50.8		ug/L		102	80 - 120
Chlorobenzene	50.0	51.8		ug/L		104	80 - 120
1,2-Dichlorobenzene	50.0	52.1		ug/L		104	80 - 120
1,3-Dichlorobenzene	50.0	51.0		ug/L		102	80 - 120
1,4-Dichlorobenzene	50.0	51.1		ug/L		102	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	102		80 - 120
1,2-Dichloroethane-d4 (Surr)	96		73 - 131
Dibromofluoromethane (Surr)	103		80 - 122
4-Bromofluorobenzene (Surr)	95		80 - 120

Lab Sample ID: LCSD 680-468513/6

Matrix: Water

Analysis Batch: 468513

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	50.1		ug/L		100	80 - 120	1	20
Chlorobenzene	50.0	51.8		ug/L		104	80 - 120	0	20
1,2-Dichlorobenzene	50.0	51.1		ug/L		102	80 - 120	2	20
1,3-Dichlorobenzene	50.0	51.3		ug/L		103	80 - 120	1	20
1,4-Dichlorobenzene	50.0	51.4		ug/L		103	80 - 120	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	100		80 - 120
1,2-Dichloroethane-d4 (Surr)	89		73 - 131
Dibromofluoromethane (Surr)	98		80 - 122
4-Bromofluorobenzene (Surr)	96		80 - 120

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

Lab Sample ID: MB 680-467545/11-A

Matrix: Water

Analysis Batch: 467761

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 467545

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	10	U	10		ug/L		02/02/17 16:01	02/03/17 19:20	1
1,4-Dioxane	10	U	10		ug/L		02/02/17 16:01	02/03/17 19:20	1
2-Chlorophenol	10	U	10		ug/L		02/02/17 16:01	02/03/17 19:20	1
4-Chloroaniline	20	U	20		ug/L		02/02/17 16:01	02/03/17 19:20	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	83		39 - 124	02/02/17 16:01	02/03/17 19:20	1
2-Fluorobiphenyl	70		32 - 113	02/02/17 16:01	02/03/17 19:20	1
2-Fluorophenol	62		26 - 109	02/02/17 16:01	02/03/17 19:20	1
Terphenyl-d14	62		10 - 126	02/02/17 16:01	02/03/17 19:20	1
Phenol-d5	60		27 - 110	02/02/17 16:01	02/03/17 19:20	1

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

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

Lab Sample ID: MB 680-467545/11-A
Matrix: Water
Analysis Batch: 467761

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 467545

	MB MB	
Surrogate	%Recovery	Qualifier Limits
Nitrobenzene-d5	69	32 - 118

Prepared	Analyzed	Dil Fac
02/02/17 16:01	02/03/17 19:20	1

Lab Sample ID: LCS 680-467545/12-A
Matrix: Water
Analysis Batch: 467761

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 467545

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trichlorobenzene	100	66.2		ug/L		66	33 - 130
1,4-Dioxane	100	56.1		ug/L		56	22 - 130
2-Chlorophenol	100	68.6		ug/L		69	39 - 130
4-Chloroaniline	100	56.6		ug/L		57	42 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol	80		39 - 124
2-Fluorobiphenyl	72		32 - 113
2-Fluorophenol	64		26 - 109
Terphenyl-d14	67		10 - 126
Phenol-d5	62		27 - 110
Nitrobenzene-d5	71		32 - 118

Lab Sample ID: 680-134841-3 MS
Matrix: Water
Analysis Batch: 467761

Client Sample ID: BSA-MW-5D-0217
Prep Type: Total/NA
Prep Batch: 467545

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trichlorobenzene	9.8	U	96.3	60.2		ug/L		62	33 - 130
1,4-Dioxane	9.8	U	96.3	47.7		ug/L		49	22 - 130
2-Chlorophenol	9.8	U F1	96.3	66.6		ug/L		68	39 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
2,4,6-Tribromophenol	81		39 - 124
2-Fluorobiphenyl	72		32 - 113
2-Fluorophenol	62		26 - 109
Terphenyl-d14	35		10 - 126
Phenol-d5	65		27 - 110
Nitrobenzene-d5	68		32 - 118

Lab Sample ID: 680-134841-3 MSD
Matrix: Water
Analysis Batch: 467761

Client Sample ID: BSA-MW-5D-0217
Prep Type: Total/NA
Prep Batch: 467545

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trichlorobenzene	9.8	U	97.8	59.4		ug/L		61	33 - 130	1	50
1,4-Dioxane	9.8	U	97.8	46.4		ug/L		47	22 - 130	3	50
2-Chlorophenol	9.8	U F1	97.8	64.7		ug/L		65	39 - 130	3	50

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

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

Lab Sample ID: 680-134841-3 MSD
Matrix: Water
Analysis Batch: 467761

Client Sample ID: BSA-MW-5D-0217
Prep Type: Total/NA
Prep Batch: 467545

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
2,4,6-Tribromophenol	80		39 - 124
2-Fluorobiphenyl	70		32 - 113
2-Fluorophenol	57		26 - 109
Terphenyl-d14	32		10 - 126
Phenol-d5	60		27 - 110
Nitrobenzene-d5	66		32 - 118

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-468340/7
Matrix: Water
Analysis Batch: 468340

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Ethane	1.1	U	1.1		ug/L			02/09/17 10:03	1
Ethylene	1.0	U	1.0		ug/L			02/09/17 10:03	1
Methane	0.58	U	0.58		ug/L			02/09/17 10:03	1
Methane (TCD)	390	U	390		ug/L			02/09/17 10:03	1

Lab Sample ID: LCS 680-468340/3
Matrix: Water
Analysis Batch: 468340

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
							Limits	
Ethane	288	284		ug/L		98	75 - 125	
Ethylene	269	268		ug/L		99	75 - 125	

Lab Sample ID: LCS 680-468340/5
Matrix: Water
Analysis Batch: 468340

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
							Limits	
Methane (TCD)	1920	1830		ug/L		95	75 - 125	

Lab Sample ID: LCSD 680-468340/6
Matrix: Water
Analysis Batch: 468340

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike	LCSD	LCSD	Unit	D	%Rec	%Rec.	RPD	RPD
	Added	Result	Qualifier				Limits		Limits
Methane (TCD)	1920	1810		ug/L		94	75 - 125	2	30

Lab Sample ID: LCSD 680-468340/8
Matrix: Water
Analysis Batch: 468340

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

			Spike	LCSD	LCSD			%Rec.		RPD
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD
Ethane			288	296		ug/L		103	75 - 125	4
Ethylene			269	279		ug/L		104	75 - 125	4

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: MB 680-468923/11

Matrix: Water

Analysis Batch: 468923

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			02/14/17 16:07	1
Ethylene	1.0	U	1.0		ug/L			02/14/17 16:07	1
Methane	0.58	U	0.58		ug/L			02/14/17 16:07	1
Methane (TCD)	390	U	390		ug/L			02/14/17 16:07	1

Lab Sample ID: LCS 680-468923/5

Matrix: Water

Analysis Batch: 468923

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane (TCD)	1920	1890		ug/L		98	75 - 125

Lab Sample ID: LCS 680-468923/9

Matrix: Water

Analysis Batch: 468923

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	288	250		ug/L		87	75 - 125
Ethylene	269	236		ug/L		88	75 - 125

Lab Sample ID: LCSD 680-468923/10

Matrix: Water

Analysis Batch: 468923

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	288	249		ug/L		86	75 - 125	0	30
Ethylene	269	236		ug/L		88	75 - 125	0	30

Lab Sample ID: LCSD 680-468923/6

Matrix: Water

Analysis Batch: 468923

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane (TCD)	1920	1820		ug/L		95	75 - 125	4	30

Lab Sample ID: MB 680-469346/9

Matrix: Water

Analysis Batch: 469346

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			02/17/17 12:42	1
Ethylene	1.0	U	1.0		ug/L			02/17/17 12:42	1
Methane	0.58	U	0.58		ug/L			02/17/17 12:42	1
Methane (TCD)	390	U	390		ug/L			02/17/17 12:42	1

AMD 4/10/17
TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCS 680-469346/3

Matrix: Water

Analysis Batch: 469346

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	288	254		ug/L		88	75 - 125
Ethylene	269	237		ug/L		88	75 - 125

Lab Sample ID: LCS 680-469346/6

Matrix: Water

Analysis Batch: 469346

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane (TCD)	1920	1760		ug/L		91	75 - 125

Lab Sample ID: LCSD 680-469346/4

Matrix: Water

Analysis Batch: 469346

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	288	271		ug/L		94	75 - 125	7	30
Ethylene	269	252		ug/L		93	75 - 125	6	30

Lab Sample ID: LCSD 680-469346/7

Matrix: Water

Analysis Batch: 469346

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane (TCD)	1920	2030		ug/L		106	75 - 125	14	30

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-467537/1-A

Matrix: Water

Analysis Batch: 467842

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 467537

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.050	U	0.050		mg/L		02/02/17 11:01	02/04/17 03:40	1
Iron, Dissolved	0.050	U	0.050		mg/L		02/02/17 11:01	02/04/17 03:40	1
Manganese	0.010	U	0.010		mg/L		02/02/17 11:01	02/04/17 03:40	1
Manganese, Dissolved	0.010	U	0.010		mg/L		02/02/17 11:01	02/04/17 03:40	1

Lab Sample ID: LCS 680-467537/2-A

Matrix: Water

Analysis Batch: 467842

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 467537

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	5.00	5.07		mg/L		101	80 - 120
Iron, Dissolved	5.00	5.07		mg/L		101	80 - 120
Manganese	0.500	0.533		mg/L		107	80 - 120
Manganese, Dissolved	0.500	0.533		mg/L		107	80 - 120

AMC 4/10/17
TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 680-134841-1 MS

Matrix: Water

Analysis Batch: 467842

Client Sample ID: GWE-5D-0217

Prep Type: Total Recoverable

Prep Batch: 467537

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	14		5.00	19.2		mg/L		103	75 - 125
Iron, Dissolved	14		5.00	19.2		mg/L		103	75 - 125
Manganese	0.42		0.500	0.966		mg/L		109	75 - 125
Manganese, Dissolved	0.42		0.500	0.966		mg/L		109	75 - 125

Lab Sample ID: 680-134841-1 MSD

Matrix: Water

Analysis Batch: 467842

Client Sample ID: GWE-5D-0217

Prep Type: Total Recoverable

Prep Batch: 467537

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	14		5.00	18.8		mg/L		96	75 - 125	2	20
Iron, Dissolved	14		5.00	18.8		mg/L		96	75 - 125	2	20
Manganese	0.42		0.500	0.952		mg/L		106	75 - 125	2	20
Manganese, Dissolved	0.42		0.500	0.952		mg/L		106	75 - 125	2	20

Method: 310.1 - Alkalinity

Lab Sample ID: MB 680-467796/3

Matrix: Water

Analysis Batch: 467796

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0		mg/L			02/02/17 19:13	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			02/02/17 19:13	1

Lab Sample ID: LCS 680-467796/4

Matrix: Water

Analysis Batch: 467796

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	250	247		mg/L		99	80 - 120

Lab Sample ID: LCSD 680-467796/11

Matrix: Water

Analysis Batch: 467796

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	250	253		mg/L		101	80 - 120	2	30

Lab Sample ID: 680-134841-7 DU

Matrix: Water

Analysis Batch: 467796

Client Sample ID: BSA-MW-4D-0217

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	530		542		mg/L		2	30
Carbon Dioxide, Free	45		43.9		mg/L		2	30

AWD 4/10/17
TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

Method: 325.2 - Chloride

Lab Sample ID: MB 680-468131/1
Matrix: Water
Analysis Batch: 468131

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0		mg/L			02/07/17 11:23	1

Lab Sample ID: LCS 680-468131/2
Matrix: Water
Analysis Batch: 468131

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	26.2		mg/L		105	85 - 115

Lab Sample ID: LCSD 680-468131/5
Matrix: Water
Analysis Batch: 468131

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	25.0	26.1		mg/L		104	85 - 115	0	30

Lab Sample ID: 680-134841-1 MS
Matrix: Water
Analysis Batch: 468131

Client Sample ID: GWE-5D-0217
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	95		25.0	121		mg/L		106	85 - 115

Lab Sample ID: 680-134841-1 MSD
Matrix: Water
Analysis Batch: 468131

Client Sample ID: GWE-5D-0217
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	95		25.0	123		mg/L		113	85 - 115	1	30

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-467459/13
Matrix: Water
Analysis Batch: 467459

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			02/01/17 16:08	1

Lab Sample ID: LCS 680-467459/16
Matrix: Water
Analysis Batch: 467459

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.500	0.540		mg/L		108	75 - 125
Nitrate Nitrite as N	1.00	1.04		mg/L		104	90 - 110
Nitrite as N	0.500	0.500		mg/L		100	90 - 110

AWO 4/6/17
TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

Method: 353.2 - Nitrogen, Nitrate-Nitrite (Continued)

Lab Sample ID: 680-134841-7 MS

Matrix: Water

Analysis Batch: 467459

Client Sample ID: BSA-MW-4D-0217

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.050	U	0.500	0.541		mg/L		108	75 - 125
Nitrate Nitrite as N	0.050	U	1.00	1.06		mg/L		106	90 - 110
Nitrite as N	0.050	U	0.500	0.519		mg/L		104	90 - 110

Lab Sample ID: 680-134841-7 MSD

Matrix: Water

Analysis Batch: 467459

Client Sample ID: BSA-MW-4D-0217

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	0.050	U	0.500	0.553		mg/L		111	75 - 125	2	30
Nitrate Nitrite as N	0.050	U	1.00	1.06		mg/L		106	90 - 110	0	10
Nitrite as N	0.050	U	0.500	0.507		mg/L		101	90 - 110	2	10

Lab Sample ID: 680-134841-1 DU

Matrix: Water

Analysis Batch: 467459

Client Sample ID: GWE-5D-0217

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrate as N	0.050	U	0.050	U	mg/L		NC	30

Method: 375.4 - Sulfate

Lab Sample ID: MB 680-467635/5

Matrix: Water

Analysis Batch: 467635

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	5.0	U	5.0		mg/L			02/02/17 15:16	1

Lab Sample ID: LCS 680-467635/6

Matrix: Water

Analysis Batch: 467635

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	20.3		mg/L		101	75 - 125

Lab Sample ID: LCSD 680-467635/10

Matrix: Water

Analysis Batch: 467635

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	20.0	20.4		mg/L		102	75 - 125	1	30

AWD 4/10/17
TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

Method: 415.1 - DOC

Lab Sample ID: MB 680-468704/2

Matrix: Water

Analysis Batch: 468704

Client Sample ID: Method Blank

Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.0	U	1.0		mg/L			02/11/17 02:20	1

Lab Sample ID: LCS 680-468704/3

Matrix: Water

Analysis Batch: 468704

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	20.0	21.4		mg/L		107	80 - 120

Lab Sample ID: LCSD 680-468704/4

Matrix: Water

Analysis Batch: 468704

Client Sample ID: Lab Control Sample Dup

Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	20.0	21.6		mg/L		108	80 - 120	1	20

Method: 415.1 - TOC

Lab Sample ID: MB 680-468191/2

Matrix: Water

Analysis Batch: 468191

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.0	U	1.0		mg/L			02/07/17 16:16	1

Lab Sample ID: LCS 680-468191/3

Matrix: Water

Analysis Batch: 468191

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	20.0	21.1		mg/L		105	80 - 120

Lab Sample ID: LCSD 680-468191/4

Matrix: Water

Analysis Batch: 468191

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	20.0	21.1		mg/L		106	80 - 120	0	25

AWD 4/6/17
TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

GC/MS VOA

Analysis Batch: 468311

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134841-3	BSA-MW-5D-0217	Total/NA	Water	8260B	
680-134841-5	CPA-MW-4D-0217	Total/NA	Water	8260B	
680-134841-7	BSA-MW-4D-0217	Total/NA	Water	8260B	
680-134841-9	1Q17 LTM Trip Blank #2	Total/NA	Water	8260B	
MB 680-468311/9	Method Blank	Total/NA	Water	8260B	
LCS 680-468311/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-468311/5	Lab Control Sample Dup	Total/NA	Water	8260B	
680-134841-3 MS	BSA-MW-5D-0217	Total/NA	Water	8260B	
680-134841-3 MSD	BSA-MW-5D-0217	Total/NA	Water	8260B	

Analysis Batch: 468513

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134841-1	GWE-5D-0217	Total/NA	Water	8260B	
MB 680-468513/10	Method Blank	Total/NA	Water	8260B	
LCS 680-468513/5	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-468513/6	Lab Control Sample Dup	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 467545

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134841-3	BSA-MW-5D-0217	Total/NA	Water	3520C	
680-134841-5	CPA-MW-4D-0217	Total/NA	Water	3520C	
680-134841-7	BSA-MW-4D-0217	Total/NA	Water	3520C	
MB 680-467545/11-A	Method Blank	Total/NA	Water	3520C	
LCS 680-467545/12-A	Lab Control Sample	Total/NA	Water	3520C	
680-134841-3 MS	BSA-MW-5D-0217	Total/NA	Water	3520C	
680-134841-3 MSD	BSA-MW-5D-0217	Total/NA	Water	3520C	

Analysis Batch: 467761

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134841-3	BSA-MW-5D-0217	Total/NA	Water	8270D	467545
680-134841-5	CPA-MW-4D-0217	Total/NA	Water	8270D	467545
680-134841-7	BSA-MW-4D-0217	Total/NA	Water	8270D	467545
MB 680-467545/11-A	Method Blank	Total/NA	Water	8270D	467545
LCS 680-467545/12-A	Lab Control Sample	Total/NA	Water	8270D	467545
680-134841-3 MS	BSA-MW-5D-0217	Total/NA	Water	8270D	467545
680-134841-3 MSD	BSA-MW-5D-0217	Total/NA	Water	8270D	467545

GC VOA

Analysis Batch: 468340

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134841-1	GWE-5D-0217	Total/NA	Water	RSK-175	
MB 680-468340/7	Method Blank	Total/NA	Water	RSK-175	
LCS 680-468340/3	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-468340/5	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-468340/6	Lab Control Sample Dup	Total/NA	Water	RSK-175	
LCSD 680-468340/8	Lab Control Sample Dup	Total/NA	Water	RSK-175	

KMM 4/10/17
TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

GC VOA (Continued)

Analysis Batch: 468923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134841-3	BSA-MW-5D-0217	Total/NA	Water	RSK-175	
680-134841-5	CPA-MW-4D-0217	Total/NA	Water	RSK-175	
680-134841-7	BSA-MW-4D-0217	Total/NA	Water	RSK-175	
MB 680-468923/11	Method Blank	Total/NA	Water	RSK-175	
LCS 680-468923/5	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-468923/9	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-468923/10	Lab Control Sample Dup	Total/NA	Water	RSK-175	
LCSD 680-468923/6	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 469346

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134841-3 - RA	BSA-MW-5D-0217	Total/NA	Water	RSK-175	
680-134841-5 - RA	CPA-MW-4D-0217	Total/NA	Water	RSK-175	
680-134841-7 - RA	BSA-MW-4D-0217	Total/NA	Water	RSK-175	
MB 680-469346/9	Method Blank	Total/NA	Water	RSK-175	
LCS 680-469346/3	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-469346/6	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-469346/4	Lab Control Sample Dup	Total/NA	Water	RSK-175	
LCSD 680-469346/7	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Metals

Prep Batch: 467537

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134841-1	GWE-5D-0217	Total Recoverable	Water	3005A	
680-134841-2	GWE-5D-F(0.2)-0217	Dissolved	Water	3005A	
680-134841-3	BSA-MW-5D-0217	Total Recoverable	Water	3005A	
680-134841-4	BSA-MW-5D-F(0.2)-0217	Dissolved	Water	3005A	
680-134841-5	CPA-MW-4D-0217	Total Recoverable	Water	3005A	
680-134841-6	CPA-MW-4D-F(0.2)-0217	Dissolved	Water	3005A	
680-134841-7	BSA-MW-4D-0217	Total Recoverable	Water	3005A	
680-134841-8	BSA-MW-4D-F(0.2)-0217	Dissolved	Water	3005A	
MB 680-467537/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-467537/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
680-134841-1 MS	GWE-5D-0217	Total Recoverable	Water	3005A	
680-134841-1 MSD	GWE-5D-0217	Total Recoverable	Water	3005A	

Analysis Batch: 467842

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134841-1	GWE-5D-0217	Total Recoverable	Water	6010C	467537
680-134841-2	GWE-5D-F(0.2)-0217	Dissolved	Water	6010C	467537
680-134841-3	BSA-MW-5D-0217	Total Recoverable	Water	6010C	467537
680-134841-4	BSA-MW-5D-F(0.2)-0217	Dissolved	Water	6010C	467537
680-134841-5	CPA-MW-4D-0217	Total Recoverable	Water	6010C	467537
680-134841-6	CPA-MW-4D-F(0.2)-0217	Dissolved	Water	6010C	467537
680-134841-7	BSA-MW-4D-0217	Total Recoverable	Water	6010C	467537
680-134841-8	BSA-MW-4D-F(0.2)-0217	Dissolved	Water	6010C	467537
MB 680-467537/1-A	Method Blank	Total Recoverable	Water	6010C	467537
LCS 680-467537/2-A	Lab Control Sample	Total Recoverable	Water	6010C	467537
680-134841-1 MS	GWE-5D-0217	Total Recoverable	Water	6010C	467537

TestAmerica Savannah
4/10/17

QC Association Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

Metals (Continued)

Analysis Batch: 467842 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134841-1 MSD	GWE-5D-0217	Total Recoverable	Water	6010C	467537

General Chemistry

Analysis Batch: 467459

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134841-1	GWE-5D-0217	Total/NA	Water	353.2	
680-134841-3	BSA-MW-5D-0217	Total/NA	Water	353.2	
680-134841-5	CPA-MW-4D-0217	Total/NA	Water	353.2	
680-134841-7	BSA-MW-4D-0217	Total/NA	Water	353.2	
MB 680-467459/13	Method Blank	Total/NA	Water	353.2	
LCS 680-467459/16	Lab Control Sample	Total/NA	Water	353.2	
680-134841-7 MS	BSA-MW-4D-0217	Total/NA	Water	353.2	
680-134841-7 MSD	BSA-MW-4D-0217	Total/NA	Water	353.2	
680-134841-1 DU	GWE-5D-0217	Total/NA	Water	353.2	

Analysis Batch: 467635

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134841-1	GWE-5D-0217	Total/NA	Water	375.4	
680-134841-3	BSA-MW-5D-0217	Total/NA	Water	375.4	
680-134841-5	CPA-MW-4D-0217	Total/NA	Water	375.4	
680-134841-7	BSA-MW-4D-0217	Total/NA	Water	375.4	
MB 680-467635/5	Method Blank	Total/NA	Water	375.4	
LCS 680-467635/6	Lab Control Sample	Total/NA	Water	375.4	
LCSD 680-467635/10	Lab Control Sample Dup	Total/NA	Water	375.4	

Analysis Batch: 467796

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134841-1	GWE-5D-0217	Total/NA	Water	310.1	
680-134841-3	BSA-MW-5D-0217	Total/NA	Water	310.1	
680-134841-5	CPA-MW-4D-0217	Total/NA	Water	310.1	
680-134841-7	BSA-MW-4D-0217	Total/NA	Water	310.1	
MB 680-467796/3	Method Blank	Total/NA	Water	310.1	
LCS 680-467796/4	Lab Control Sample	Total/NA	Water	310.1	
LCSD 680-467796/11	Lab Control Sample Dup	Total/NA	Water	310.1	
680-134841-7 DU	BSA-MW-4D-0217	Total/NA	Water	310.1	

Analysis Batch: 468131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134841-1	GWE-5D-0217	Total/NA	Water	325.2	
680-134841-3	BSA-MW-5D-0217	Total/NA	Water	325.2	
680-134841-5	CPA-MW-4D-0217	Total/NA	Water	325.2	
680-134841-7	BSA-MW-4D-0217	Total/NA	Water	325.2	
MB 680-468131/1	Method Blank	Total/NA	Water	325.2	
LCS 680-468131/2	Lab Control Sample	Total/NA	Water	325.2	
LCSD 680-468131/5	Lab Control Sample Dup	Total/NA	Water	325.2	
680-134841-1 MS	GWE-5D-0217	Total/NA	Water	325.2	
680-134841-1 MSD	GWE-5D-0217	Total/NA	Water	325.2	

AWD 4/10/17
TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

General Chemistry (Continued)

Analysis Batch: 468191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134841-1	GWE-5D-0217	Total/NA	Water	415.1	
680-134841-3	BSA-MW-5D-0217	Total/NA	Water	415.1	
680-134841-5	CPA-MW-4D-0217	Total/NA	Water	415.1	
680-134841-7	BSA-MW-4D-0217	Total/NA	Water	415.1	
MB 680-468191/2	Method Blank	Total/NA	Water	415.1	
LCS 680-468191/3	Lab Control Sample	Total/NA	Water	415.1	
LCSD 680-468191/4	Lab Control Sample Dup	Total/NA	Water	415.1	

Analysis Batch: 468704

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134841-2	GWE-5D-F(0.2)-0217	Dissolved	Water	415.1	
680-134841-4	BSA-MW-5D-F(0.2)-0217	Dissolved	Water	415.1	
680-134841-6	CPA-MW-4D-F(0.2)-0217	Dissolved	Water	415.1	
680-134841-8	BSA-MW-4D-F(0.2)-0217	Dissolved	Water	415.1	
MB 680-468704/2	Method Blank	Dissolved	Water	415.1	
LCS 680-468704/3	Lab Control Sample	Dissolved	Water	415.1	
LCSD 680-468704/4	Lab Control Sample Dup	Dissolved	Water	415.1	

KWS 4/10/17
TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

Client Sample ID: GWE-5D-0217

Lab Sample ID: 680-134841-1

Date Collected: 01/31/17 10:14

Matrix: Water

Date Received: 02/01/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	468513	02/10/17 15:19	CEJ	TAL SAV
Total/NA	Analysis	RSK-175		1	468340	02/09/17 17:58	JJW	TAL SAV
Total Recoverable	Prep	3005A			467537	02/02/17 11:01	AJR	TAL SAV
Total Recoverable	Analysis	6010C		1	467842	02/04/17 03:49	BCB	TAL SAV
Total/NA	Analysis	310.1		1	467796	02/02/17 19:30	JCM	TAL SAV
Total/NA	Analysis	325.2		5	468131	02/07/17 12:35	ALS	TAL SAV
Total/NA	Analysis	353.2		1	467459	02/01/17 16:17	GRX	TAL SAV
Total/NA	Analysis	375.4		20	467635	02/03/17 07:29	ALS	TAL SAV
Total/NA	Analysis	415.1		1	468191	02/07/17 21:22	KLD	TAL SAV

Client Sample ID: GWE-5D-F(0.2)-0217

Lab Sample ID: 680-134841-2

Date Collected: 01/31/17 10:14

Matrix: Water

Date Received: 02/01/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			467537	02/02/17 11:01	AJR	TAL SAV
Dissolved	Analysis	6010C		1	467842	02/04/17 04:13	BCB	TAL SAV
Dissolved	Analysis	415.1		1	468704	02/11/17 04:59	KLD	TAL SAV

Client Sample ID: BSA-MW-5D-0217

Lab Sample ID: 680-134841-3

Date Collected: 01/31/17 11:48

Matrix: Water

Date Received: 02/01/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	468311	02/09/17 11:10	CEJ	TAL SAV
Total/NA	Prep	3520C			467545	02/02/17 16:01	RBS	TAL SAV
Total/NA	Analysis	8270D		1	467761	02/03/17 22:07	JEM	TAL SAV
Total/NA	Analysis	RSK-175		1	468923	02/14/17 17:29	JJW	TAL SAV
Total/NA	Analysis	RSK-175	RA	1	469346	02/17/17 13:10	SMC	TAL SAV
Total Recoverable	Prep	3005A			467537	02/02/17 11:01	AJR	TAL SAV
Total Recoverable	Analysis	6010C		1	467842	02/04/17 04:18	BCB	TAL SAV
Total/NA	Analysis	310.1		1	467796	02/02/17 19:42	JCM	TAL SAV
Total/NA	Analysis	325.2		5	468131	02/07/17 11:40	ALS	TAL SAV
Total/NA	Analysis	353.2		1	467459	02/01/17 16:19	GRX	TAL SAV
Total/NA	Analysis	375.4		1	467635	02/03/17 07:54	ALS	TAL SAV
Total/NA	Analysis	415.1		1	468191	02/07/17 21:37	KLD	TAL SAV

4/10/17
TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

Client Sample ID: BSA-MW-5D-F(0.2)-0217

Lab Sample ID: 680-134841-4

Date Collected: 01/31/17 11:48

Matrix: Water

Date Received: 02/01/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			467537	02/02/17 11:01	AJR	TAL SAV
Dissolved	Analysis	6010C		1	467842	02/04/17 04:32	BCB	TAL SAV
Dissolved	Analysis	415.1		1	468704	02/11/17 05:17	KLD	TAL SAV

Client Sample ID: CPA-MW-4D-0217

Lab Sample ID: 680-134841-5

Date Collected: 01/31/17 13:23

Matrix: Water

Date Received: 02/01/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	468311	02/09/17 11:30	CEJ	TAL SAV
Total/NA	Prep	3520C			467545	02/02/17 16:01	RBS	TAL SAV
Total/NA	Analysis	8270D		1	467761	02/03/17 22:30	JEM	TAL SAV
Total/NA	Analysis	RSK-175		1	468923	02/14/17 17:42	JJW	TAL SAV
Total/NA	Analysis	RSK-175	RA	1	469346	02/17/17 13:23	SMC	TAL SAV
Total Recoverable	Prep	3005A			467537	02/02/17 11:01	AJR	TAL SAV
Total Recoverable	Analysis	6010C		1	467842	02/04/17 04:37	BCB	TAL SAV
Total/NA	Analysis	310.1		1	467796	02/02/17 19:54	JCM	TAL SAV
Total/NA	Analysis	325.2		5	468131	02/07/17 12:36	ALS	TAL SAV
Total/NA	Analysis	353.2		1	467459	02/01/17 16:38	GRX	TAL SAV
Total/NA	Analysis	375.4		5	467635	02/03/17 07:29	ALS	TAL SAV
Total/NA	Analysis	415.1		1	468191	02/07/17 21:55	KLD	TAL SAV

Client Sample ID: CPA-MW-4D-F(0.2)-0217

Lab Sample ID: 680-134841-6

Date Collected: 01/31/17 13:23

Matrix: Water

Date Received: 02/01/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			467537	02/02/17 11:01	AJR	TAL SAV
Dissolved	Analysis	6010C		1	467842	02/04/17 04:41	BCB	TAL SAV
Dissolved	Analysis	415.1		1	468704	02/11/17 05:37	KLD	TAL SAV

Client Sample ID: BSA-MW-4D-0217

Lab Sample ID: 680-134841-7

Date Collected: 01/31/17 14:40

Matrix: Water

Date Received: 02/01/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		20	468311	02/09/17 12:32	CEJ	TAL SAV
Total/NA	Prep	3520C			467545	02/02/17 16:01	RBS	TAL SAV
Total/NA	Analysis	8270D		1	467761	02/03/17 22:54	JEM	TAL SAV
Total/NA	Analysis	RSK-175		1	468923	02/14/17 17:55	JJW	TAL SAV
Total/NA	Analysis	RSK-175	RA	1	469346	02/17/17 13:36	SMC	TAL SAV
Total Recoverable	Prep	3005A			467537	02/02/17 11:01	AJR	TAL SAV

Amo 4/10/17
TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

Client Sample ID: BSA-MW-4D-0217

Lab Sample ID: 680-134841-7

Date Collected: 01/31/17 14:40

Matrix: Water

Date Received: 02/01/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Analysis	6010C		1	467842	02/04/17 04:46	BCB	TAL SAV
Total/NA	Analysis	310.1		1	467796	02/02/17 20:04	JCM	TAL SAV
Total/NA	Analysis	325.2		5	468131	02/07/17 11:40	ALS	TAL SAV
Total/NA	Analysis	353.2		1	467459	02/01/17 16:13	GRX	TAL SAV
Total/NA	Analysis	375.4		2	467635	02/03/17 08:01	ALS	TAL SAV
Total/NA	Analysis	415.1		1	468191	02/07/17 22:15	KLD	TAL SAV

Client Sample ID: BSA-MW-4D-F(0.2)-0217

Lab Sample ID: 680-134841-8

Date Collected: 01/31/17 14:40

Matrix: Water

Date Received: 02/01/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			467537	02/02/17 11:01	AJR	TAL SAV
Dissolved	Analysis	6010C		1	467842	02/04/17 04:51	BCB	TAL SAV
Dissolved	Analysis	415.1		1	468704	02/11/17 05:58	KLD	TAL SAV

Client Sample ID: 1Q17 LTM Trip Blank #2

Lab Sample ID: 680-134841-9

Date Collected: 01/31/17 00:00

Matrix: Water

Date Received: 02/01/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	468311	02/09/17 09:06	CEJ	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

KMD 4/10/17
TestAmerica Savannah

TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Project Manager: Amanda Derhake
Tel/Fax: 636-724-9191

Site Contact: Samantha DiCenso
Lab Contact: Michele Kersey

Date: 1/31/17
Carrier: FedEx

COC No: 1 of COCs

Sampler: T. Goodwin
For Lab Use Only:
Walk-In Client:
Lab Sampling:
Job / SDG No.:

Sample Specific Notes

Analysis Turnaround Time
☐ CALENDAR DAYS ☐ WORKING DAYS
TAT If different from Below
☐ 2 weeks
☐ 1 week
☐ 2 days
☐ 1 day

Sample Type (C=Comp, G=Grab)
Sample Time
Sample Date
Matrix
of Cont.

Sample Identification
GWE-5D-0217
GWE-5D-F(0.2)-0217
BSA-MW-5D-0217
BSA-MW-5D-F(0.2)-0217
BSA-MW-5D-0217-M5
BSA-MW-5D-0217-M5D
CPA-MW-4D-0217
CPA-MW-4D-F(0.2)-0217
BSA-MW-4D-0217
BSA-MW-4D-F(0.2)-0217
IQ17 LTM Trip Bank #2

Sample Date
1/31/17
1014
1014
1148
1148
1148
1323
1323
1440
1440
—
—

Matrix
W
—
—
—
—
—
—
—
—
—
—
—
—

of Cont.
14
4
16
4
5
5
16
4
16
4
2
2

Filtered Sample (Y/N)
N
Y
N
Y
N
N
N
Y
N
Y
N
N

Performs MS/MSD (Y/N)
N
Y
N
Y
N
N
N
Y
N
Y
N
N

VOCs by 8260
3
—
3
—
3
3
3
—
3
—
2
—

SVOCs by 8270
1
—
1
—
1
1
1
—
1
—
—
—

Alk/CO2 by 310
1
—
1
—
1
1
1
—
1
—
—
—

Chloride by 325/Sulfate by 375
4
—
4
—
4
4
4
—
4
—
—
—

Dissolved Gases by RSK 175
3
—
3
—
3
3
3
—
3
—
—
—

Nitrate by 353
2
—
2
—
2
2
2
—
2
—
—
—

TOC by 415
1
—
1
—
1
1
1
—
1
—
—
—

Dissolved Fe/Mn by 6010C
3
—
3
—
3
3
3
—
3
—
—
—

DOC by 415
1
—
1
—
1
1
1
—
1
—
—
—

Barcode
680-134841 Chain of Custody

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
2 1 4 1 1 2 1 3 3 4 3

Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Custody Seal No.:
Company: *Goldier*
Company: *Samantha Derhake*
Company: *Derhake*
Company: *Derhake*

Relinquished by:
Relinquished by:
Relinquished by:

Date/Time: 1/31/17
Date/Time:
Date/Time:
Date/Time:

Received by:
Received by:
Received in Laboratory by:

Company:
Company:
Company:

Therm ID No.:
Date/Time:
Date/Time:
Date/Time:

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-134841-1

SDG Number: KPS186

Login Number: 134841

List Source: TestAmerica Savannah

List Number: 1

Creator: Flanagan, Naomi V

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134841-1
SDG: KPS186

Laboratory: TestAmerica Savannah

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
	AFCEE		SAVLAB	
Alabama	State Program	4	41450	06-30-17
Alaska (UST)	State Program	10	UST-104	11-05-17
Arizona	State Program	9	AZ808	12-14-17
Arkansas DEQ	State Program	6	88-0692	02-01-18
California	State Program	9	2939	06-30-17 *
Colorado	State Program	8	N/A	12-31-17
Connecticut	State Program	1	PH-0161	03-31-17 *
Florida	NELAP	4	E87052	06-30-17
GA Dept. of Agriculture	State Program	4	N/A	06-12-17 *
Georgia	State Program	4	N/A	06-30-17
Georgia	State Program	4	803	06-30-17
Guam	State Program	9	15-005r	04-16-17 *
Hawaii	State Program	9	N/A	06-30-17
Illinois	NELAP	5	200022	11-30-17
Indiana	State Program	5	N/A	06-30-17
Iowa	State Program	7	353	06-30-17
Kentucky (DW)	State Program	4	90084	12-31-17
Kentucky (UST)	State Program	4	18	06-30-17
Kentucky (VWV)	State Program	4	90084	12-31-17
L-A-B	DoD ELAP		L2463	09-22-19
Louisiana	NELAP	6	30690	06-30-17
Louisiana (DW)	NELAP	6	LA160019	12-31-17
Maine	State Program	1	GA00006	09-24-18
Maryland	State Program	3	250	12-31-17
Massachusetts	State Program	1	M-GA006	06-30-17
Michigan	State Program	5	9925	06-30-17
Mississippi	State Program	4	N/A	06-30-17
Nebraska	State Program	7	TestAmerica-Savannah	06-30-17
New Jersey	NELAP	2	GA769	06-30-17 *
New Mexico	State Program	6	N/A	06-30-17
New York	NELAP	2	10842	03-31-17 *
North Carolina (DW)	State Program	4	13701	07-31-17
North Carolina (VWV/SW)	State Program	4	269	12-31-17
Oklahoma	State Program	6	9984	08-31-17
Pennsylvania	NELAP	3	68-00474	06-30-17
Puerto Rico	State Program	2	GA00006	12-31-17
South Carolina	State Program	4	98001	06-30-17
Tennessee	State Program	4	TN02961	06-30-17
Texas	NELAP	6	T104704185-16-9	11-30-17
US Fish & Wildlife	Federal		LE058448-0	10-31-17
USDA	Federal		SAV 3-04	06-11-17 *
Virginia	NELAP	3	460161	06-14-17 *
Washington	State Program	10	C805	06-10-17 *
West Virginia (DW)	State Program	3	9950C	12-31-17
West Virginia DEP	State Program	3	094	06-30-17
Wisconsin	State Program	5	999819810	08-31-17
Wyoming	State Program	8	8TMS-L	06-30-16 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

KWP 4/10/17
TestAmerica Savannah



Level IV Data Validation Summary
Solutia Inc., W.G. Krummrich, Sauget, Illinois
1Q17 Long-Term Monitoring Program

Company Name: Golder Associates
Project Name: WGK-1Q17 LTM
Reviewer: A. Derhake
Laboratory: TestAmerica
SDG#: KPS187
Matrix: Water

Project Manager: A. Derhake
Project Number: 140-3345
Sample Date: February 2017

Analytical Method: VOC (8260B), SVOC (8270D), Dissolved Gases (RSK-175), Metals (6010C), Alkalinity (310.1), Chloride (325.2), Nitrogen, Nitrate-Nitrite (353.2), Sulfate (375.4), TOC (415.1), and DOC (415.1)

Sample Names: GWE-3D-0217, GWE-3D-F(0.2)-0217, GWE-2D-0217, GWE-2D-F(0.2)-0217, GWE-1D-0217, GWE-1D-F(0.2)-0217, BSA-MW-3D-0217, BSA-MW-3D-F(0.2)-0217, BSA-MW-3D-0217-EB, 1Q17 LTM Trip Blank #3

Field Information

	YES	NO	NA
a) Sampling dates noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the laboratory narrative indicate deficiencies?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

VOC: Insufficient volume to perform MS/MSD associated with batch 468513.

Samples GWE-3D, GWE-2D, and BSA-MW-3D required dilution prior to analysis, reporting limits were adjusted accordingly.

SVOC: No deficiencies noted.

Dissolved Gases: The CCV standards associated with batch 468923 were outside acceptance limits in the initial data and the re-analysis, both sets of data were qualified and reported.

Metals: No deficiencies noted.

Alkalinity: No deficiencies noted.

Chloride: Samples GWE-3D, GWE-2D, GWE-1D, and BSA-MW-3D required dilution prior to analysis, reporting limits were adjusted accordingly.

Nitrate-Nitrite as Nitrogen: No deficiencies noted.

Sulfate: Samples GWE-3D, GWE-2D, GWE-1D, and BSA-MW-3D required dilution prior to analysis, reporting limits were adjusted accordingly.

TOC: No deficiencies noted.

DOC: No deficiencies noted.

Chain-of-Custody (COC)

	YES	NO	NA
a) Was the COC signed by both field and laboratory personnel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Were samples received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: Samples were received at 1.2°C and 2.4°C, some outside the 4°C ± 2°C criteria

**General****YES NO NA**

- | | | | |
|---|-------------------------------------|--------------------------|--------------------------|
| a) Were hold times met for sample analysis? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Were the correct preservatives used? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Was the correct method used? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Any sample dilutions noted? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Comments: Detections in diluted analysis were qualified.**GC/MS Instrument Performance Check (IPC) and Internal Standards (IS)****YES NO NA**

- | | | | |
|---|-------------------------------------|--------------------------|--------------------------|
| a) IPC analyzed at the appropriate frequency and met the appropriate standards? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Does BFB meet the ion abundance criteria? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Internal Standard retention times and areas met appropriate criteria? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Comments: None**Calibrations****YES NO NA**

- | | | | |
|---|-------------------------------------|-------------------------------------|--------------------------|
| a) Initial calibration analyzed at the appropriate frequency and met the appropriate standards? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Continuing calibrations analyzed at the appropriate frequency and met the appropriate standards? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Initial calibration verifications and blanks analyzed at the appropriate frequency and met the appropriate standards? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) Continuing calibration verifications and blanks analyzed at the appropriate frequency and met the appropriate standards? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Comments: Some compounds did not meet calibration requirements; however, calibration criteria were met by analytes of interest. No data qualification was required.**Blanks****YES NO NA**

- | | | | |
|---|-------------------------------------|--------------------------|--------------------------|
| a) Were blanks (trip, equipment, method) performed at required frequency? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Were analytes detected in any blanks? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Comments: Equipment blank for BSA-MW-3D was submitted with SDG KPS187. Chlorobenzene was detected in the EB, qualification was not required due to 5x dilution rule**Matrix Spike/Matrix Spike Duplicate (MS/MSD)****YES NO NA**

- | | | | |
|---------------------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Was MS/MSD accuracy criteria met? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Was MS/MSD precision criteria met? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Comments: None**Laboratory Control Sample (LCS)****YES NO NA**

- | | | | |
|---|-------------------------------------|--------------------------|--------------------------|
| a) LCS analyzed at the appropriate frequency and met appropriate standards? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|---|-------------------------------------|--------------------------|--------------------------|

Comments: None**Surrogate (System Monitoring) Compounds****YES NO NA**

- | | | | |
|---|-------------------------------------|--------------------------|--------------------------|
| a) Surrogate compounds analyzed at the appropriate frequency and met appropriate standards? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|---|-------------------------------------|--------------------------|--------------------------|

Comments: None

**Duplicates****YES NO NA**

- a) Were field duplicates collected?
- b) Was field duplicate precision criteria met?

☐ ☒ ☐

☐ ☐ ☒

Comments: None**Additional Comments:** None**Qualifications:**

Quality Control Issue	Compound(s)	Qualifier	Samples Affected
Compounds analyzed at a dilution	Benzene, Chlorobenzene, 1,4-Dichlorobenzene, Chloride, and Sulfate	D	GWE-3D, GWE-2D, GWE-1D, BSA-MW-3D

SDG KPS187

Sample Results from:

GWE-1D

GWE-2D

GWE-3D

BSA-MW-3D

BSA-MW-3D-EB

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-134903-1
TestAmerica Sample Delivery Group: KPS187
Client Project/Site: 1Q17 LTM GW Sampling-1403345
Revision: 1

For:
Solutia Inc.
575 Maryville Centre Dr.
Saint Louis, Missouri 63141

Attn: Mr. Jerry Rinaldi

Kathryn Smith

Authorized for release by:
4/7/2017 6:23:38 PM

Kathryn Smith, Manager of Project Management
(912)354-7858
kathy.smith@testamericainc.com

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The test results in this report meet all 2003 NELAP and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

AWO 4/10/17

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Case Narrative

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

Job ID: 680-134903-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Solutia Inc.

Project: 1Q17 LTM GW Sampling-1403345

Report Number: 680-134903-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

This report was revised on 4/7/17 to correct the carbon dioxide method blank detection that was an error.

RECEIPT

The samples were received on 02/02/2017; the samples arrived in good condition, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.2° C and 2.4° C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples GWE-3D-0217 (680-134903-1), GWE-2D-0217 (680-134903-3), GWE-1D-0217 (680-134903-5), BSA-MW-3D-0217 (680-134903-7), BSA-MW-3D-0217-EB (680-134903-9) and 1Q17LTM Trip Blank #3 (680-134903-10) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 02/09/2017 and 02/10/2017.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-468513.

Samples GWE-3D-0217 (680-134903-1)[10X], GWE-2D-0217 (680-134903-3)[5X] and BSA-MW-3D-0217 (680-134903-7)[20X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SEMIVOLATILE ORGANIC COMPOUNDS (AQUEOUS)

Samples BSA-MW-3D-0217 (680-134903-7) and BSA-MW-3D-0217-EB (680-134903-9) were analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 02/06/2017 and analyzed on 02/08/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED GASES

Samples GWE-3D-0217 (680-134903-1), GWE-2D-0217 (680-134903-3), GWE-1D-0217 (680-134903-5) and BSA-MW-3D-0217 (680-134903-7) were analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 02/14/2017 and 02/17/2017.

The closing continuing calibration verification (CCV) standards associated with batch 680-468923 failed to meet acceptance limits. The associated samples were re-analyzed following a successful CCV and produced similar results but were outside of their analytical holding time. Both sets of data have been qualified and reported.

The closing continuing calibration verification (CCV) standards associated with batch 680-468923 failed to meet acceptance limits. There was insufficient sample volume for re-analysis; samples have been qualified and reported.
GWE-2D-0217 (680-134903-3)

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Case Narrative

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

Job ID: 680-134903-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

METALS (ICP)

Samples GWE-3D-F(0.2)-0217 (680-134903-2), GWE-2D-F(2.0)-0217 (680-134903-4), GWE-1D-F(0.2)-0217 (680-134903-6) and BSA-MW-3D-F(0.2)-0217 (680-134903-8) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 02/07/2017 and analyzed on 02/08/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP)

Samples GWE-3D-0217 (680-134903-1), GWE-2D-0217 (680-134903-3), GWE-1D-0217 (680-134903-5) and BSA-MW-3D-0217 (680-134903-7) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 02/07/2017 and analyzed on 02/08/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ALKALINITY

Samples GWE-3D-0217 (680-134903-1), GWE-2D-0217 (680-134903-3), GWE-1D-0217 (680-134903-5) and BSA-MW-3D-0217 (680-134903-7) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 02/07/2017 and 02/08/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

CHLORIDE

Samples GWE-3D-0217 (680-134903-1), GWE-2D-0217 (680-134903-3), GWE-1D-0217 (680-134903-5) and BSA-MW-3D-0217 (680-134903-7) were analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 02/07/2017.

Samples GWE-3D-0217 (680-134903-1)[50X], GWE-2D-0217 (680-134903-3)[20X], GWE-1D-0217 (680-134903-5)[2X] and BSA-MW-3D-0217 (680-134903-7)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

NITRATE-NITRITE AS NITROGEN

Samples GWE-3D-0217 (680-134903-1), GWE-2D-0217 (680-134903-3), GWE-1D-0217 (680-134903-5) and BSA-MW-3D-0217 (680-134903-7) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 02/02/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SULFATE

Samples GWE-3D-0217 (680-134903-1), GWE-2D-0217 (680-134903-3), GWE-1D-0217 (680-134903-5) and BSA-MW-3D-0217 (680-134903-7) were analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 02/09/2017.

Samples GWE-3D-0217 (680-134903-1)[10X], GWE-2D-0217 (680-134903-3)[50X], GWE-1D-0217 (680-134903-5)[10X] and BSA-MW-3D-0217 (680-134903-7)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL ORGANIC CARBON

Samples GWE-3D-0217 (680-134903-1), GWE-2D-0217 (680-134903-3), GWE-1D-0217 (680-134903-5) and BSA-MW-3D-0217 (680-134903-7) were analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 02/07/2017 and 02/08/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED ORGANIC CARBON (DOC)

Samples GWE-3D-F(0.2)-0217 (680-134903-2), GWE-2D-F(2.0)-0217 (680-134903-4), GWE-1D-F(0.2)-0217 (680-134903-6) and

Case Narrative

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

Job ID: 680-134903-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

BSA-MW-3D-F(0.2)-0217 (680-134903-8) were analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 02/11/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

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Sample Summary

Client: Solutia Inc.

Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1

SDG: KPS187

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-134903-1	GWE-3D-0217	Water	02/01/17 09:36	02/02/17 09:15
680-134903-2	GWE-3D-F(0.2)-0217	Water	02/01/17 09:36	02/02/17 09:15
680-134903-3	GWE-2D-0217	Water	02/01/17 10:44	02/02/17 09:15
680-134903-4	GWE-2D-F(2.0)-0217	Water	02/01/17 10:44	02/02/17 09:15
680-134903-5	GWE-1D-0217	Water	02/01/17 13:13	02/02/17 09:15
680-134903-6	GWE-1D-F(0.2)-0217	Water	02/01/17 13:13	02/02/17 09:15
680-134903-7	BSA-MW-3D-0217	Water	02/01/17 14:35	02/02/17 09:15
680-134903-8	BSA-MW-3D-F(0.2)-0217	Water	02/01/17 14:35	02/02/17 09:15
680-134903-9	BSA-MW-3D-0217-EB	Water	02/01/17 15:20	02/02/17 09:15
680-134903-10	1Q17LTM Trip Blank #3	Water	02/01/17 00:00	02/02/17 09:15

AWB 4/10/17
TestAmerica Savannah

Method Summary

Client: Solutia Inc.

Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1

SDG: KPS187

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
310.1	Alkalinity	MCAWW	TAL SAV
325.2	Chloride	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV
375.4	Sulfate	MCAWW	TAL SAV
415.1	TOC	MCAWW	TAL SAV
415.1	DOC	MCAWW	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

AWD 4/10/17
TestAmerica Savannah

Definitions/Glossary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
H	Sample was prepped or analyzed beyond the specified holding time

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

AWP 4/10/17
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

Client Sample ID: GWE-3D-0217

Lab Sample ID: 680-134903-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	17	D	10		ug/L	10		8260B	Total/NA
Chlorobenzene	1200	D	10		ug/L	10		8260B	Total/NA
1,4-Dichlorobenzene	88	D	10		ug/L	10		8260B	Total/NA
Methane	42		0.58		ug/L	1		RSK-175	Total/NA
Methane - RA	44	H	0.58		ug/L	1		RSK-175	Total/NA
Iron	27		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.85		0.010		mg/L	1		6010C	Total Recoverable
Chloride	1300	B	50		mg/L	50		325.2	Total/NA
Sulfate	320		50		mg/L	10		375.4	Total/NA
Total Organic Carbon	6.5		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	450		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	63		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: GWE-3D-F(0.2)-0217

Lab Sample ID: 680-134903-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	27		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.87		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	6.4		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: GWE-2D-0217

Lab Sample ID: 680-134903-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene - DL	460	D	5.0		ug/L	5		8260B	Total/NA
Methane	29		0.58		ug/L	1		RSK-175	Total/NA
Iron	38		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.94		0.010		mg/L	1		6010C	Total Recoverable
Chloride	940	D	20		mg/L	20		325.2	Total/NA
Sulfate	930	D	250		mg/L	50		375.4	Total/NA
Total Organic Carbon	4.8		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	430		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	140		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: GWE-2D-F(2.0)-0217

Lab Sample ID: 680-134903-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	38		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.93		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	4.9		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: GWE-1D-0217

Lab Sample ID: 680-134903-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	1.9		1.0		ug/L	1		8260B	Total/NA
Methane	8.2		0.58		ug/L	1		RSK-175	Total/NA

This Detection Summary does not include radiochemical test results.


 TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

Client Sample ID: GWE-1D-0217 (Continued)

Lab Sample ID: 680-134903-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methane - RA	8.1	H	0.58		ug/L	1		RSK-175	Total/NA
Iron	19		0.050		mg/L	1		6010C	Total Recoverable
Manganese	1.0		0.010		mg/L	1		6010C	Total Recoverable
Chloride	71	D	2.0		mg/L	2		325.2	Total/NA
Sulfate	210	D	50		mg/L	10		375.4	Total/NA
Total Organic Carbon	3.9		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	500		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	110		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: GWE-1D-F(0.2)-0217

Lab Sample ID: 680-134903-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	18		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.97		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	3.9		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: BSA-MW-3D-0217

Lab Sample ID: 680-134903-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	1000	D	20		ug/L	20		8260B	Total/NA
1,4-Dichlorobenzene	230	D	20		ug/L	20		8260B	Total/NA
2-Chlorophenol	20		9.8		ug/L	1		8270D	Total/NA
Ethane	1.7		1.1		ug/L	1		RSK-175	Total/NA
Methane	330		0.58		ug/L	1		RSK-175	Total/NA
Ethane - RA	1.9	H	1.1		ug/L	1		RSK-175	Total/NA
Methane - RA	360	H	0.58		ug/L	1		RSK-175	Total/NA
Iron	17		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.91		0.010		mg/L	1		6010C	Total Recoverable
Chloride	490	D	10		mg/L	10		325.2	Total/NA
Sulfate	25	D	10		mg/L	2		375.4	Total/NA
Total Organic Carbon	3.8		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	630		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	100		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: BSA-MW-3D-F(0.2)-0217

Lab Sample ID: 680-134903-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	17		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.90		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	4.1		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: BSA-MW-3D-0217-EB

Lab Sample ID: 680-134903-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	1.1		1.0		ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

msp 4/10/17
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.

Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1

SDG: KPS187

Client Sample ID: 1Q17LTM Trip Blank #3

Lab Sample ID: 680-134903-10

☐ No Detections.

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This Detection Summary does not include radiochemical test results.

AWO 4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

Client Sample ID: GWE-3D-0217

Lab Sample ID: 680-134903-1

Date Collected: 02/01/17 09:36

Matrix: Water

Date Received: 02/02/17 09:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	17	P	10		ug/L			02/09/17 13:13	10
Chlorobenzene	1200	P	10		ug/L			02/09/17 13:13	10
1,2-Dichlorobenzene	10	U	10		ug/L			02/09/17 13:13	10
1,3-Dichlorobenzene	10	U	10		ug/L			02/09/17 13:13	10
1,4-Dichlorobenzene	88	P	10		ug/L			02/09/17 13:13	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		02/09/17 13:13	10
1,2-Dichloroethane-d4 (Surr)	100		73 - 131		02/09/17 13:13	10
Dibromofluoromethane (Surr)	102		80 - 122		02/09/17 13:13	10
4-Bromofluorobenzene (Surr)	94		80 - 120		02/09/17 13:13	10

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			02/14/17 18:08	1
Ethylene	1.0	U	1.0		ug/L			02/14/17 18:08	1
Methane	42		0.58		ug/L			02/14/17 18:08	1

Method: RSK-175 - Dissolved Gases (GC) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U H	1.1		ug/L			02/17/17 13:49	1
Ethylene	1.0	U H	1.0		ug/L			02/17/17 13:49	1
Methane	41	H	0.58		ug/L			02/17/17 13:49	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	27		0.050		mg/L		02/07/17 10:22	02/08/17 05:19	1
Manganese	0.85		0.010		mg/L		02/07/17 10:22	02/08/17 05:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1300	P	50		mg/L			02/07/17 12:36	50
Nitrate as N	0.050	U	0.050		mg/L			02/02/17 17:08	1
Sulfate	320	P	50		mg/L			02/09/17 09:52	10
Total Organic Carbon	6.5		1.0		mg/L			02/07/17 22:36	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	450		5.0		mg/L			02/07/17 17:13	1
Carbon Dioxide, Free	63		5.0		mg/L			02/07/17 17:13	1

AWO 4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

Client Sample ID: GWE-3D-F(0.2)-0217

Lab Sample ID: 680-134903-2

Date Collected: 02/01/17 09:36

Matrix: Water

Date Received: 02/02/17 09:15

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	27		0.050		mg/L		02/07/17 10:22	02/08/17 05:33	1
Manganese, Dissolved	0.87		0.010		mg/L		02/07/17 10:22	02/08/17 05:33	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	6.4		1.0		mg/L			02/11/17 06:50	1

AWD 4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

Client Sample ID: GWE-2D-0217

Lab Sample ID: 680-134903-3

Date Collected: 02/01/17 10:44

Matrix: Water

Date Received: 02/02/17 09:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			02/09/17 13:33	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/09/17 13:33	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/09/17 13:33	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/09/17 13:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120		02/09/17 13:33	1
1,2-Dichloroethane-d4 (Surr)	105		73 - 131		02/09/17 13:33	1
Dibromofluoromethane (Surr)	106		80 - 122		02/09/17 13:33	1
4-Bromofluorobenzene (Surr)	92		80 - 120		02/09/17 13:33	1

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	460	D	5.0		ug/L			02/10/17 16:20	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		80 - 120		02/10/17 16:20	5
1,2-Dichloroethane-d4 (Surr)	89		73 - 131		02/10/17 16:20	5
Dibromofluoromethane (Surr)	91		80 - 122		02/10/17 16:20	5
4-Bromofluorobenzene (Surr)	93		80 - 120		02/10/17 16:20	5

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			02/14/17 18:21	1
Ethylene	1.0	U	1.0		ug/L			02/14/17 18:21	1
Methane	29		0.58		ug/L			02/14/17 18:21	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	38		0.050		mg/L		02/07/17 10:22	02/08/17 05:38	1
Manganese	0.94		0.010		mg/L		02/07/17 10:22	02/08/17 05:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	940	D	20		mg/L			02/07/17 15:31	20
Nitrate as N	0.050	U	0.050		mg/L			02/02/17 17:09	1
Sulfate	930	D	250		mg/L			02/09/17 09:52	50
Total Organic Carbon	4.8		1.0		mg/L			02/07/17 22:57	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	430		5.0		mg/L			02/07/17 16:32	1
Carbon Dioxide, Free	140		5.0		mg/L			02/07/17 16:32	1

AMD 4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

Client Sample ID: GWE-2D-F(2.0)-0217

Lab Sample ID: 680-134903-4

Date Collected: 02/01/17 10:44

Matrix: Water

Date Received: 02/02/17 09:15

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	38		0.050		mg/L		02/07/17 10:22	02/08/17 05:42	1
Manganese, Dissolved	0.93		0.010		mg/L		02/07/17 10:22	02/08/17 05:42	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	4.9		1.0		mg/L			02/11/17 07:08	1

AWD 4/6/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

Client Sample ID: GWE-1D-0217

Lab Sample ID: 680-134903-5

Date Collected: 02/01/17 13:13

Matrix: Water

Date Received: 02/02/17 09:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			02/10/17 15:40	1
Chlorobenzene	1.9		1.0		ug/L			02/10/17 15:40	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/10/17 15:40	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/10/17 15:40	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/10/17 15:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		02/10/17 15:40	1
1,2-Dichloroethane-d4 (Surr)	97		73 - 131		02/10/17 15:40	1
Dibromofluoromethane (Surr)	100		80 - 122		02/10/17 15:40	1
4-Bromofluorobenzene (Surr)	93		80 - 120		02/10/17 15:40	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			02/14/17 18:34	1
Ethylene	1.0	U	1.0		ug/L			02/14/17 18:34	1
Methane	8.2		0.58		ug/L			02/14/17 18:34	1

Method: RSK-175 - Dissolved Gases (GC) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U H	1.1		ug/L			02/17/17 14:01	1
Ethylene	1.0	U H	1.0		ug/L			02/17/17 14:01	1
Methane	8.1	H	0.58		ug/L			02/17/17 14:01	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	19		0.050		mg/L		02/07/17 10:22	02/08/17 05:47	1
Manganese	1.0		0.010		mg/L		02/07/17 10:22	02/08/17 05:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	71	D	2.0		mg/L			02/07/17 11:40	2
Nitrate as N	0.050	U	0.050		mg/L			02/02/17 17:10	1
Sulfate	210	D	50		mg/L			02/09/17 09:51	10
Total Organic Carbon	3.9		1.0		mg/L			02/07/17 23:18	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	500		5.0		mg/L			02/07/17 16:22	1
Carbon Dioxide, Free	110		5.0		mg/L			02/07/17 16:22	1

Amo 4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

Client Sample ID: GWE-1D-F(0.2)-0217

Lab Sample ID: 680-134903-6

Date Collected: 02/01/17 13:13

Matrix: Water

Date Received: 02/02/17 09:15

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	18		0.050		mg/L		02/07/17 10:22	02/08/17 05:52	1
Manganese, Dissolved	0.97		0.010		mg/L		02/07/17 10:22	02/08/17 05:52	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	3.9		1.0		mg/L			02/11/17 07:29	1

Amo 4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

Client Sample ID: BSA-MW-3D-0217

Lab Sample ID: 680-134903-7

Date Collected: 02/01/17 14:35

Matrix: Water

Date Received: 02/02/17 09:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	20	U	20		ug/L			02/09/17 14:14	20
Chlorobenzene	1000	D	20		ug/L			02/09/17 14:14	20
1,2-Dichlorobenzene	20	U	20		ug/L			02/09/17 14:14	20
1,3-Dichlorobenzene	20	U	20		ug/L			02/09/17 14:14	20
1,4-Dichlorobenzene	230	D	20		ug/L			02/09/17 14:14	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		02/09/17 14:14	20
1,2-Dichloroethane-d4 (Surr)	110		73 - 131		02/09/17 14:14	20
Dibromofluoromethane (Surr)	111		80 - 122		02/09/17 14:14	20
4-Bromofluorobenzene (Surr)	95		80 - 120		02/09/17 14:14	20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	9.8	U	9.8		ug/L		02/06/17 15:03	02/08/17 19:07	1
1,4-Dioxane	9.8	U	9.8		ug/L		02/06/17 15:03	02/08/17 19:07	1
2-Chlorophenol	20		9.8		ug/L		02/06/17 15:03	02/08/17 19:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	78		39 - 124	02/06/17 15:03	02/08/17 19:07	1
2-Fluorobiphenyl	67		32 - 113	02/06/17 15:03	02/08/17 19:07	1
2-Fluorophenol	51		26 - 109	02/06/17 15:03	02/08/17 19:07	1
Terphenyl-d14	46		10 - 126	02/06/17 15:03	02/08/17 19:07	1
Phenol-d5	56		27 - 110	02/06/17 15:03	02/08/17 19:07	1
Nitrobenzene-d5	64		32 - 118	02/06/17 15:03	02/08/17 19:07	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.7		1.1		ug/L			02/14/17 18:47	1
Ethylene	1.0	U	1.0		ug/L			02/14/17 18:47	1
Methane	330		0.58		ug/L			02/14/17 18:47	1

Method: RSK-175 - Dissolved Gases (GC) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.9	H	1.1		ug/L			02/17/17 14:14	1
Ethylene	1.0	U H	1.0		ug/L			02/17/17 14:14	1
Methane	360	H	0.58		ug/L			02/17/17 14:14	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	17		0.050		mg/L		02/07/17 10:22	02/08/17 05:57	1
Manganese	0.91		0.010		mg/L		02/07/17 10:22	02/08/17 05:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	490	D	10		mg/L			02/07/17 13:12	10
Nitrate as N	0.050	U	0.050		mg/L			02/02/17 17:11	1
Sulfate	25	D	10		mg/L			02/09/17 09:51	2
Total Organic Carbon	3.8		1.0		mg/L			02/08/17 00:09	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	630		5.0		mg/L			02/08/17 17:23	1

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4/7/2017

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

Client Sample ID: BSA-MW-3D-0217

Lab Sample ID: 680-134903-7

Date Collected: 02/01/17 14:35

Matrix: Water

Date Received: 02/02/17 09:15

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon Dioxide, Free	100		5.0		mg/L			02/08/17 17:23	1

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mw 4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

Client Sample ID: BSA-MW-3D-F(0.2)-0217

Lab Sample ID: 680-134903-8

Date Collected: 02/01/17 14:35

Matrix: Water

Date Received: 02/02/17 09:15

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	17		0.050		mg/L		02/07/17 10:22	02/08/17 06:01	1
Manganese, Dissolved	0.90		0.010		mg/L		02/07/17 10:22	02/08/17 06:01	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	4.1		1.0		mg/L			02/11/17 07:49	1

AWW 4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

Client Sample ID: BSA-MW-3D-0217-EB

Lab Sample ID: 680-134903-9

Date Collected: 02/01/17 15:20

Matrix: Water

Date Received: 02/02/17 09:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			02/09/17 14:35	1
Chlorobenzene	1.1		1.0		ug/L			02/09/17 14:35	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/09/17 14:35	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/09/17 14:35	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/09/17 14:35	1

Surrogate

	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		02/09/17 14:35	1
1,2-Dichloroethane-d4 (Surr)	106		73 - 131		02/09/17 14:35	1
Dibromofluoromethane (Surr)	108		80 - 122		02/09/17 14:35	1
4-Bromofluorobenzene (Surr)	94		80 - 120		02/09/17 14:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	9.9	U	9.9		ug/L		02/06/17 15:03	02/08/17 19:31	1
1,4-Dioxane	9.9	U	9.9		ug/L		02/06/17 15:03	02/08/17 19:31	1
2-Chlorophenol	9.9	U	9.9		ug/L		02/06/17 15:03	02/08/17 19:31	1

Surrogate

	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	55		39 - 124	02/06/17 15:03	02/08/17 19:31	1
2-Fluorobiphenyl	44		32 - 113	02/06/17 15:03	02/08/17 19:31	1
2-Fluorophenol	36		26 - 109	02/06/17 15:03	02/08/17 19:31	1
Terphenyl-d14	58		10 - 126	02/06/17 15:03	02/08/17 19:31	1
Phenol-d5	36		27 - 110	02/06/17 15:03	02/08/17 19:31	1
Nitrobenzene-d5	41		32 - 118	02/06/17 15:03	02/08/17 19:31	1

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Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

Client Sample ID: 1Q17LTM Trip Blank #3

Lab Sample ID: 680-134903-10

Date Collected: 02/01/17 00:00

Matrix: Water

Date Received: 02/02/17 09:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			02/09/17 14:55	1
Chlorobenzene	1.0	U	1.0		ug/L			02/09/17 14:55	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/09/17 14:55	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/09/17 14:55	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/09/17 14:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		02/09/17 14:55	1
1,2-Dichloroethane-d4 (Surr)	98		73 - 131		02/09/17 14:55	1
Dibromofluoromethane (Surr)	99		80 - 122		02/09/17 14:55	1
4-Bromofluorobenzene (Surr)	95		80 - 120		02/09/17 14:55	1

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Surrogate Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	12DCE (73-131)	DBFM (80-122)	BFB (80-120)
680-134903-1	GWE-3D-0217	99	100	102	94
680-134903-3	GWE-2D-0217	97	105	106	92
680-134903-3 - DL	GWE-2D-0217	103	89	91	93
680-134903-5	GWE-1D-0217	100	97	100	93
680-134903-7	BSA-MW-3D-0217	99	110	111	95
680-134903-9	BSA-MW-3D-0217-EB	98	106	108	94
680-134903-10	1Q17LTM Trip Blank #3	99	98	99	95
LCS 680-468311/4	Lab Control Sample	100	81	91	97
LCS 680-468513/5	Lab Control Sample	102	96	103	95
LCSD 680-468311/5	Lab Control Sample Dup	102	80	89	98
LCSD 680-468513/6	Lab Control Sample Dup	100	89	98	96
MB 680-468311/9	Method Blank	98	99	100	94
MB 680-468513/10	Method Blank	98	101	105	93

Surrogate Legend

TOL = Toluene-d8 (Surr)
12DCE = 1,2-Dichloroethane-d4 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TBP (39-124)	FBP (32-113)	2FP (26-109)	TPH (10-126)	PHL (27-110)	NBZ (32-118)
680-134903-7	BSA-MW-3D-0217	78	67	51	46	56	64
680-134903-9	BSA-MW-3D-0217-EB	55	44	36	58	36	41
LCS 680-467873/14-A	Lab Control Sample	93	71	59	61	61	69
MB 680-467873/13-A	Method Blank	76	65	61	61	61	68

Surrogate Legend

TBP = 2,4,6-Tribromophenol
FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol
TPH = Terphenyl-d14
PHL = Phenol-d5
NBZ = Nitrobenzene-d5

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

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

Lab Sample ID: MB 680-468311/9

Matrix: Water

Analysis Batch: 468311

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		1.0		ug/L			02/09/17 08:46	1
Chlorobenzene	1.0	U	1.0		1.0		ug/L			02/09/17 08:46	1
1,2-Dichlorobenzene	1.0	U	1.0		1.0		ug/L			02/09/17 08:46	1
1,3-Dichlorobenzene	1.0	U	1.0		1.0		ug/L			02/09/17 08:46	1
1,4-Dichlorobenzene	1.0	U	1.0		1.0		ug/L			02/09/17 08:46	1

Surrogate	MB	MB	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120				02/09/17 08:46	1
1,2-Dichloroethane-d4 (Surr)	99		73 - 131				02/09/17 08:46	1
Dibromofluoromethane (Surr)	100		80 - 122				02/09/17 08:46	1
4-Bromofluorobenzene (Surr)	94		80 - 120				02/09/17 08:46	1

Lab Sample ID: LCS 680-468311/4

Matrix: Water

Analysis Batch: 468311

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike	LCS	LCS	Result	Qualifier	Unit	D	%Rec	%Rec.	Limits
Benzene	Added	Result	Qualifier	49.2		ug/L		98	80 - 120	
Chlorobenzene	50.0	50.2				ug/L		100	80 - 120	
1,2-Dichlorobenzene	50.0	51.5				ug/L		103	80 - 120	
1,3-Dichlorobenzene	50.0	51.8				ug/L		104	80 - 120	
1,4-Dichlorobenzene	50.0	51.0				ug/L		102	80 - 120	

Surrogate	LCS	LCS	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	100		80 - 120		
1,2-Dichloroethane-d4 (Surr)	81		73 - 131		
Dibromofluoromethane (Surr)	91		80 - 122		
4-Bromofluorobenzene (Surr)	97		80 - 120		

Lab Sample ID: LCSD 680-468311/5

Matrix: Water

Analysis Batch: 468311

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike	LCSD	LCSD	Result	Qualifier	Unit	D	%Rec	%Rec.	Limits	RPD	RPD	Limit
Benzene	Added	Result	Qualifier	49.7		ug/L		99	80 - 120		1	20	
Chlorobenzene	50.0	50.8				ug/L		102	80 - 120		1	20	
1,2-Dichlorobenzene	50.0	51.5				ug/L		103	80 - 120		0	20	
1,3-Dichlorobenzene	50.0	51.6				ug/L		103	80 - 120		0	20	
1,4-Dichlorobenzene	50.0	51.4				ug/L		103	80 - 120		1	20	

Surrogate	LCSD	LCSD	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	102		80 - 120		
1,2-Dichloroethane-d4 (Surr)	80		73 - 131		
Dibromofluoromethane (Surr)	89		80 - 122		
4-Bromofluorobenzene (Surr)	98		80 - 120		

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

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

Lab Sample ID: MB 680-468513/10

Matrix: Water

Analysis Batch: 468513

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			02/10/17 09:10	1
Chlorobenzene	1.0	U	1.0		ug/L			02/10/17 09:10	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/10/17 09:10	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/10/17 09:10	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/10/17 09:10	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		02/10/17 09:10	1
1,2-Dichloroethane-d4 (Surr)	101		73 - 131		02/10/17 09:10	1
Dibromofluoromethane (Surr)	105		80 - 122		02/10/17 09:10	1
4-Bromofluorobenzene (Surr)	93		80 - 120		02/10/17 09:10	1

Lab Sample ID: LCS 680-468513/5

Matrix: Water

Analysis Batch: 468513

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	50.8		ug/L		102	80 - 120
Chlorobenzene	50.0	51.8		ug/L		104	80 - 120
1,2-Dichlorobenzene	50.0	52.1		ug/L		104	80 - 120
1,3-Dichlorobenzene	50.0	51.0		ug/L		102	80 - 120
1,4-Dichlorobenzene	50.0	51.1		ug/L		102	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	102		80 - 120
1,2-Dichloroethane-d4 (Surr)	96		73 - 131
Dibromofluoromethane (Surr)	103		80 - 122
4-Bromofluorobenzene (Surr)	95		80 - 120

Lab Sample ID: LCSD 680-468513/6

Matrix: Water

Analysis Batch: 468513

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	50.1		ug/L		100	80 - 120	1	20
Chlorobenzene	50.0	51.8		ug/L		104	80 - 120	0	20
1,2-Dichlorobenzene	50.0	51.1		ug/L		102	80 - 120	2	20
1,3-Dichlorobenzene	50.0	51.3		ug/L		103	80 - 120	1	20
1,4-Dichlorobenzene	50.0	51.4		ug/L		103	80 - 120	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	100		80 - 120
1,2-Dichloroethane-d4 (Surr)	89		73 - 131
Dibromofluoromethane (Surr)	98		80 - 122
4-Bromofluorobenzene (Surr)	96		80 - 120

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

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

Lab Sample ID: MB 680-467873/13-A

Matrix: Water

Analysis Batch: 468299

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 467873

Analyte	MB	MB	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	10	U			10		ug/L		02/06/17 15:03	02/08/17 19:45	1
1,4-Dioxane	10	U			10		ug/L		02/06/17 15:03	02/08/17 19:45	1
2-Chlorophenol	10	U			10		ug/L		02/06/17 15:03	02/08/17 19:45	1

Surrogate	MB	MB	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	76				39 - 124	02/06/17 15:03	02/08/17 19:45	1
2-Fluorobiphenyl	65				32 - 113	02/06/17 15:03	02/08/17 19:45	1
2-Fluorophenol	61				26 - 109	02/06/17 15:03	02/08/17 19:45	1
Terphenyl-d14	61				10 - 126	02/06/17 15:03	02/08/17 19:45	1
Phenol-d5	61				27 - 110	02/06/17 15:03	02/08/17 19:45	1
Nitrobenzene-d5	68				32 - 118	02/06/17 15:03	02/08/17 19:45	1

Lab Sample ID: LCS 680-467873/14-A

Matrix: Water

Analysis Batch: 468299

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 467873

Analyte	Spike	LCS	LCS	Result	Qualifier	Unit	D	%Rec	%Rec.
	Added	Result	Qualifier					Limits	
1,2,4-Trichlorobenzene	100	69.8				ug/L		70	33 - 130
1,4-Dioxane	100	49.1				ug/L		49	22 - 130
2-Chlorophenol	100	64.7				ug/L		65	39 - 130

Surrogate	LCS	LCS	%Recovery	Qualifier	Limits
2,4,6-Tribromophenol	93				39 - 124
2-Fluorobiphenyl	71				32 - 113
2-Fluorophenol	59				26 - 109
Terphenyl-d14	61				10 - 126
Phenol-d5	61				27 - 110
Nitrobenzene-d5	69				32 - 118

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-468923/11

Matrix: Water

Analysis Batch: 468923

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U			1.1		ug/L			02/14/17 16:07	1
Ethylene	1.0	U			1.0		ug/L			02/14/17 16:07	1
Methane	0.58	U			0.58		ug/L			02/14/17 16:07	1
Methane (TCD)	390	U			390		ug/L			02/14/17 16:07	1

Lab Sample ID: LCS 680-468923/5

Matrix: Water

Analysis Batch: 468923

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike	LCS	LCS	Result	Qualifier	Unit	D	%Rec	%Rec.
	Added	Result	Qualifier					Limits	
Methane (TCD)	1920	1890				ug/L		98	75 - 125

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCS 680-468923/9

Matrix: Water

Analysis Batch: 468923

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	288	250		ug/L		87	75 - 125
Ethylene	269	236		ug/L		88	75 - 125

Lab Sample ID: LCSD 680-468923/10

Matrix: Water

Analysis Batch: 468923

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	288	249		ug/L		86	75 - 125	0	30
Ethylene	269	236		ug/L		88	75 - 125	0	30

Lab Sample ID: LCSD 680-468923/6

Matrix: Water

Analysis Batch: 468923

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane (TCD)	1920	1820		ug/L		95	75 - 125	4	30

Lab Sample ID: MB 680-469346/9

Matrix: Water

Analysis Batch: 469346

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			02/17/17 12:42	1
Ethylene	1.0	U	1.0		ug/L			02/17/17 12:42	1
Methane	0.58	U	0.58		ug/L			02/17/17 12:42	1
Methane (TCD)	390	U	390		ug/L			02/17/17 12:42	1

Lab Sample ID: LCS 680-469346/3

Matrix: Water

Analysis Batch: 469346

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	288	254		ug/L		88	75 - 125
Ethylene	269	237		ug/L		88	75 - 125

Lab Sample ID: LCS 680-469346/6

Matrix: Water

Analysis Batch: 469346

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane (TCD)	1920	1760		ug/L		91	75 - 125

Lab Sample ID: LCSD 680-469346/4

Matrix: Water

Analysis Batch: 469346

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	288	271		ug/L		94	75 - 125	7	30

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCSD 680-469346/4
Matrix: Water
Analysis Batch: 469346

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene	269	252		ug/L		93	75 - 125	6	30

Lab Sample ID: LCSD 680-469346/7
Matrix: Water
Analysis Batch: 469346

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane (TCD)	1920	2030		ug/L		106	75 - 125	14	30

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-467999/1-A
Matrix: Water
Analysis Batch: 468196

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 467999

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.050	U	0.050		mg/L		02/07/17 10:22	02/08/17 03:49	1
Iron, Dissolved	0.050	U	0.050		mg/L		02/07/17 10:22	02/08/17 03:49	1
Manganese	0.010	U	0.010		mg/L		02/07/17 10:22	02/08/17 03:49	1
Manganese, Dissolved	0.010	U	0.010		mg/L		02/07/17 10:22	02/08/17 03:49	1

Lab Sample ID: LCS 680-467999/2-A
Matrix: Water
Analysis Batch: 468196

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 467999

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	5.00	5.09		mg/L		102	80 - 120
Iron, Dissolved	5.00	5.09		mg/L		102	80 - 120
Manganese	0.500	0.561		mg/L		112	80 - 120
Manganese, Dissolved	0.500	0.561		mg/L		112	80 - 120

Method: 310.1 - Alkalinity

Lab Sample ID: MB 680-468133/7
Matrix: Water
Analysis Batch: 468133

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0		mg/L			02/07/17 15:38	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			02/07/17 15:38	1

Lab Sample ID: LCS 680-468133/8
Matrix: Water
Analysis Batch: 468133

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	250	250		mg/L		100	80 - 120

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

Method: 310.1 - Alkalinity (Continued)

Lab Sample ID: LCSD 680-468133/34
Matrix: Water
Analysis Batch: 468133

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	250	251		mg/L		100	80 - 120	0	30

Lab Sample ID: MB 680-468327/7
Matrix: Water
Analysis Batch: 468327

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0		mg/L			02/08/17 15:57	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			02/08/17 15:57	1

Lab Sample ID: LCS 680-468327/8
Matrix: Water
Analysis Batch: 468327

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	250	231		mg/L		92	80 - 120

Lab Sample ID: LCSD 680-468327/34
Matrix: Water
Analysis Batch: 468327

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	250	244		mg/L		97	80 - 120	5	30

Lab Sample ID: 680-134903-7 DU
Matrix: Water
Analysis Batch: 468327

Client Sample ID: BSA-MW-3D-0217
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	Prepared	Analyzed	Dil Fac	RPD	RPD Limit
Alkalinity	630		619		mg/L					2	30
Carbon Dioxide, Free	100		93.9		mg/L					11	30

Method: 325.2 - Chloride

Lab Sample ID: MB 680-468131/1
Matrix: Water
Analysis Batch: 468131

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0		mg/L			02/07/17 11:23	1

Lab Sample ID: LCS 680-468131/2
Matrix: Water
Analysis Batch: 468131

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	26.2		mg/L		105	85 - 115

AMC 4/10/17
TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

Method: 325.2 - Chloride (Continued)

Lab Sample ID: LCSD 680-468131/5
Matrix: Water
Analysis Batch: 468131

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	25.0	26.1		mg/L		104	85 - 115	0	30

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-467609/13
Matrix: Water
Analysis Batch: 467609

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			02/02/17 16:53	1

Lab Sample ID: LCS 680-467609/16
Matrix: Water
Analysis Batch: 467609

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.500	0.524		mg/L		105	75 - 125
Nitrate Nitrite as N	1.00	1.03		mg/L		103	90 - 110
Nitrite as N	0.500	0.506		mg/L		101	90 - 110

Method: 375.4 - Sulfate

Lab Sample ID: MB 680-468371/7
Matrix: Water
Analysis Batch: 468371

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	5.0	U	5.0		mg/L			02/09/17 09:34	1

Lab Sample ID: LCS 680-468371/8
Matrix: Water
Analysis Batch: 468371

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	20.7		mg/L		104	75 - 125

Lab Sample ID: LCSD 680-468371/13
Matrix: Water
Analysis Batch: 468371

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	20.0	21.3		mg/L		106	75 - 125	2	30

AWD 4/10/17
TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

Method: 415.1 - DOC

Lab Sample ID: MB 680-468704/2
Matrix: Water
Analysis Batch: 468704

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.0	U	1.0		mg/L			02/11/17 02:20	1

Lab Sample ID: LCS 680-468704/3
Matrix: Water
Analysis Batch: 468704

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	20.0	21.4		mg/L		107	80 - 120

Lab Sample ID: LCSD 680-468704/4
Matrix: Water
Analysis Batch: 468704

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	20.0	21.6		mg/L		108	80 - 120	1	20

Method: 415.1 - TOC

Lab Sample ID: MB 680-468191/2
Matrix: Water
Analysis Batch: 468191

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.0	U	1.0		mg/L			02/07/17 16:16	1

Lab Sample ID: LCS 680-468191/3
Matrix: Water
Analysis Batch: 468191

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	20.0	21.1		mg/L		105	80 - 120

Lab Sample ID: LCSD 680-468191/4
Matrix: Water
Analysis Batch: 468191

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	20.0	21.1		mg/L		106	80 - 120	0	25

AWD 4/10/17
TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

GC/MS VOA

Analysis Batch: 468311

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134903-1	GWE-3D-0217	Total/NA	Water	8260B	
680-134903-3	GWE-2D-0217	Total/NA	Water	8260B	
680-134903-7	BSA-MW-3D-0217	Total/NA	Water	8260B	
680-134903-9	BSA-MW-3D-0217-EB	Total/NA	Water	8260B	
680-134903-10	1Q17LTM Trip Blank #3	Total/NA	Water	8260B	
MB 680-468311/9	Method Blank	Total/NA	Water	8260B	
LCS 680-468311/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-468311/5	Lab Control Sample Dup	Total/NA	Water	8260B	

Analysis Batch: 468513

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134903-3 - DL	GWE-2D-0217	Total/NA	Water	8260B	
680-134903-5	GWE-1D-0217	Total/NA	Water	8260B	
MB 680-468513/10	Method Blank	Total/NA	Water	8260B	
LCS 680-468513/5	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-468513/6	Lab Control Sample Dup	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 467873

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134903-7	BSA-MW-3D-0217	Total/NA	Water	3520C	
680-134903-9	BSA-MW-3D-0217-EB	Total/NA	Water	3520C	
MB 680-467873/13-A	Method Blank	Total/NA	Water	3520C	
LCS 680-467873/14-A	Lab Control Sample	Total/NA	Water	3520C	

Analysis Batch: 468260

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134903-7	BSA-MW-3D-0217	Total/NA	Water	8270D	467873
680-134903-9	BSA-MW-3D-0217-EB	Total/NA	Water	8270D	467873

Analysis Batch: 468299

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-467873/13-A	Method Blank	Total/NA	Water	8270D	467873
LCS 680-467873/14-A	Lab Control Sample	Total/NA	Water	8270D	467873

GC VOA

Analysis Batch: 468923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134903-1	GWE-3D-0217	Total/NA	Water	RSK-175	
680-134903-3	GWE-2D-0217	Total/NA	Water	RSK-175	
680-134903-5	GWE-1D-0217	Total/NA	Water	RSK-175	
680-134903-7	BSA-MW-3D-0217	Total/NA	Water	RSK-175	
MB 680-468923/11	Method Blank	Total/NA	Water	RSK-175	
LCS 680-468923/5	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-468923/9	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-468923/10	Lab Control Sample Dup	Total/NA	Water	RSK-175	
LCSD 680-468923/6	Lab Control Sample Dup	Total/NA	Water	RSK-175	

AMP 4/10/17
TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

GC VOA (Continued)

Analysis Batch: 469346

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134903-1 - RA	GWE-3D-0217	Total/NA	Water	RSK-175	
680-134903-5 - RA	GWE-1D-0217	Total/NA	Water	RSK-175	
680-134903-7 - RA	BSA-MW-3D-0217	Total/NA	Water	RSK-175	
MB 680-469346/9	Method Blank	Total/NA	Water	RSK-175	
LCS 680-469346/3	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-469346/6	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-469346/4	Lab Control Sample Dup	Total/NA	Water	RSK-175	
LCSD 680-469346/7	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Metals

Prep Batch: 467999

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134903-1	GWE-3D-0217	Total Recoverable	Water	3005A	
680-134903-2	GWE-3D-F(0.2)-0217	Dissolved	Water	3005A	
680-134903-3	GWE-2D-0217	Total Recoverable	Water	3005A	
680-134903-4	GWE-2D-F(2.0)-0217	Dissolved	Water	3005A	
680-134903-5	GWE-1D-0217	Total Recoverable	Water	3005A	
680-134903-6	GWE-1D-F(0.2)-0217	Dissolved	Water	3005A	
680-134903-7	BSA-MW-3D-0217	Total Recoverable	Water	3005A	
680-134903-8	BSA-MW-3D-F(0.2)-0217	Dissolved	Water	3005A	
MB 680-467999/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-467999/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 468196

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134903-1	GWE-3D-0217	Total Recoverable	Water	6010C	467999
680-134903-2	GWE-3D-F(0.2)-0217	Dissolved	Water	6010C	467999
680-134903-3	GWE-2D-0217	Total Recoverable	Water	6010C	467999
680-134903-4	GWE-2D-F(2.0)-0217	Dissolved	Water	6010C	467999
680-134903-5	GWE-1D-0217	Total Recoverable	Water	6010C	467999
680-134903-6	GWE-1D-F(0.2)-0217	Dissolved	Water	6010C	467999
680-134903-7	BSA-MW-3D-0217	Total Recoverable	Water	6010C	467999
680-134903-8	BSA-MW-3D-F(0.2)-0217	Dissolved	Water	6010C	467999
MB 680-467999/1-A	Method Blank	Total Recoverable	Water	6010C	467999
LCS 680-467999/2-A	Lab Control Sample	Total Recoverable	Water	6010C	467999

General Chemistry

Analysis Batch: 467609

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134903-1	GWE-3D-0217	Total/NA	Water	353.2	
680-134903-3	GWE-2D-0217	Total/NA	Water	353.2	
680-134903-5	GWE-1D-0217	Total/NA	Water	353.2	
680-134903-7	BSA-MW-3D-0217	Total/NA	Water	353.2	
MB 680-467609/13	Method Blank	Total/NA	Water	353.2	
LCS 680-467609/16	Lab Control Sample	Total/NA	Water	353.2	

AWM 4/10/17
TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

General Chemistry (Continued)

Analysis Batch: 468131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134903-1	GWE-3D-0217	Total/NA	Water	325.2	
680-134903-3	GWE-2D-0217	Total/NA	Water	325.2	
680-134903-5	GWE-1D-0217	Total/NA	Water	325.2	
680-134903-7	BSA-MW-3D-0217	Total/NA	Water	325.2	
MB 680-468131/1	Method Blank	Total/NA	Water	325.2	
LCS 680-468131/2	Lab Control Sample	Total/NA	Water	325.2	
LCSD 680-468131/5	Lab Control Sample Dup	Total/NA	Water	325.2	

Analysis Batch: 468133

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134903-1	GWE-3D-0217	Total/NA	Water	310.1	
680-134903-3	GWE-2D-0217	Total/NA	Water	310.1	
680-134903-5	GWE-1D-0217	Total/NA	Water	310.1	
MB 680-468133/7	Method Blank	Total/NA	Water	310.1	
LCS 680-468133/8	Lab Control Sample	Total/NA	Water	310.1	
LCSD 680-468133/34	Lab Control Sample Dup	Total/NA	Water	310.1	

Analysis Batch: 468191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134903-1	GWE-3D-0217	Total/NA	Water	415.1	
680-134903-3	GWE-2D-0217	Total/NA	Water	415.1	
680-134903-5	GWE-1D-0217	Total/NA	Water	415.1	
680-134903-7	BSA-MW-3D-0217	Total/NA	Water	415.1	
MB 680-468191/2	Method Blank	Total/NA	Water	415.1	
LCS 680-468191/3	Lab Control Sample	Total/NA	Water	415.1	
LCSD 680-468191/4	Lab Control Sample Dup	Total/NA	Water	415.1	

Analysis Batch: 468327

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134903-7	BSA-MW-3D-0217	Total/NA	Water	310.1	
MB 680-468327/7	Method Blank	Total/NA	Water	310.1	
LCS 680-468327/8	Lab Control Sample	Total/NA	Water	310.1	
LCSD 680-468327/34	Lab Control Sample Dup	Total/NA	Water	310.1	
680-134903-7 DU	BSA-MW-3D-0217	Total/NA	Water	310.1	

Analysis Batch: 468371

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134903-1	GWE-3D-0217	Total/NA	Water	375.4	
680-134903-3	GWE-2D-0217	Total/NA	Water	375.4	
680-134903-5	GWE-1D-0217	Total/NA	Water	375.4	
680-134903-7	BSA-MW-3D-0217	Total/NA	Water	375.4	
MB 680-468371/7	Method Blank	Total/NA	Water	375.4	
LCS 680-468371/8	Lab Control Sample	Total/NA	Water	375.4	
LCSD 680-468371/13	Lab Control Sample Dup	Total/NA	Water	375.4	

Analysis Batch: 468704

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134903-2	GWE-3D-F(0.2)-0217	Dissolved	Water	415.1	
680-134903-4	GWE-2D-F(2.0)-0217	Dissolved	Water	415.1	
680-134903-6	GWE-1D-F(0.2)-0217	Dissolved	Water	415.1	
680-134903-8	BSA-MW-3D-F(0.2)-0217	Dissolved	Water	415.1	

AWD 4/10/17
TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

General Chemistry (Continued)

Analysis Batch: 468704 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-468704/2	Method Blank	Dissolved	Water	415.1	
LCS 680-468704/3	Lab Control Sample	Dissolved	Water	415.1	
LCSD 680-468704/4	Lab Control Sample Dup	Dissolved	Water	415.1	

mp 4/10/17
TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

Client Sample ID: GWE-3D-0217

Lab Sample ID: 680-134903-1

Date Collected: 02/01/17 09:36

Matrix: Water

Date Received: 02/02/17 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10	468311	02/09/17 13:13	CEJ	TAL SAV
Total/NA	Analysis	RSK-175		1	468923	02/14/17 18:08	JJW	TAL SAV
Total/NA	Analysis	RSK-175	RA	1	469346	02/17/17 13:49	SMC	TAL SAV
Total Recoverable	Prep	3005A			467999	02/07/17 10:22	AJR	TAL SAV
Total Recoverable	Analysis	6010C		1	468196	02/08/17 05:19	BCB	TAL SAV
Total/NA	Analysis	310.1		1	468133	02/07/17 17:13	JCM	TAL SAV
Total/NA	Analysis	325.2		50	468131	02/07/17 12:36	ALS	TAL SAV
Total/NA	Analysis	353.2		1	467609	02/02/17 17:08	GRX	TAL SAV
Total/NA	Analysis	375.4		10	468371	02/09/17 09:52	ALS	TAL SAV
Total/NA	Analysis	415.1		1	468191	02/07/17 22:36	KLD	TAL SAV

Client Sample ID: GWE-3D-F(0.2)-0217

Lab Sample ID: 680-134903-2

Date Collected: 02/01/17 09:36

Matrix: Water

Date Received: 02/02/17 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			467999	02/07/17 10:22	AJR	TAL SAV
Dissolved	Analysis	6010C		1	468196	02/08/17 05:33	BCB	TAL SAV
Dissolved	Analysis	415.1		1	468704	02/11/17 06:50	KLD	TAL SAV

Client Sample ID: GWE-2D-0217

Lab Sample ID: 680-134903-3

Date Collected: 02/01/17 10:44

Matrix: Water

Date Received: 02/02/17 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	468311	02/09/17 13:33	CEJ	TAL SAV
Total/NA	Analysis	8260B	DL	5	468513	02/10/17 16:20	CEJ	TAL SAV
Total/NA	Analysis	RSK-175		1	468923	02/14/17 18:21	JJW	TAL SAV
Total Recoverable	Prep	3005A			467999	02/07/17 10:22	AJR	TAL SAV
Total Recoverable	Analysis	6010C		1	468196	02/08/17 05:38	BCB	TAL SAV
Total/NA	Analysis	310.1		1	468133	02/07/17 16:32	JCM	TAL SAV
Total/NA	Analysis	325.2		20	468131	02/07/17 15:31	ALS	TAL SAV
Total/NA	Analysis	353.2		1	467609	02/02/17 17:09	GRX	TAL SAV
Total/NA	Analysis	375.4		50	468371	02/09/17 09:52	ALS	TAL SAV
Total/NA	Analysis	415.1		1	468191	02/07/17 22:57	KLD	TAL SAV

AWO 4/10/17
TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

Client Sample ID: GWE-2D-F(2.0)-0217

Lab Sample ID: 680-134903-4

Date Collected: 02/01/17 10:44

Matrix: Water

Date Received: 02/02/17 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			467999	02/07/17 10:22	AJR	TAL SAV
Dissolved	Analysis	6010C		1	468196	02/08/17 05:42	BCB	TAL SAV
Dissolved	Analysis	415.1		1	468704	02/11/17 07:08	KLD	TAL SAV

Client Sample ID: GWE-1D-0217

Lab Sample ID: 680-134903-5

Date Collected: 02/01/17 13:13

Matrix: Water

Date Received: 02/02/17 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	468513	02/10/17 15:40	CEJ	TAL SAV
Total/NA	Analysis	RSK-175		1	468923	02/14/17 18:34	JJW	TAL SAV
Total/NA	Analysis	RSK-175	RA	1	469346	02/17/17 14:01	SMC	TAL SAV
Total Recoverable	Prep	3005A			467999	02/07/17 10:22	AJR	TAL SAV
Total Recoverable	Analysis	6010C		1	468196	02/08/17 05:47	BCB	TAL SAV
Total/NA	Analysis	310.1		1	468133	02/07/17 16:22	JCM	TAL SAV
Total/NA	Analysis	325.2		2	468131	02/07/17 11:40	ALS	TAL SAV
Total/NA	Analysis	353.2		1	467609	02/02/17 17:10	GRX	TAL SAV
Total/NA	Analysis	375.4		10	468371	02/09/17 09:51	ALS	TAL SAV
Total/NA	Analysis	415.1		1	468191	02/07/17 23:18	KLD	TAL SAV

Client Sample ID: GWE-1D-F(0.2)-0217

Lab Sample ID: 680-134903-6

Date Collected: 02/01/17 13:13

Matrix: Water

Date Received: 02/02/17 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			467999	02/07/17 10:22	AJR	TAL SAV
Dissolved	Analysis	6010C		1	468196	02/08/17 05:52	BCB	TAL SAV
Dissolved	Analysis	415.1		1	468704	02/11/17 07:29	KLD	TAL SAV

Client Sample ID: BSA-MW-3D-0217

Lab Sample ID: 680-134903-7

Date Collected: 02/01/17 14:35

Matrix: Water

Date Received: 02/02/17 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		20	468311	02/09/17 14:14	CEJ	TAL SAV
Total/NA	Prep	3520C			467873	02/06/17 15:03	RBS	TAL SAV
Total/NA	Analysis	8270D		1	468260	02/08/17 19:07	OK	TAL SAV
Total/NA	Analysis	RSK-175		1	468923	02/14/17 18:47	JJW	TAL SAV
Total/NA	Analysis	RSK-175	RA	1	469346	02/17/17 14:14	SMC	TAL SAV
Total Recoverable	Prep	3005A			467999	02/07/17 10:22	AJR	TAL SAV
Total Recoverable	Analysis	6010C		1	468196	02/08/17 05:57	BCB	TAL SAV
Total/NA	Analysis	310.1		1	468327	02/08/17 17:23	JCM	TAL SAV

AWD 4/16/17
TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.

Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1

SDG: KPS187

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	325.2		10	468131	02/07/17 13:12	ALS	TAL SAV
Total/NA	Analysis	353.2		1	467609	02/02/17 17:11	GRX	TAL SAV
Total/NA	Analysis	375.4		2	468371	02/09/17 09:51	ALS	TAL SAV
Total/NA	Analysis	415.1		1	468191	02/08/17 00:09	KLD	TAL SAV

Client Sample ID: BSA-MW-3D-F(0.2)-0217

Lab Sample ID: 680-134903-8

Date Collected: 02/01/17 14:35

Matrix: Water

Date Received: 02/02/17 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			467999	02/07/17 10:22	AJR	TAL SAV
Dissolved	Analysis	6010C		1	468196	02/08/17 06:01	BCB	TAL SAV
Dissolved	Analysis	415.1		1	468704	02/11/17 07:49	KLD	TAL SAV

Client Sample ID: BSA-MW-3D-0217-EB

Lab Sample ID: 680-134903-9

Date Collected: 02/01/17 15:20

Matrix: Water

Date Received: 02/02/17 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	468311	02/09/17 14:35	CEJ	TAL SAV
Total/NA	Prep	3520C			467873	02/06/17 15:03	RBS	TAL SAV
Total/NA	Analysis	8270D		1	468260	02/08/17 19:31	OK	TAL SAV

Client Sample ID: 1Q17LTM Trip Blank #3

Lab Sample ID: 680-134903-10

Date Collected: 02/01/17 00:00

Matrix: Water

Date Received: 02/02/17 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	468311	02/09/17 14:55	CEJ	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

AMD 4/10/17
TestAmerica Savannah

Savannah, GA 31404
phone 912.354.7858 fax

TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DOW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact		Project Manager: Amanda Derhake Tel/Fax: 636-724-9191		Site Contact: Samantha DiCenso Lab Contact: Michele Kersey		Date: 2/1/17 Carrier: FedEx		COC No: 1 of 1 COCs											
Analysis Turnaround Time		CALENDAR DAYS <input type="checkbox"/> WORKING DAYS <input type="checkbox"/>		TAT if different from Below		For Lab Use Only:		Sampler: T. Leckert											
Phone		2 weeks		<input type="checkbox"/>		Walk-in Client:		Lab Sampling:											
FAX		1 week		<input type="checkbox"/>		Job / SDG No:													
Project Name: 1Q17 LTM GW Sampling-1403345		2 days		<input type="checkbox"/>															
Site: Solulia WG Krummrich Facility		1 day		<input type="checkbox"/>															
P O # 42262863																			
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	VOCs by 8270	SVOCs by 8270	Total Fe/Mn by 6010C	Alk/CO2 by 3101	Chloride by 3252/Sulfate by 3754	Dissolved Gases by RSK 175	Nitrate by 3532	TOC by 4151	DOC by 4151	Sample Specific Notes		
GW E-3D-0217	2/1/17	0936	G	W	14	N	3	1	1	1	3	2	3	1	3	2	3		
GW E-3D-F(0.2)-0217		0936			4	Y													
GW E-2D-0217		1044			14	N	3	1	1	1	3	2	3	1	3	2	3		
GW E-2D-F(0.2)-0217		1044			4	Y													
GW E-1D-0217		1313			14	N	3	1	1	1	3	2	3	1	3	2	3		
GW E-1D-F(0.2)-0217		1313			4	Y													
BSA-MW-3D-0217		1435			16	N	3	2	1	1	3	2	3	1	3	2	3		
BSA-MW-3D-F(0.2)-0217		1435			4	Y													
BSA-MW-3D-0217-EB		1520			5	N	3	2											
1Q17 LTM Trip Blank #3					2	N	2												
<p>Preservation Used: 1=Ice, 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Other</p> <p>Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.</p> <p><input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown</p> <p>Special Instructions/QC Requirements & Comments:</p>																			
Custody Seal No.:		Company: Golden		Date/Time: 10:30		Received by:		Cooler Temp (°C) Obs'd:		Cor'd:		Company:		Date/Time:		Therm ID No.:			
Relinquished by: Samantha Sledge		Company:		Date/Time:		Received by:		Cooler Temp (°C) Obs'd:		Cor'd:		Company:		Date/Time:		Therm ID No.:			
Relinquished by:		Company:		Date/Time:		Received by:		Cooler Temp (°C) Obs'd:		Cor'd:		Company:		Date/Time:		Therm ID No.:			
Relinquished by:		Company:		Date/Time:		Received by:		Cooler Temp (°C) Obs'd:		Cor'd:		Company:		Date/Time:		Therm ID No.:			

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-134903-1

SDG Number: KPS187

Login Number: 134903

List Source: TestAmerica Savannah

List Number: 1

Creator: Flanagan, Naomi V

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Handwritten signature

Accreditation/Certification Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling-1403345

TestAmerica Job ID: 680-134903-1
SDG: KPS187

Laboratory: TestAmerica Savannah

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
	AFCEE		SAVLAB	
Alabama	State Program	4	41450	06-30-17
Alaska (UST)	State Program	10	UST-104	11-05-17
Arizona	State Program	9	AZ808	12-14-17
Arkansas DEQ	State Program	6	88-0692	02-01-18
California	State Program	9	2939	06-30-17 *
Colorado	State Program	8	N/A	12-31-17
Connecticut	State Program	1	PH-0161	03-31-17 *
Florida	NELAP	4	E87052	06-30-17
GA Dept. of Agriculture	State Program	4	N/A	06-12-17 *
Georgia	State Program	4	N/A	06-30-17
Georgia	State Program	4	803	06-30-17
Guam	State Program	9	15-005r	04-16-17 *
Hawaii	State Program	9	N/A	06-30-17
Illinois	NELAP	5	200022	11-30-17
Indiana	State Program	5	N/A	06-30-17
Iowa	State Program	7	353	06-30-17
Kentucky (DW)	State Program	4	90084	12-31-17
Kentucky (UST)	State Program	4	18	06-30-17
Kentucky (VWV)	State Program	4	90084	12-31-17
L-A-B	DoD ELAP		L2463	09-22-19
Louisiana	NELAP	6	30690	06-30-17
Louisiana (DW)	NELAP	6	LA160019	12-31-17
Maine	State Program	1	GA00006	09-24-18
Maryland	State Program	3	250	12-31-17
Massachusetts	State Program	1	M-GA006	06-30-17
Michigan	State Program	5	9925	06-30-17
Mississippi	State Program	4	N/A	06-30-17
Nebraska	State Program	7	TestAmerica-Savannah	06-30-17
New Jersey	NELAP	2	GA769	06-30-17 *
New Mexico	State Program	6	N/A	06-30-17
New York	NELAP	2	10842	03-31-17 *
North Carolina (DW)	State Program	4	13701	07-31-17
North Carolina (VWV/SW)	State Program	4	269	12-31-17
Oklahoma	State Program	6	9984	08-31-17
Pennsylvania	NELAP	3	68-00474	06-30-17
Puerto Rico	State Program	2	GA00006	12-31-17
South Carolina	State Program	4	98001	06-30-17
Tennessee	State Program	4	TN02961	06-30-17
Texas	NELAP	6	T104704185-16-9	11-30-17
US Fish & Wildlife	Federal		LE058448-0	10-31-17
USDA	Federal		SAV 3-04	06-11-17 *
Virginia	NELAP	3	460161	06-14-17 *
Washington	State Program	10	C805	06-10-17 *
West Virginia (DW)	State Program	3	9950C	12-31-17
West Virginia DEP	State Program	3	094	06-30-17
Wisconsin	State Program	5	999819810	08-31-17
Wyoming	State Program	8	8TMS-L	06-30-16 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.


 TestAmerica Savannah



Level IV Data Validation Summary
Solutia Inc., W.G. Krummrich, Sauget, Illinois
1Q17 Long-Term Monitoring Program

Company Name: Golder Associates
Project Name: WGK-1Q17 LTM
Reviewer: A. Derhake
Laboratory: TestAmerica
SDG#: KPS188
Matrix: Water

Project Manager: A. Derhake
Project Number: 140-3345
Sample Date: February 2017

Analytical Method: VOC (8260B), SVOC (8270D), Dissolved Gases (RSK-175), Metals (6010C), Alkalinity (310.1), Chloride (325.2), Nitrogen, Nitrate-Nitrite (353.2), Sulfate (375.4), TOC (415.1), and DOC (415.1)

Sample Names: CPA-MW-3D-0217, CPA-MW-3D-F(0.2)-0217, CPA-MW-3D-0217-AD, BSA-MW-2D-0217, BSA-MW-2D-F(0.2)-0217, CPA-MW-2D-0217, CPA-MW-2D-F(0.2)-0217, CPA-MW-2D-0217-AD, CPA-MW-1D-0217, CPA-MW-1D-F(0.2)-0217, BSA-MW-1S-0217, BSA-MW-1S-F(0.2)-0217, BSA-MW-1S-0217-EB, 1Q17 LTM Trip Blank #4

Field Information**YES NO NA**

- a) Sampling dates noted? ☒ ☐ ☐
- b) Does the laboratory narrative indicate deficiencies? ☒ ☐ ☐

Comments:

VOC: Insufficient volume to perform MS/MSD associated with batch 469151.

Samples CPA-MW-3D, CPA-MW-3D-AD, BSA-MW-2D, CPA-MW-2D, CPA-MW-2D-AD, CPA-MW-1D, and BSA-MW-1S required dilution prior to analysis, reporting limits were adjusted accordingly.

SVOC: 4-chloroaniline exceeded recovery criteria low for MS of sample CPA-MW-3D in batch 468260.

Sample CPA-MW-1D required dilution prior to analysis, reporting limits were adjusted accordingly.

Dissolved Gases: The CCV standards associated with batch 468923 were outside acceptance limits in the initial data, and the re-analysis, both sets of data were qualified and reported.

Metals: No deficiencies noted.

Alkalinity: No deficiencies noted.

Chloride: Chloride recovered low for the MS/MSD in batch 468131.

Samples CPA-MW-3D, BSA-MW-2D, CPA-MW-2D, CPA-MW-1D, and BSA-MW-1S required dilution prior to analysis, reporting limits were adjusted accordingly.

Nitrate-Nitrite as Nitrogen: No deficiencies noted.

Sulfate: Sulfate recovered high for the MS/MSD in batch 468371.

Sample CPA-MW-2D required dilution prior to analysis, reporting limits were adjusted accordingly.

TOC: No deficiencies noted.

DOC: No deficiencies noted.

Chain-of-Custody (COC)**YES NO NA**

- a) Was the COC signed by both field and laboratory personnel? ☒ ☐ ☐
- b) Were samples received in good condition? ☒ ☐ ☐

Comments: Samples were received at 1.9°C, 3.7°C, and 4.0°C, some outside the 4°C ± 2°C criteria

**General****YES NO NA**

- a) Were hold times met for sample analysis?
- b) Were the correct preservatives used?
- c) Was the correct method used?
- d) Any sample dilutions noted?

☒ ☐ ☐

☒ ☐ ☐

☒ ☐ ☐

☒ ☐ ☐

Comments: Detections in diluted analysis were qualified.

GC/MS Instrument Performance Check (IPC) and Internal Standards (IS)**YES NO NA**

- a) IPC analyzed at the appropriate frequency and met the appropriate standards?
- b) Does BFB meet the ion abundance criteria?
- c) Internal Standard retention times and areas met appropriate criteria?

☒ ☐ ☐

☒ ☐ ☐

☒ ☐ ☐

Comments: None

Calibrations**YES NO NA**

- a) Initial calibration analyzed at the appropriate frequency and met the appropriate standards?
- b) Continuing calibrations analyzed at the appropriate frequency and met the appropriate standards?
- c) Initial calibration verifications and blanks analyzed at the appropriate frequency and met the appropriate standards?
- d) Continuing calibration verifications and blanks analyzed at the appropriate frequency and met the appropriate standards?

☒ ☐ ☐

☒ ☐ ☐

☐ ☒ ☐

☐ ☒ ☐

Comments: Some compounds did not meet calibration requirements; however, calibration criteria were met by analytes of interest. No data qualification was required.

Blanks**YES NO NA**

- a) Were blanks (trip, equipment, method) performed at required frequency?
- b) Were analytes detected in any blanks?

☒ ☐ ☐

☒ ☐ ☐

Comments: Equipment blank for BSA-MW-1S was submitted with SDG KPS188. Benzene, chlorobenzene, 1,2-dichlorobenzene, and 1,4-dichlorobenzene were detected in the EB, qualification was not required due to 5x dilution rule.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)**YES NO NA**

- a) Was MS/MSD accuracy criteria met?
- b) Was MS/MSD precision criteria met?

☐ ☒ ☐

☒ ☐ ☐

Comments: 4-chloroaniline exceeded the recovery criteria low for MS and MSD of sample CPA-MW-3D associated with batch 468260. Data was not qualified on MS/MSD data alone.

Laboratory Control Sample (LCS)**YES NO NA**

- a) LCS analyzed at the appropriate frequency and met appropriate standards?

☒ ☐ ☐

Comments: None

**Surrogate (System Monitoring) Compounds****YES NO NA**

- a) Surrogate compounds analyzed at the appropriate frequency and met appropriate standards?

☒ ☐ ☐**Comments:** None**Duplicates****YES NO NA**

- a) Were field duplicates collected?

☒ ☐ ☐

- b) Was field duplicate precision criteria met?

☒ ☐ ☐**Comments:** Duplicate samples CPA-MW-3D-0217-AD and CPA-MW-2D-0217-AD were submitted with SDG KPS188.**Additional Comments:** None**Qualifications:**

Quality Control Issue	Compound(s)	Qualifier	Samples Affected
Compounds analyzed at a dilution	Benzene, Chlorobenzene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2,4-Trichlorobenzene, Chloride, and Sulfate	D	CPA-MW-3D, CPA-MW-3D-AD, BSA-MW-2D, CPA-MW-2D, CPA-MW-2D-AD, CPA-MW-1D, BSA-MW-1S

SDG KPS188

Sample Results from:

**CPA-MW-3D
CPA-MW-3D-AD
BSA-MW-2D
CPA-MW-2D
CPA-MW-2D-AD
CPA-MW-1D
BSA-MW-1S
BSA-MW-1S-EB**

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-134948-1
TestAmerica Sample Delivery Group: KPS188
Client Project/Site: 1Q17 LTM GW Sampling - 1403345
Revision: 1

For:
Solutia Inc.
575 Maryville Centre Dr.
Saint Louis, Missouri 63141

Attn: Mr. Jerry Rinaldi

Kathryn Smith

Authorized for release by:
4/7/2017 6:17:36 PM

Kathryn Smith, Manager of Project Management
(912)354-7858
kathy.smith@testamericainc.com

LINKS

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www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

*KWP
4/10/17*

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Case Narrative

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

Job ID: 680-134948-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Solutia Inc.

Project: 1Q17 LTM GW Sampling - 1403345

Report Number: 680-134948-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

This report was revised on 4/7/17 to correct the carbon dioxide method blank detection that was an error.

RECEIPT

The samples were received on 02/03/2017; the samples arrived in good condition, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.9° C, 3.7° C and 4.0° C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples CPA-MW-3D-0217 (680-134948-1), CPA-MW-3D-0217-AD (680-134948-3), BSA-MW-2D-0217 (680-134948-4), CPA-MW-2D-0217 (680-134948-6), CPA-MW-2D-0217-AD (680-134948-8), CPA-MW-1D-0217 (680-134948-9), BSA-MW-1S-0217 (680-134948-11), BSA-MW-1S-0217-EB (680-134948-13) and 1Q17 LTM Trip Blank #4 (680-134948-14) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 02/12/2017, 02/13/2017 and 02/16/2017.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-469151.

Samples CPA-MW-3D-0217 (680-134948-1)[5X], CPA-MW-3D-0217-AD (680-134948-3)[5X], BSA-MW-2D-0217 (680-134948-4)[200X], BSA-MW-2D-0217 (680-134948-4)[500X], CPA-MW-2D-0217 (680-134948-6)[250X], CPA-MW-2D-0217-AD (680-134948-8)[250X], CPA-MW-1D-0217 (680-134948-9)[250X] and BSA-MW-1S-0217 (680-134948-11)[5000X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SEMIVOLATILE ORGANIC COMPOUNDS (AQUEOUS)

Samples CPA-MW-3D-0217 (680-134948-1), CPA-MW-3D-0217-AD (680-134948-3), BSA-MW-2D-0217 (680-134948-4), CPA-MW-2D-0217 (680-134948-6), CPA-MW-2D-0217-AD (680-134948-8), CPA-MW-1D-0217 (680-134948-9), BSA-MW-1S-0217 (680-134948-11) and BSA-MW-1S-0217-EB (680-134948-13) were analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 02/06/2017 and analyzed on 02/08/2017 and 02/09/2017.

4-Chloroaniline recovered low for the MS of sample CPA-MW-3D-0217MS (680-134948-1) in batch 680-468260.

Sample CPA-MW-1D-0217 (680-134948-9)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED GASES

Samples CPA-MW-3D-0217 (680-134948-1), BSA-MW-2D-0217 (680-134948-4), CPA-MW-2D-0217 (680-134948-6), CPA-MW-1D-0217 (680-134948-9) and BSA-MW-1S-0217 (680-134948-11) were analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 02/14/2017 and 02/17/2017.

The closing continuing calibration verification (CCV) standards associated with batch 680-468923 failed to meet acceptance limits. The

Case Narrative

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

Job ID: 680-134948-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

associated samples were re-analyzed following a successful CCV and produced similar results but were outside of their analytical holding time: CPA-MW-3D-0217 (680-134948-1), CPA-MW-2D-0217 (680-134948-6) and CPA-MW-1D-0217 (680-134948-9). Both sets of data have been qualified and reported.

The closing continuing calibration verification (CCV) standards associated with batch 680-468923 failed to meet acceptance limits. There was insufficient sample volume for re-analysis; samples have been qualified and reported.
BSA-MW-2D-0217 (680-134948-4) and BSA-MW-1S-0217 (680-134948-11).

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP)

Samples CPA-MW-3D-F(0.2)-0217 (680-134948-2), BSA-MW-2D-F(0.2)-0217 (680-134948-5), CPA-MW-2D-F(0.2)-0217 (680-134948-7), CPA-MW-1D-F(0.2)-0217 (680-134948-10) and BSA-MW-1S-F(0.2)-0217 (680-134948-12) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 02/09/2017 and analyzed on 02/10/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP)

Samples CPA-MW-3D-0217 (680-134948-1), BSA-MW-2D-0217 (680-134948-4), CPA-MW-2D-0217 (680-134948-6), CPA-MW-1D-0217 (680-134948-9) and BSA-MW-1S-0217 (680-134948-11) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 02/09/2017 and analyzed on 02/10/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ALKALINITY

Samples CPA-MW-3D-0217 (680-134948-1), BSA-MW-2D-0217 (680-134948-4), CPA-MW-2D-0217 (680-134948-6), CPA-MW-1D-0217 (680-134948-9) and BSA-MW-1S-0217 (680-134948-11) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 02/07/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

CHLORIDE

Samples CPA-MW-3D-0217 (680-134948-1), BSA-MW-2D-0217 (680-134948-4), CPA-MW-2D-0217 (680-134948-6), CPA-MW-1D-0217 (680-134948-9) and BSA-MW-1S-0217 (680-134948-11) were analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 02/07/2017.

Chloride recovered low for the MS/MSD of sample 680-134870-2 in batch 680-468131.

Samples CPA-MW-3D-0217 (680-134948-1)[5X], BSA-MW-2D-0217 (680-134948-4)[5X], CPA-MW-2D-0217 (680-134948-6)[2X], CPA-MW-1D-0217 (680-134948-9)[5X] and BSA-MW-1S-0217 (680-134948-11)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

NITRATE-NITRITE AS NITROGEN

Samples CPA-MW-3D-0217 (680-134948-1), BSA-MW-2D-0217 (680-134948-4), CPA-MW-2D-0217 (680-134948-6), CPA-MW-1D-0217 (680-134948-9) and BSA-MW-1S-0217 (680-134948-11) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 02/03/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SULFATE

Samples CPA-MW-3D-0217 (680-134948-1), BSA-MW-2D-0217 (680-134948-4), CPA-MW-2D-0217 (680-134948-6), CPA-MW-1D-0217 (680-134948-9) and BSA-MW-1S-0217 (680-134948-11) were analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 02/09/2017 and 02/14/2017.

Case Narrative

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

Job ID: 680-134948-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

Sulfate recovered high for the MS/MSD of sample 680-134909-2 in batch 680-468371.

Sample CPA-MW-2D-0217 (680-134948-6)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL ORGANIC CARBON

Samples CPA-MW-3D-0217 (680-134948-1), BSA-MW-2D-0217 (680-134948-4), CPA-MW-2D-0217 (680-134948-6), CPA-MW-1D-0217 (680-134948-9) and BSA-MW-1S-0217 (680-134948-11) were analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 02/13/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED ORGANIC CARBON (DOC)

Samples CPA-MW-3D-F(0.2)-0217 (680-134948-2), BSA-MW-2D-F(0.2)-0217 (680-134948-5), CPA-MW-2D-F(0.2)-0217 (680-134948-7), CPA-MW-1D-F(0.2)-0217 (680-134948-10) and BSA-MW-1S-F(0.2)-0217 (680-134948-12) were analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 02/11/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Solutia Inc.

Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1

SDG: KPS188

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-134948-1	CPA-MW-3D-0217	Water	02/02/17 09:07	02/03/17 10:50
680-134948-2	CPA-MW-3D-F(0.2)-0217	Water	02/02/17 09:07	02/03/17 10:50
680-134948-3	CPA-MW-3D-0217-AD	Water	02/02/17 09:07	02/03/17 10:50
680-134948-4	BSA-MW-2D-0217	Water	02/02/17 10:39	02/03/17 10:50
680-134948-5	BSA-MW-2D-F(0.2)-0217	Water	02/02/17 10:39	02/03/17 10:50
680-134948-6	CPA-MW-2D-0217	Water	02/02/17 12:23	02/03/17 10:50
680-134948-7	CPA-MW-2D-F(0.2)-0217	Water	02/02/17 12:23	02/03/17 10:50
680-134948-8	CPA-MW-2D-0217-AD	Water	02/02/17 12:23	02/03/17 10:50
680-134948-9	CPA-MW-1D-0217	Water	02/02/17 14:11	02/03/17 10:50
680-134948-10	CPA-MW-1D-F(0.2)-0217	Water	02/02/17 14:11	02/03/17 10:50
680-134948-11	BSA-MW-1S-0217	Water	02/02/17 15:21	02/03/17 10:50
680-134948-12	BSA-MW-1S-F(0.2)-0217	Water	02/02/17 15:21	02/03/17 10:50
680-134948-13	BSA-MW-1S-0217-EB	Water	02/02/17 16:05	02/03/17 10:50
680-134948-14	1Q17 LTM Trip Blank #4	Water	02/02/17 00:00	02/03/17 10:50

AWD 4/10/17
TestAmerica Savannah

Method Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
310.1	Alkalinity	MCAWW	TAL SAV
325.2	Chloride	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV
375.4	Sulfate	MCAWW	TAL SAV
415.1	TOC	MCAWW	TAL SAV
415.1	DOC	MCAWW	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

AWD 4/10/17
TestAmerica Savannah

Definitions/Glossary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
F1	MS and/or MSD Recovery is outside acceptance limits.

GC VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
H	Sample was prepped or analyzed beyond the specified holding time

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

AWO 4/10/17
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

Client Sample ID: CPA-MW-3D-0217

Lab Sample ID: 680-134948-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	250	D	5.0		ug/L	5		8260B	Total/NA
Ethane	11		1.1		ug/L	1		RSK-175	Total/NA
Methane (TCD)	9700		390		ug/L	1		RSK-175	Total/NA
Ethane - RA	14	H	1.1		ug/L	1		RSK-175	Total/NA
Ethylene - RA	3.2	H	1.0		ug/L	1		RSK-175	Total/NA
Methane (TCD) - RA	7600	H	390		ug/L	1		RSK-175	Total/NA
Iron	12		0.050		mg/L	1		6010C	Total
									Recoverable
Manganese	0.65		0.010		mg/L	1		6010C	Total
									Recoverable
Chloride	110	D	5.0		mg/L	5		325.2	Total/NA
Total Organic Carbon	6.8		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	570		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	59		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: CPA-MW-3D-F(0.2)-0217

Lab Sample ID: 680-134948-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	13		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.70		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	7.2		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: CPA-MW-3D-0217-AD

Lab Sample ID: 680-134948-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	280	D	5.0		ug/L	5		8260B	Total/NA

Client Sample ID: BSA-MW-2D-0217

Lab Sample ID: 680-134948-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	260	D	200		ug/L	200		8260B	Total/NA
Benzene - DL	47000	D	500		ug/L	500		8260B	Total/NA
1,4-Dioxane	12		9.7		ug/L	1		8270D	Total/NA
Ethane	7.4		1.1		ug/L	1		RSK-175	Total/NA
Methane (TCD)	21000		390		ug/L	1		RSK-175	Total/NA
Iron	6.8		0.050		mg/L	1		6010C	Total
									Recoverable
Manganese	0.88		0.010		mg/L	1		6010C	Total
									Recoverable
Chloride	200	D	5.0		mg/L	5		325.2	Total/NA
Total Organic Carbon	10		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	770		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	67		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: BSA-MW-2D-F(0.2)-0217

Lab Sample ID: 680-134948-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	6.8		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.88		0.010		mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Am 4/10/17
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

Client Sample ID: BSA-MW-2D-F(0.2)-0217 (Continued)

Lab Sample ID: 680-134948-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Organic Carbon	10		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: CPA-MW-2D-0217

Lab Sample ID: 680-134948-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	29000	D	250		ug/L	250		8260B	Total/NA
1,4-Dichlorobenzene	850	D	250		ug/L	250		8260B	Total/NA
2-Chlorophenol	31		9.7		ug/L	1		8270D	Total/NA
Ethane	1.5		1.1		ug/L	1		RSK-175	Total/NA
Methane (TCD)	1700		390		ug/L	1		RSK-175	Total/NA
Ethane - RA	2.6 H		1.1		ug/L	1		RSK-175	Total/NA
Ethylene - RA	1.5 H		1.0		ug/L	1		RSK-175	Total/NA
Methane (TCD) - RA	1600 H		390		ug/L	1		RSK-175	Total/NA
Iron	8.6		0.050		mg/L	1		6010C	Total
									Recoverable
Manganese	0.49		0.010		mg/L	1		6010C	Total
									Recoverable
Chloride	56	D	2.0		mg/L	2		325.2	Total/NA
Sulfate	24	D	10		mg/L	2		375.4	Total/NA
Total Organic Carbon	6.3		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	500		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	41		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: CPA-MW-2D-F(0.2)-0217

Lab Sample ID: 680-134948-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	8.5		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.49		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	6.2		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: CPA-MW-2D-0217-AD

Lab Sample ID: 680-134948-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	28000	D	250		ug/L	250		8260B	Total/NA
1,4-Dichlorobenzene	830	D	250		ug/L	250		8260B	Total/NA
2-Chlorophenol	37		9.7		ug/L	1		8270D	Total/NA

Client Sample ID: CPA-MW-1D-0217

Lab Sample ID: 680-134948-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	6600	D	250		ug/L	250		8260B	Total/NA
Chlorobenzene	19000	D	250		ug/L	250		8260B	Total/NA
1,2-Dichlorobenzene	10000	D	250		ug/L	250		8260B	Total/NA
1,3-Dichlorobenzene	1300	D	250		ug/L	250		8260B	Total/NA
1,4-Dichlorobenzene	9000	D	250		ug/L	250		8260B	Total/NA
1,2,4-Trichlorobenzene - DL	480	D	49		ug/L	5		8270D	Total/NA
Ethane	19		1.1		ug/L	1		RSK-175	Total/NA
Methane (TCD)	18000		390		ug/L	1		RSK-175	Total/NA
Ethane - RA	17 H		1.1		ug/L	1		RSK-175	Total/NA
Methane (TCD) - RA	15000 H		390		ug/L	1		RSK-175	Total/NA

This Detection Summary does not include radiochemical test results.

AWD 4/10/17
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.

Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1

SDG: KPS188

Client Sample ID: CPA-MW-1D-0217 (Continued)

Lab Sample ID: 680-134948-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	0.25		0.050		mg/L	1		6010C	Total
									Recoverable
Manganese	0.12		0.010		mg/L	1		6010C	Total
									Recoverable
Chloride	150	D	5.0		mg/L	5		325.2	Total/NA
Total Organic Carbon	8.3		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	860		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	11		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: CPA-MW-1D-F(0.2)-0217

Lab Sample ID: 680-134948-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	0.14		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.11		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	8.5		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: BSA-MW-1S-0217

Lab Sample ID: 680-134948-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	320000	D	5000		ug/L	5000		8260B	Total/NA
Methane (TCD)	9900		390		ug/L	1		RSK-175	Total/NA
Iron	27		0.050		mg/L	1		6010C	Total
									Recoverable
Manganese	2.3		0.010		mg/L	1		6010C	Total
									Recoverable
Chloride	320	D	10		mg/L	10		325.2	Total/NA
Total Organic Carbon	9.6		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	1200		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	150		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: BSA-MW-1S-F(0.2)-0217

Lab Sample ID: 680-134948-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	26		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	2.3		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	9.9		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: BSA-MW-1S-0217-EB

Lab Sample ID: 680-134948-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	140		1.0		ug/L	1		8260B	Total/NA
Chlorobenzene	3.6		1.0		ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	2.9		1.0		ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	2.8		1.0		ug/L	1		8260B	Total/NA

Client Sample ID: 1Q17 LTM Trip Blank #4

Lab Sample ID: 680-134948-14

No Detections.

This Detection Summary does not include radiochemical test results.

MWO 4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

Client Sample ID: CPA-MW-3D-0217

Lab Sample ID: 680-134948-1

Date Collected: 02/02/17 09:07

Matrix: Water

Date Received: 02/03/17 10:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	5.0	U	5.0		ug/L			02/16/17 02:57	5
Chlorobenzene	250	D	5.0		ug/L			02/16/17 02:57	5
1,2-Dichlorobenzene	5.0	U	5.0		ug/L			02/16/17 02:57	5
1,3-Dichlorobenzene	5.0	U	5.0		ug/L			02/16/17 02:57	5
1,4-Dichlorobenzene	5.0	U	5.0		ug/L			02/16/17 02:57	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 120		02/16/17 02:57	5
1,2-Dichloroethane-d4 (Surr)	101		73 - 131		02/16/17 02:57	5
Dibromofluoromethane (Surr)	95		80 - 122		02/16/17 02:57	5
4-Bromofluorobenzene (Surr)	103		80 - 120		02/16/17 02:57	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	9.6	U	9.6		ug/L		02/06/17 15:03	02/08/17 19:54	1
2-Chlorophenol	9.6	U	9.6		ug/L		02/06/17 15:03	02/08/17 19:54	1
4-Chloroaniline	19	U	19		ug/L		02/06/17 15:03	02/08/17 19:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	77		39 - 124	02/06/17 15:03	02/08/17 19:54	1
2-Fluorobiphenyl	64		32 - 113	02/06/17 15:03	02/08/17 19:54	1
2-Fluorophenol	51		26 - 109	02/06/17 15:03	02/08/17 19:54	1
Terphenyl-d14	28		10 - 126	02/06/17 15:03	02/08/17 19:54	1
Phenol-d5	53		27 - 110	02/06/17 15:03	02/08/17 19:54	1
Nitrobenzene-d5	66		32 - 118	02/06/17 15:03	02/08/17 19:54	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	11		1.1		ug/L			02/14/17 19:12	1
Ethylene	1.0	U	1.0		ug/L			02/14/17 19:12	1
Methane (TCD)	9700		390		ug/L			02/14/17 19:12	1

Method: RSK-175 - Dissolved Gases (GC) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	11	H	1.1		ug/L			02/17/17 16:21	1
Ethylene	3.2	H	1.0		ug/L			02/17/17 16:21	1
Methane (TCD)	7600	H	390		ug/L			02/17/17 16:21	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	12		0.050		mg/L		02/09/17 11:02	02/10/17 19:14	1
Manganese	0.65		0.010		mg/L		02/09/17 11:02	02/10/17 19:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	110	D	5.0		mg/L			02/07/17 12:36	5
Nitrate as N	0.050	U	0.050		mg/L			02/03/17 16:11	1
Sulfate	5.0	U	5.0		mg/L			02/09/17 10:11	1
Total Organic Carbon	6.8		1.0		mg/L			02/13/17 19:50	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	570		5.0		mg/L			02/07/17 17:38	1

TestAmerica Savannah
Ann 4/10/17
4/7/2017

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

Client Sample ID: CPA-MW-3D-0217

Lab Sample ID: 680-134948-1

Date Collected: 02/02/17 09:07

Matrix: Water

Date Received: 02/03/17 10:50

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon Dioxide, Free	59		5.0		mg/L			02/07/17 17:38	1

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AWD 4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

Client Sample ID: CPA-MW-3D-F(0.2)-0217

Lab Sample ID: 680-134948-2

Date Collected: 02/02/17 09:07

Matrix: Water

Date Received: 02/03/17 10:50

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	13		0.050		mg/L		02/09/17 11:02	02/10/17 19:19	1
Manganese, Dissolved	0.70		0.010		mg/L		02/09/17 11:02	02/10/17 19:19	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	7.2		1.0		mg/L			02/11/17 08:13	1

AWD 4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

Client Sample ID: CPA-MW-3D-0217-AD

Lab Sample ID: 680-134948-3

Date Collected: 02/02/17 09:07

Matrix: Water

Date Received: 02/03/17 10:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	5.0	U	5.0		ug/L			02/13/17 21:52	5
Chlorobenzene	280		5.0		ug/L			02/13/17 21:52	5
1,2-Dichlorobenzene	5.0	U	5.0		ug/L			02/13/17 21:52	5
1,3-Dichlorobenzene	5.0	U	5.0		ug/L			02/13/17 21:52	5
1,4-Dichlorobenzene	5.0	U	5.0		ug/L			02/13/17 21:52	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		02/13/17 21:52	5
1,2-Dichloroethane-d4 (Surr)	93		73 - 131		02/13/17 21:52	5
Dibromofluoromethane (Surr)	95		80 - 122		02/13/17 21:52	5
4-Bromofluorobenzene (Surr)	93		80 - 120		02/13/17 21:52	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	9.8	U	9.8		ug/L		02/06/17 15:03	02/08/17 20:17	1
2-Chlorophenol	9.8	U	9.8		ug/L		02/06/17 15:03	02/08/17 20:17	1
4-Chloroaniline	20	U	20		ug/L		02/06/17 15:03	02/08/17 20:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	74		39 - 124	02/06/17 15:03	02/08/17 20:17	1
2-Fluorobiphenyl	62		32 - 113	02/06/17 15:03	02/08/17 20:17	1
2-Fluorophenol	47		26 - 109	02/06/17 15:03	02/08/17 20:17	1
Terphenyl-d14	26		10 - 126	02/06/17 15:03	02/08/17 20:17	1
Phenol-d5	51		27 - 110	02/06/17 15:03	02/08/17 20:17	1
Nitrobenzene-d5	61		32 - 118	02/06/17 15:03	02/08/17 20:17	1

RWD 4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

Client Sample ID: BSA-MW-2D-0217

Lab Sample ID: 680-134948-4

Date Collected: 02/02/17 10:39

Matrix: Water

Date Received: 02/03/17 10:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	260	D	200		ug/L			02/16/17 03:43	200
1,2-Dichlorobenzene	200	U	200		ug/L			02/16/17 03:43	200
1,3-Dichlorobenzene	200	U	200		ug/L			02/16/17 03:43	200
1,4-Dichlorobenzene	200	U	200		ug/L			02/16/17 03:43	200

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 120		02/16/17 03:43	200
1,2-Dichloroethane-d4 (Surr)	108		73 - 131		02/16/17 03:43	200
Dibromofluoromethane (Surr)	97		80 - 122		02/16/17 03:43	200
4-Bromofluorobenzene (Surr)	102		80 - 120		02/16/17 03:43	200

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	47000	V	500		ug/L			02/16/17 11:59	500

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 120		02/16/17 11:59	500
1,2-Dichloroethane-d4 (Surr)	105		73 - 131		02/16/17 11:59	500
Dibromofluoromethane (Surr)	94		80 - 122		02/16/17 11:59	500
4-Bromofluorobenzene (Surr)	102		80 - 120		02/16/17 11:59	500

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	9.7	U	9.7		ug/L		02/06/17 15:03	02/08/17 20:40	1
1,4-Dioxane	12		9.7		ug/L		02/06/17 15:03	02/08/17 20:40	1
2-Chlorophenol	9.7	U	9.7		ug/L		02/06/17 15:03	02/08/17 20:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	74		39 - 124	02/06/17 15:03	02/08/17 20:40	1
2-Fluorobiphenyl	65		32 - 113	02/06/17 15:03	02/08/17 20:40	1
2-Fluorophenol	51		26 - 109	02/06/17 15:03	02/08/17 20:40	1
Terphenyl-d14	24		10 - 126	02/06/17 15:03	02/08/17 20:40	1
Phenol-d5	52		27 - 110	02/06/17 15:03	02/08/17 20:40	1
Nitrobenzene-d5	63		32 - 118	02/06/17 15:03	02/08/17 20:40	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	7.4		1.1		ug/L			02/14/17 19:25	1
Ethylene	1.0	U	1.0		ug/L			02/14/17 19:25	1
Methane (TCD)	21000		390		ug/L			02/14/17 19:25	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	6.8		0.050		mg/L		02/09/17 11:02	02/10/17 19:35	1
Manganese	0.88		0.010		mg/L		02/09/17 11:02	02/10/17 19:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	200	D	5.0		mg/L			02/07/17 11:40	5
Nitrate as N	0.050	U	0.050		mg/L			02/03/17 16:13	1
Sulfate	5.0	U	5.0		mg/L			02/09/17 09:49	1

AWO 4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.

Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1

SDG: KPS188

Client Sample ID: BSA-MW-2D-0217

Lab Sample ID: 680-134948-4

Date Collected: 02/02/17 10:39

Matrix: Water

Date Received: 02/03/17 10:50

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	10		1.0		mg/L			02/13/17 20:08	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	770		5.0		mg/L			02/07/17 17:27	1
Carbon Dioxide, Free	67		5.0		mg/L			02/07/17 17:27	1

4/10/17 AMO
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.

Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1

SDG: KPS188

Client Sample ID: BSA-MW-2D-F(0.2)-0217

Lab Sample ID: 680-134948-5

Date Collected: 02/02/17 10:39

Matrix: Water

Date Received: 02/03/17 10:50

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	6.8		0.050		mg/L		02/09/17 11:02	02/10/17 19:40	1
Manganese, Dissolved	0.88		0.010		mg/L		02/09/17 11:02	02/10/17 19:40	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	10		1.0		mg/L			02/11/17 08:32	1

KMP 4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

Client Sample ID: CPA-MW-2D-0217

Lab Sample ID: 680-134948-6

Date Collected: 02/02/17 12:23

Matrix: Water

Date Received: 02/03/17 10:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	250	U	250		ug/L			02/12/17 13:50	250
Chlorobenzene	29000	D	250		ug/L			02/12/17 13:50	250
1,2-Dichlorobenzene	250	U	250		ug/L			02/12/17 13:50	250
1,3-Dichlorobenzene	250	U	250		ug/L			02/12/17 13:50	250
1,4-Dichlorobenzene	850		250		ug/L			02/12/17 13:50	250

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		02/12/17 13:50	250
1,2-Dichloroethane-d4 (Surr)	100		73 - 131		02/12/17 13:50	250
Dibromofluoromethane (Surr)	104		80 - 122		02/12/17 13:50	250
4-Bromofluorobenzene (Surr)	89		80 - 120		02/12/17 13:50	250

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	9.7	U	9.7		ug/L		02/06/17 15:03	02/08/17 21:03	1
2-Chlorophenol	31		9.7		ug/L		02/06/17 15:03	02/08/17 21:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	62		39 - 124	02/06/17 15:03	02/08/17 21:03	1
2-Fluorobiphenyl	49		32 - 113	02/06/17 15:03	02/08/17 21:03	1
2-Fluorophenol	39		26 - 109	02/06/17 15:03	02/08/17 21:03	1
Terphenyl-d14	36		10 - 126	02/06/17 15:03	02/08/17 21:03	1
Phenol-d5	47		27 - 110	02/06/17 15:03	02/08/17 21:03	1
Nitrobenzene-d5	49		32 - 118	02/06/17 15:03	02/08/17 21:03	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.5		1.1		ug/L			02/14/17 20:04	1
Ethylene	1.0	U	1.0		ug/L			02/14/17 20:04	1
Methane (TCD)	1700		390		ug/L			02/14/17 20:04	1

Method: RSK-175 - Dissolved Gases (GC) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	2.6 H		1.1		ug/L			02/17/17 16:34	1
Ethylene	1.5 H		1.0		ug/L			02/17/17 16:34	1
Methane (TCD)	1600 H		390		ug/L			02/17/17 16:34	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	8.6		0.050		mg/L		02/09/17 11:02	02/10/17 19:45	1
Manganese	0.49		0.010		mg/L		02/09/17 11:02	02/10/17 19:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	56	D	2.0		mg/L			02/07/17 11:40	2
Nitrate as N	0.050	U	0.050		mg/L			02/03/17 16:16	1
Sulfate	24	D	10		mg/L			02/09/17 09:32	2
Total Organic Carbon	6.3		1.0		mg/L			02/13/17 20:26	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	500		5.0		mg/L			02/07/17 17:48	1
Carbon Dioxide, Free	41		5.0		mg/L			02/07/17 17:48	1

KMO 4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

Client Sample ID: CPA-MW-2D-F(0.2)-0217

Lab Sample ID: 680-134948-7

Date Collected: 02/02/17 12:23

Matrix: Water

Date Received: 02/03/17 10:50

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	8.5		0.050		mg/L		02/09/17 11:02	02/10/17 19:50	1
Manganese, Dissolved	0.49		0.010		mg/L		02/09/17 11:02	02/10/17 19:50	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	6.2		1.0		mg/L			02/11/17 08:52	1

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AWD 4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

Client Sample ID: CPA-MW-2D-0217-AD

Lab Sample ID: 680-134948-8

Date Collected: 02/02/17 12:23

Matrix: Water

Date Received: 02/03/17 10:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	250	U	250		ug/L			02/12/17 14:10	250
Chlorobenzene	28000	V	250		ug/L			02/12/17 14:10	250
1,2-Dichlorobenzene	250	U	250		ug/L			02/12/17 14:10	250
1,3-Dichlorobenzene	250	U	250		ug/L			02/12/17 14:10	250
1,4-Dichlorobenzene	830	V	250		ug/L			02/12/17 14:10	250

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		02/12/17 14:10	250
1,2-Dichloroethane-d4 (Surr)	99		73 - 131		02/12/17 14:10	250
Dibromofluoromethane (Surr)	102		80 - 122		02/12/17 14:10	250
4-Bromofluorobenzene (Surr)	95		80 - 120		02/12/17 14:10	250

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	9.7	U	9.7		ug/L		02/06/17 15:03	02/08/17 21:26	1
2-Chlorophenol	37		9.7		ug/L		02/06/17 15:03	02/08/17 21:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	74		39 - 124	02/06/17 15:03	02/08/17 21:26	1
2-Fluorobiphenyl	61		32 - 113	02/06/17 15:03	02/08/17 21:26	1
2-Fluorophenol	46		26 - 109	02/06/17 15:03	02/08/17 21:26	1
Terphenyl-d14	28		10 - 126	02/06/17 15:03	02/08/17 21:26	1
Phenol-d5	51		27 - 110	02/06/17 15:03	02/08/17 21:26	1
Nitrobenzene-d5	59		32 - 118	02/06/17 15:03	02/08/17 21:26	1

AWD 4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

Client Sample ID: CPA-MW-1D-0217

Lab Sample ID: 680-134948-9

Date Collected: 02/02/17 14:11

Matrix: Water

Date Received: 02/03/17 10:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	6600	D	250		ug/L			02/12/17 14:31	250
Chlorobenzene	19000	D	250		ug/L			02/12/17 14:31	250
1,2-Dichlorobenzene	10000	D	250		ug/L			02/12/17 14:31	250
1,3-Dichlorobenzene	1300	D	250		ug/L			02/12/17 14:31	250
1,4-Dichlorobenzene	9000	D	250		ug/L			02/12/17 14:31	250

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 120		02/12/17 14:31	250
1,2-Dichloroethane-d4 (Surr)	100		73 - 131		02/12/17 14:31	250
Dibromofluoromethane (Surr)	104		80 - 122		02/12/17 14:31	250
4-Bromofluorobenzene (Surr)	93		80 - 120		02/12/17 14:31	250

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorophenol	9.8	U	9.8		ug/L		02/06/17 15:03	02/08/17 21:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	60		39 - 124	02/06/17 15:03	02/08/17 21:50	1
2-Fluorobiphenyl	49		32 - 113	02/06/17 15:03	02/08/17 21:50	1
2-Fluorophenol	48		26 - 109	02/06/17 15:03	02/08/17 21:50	1
Terphenyl-d14	16		10 - 126	02/06/17 15:03	02/08/17 21:50	1
Phenol-d5	55		27 - 110	02/06/17 15:03	02/08/17 21:50	1
Nitrobenzene-d5	51		32 - 118	02/06/17 15:03	02/08/17 21:50	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	480	D	49		ug/L		02/06/17 15:03	02/09/17 16:13	5

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	19		1.1		ug/L			02/14/17 20:17	1
Ethylene	1.0	U	1.0		ug/L			02/14/17 20:17	1
Methane (TCD)	18000		390		ug/L			02/14/17 20:17	1

Method: RSK-175 - Dissolved Gases (GC) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	17	H	1.1		ug/L			02/17/17 16:47	1
Ethylene	1.0	U H	1.0		ug/L			02/17/17 16:47	1
Methane (TCD)	15000	H	390		ug/L			02/17/17 16:47	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.25		0.050		mg/L		02/09/17 11:02	02/10/17 19:55	1
Manganese	0.12		0.010		mg/L		02/09/17 11:02	02/10/17 19:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	150	D	5.0		mg/L			02/07/17 11:41	5
Nitrate as N	0.050	U	0.050		mg/L			02/03/17 16:20	1
Sulfate	5.0	U	5.0		mg/L			02/14/17 13:40	1
Total Organic Carbon	8.3		1.0		mg/L			02/13/17 20:49	1

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.

Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1

SDG: KPS188

Client Sample ID: CPA-MW-1D-0217

Lab Sample ID: 680-134948-9

Date Collected: 02/02/17 14:11

Matrix: Water

Date Received: 02/03/17 10:50

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	860		5.0		mg/L			02/07/17 16:46	1
Carbon Dioxide, Free	11		5.0		mg/L			02/07/17 16:46	1

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KWD 4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.

Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1

SDG: KPS188

Client Sample ID: CPA-MW-1D-F(0.2)-0217

Lab Sample ID: 680-134948-10

Date Collected: 02/02/17 14:11

Matrix: Water

Date Received: 02/03/17 10:50

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	0.14		0.050		mg/L		02/09/17 11:02	02/10/17 20:01	1
Manganese, Dissolved	0.11		0.010		mg/L		02/09/17 11:02	02/10/17 20:01	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	8.5		1.0		mg/L			02/11/17 09:14	1

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MWD 4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

Client Sample ID: BSA-MW-1S-0217

Lab Sample ID: 680-134948-11

Date Collected: 02/02/17 15:21

Matrix: Water

Date Received: 02/03/17 10:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	320000	D	5000		ug/L			02/16/17 03:20	5000
Chlorobenzene	5000	U	5000		ug/L			02/16/17 03:20	5000
1,2-Dichlorobenzene	5000	U	5000		ug/L			02/16/17 03:20	5000
1,3-Dichlorobenzene	5000	U	5000		ug/L			02/16/17 03:20	5000
1,4-Dichlorobenzene	5000	U	5000		ug/L			02/16/17 03:20	5000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		02/16/17 03:20	5000
1,2-Dichloroethane-d4 (Surr)	105		73 - 131		02/16/17 03:20	5000
Dibromofluoromethane (Surr)	96		80 - 122		02/16/17 03:20	5000
4-Bromofluorobenzene (Surr)	102		80 - 120		02/16/17 03:20	5000

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	9.7	U	9.7		ug/L		02/06/17 15:03	02/08/17 22:13	1
2-Chlorophenol	9.7	U	9.7		ug/L		02/06/17 15:03	02/08/17 22:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	78		39 - 124	02/06/17 15:03	02/08/17 22:13	1
2-Fluorobiphenyl	64		32 - 113	02/06/17 15:03	02/08/17 22:13	1
2-Fluorophenol	60		26 - 109	02/06/17 15:03	02/08/17 22:13	1
Terphenyl-d14	22		10 - 126	02/06/17 15:03	02/08/17 22:13	1
Phenol-d5	51		27 - 110	02/06/17 15:03	02/08/17 22:13	1
Nitrobenzene-d5	63		32 - 118	02/06/17 15:03	02/08/17 22:13	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			02/14/17 20:30	1
Ethylene	1.0	U	1.0		ug/L			02/14/17 20:30	1
Methane (TCD)	9900		390		ug/L			02/14/17 20:30	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	27		0.050		mg/L		02/09/17 11:02	02/10/17 20:06	1
Manganese	2.3		0.010		mg/L		02/09/17 11:02	02/10/17 20:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	320	D	10		mg/L			02/07/17 12:35	10
Nitrate as N	0.050	U	0.050		mg/L			02/03/17 16:21	1
Sulfate	5.0	U	5.0		mg/L			02/09/17 09:49	1
Total Organic Carbon	9.6		1.0		mg/L			02/13/17 21:40	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	1200		5.0		mg/L			02/07/17 18:05	1
Carbon Dioxide, Free	150		5.0		mg/L			02/07/17 18:05	1

AWP 4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

Client Sample ID: BSA-MW-1S-F(0.2)-0217

Lab Sample ID: 680-134948-12

Date Collected: 02/02/17 15:21

Matrix: Water

Date Received: 02/03/17 10:50

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	26		0.050		mg/L		02/09/17 11:02	02/10/17 20:11	1
Manganese, Dissolved	2.3		0.010		mg/L		02/09/17 11:02	02/10/17 20:11	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	9.9		1.0		mg/L			02/11/17 09:35	1

KWD 4/10/17

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

Client Sample ID: BSA-MW-1S-0217-EB

Lab Sample ID: 680-134948-13

Date Collected: 02/02/17 16:05

Matrix: Water

Date Received: 02/03/17 10:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	140		1.0		ug/L			02/12/17 12:07	1
Chlorobenzene	3.6		1.0		ug/L			02/12/17 12:07	1
1,2-Dichlorobenzene	2.9		1.0		ug/L			02/12/17 12:07	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/12/17 12:07	1
1,4-Dichlorobenzene	2.8		1.0		ug/L			02/12/17 12:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 120		02/12/17 12:07	1
1,2-Dichloroethane-d4 (Surr)	89		73 - 131		02/12/17 12:07	1
Dibromofluoromethane (Surr)	95		80 - 122		02/12/17 12:07	1
4-Bromofluorobenzene (Surr)	94		80 - 120		02/12/17 12:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	9.8	U	9.8		ug/L		02/06/17 15:03	02/08/17 22:36	1
1,4-Dioxane	9.8	U	9.8		ug/L		02/06/17 15:03	02/08/17 22:36	1
2-Chlorophenol	9.8	U	9.8		ug/L		02/06/17 15:03	02/08/17 22:36	1
4-Chloroaniline	20	U	20		ug/L		02/06/17 15:03	02/08/17 22:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	72		39 - 124	02/06/17 15:03	02/08/17 22:36	1
2-Fluorobiphenyl	59		32 - 113	02/06/17 15:03	02/08/17 22:36	1
2-Fluorophenol	47		26 - 109	02/06/17 15:03	02/08/17 22:36	1
Terphenyl-d14	43		10 - 126	02/06/17 15:03	02/08/17 22:36	1
Phenol-d5	48		27 - 110	02/06/17 15:03	02/08/17 22:36	1
Nitrobenzene-d5	54		32 - 118	02/06/17 15:03	02/08/17 22:36	1

AWB 4/10/17

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

Client Sample ID: 1Q17 LTM Trip Blank #4

Lab Sample ID: 680-134948-14

Date Collected: 02/02/17 00:00

Matrix: Water

Date Received: 02/03/17 10:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			02/12/17 12:28	1
Chlorobenzene	1.0	U	1.0		ug/L			02/12/17 12:28	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/12/17 12:28	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/12/17 12:28	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/12/17 12:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		02/12/17 12:28	1
1,2-Dichloroethane-d4 (Surr)	91		73 - 131		02/12/17 12:28	1
Dibromofluoromethane (Surr)	96		80 - 122		02/12/17 12:28	1
4-Bromofluorobenzene (Surr)	93		80 - 120		02/12/17 12:28	1

AWD 4/10/17

TestAmerica Savannah

Surrogate Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (80-120)	12DCE (73-131)	DBFM (80-122)	BFB (80-120)
680-134948-1	CPA-MW-3D-0217	101	101	95	103
680-134948-3	CPA-MW-3D-0217-AD	100	93	95	93
680-134948-4	BSA-MW-2D-0217	101	108	97	102
680-134948-4 - DL	BSA-MW-2D-0217	101	105	94	102
680-134948-6	CPA-MW-2D-0217	100	100	104	89
680-134948-8	CPA-MW-2D-0217-AD	100	99	102	95
680-134948-9	CPA-MW-1D-0217	101	100	104	93
680-134948-11	BSA-MW-1S-0217	100	105	96	102
680-134948-13	BSA-MW-1S-0217-EB	102	89	95	94
680-134948-14	1Q17 LTM Trip Blank #4	100	91	96	93
LCS 680-468678/3	Lab Control Sample	101	78	91	95
LCS 680-468809/4	Lab Control Sample	101	81	91	99
LCS 680-469108/3	Lab Control Sample	107	109	107	102
LCS 680-469151/4	Lab Control Sample	99	106	100	96
LCSD 680-468678/4	Lab Control Sample Dup	101	99	107	98
LCSD 680-468809/5	Lab Control Sample Dup	100	91	100	95
LCSD 680-469108/4	Lab Control Sample Dup	97	100	99	94
LCSD 680-469151/5	Lab Control Sample Dup	102	101	100	94
MB 680-468678/8	Method Blank	105	86	91	92
MB 680-468809/9	Method Blank	99	97	97	94
MB 680-469108/9	Method Blank	101	103	96	102
MB 680-469151/9	Method Blank	100	101	94	103

Surrogate Legend

TOL = Toluene-d8 (Surr)
12DCE = 1,2-Dichloroethane-d4 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TBP (39-124)	FBP (32-113)	2FP (26-109)	TPH (10-126)	PHL (27-110)	NBZ (32-118)
680-134948-1	CPA-MW-3D-0217	77	64	51	28	53	66
680-134948-1 MS	CPA-MW-3D-0217	74	58	53	39	52	58
680-134948-1 MSD	CPA-MW-3D-0217	92	71	58	48	61	66
680-134948-3	CPA-MW-3D-0217-AD	74	62	47	26	51	61
680-134948-4	BSA-MW-2D-0217	74	65	51	24	52	63
680-134948-6	CPA-MW-2D-0217	62	49	39	36	47	49
680-134948-8	CPA-MW-2D-0217-AD	74	61	46	28	51	59
680-134948-9	CPA-MW-1D-0217	60	49	48	16	55	51
680-134948-11	BSA-MW-1S-0217	78	64	60	22	51	63
680-134948-13	BSA-MW-1S-0217-EB	72	59	47	43	48	54
LCS 680-467873/14-A	Lab Control Sample	93	71	59	61	61	69
MB 680-467873/13-A	Method Blank	76	65	61	61	61	68

Surrogate Legend

TBP = 2,4,6-Tribromophenol

AWD 4/10/17
TestAmerica Savannah

Surrogate Summary

Client: Solutia Inc.

Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1

SDG: KPS188

FBP = 2-Fluorobiphenyl

2FP = 2-Fluorophenol

TPH = Terphenyl-d14

PHL = Phenol-d5

NBZ = Nitrobenzene-d5

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AWD 4/10/17
TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

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

Lab Sample ID: MB 680-468678/8

Matrix: Water

Analysis Batch: 468678

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			02/12/17 11:47	1
Chlorobenzene	1.0	U	1.0		ug/L			02/12/17 11:47	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/12/17 11:47	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/12/17 11:47	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/12/17 11:47	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 120		02/12/17 11:47	1
1,2-Dichloroethane-d4 (Surr)	86		73 - 131		02/12/17 11:47	1
Dibromofluoromethane (Surr)	91		80 - 122		02/12/17 11:47	1
4-Bromofluorobenzene (Surr)	92		80 - 120		02/12/17 11:47	1

Lab Sample ID: LCS 680-468678/3

Matrix: Water

Analysis Batch: 468678

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	48.9		ug/L		98	80 - 120
Chlorobenzene	50.0	52.5		ug/L		105	80 - 120
1,2-Dichlorobenzene	50.0	51.5		ug/L		103	80 - 120
1,3-Dichlorobenzene	50.0	52.3		ug/L		105	80 - 120
1,4-Dichlorobenzene	50.0	51.3		ug/L		103	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	101		80 - 120
1,2-Dichloroethane-d4 (Surr)	78		73 - 131
Dibromofluoromethane (Surr)	91		80 - 122
4-Bromofluorobenzene (Surr)	95		80 - 120

Lab Sample ID: LCSD 680-468678/4

Matrix: Water

Analysis Batch: 468678

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	51.3		ug/L		103	80 - 120	5	20
Chlorobenzene	50.0	53.0		ug/L		106	80 - 120	1	20
1,2-Dichlorobenzene	50.0	52.5		ug/L		105	80 - 120	2	20
1,3-Dichlorobenzene	50.0	52.5		ug/L		105	80 - 120	0	20
1,4-Dichlorobenzene	50.0	52.8		ug/L		106	80 - 120	3	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	101		80 - 120
1,2-Dichloroethane-d4 (Surr)	99		73 - 131
Dibromofluoromethane (Surr)	107		80 - 122
4-Bromofluorobenzene (Surr)	98		80 - 120

AWD 4/10/17
TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

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

Lab Sample ID: MB 680-468809/9

Matrix: Water

Analysis Batch: 468809

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			02/13/17 19:08	1
Chlorobenzene	1.0	U	1.0		ug/L			02/13/17 19:08	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/13/17 19:08	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/13/17 19:08	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/13/17 19:08	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		02/13/17 19:08	1
1,2-Dichloroethane-d4 (Surr)	97		73 - 131		02/13/17 19:08	1
Dibromofluoromethane (Surr)	97		80 - 122		02/13/17 19:08	1
4-Bromofluorobenzene (Surr)	94		80 - 120		02/13/17 19:08	1

Lab Sample ID: LCS 680-468809/4

Matrix: Water

Analysis Batch: 468809

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	48.7		ug/L		97	80 - 120
Chlorobenzene	50.0	52.9		ug/L		106	80 - 120
1,2-Dichlorobenzene	50.0	52.4		ug/L		105	80 - 120
1,3-Dichlorobenzene	50.0	52.4		ug/L		105	80 - 120
1,4-Dichlorobenzene	50.0	52.8		ug/L		106	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	101		80 - 120
1,2-Dichloroethane-d4 (Surr)	81		73 - 131
Dibromofluoromethane (Surr)	91		80 - 122
4-Bromofluorobenzene (Surr)	99		80 - 120

Lab Sample ID: LCSD 680-468809/5

Matrix: Water

Analysis Batch: 468809

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	48.9		ug/L		98	80 - 120	0	20
Chlorobenzene	50.0	52.4		ug/L		105	80 - 120	1	20
1,2-Dichlorobenzene	50.0	52.0		ug/L		104	80 - 120	1	20
1,3-Dichlorobenzene	50.0	51.3		ug/L		103	80 - 120	2	20
1,4-Dichlorobenzene	50.0	51.1		ug/L		102	80 - 120	3	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	100		80 - 120
1,2-Dichloroethane-d4 (Surr)	91		73 - 131
Dibromofluoromethane (Surr)	100		80 - 122
4-Bromofluorobenzene (Surr)	95		80 - 120

AWD 4/10/17
TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

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

Lab Sample ID: MB 680-469108/9

Matrix: Water

Analysis Batch: 469108

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			02/15/17 20:43	1
Chlorobenzene	1.0	U	1.0		ug/L			02/15/17 20:43	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/15/17 20:43	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/15/17 20:43	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/15/17 20:43	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 120		02/15/17 20:43	1
1,2-Dichloroethane-d4 (Surr)	103		73 - 131		02/15/17 20:43	1
Dibromofluoromethane (Surr)	96		80 - 122		02/15/17 20:43	1
4-Bromofluorobenzene (Surr)	102		80 - 120		02/15/17 20:43	1

Lab Sample ID: LCS 680-469108/3

Matrix: Water

Analysis Batch: 469108

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	53.0		ug/L		106	80 - 120
Chlorobenzene	50.0	49.2		ug/L		98	80 - 120
1,2-Dichlorobenzene	50.0	50.7		ug/L		101	80 - 120
1,3-Dichlorobenzene	50.0	51.7		ug/L		103	80 - 120
1,4-Dichlorobenzene	50.0	51.2		ug/L		102	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	107		80 - 120
1,2-Dichloroethane-d4 (Surr)	109		73 - 131
Dibromofluoromethane (Surr)	107		80 - 122
4-Bromofluorobenzene (Surr)	102		80 - 120

Lab Sample ID: LCSD 680-469108/4

Matrix: Water

Analysis Batch: 469108

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	48.7		ug/L		97	80 - 120	8	20
Chlorobenzene	50.0	45.9		ug/L		92	80 - 120	7	20
1,2-Dichlorobenzene	50.0	46.4		ug/L		93	80 - 120	9	20
1,3-Dichlorobenzene	50.0	47.3		ug/L		95	80 - 120	9	20
1,4-Dichlorobenzene	50.0	46.8		ug/L		94	80 - 120	9	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	97		80 - 120
1,2-Dichloroethane-d4 (Surr)	100		73 - 131
Dibromofluoromethane (Surr)	99		80 - 122
4-Bromofluorobenzene (Surr)	94		80 - 120

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

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

Lab Sample ID: MB 680-469151/9

Matrix: Water

Analysis Batch: 469151

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			02/16/17 08:53	1
Chlorobenzene	1.0	U	1.0		ug/L			02/16/17 08:53	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/16/17 08:53	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/16/17 08:53	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/16/17 08:53	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		02/16/17 08:53	1
1,2-Dichloroethane-d4 (Surr)	101		73 - 131		02/16/17 08:53	1
Dibromofluoromethane (Surr)	94		80 - 122		02/16/17 08:53	1
4-Bromofluorobenzene (Surr)	103		80 - 120		02/16/17 08:53	1

Lab Sample ID: LCS 680-469151/4

Matrix: Water

Analysis Batch: 469151

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	48.7		ug/L		97	80 - 120
Chlorobenzene	50.0	44.8		ug/L		90	80 - 120
1,2-Dichlorobenzene	50.0	47.7		ug/L		95	80 - 120
1,3-Dichlorobenzene	50.0	49.2		ug/L		98	80 - 120
1,4-Dichlorobenzene	50.0	48.0		ug/L		96	80 - 120

Surrogate	LCS	LCS	Limits
Toluene-d8 (Surr)	99		80 - 120
1,2-Dichloroethane-d4 (Surr)	106		73 - 131
Dibromofluoromethane (Surr)	100		80 - 122
4-Bromofluorobenzene (Surr)	96		80 - 120

Lab Sample ID: LCSD 680-469151/5

Matrix: Water

Analysis Batch: 469151

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	49.9		ug/L		100	80 - 120	3	20
Chlorobenzene	50.0	46.0		ug/L		92	80 - 120	3	20
1,2-Dichlorobenzene	50.0	46.1		ug/L		92	80 - 120	3	20
1,3-Dichlorobenzene	50.0	48.5		ug/L		97	80 - 120	1	20
1,4-Dichlorobenzene	50.0	47.6		ug/L		95	80 - 120	1	20

Surrogate	LCSD	LCSD	Limits
Toluene-d8 (Surr)	102		80 - 120
1,2-Dichloroethane-d4 (Surr)	101		73 - 131
Dibromofluoromethane (Surr)	100		80 - 122
4-Bromofluorobenzene (Surr)	94		80 - 120

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

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

Lab Sample ID: MB 680-467873/13-A
Matrix: Water
Analysis Batch: 468299

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 467873

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,2,4-Trichlorobenzene	10	U	10		ug/L		02/06/17 15:03	02/08/17 19:45	1
1,4-Dioxane	10	U	10		ug/L		02/06/17 15:03	02/08/17 19:45	1
2-Chlorophenol	10	U	10		ug/L		02/06/17 15:03	02/08/17 19:45	1
4-Chloroaniline	20	U	20		ug/L		02/06/17 15:03	02/08/17 19:45	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2,4,6-Tribromophenol	76		39 - 124	02/06/17 15:03	02/08/17 19:45	1
2-Fluorobiphenyl	65		32 - 113	02/06/17 15:03	02/08/17 19:45	1
2-Fluorophenol	61		26 - 109	02/06/17 15:03	02/08/17 19:45	1
Terphenyl-d14	61		10 - 126	02/06/17 15:03	02/08/17 19:45	1
Phenol-d5	61		27 - 110	02/06/17 15:03	02/08/17 19:45	1
Nitrobenzene-d5	68		32 - 118	02/06/17 15:03	02/08/17 19:45	1

Lab Sample ID: LCS 680-467873/14-A
Matrix: Water
Analysis Batch: 468299

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 467873

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.
	Added	Result	Qualifier				Limits
1,2,4-Trichlorobenzene	100	69.8		ug/L		70	33 - 130
1,4-Dioxane	100	49.1		ug/L		49	22 - 130
2-Chlorophenol	100	64.7		ug/L		65	39 - 130
4-Chloroaniline	100	67.0		ug/L		67	42 - 130

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
2,4,6-Tribromophenol	93		39 - 124
2-Fluorobiphenyl	71		32 - 113
2-Fluorophenol	59		26 - 109
Terphenyl-d14	61		10 - 126
Phenol-d5	61		27 - 110
Nitrobenzene-d5	69		32 - 118

Lab Sample ID: 680-134948-1 MS
Matrix: Water
Analysis Batch: 468260

Client Sample ID: CPA-MW-3D-0217
Prep Type: Total/NA
Prep Batch: 467873

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				Limits
1,2,4-Trichlorobenzene	9.6	U	98.1	49.1		ug/L		50	33 - 130
1,4-Dioxane	9.6	U	98.1	38.3		ug/L		39	22 - 130
2-Chlorophenol	9.6	U	98.1	57.8		ug/L		56	39 - 130
4-Chloroaniline	19	U F1	98.1	46.2	F1	ug/L		35	42 - 130

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
2,4,6-Tribromophenol	74		39 - 124
2-Fluorobiphenyl	58		32 - 113
2-Fluorophenol	53		26 - 109
Terphenyl-d14	39		10 - 126
Phenol-d5	52		27 - 110

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

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

Lab Sample ID: 680-134948-1 MS
Matrix: Water
Analysis Batch: 468260

Client Sample ID: CPA-MW-3D-0217
Prep Type: Total/NA
Prep Batch: 467873

Surrogate	MS %Recovery	MS Qualifier	Limits
Nitrobenzene-d5	58		32 - 118

Lab Sample ID: 680-134948-1 MSD
Matrix: Water
Analysis Batch: 468260

Client Sample ID: CPA-MW-3D-0217
Prep Type: Total/NA
Prep Batch: 467873

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trichlorobenzene	9.6	U	101	64.0		ug/L		63	33 - 130	26	50
1,4-Dioxane	9.6	U	101	45.1		ug/L		45	22 - 130	16	50
2-Chlorophenol	9.6	U	101	71.0		ug/L		67	39 - 130	20	50
4-Chloroaniline	19	U F1	101	61.9		ug/L		49	42 - 130	29	50
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
2,4,6-Tribromophenol	92		39 - 124								
2-Fluorobiphenyl	71		32 - 113								
2-Fluorophenol	58		26 - 109								
Terphenyl-d14	48		10 - 126								
Phenol-d5	61		27 - 110								
Nitrobenzene-d5	66		32 - 118								

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-468923/11
Matrix: Water
Analysis Batch: 468923

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			02/14/17 16:07	1
Ethylene	1.0	U	1.0		ug/L			02/14/17 16:07	1
Methane	0.58	U	0.58		ug/L			02/14/17 16:07	1
Methane (TCD)	390	U	390		ug/L			02/14/17 16:07	1

Lab Sample ID: LCS 680-468923/5
Matrix: Water
Analysis Batch: 468923

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane (TCD)	1920	1890		ug/L		98	75 - 125

Lab Sample ID: LCS 680-468923/9
Matrix: Water
Analysis Batch: 468923

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	288	250		ug/L		87	75 - 125
Ethylene	269	236		ug/L		88	75 - 125

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCSD 680-468923/10

Matrix: Water

Analysis Batch: 468923

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	288	249		ug/L		86	75 - 125	0	30
Ethylene	269	236		ug/L		88	75 - 125	0	30

Lab Sample ID: LCSD 680-468923/6

Matrix: Water

Analysis Batch: 468923

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane (TCD)	1920	1820		ug/L		95	75 - 125	4	30

Lab Sample ID: MB 680-469346/9

Matrix: Water

Analysis Batch: 469346

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			02/17/17 12:42	1
Ethylene	1.0	U	1.0		ug/L			02/17/17 12:42	1
Methane	0.58	U	0.58		ug/L			02/17/17 12:42	1
Methane (TCD)	390	U	390		ug/L			02/17/17 12:42	1

Lab Sample ID: LCS 680-469346/3

Matrix: Water

Analysis Batch: 469346

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	288	254		ug/L		88	75 - 125		
Ethylene	269	237		ug/L		88	75 - 125		

Lab Sample ID: LCS 680-469346/6

Matrix: Water

Analysis Batch: 469346

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane (TCD)	1920	1760		ug/L		91	75 - 125		

Lab Sample ID: LCSD 680-469346/4

Matrix: Water

Analysis Batch: 469346

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	288	271		ug/L		94	75 - 125	7	30
Ethylene	269	252		ug/L		93	75 - 125	6	30

Lab Sample ID: LCSD 680-469346/7

Matrix: Water

Analysis Batch: 469346

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane (TCD)	1920	2030		ug/L		106	75 - 125	14	30

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-468404/1-A
Matrix: Water
Analysis Batch: 468707

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 468404

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.050	U	0.050		mg/L		02/09/17 11:02	02/10/17 17:51	1
Iron, Dissolved	0.050	U	0.050		mg/L		02/09/17 11:02	02/10/17 17:51	1
Manganese	0.010	U	0.010		mg/L		02/09/17 11:02	02/10/17 17:51	1
Manganese, Dissolved	0.010	U	0.010		mg/L		02/09/17 11:02	02/10/17 17:51	1

Lab Sample ID: LCS 680-468404/2-A
Matrix: Water
Analysis Batch: 468707

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 468404

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	5.00	5.10		mg/L		102	80 - 120
Iron, Dissolved	5.00	5.10		mg/L		102	80 - 120
Manganese	0.500	0.528		mg/L		106	80 - 120
Manganese, Dissolved	0.500	0.528		mg/L		106	80 - 120

Method: 310.1 - Alkalinity

Lab Sample ID: MB 680-468133/7
Matrix: Water
Analysis Batch: 468133

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0		mg/L			02/07/17 15:38	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			02/07/17 15:38	1

Lab Sample ID: LCS 680-468133/8
Matrix: Water
Analysis Batch: 468133

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	250	250		mg/L		100	80 - 120

Lab Sample ID: LCSD 680-468133/34
Matrix: Water
Analysis Batch: 468133

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	250	251		mg/L		100	80 - 120	0	30

Method: 325.2 - Chloride

Lab Sample ID: MB 680-468131/1
Matrix: Water
Analysis Batch: 468131

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0		mg/L			02/07/17 11:23	1


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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

Method: 325.2 - Chloride (Continued)

Lab Sample ID: LCS 680-468131/2

Matrix: Water

Analysis Batch: 468131

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	26.2		mg/L		105	85 - 115

Lab Sample ID: LCSD 680-468131/5

Matrix: Water

Analysis Batch: 468131

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	25.0	26.1		mg/L		104	85 - 115	0	30

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-467760/13

Matrix: Water

Analysis Batch: 467760

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			02/03/17 15:51	1

Lab Sample ID: LCS 680-467760/16

Matrix: Water

Analysis Batch: 467760

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.500	0.531		mg/L		106	75 - 125
Nitrate Nitrite as N	1.00	1.03		mg/L		103	90 - 110
Nitrite as N	0.500	0.499		mg/L		100	90 - 110

Lab Sample ID: 680-134948-4 MS

Matrix: Water

Analysis Batch: 467760

Client Sample ID: BSA-MW-2D-0217

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.050	U	0.500	0.545		mg/L		109	75 - 125
Nitrate Nitrite as N	0.050	U	1.00	1.05		mg/L		105	90 - 110
Nitrite as N	0.050	U	0.500	0.505		mg/L		101	90 - 110

Lab Sample ID: 680-134948-4 MSD

Matrix: Water

Analysis Batch: 467760

Client Sample ID: BSA-MW-2D-0217

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	0.050	U	0.500	0.547		mg/L		109	75 - 125	0	30
Nitrate Nitrite as N	0.050	U	1.00	1.05		mg/L		105	90 - 110	0	10
Nitrite as N	0.050	U	0.500	0.503		mg/L		101	90 - 110	0	10

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

Method: 375.4 - Sulfate

Lab Sample ID: MB 680-468371/7
Matrix: Water
Analysis Batch: 468371

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	5.0	U	5.0		mg/L			02/09/17 09:34	1

Lab Sample ID: LCS 680-468371/8
Matrix: Water
Analysis Batch: 468371

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	20.7		mg/L		104	75 - 125

Lab Sample ID: LCSD 680-468371/13
Matrix: Water
Analysis Batch: 468371

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	20.0	21.3		mg/L		106	75 - 125	2	30

Lab Sample ID: MB 680-469008/4
Matrix: Water
Analysis Batch: 469008

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	5.0	U	5.0		mg/L			02/14/17 13:40	1

Lab Sample ID: LCS 680-469008/5
Matrix: Water
Analysis Batch: 469008

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	19.8		mg/L		99	75 - 125

Lab Sample ID: LCSD 680-469008/8
Matrix: Water
Analysis Batch: 469008

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	20.0	20.2		mg/L		101	75 - 125	2	30

Method: 415.1 - DOC

Lab Sample ID: MB 680-468704/2
Matrix: Water
Analysis Batch: 468704

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.0	U	1.0		mg/L			02/11/17 02:20	1

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

Method: 415.1 - DOC (Continued)

Lab Sample ID: LCS 680-468704/3

Matrix: Water

Analysis Batch: 468704

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	20.0	21.4		mg/L		107	80 - 120

Lab Sample ID: LCSD 680-468704/4

Matrix: Water

Analysis Batch: 468704

Client Sample ID: Lab Control Sample Dup

Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	20.0	21.6		mg/L		108	80 - 120	1	20

Method: 415.1 - TOC

Lab Sample ID: MB 680-468947/2

Matrix: Water

Analysis Batch: 468947

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.0	U	1.0		mg/L			02/13/17 17:03	1

Lab Sample ID: LCS 680-468947/3

Matrix: Water

Analysis Batch: 468947

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	20.0	20.8		mg/L		104	80 - 120

Lab Sample ID: LCSD 680-468947/4

Matrix: Water

Analysis Batch: 468947

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	20.0	20.9		mg/L		105	80 - 120	1	25


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QC Association Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

GC/MS VOA

Analysis Batch: 468678

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134948-6	CPA-MW-2D-0217	Total/NA	Water	8260B	
680-134948-8	CPA-MW-2D-0217-AD	Total/NA	Water	8260B	
680-134948-9	CPA-MW-1D-0217	Total/NA	Water	8260B	
680-134948-13	BSA-MW-1S-0217-EB	Total/NA	Water	8260B	
680-134948-14	1Q17 LTM Trip Blank #4	Total/NA	Water	8260B	
MB 680-468678/8	Method Blank	Total/NA	Water	8260B	
LCS 680-468678/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-468678/4	Lab Control Sample Dup	Total/NA	Water	8260B	

Analysis Batch: 468809

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134948-3	CPA-MW-3D-0217-AD	Total/NA	Water	8260B	
MB 680-468809/9	Method Blank	Total/NA	Water	8260B	
LCS 680-468809/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-468809/5	Lab Control Sample Dup	Total/NA	Water	8260B	

Analysis Batch: 469108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134948-1	CPA-MW-3D-0217	Total/NA	Water	8260B	
680-134948-4	BSA-MW-2D-0217	Total/NA	Water	8260B	
680-134948-11	BSA-MW-1S-0217	Total/NA	Water	8260B	
MB 680-469108/9	Method Blank	Total/NA	Water	8260B	
LCS 680-469108/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-469108/4	Lab Control Sample Dup	Total/NA	Water	8260B	

Analysis Batch: 469151

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134948-4 - DL	BSA-MW-2D-0217	Total/NA	Water	8260B	
MB 680-469151/9	Method Blank	Total/NA	Water	8260B	
LCS 680-469151/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-469151/5	Lab Control Sample Dup	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 467873

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134948-1	CPA-MW-3D-0217	Total/NA	Water	3520C	
680-134948-3	CPA-MW-3D-0217-AD	Total/NA	Water	3520C	
680-134948-4	BSA-MW-2D-0217	Total/NA	Water	3520C	
680-134948-6	CPA-MW-2D-0217	Total/NA	Water	3520C	
680-134948-8	CPA-MW-2D-0217-AD	Total/NA	Water	3520C	
680-134948-9	CPA-MW-1D-0217	Total/NA	Water	3520C	
680-134948-9 - DL	CPA-MW-1D-0217	Total/NA	Water	3520C	
680-134948-11	BSA-MW-1S-0217	Total/NA	Water	3520C	
680-134948-13	BSA-MW-1S-0217-EB	Total/NA	Water	3520C	
MB 680-467873/13-A	Method Blank	Total/NA	Water	3520C	
LCS 680-467873/14-A	Lab Control Sample	Total/NA	Water	3520C	
680-134948-1 MS	CPA-MW-3D-0217	Total/NA	Water	3520C	
680-134948-1 MSD	CPA-MW-3D-0217	Total/NA	Water	3520C	


 TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.

Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1

SDG: KPS188

GC/MS Semi VOA (Continued)

Analysis Batch: 468260

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134948-1	CPA-MW-3D-0217	Total/NA	Water	8270D	467873
680-134948-3	CPA-MW-3D-0217-AD	Total/NA	Water	8270D	467873
680-134948-4	BSA-MW-2D-0217	Total/NA	Water	8270D	467873
680-134948-6	CPA-MW-2D-0217	Total/NA	Water	8270D	467873
680-134948-8	CPA-MW-2D-0217-AD	Total/NA	Water	8270D	467873
680-134948-9	CPA-MW-1D-0217	Total/NA	Water	8270D	467873
680-134948-11	BSA-MW-1S-0217	Total/NA	Water	8270D	467873
680-134948-13	BSA-MW-1S-0217-EB	Total/NA	Water	8270D	467873
680-134948-1 MS	CPA-MW-3D-0217	Total/NA	Water	8270D	467873
680-134948-1 MSD	CPA-MW-3D-0217	Total/NA	Water	8270D	467873

Analysis Batch: 468299

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-467873/13-A	Method Blank	Total/NA	Water	8270D	467873
LCS 680-467873/14-A	Lab Control Sample	Total/NA	Water	8270D	467873

Analysis Batch: 468434

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134948-9 - DL	CPA-MW-1D-0217	Total/NA	Water	8270D	467873

GC VOA

Analysis Batch: 468923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134948-1	CPA-MW-3D-0217	Total/NA	Water	RSK-175	
680-134948-4	BSA-MW-2D-0217	Total/NA	Water	RSK-175	
680-134948-6	CPA-MW-2D-0217	Total/NA	Water	RSK-175	
680-134948-9	CPA-MW-1D-0217	Total/NA	Water	RSK-175	
680-134948-11	BSA-MW-1S-0217	Total/NA	Water	RSK-175	
MB 680-468923/11	Method Blank	Total/NA	Water	RSK-175	
LCS 680-468923/5	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-468923/9	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-468923/10	Lab Control Sample Dup	Total/NA	Water	RSK-175	
LCSD 680-468923/6	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 469346

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134948-1 - RA	CPA-MW-3D-0217	Total/NA	Water	RSK-175	
680-134948-6 - RA	CPA-MW-2D-0217	Total/NA	Water	RSK-175	
680-134948-9 - RA	CPA-MW-1D-0217	Total/NA	Water	RSK-175	
MB 680-469346/9	Method Blank	Total/NA	Water	RSK-175	
LCS 680-469346/3	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-469346/6	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-469346/4	Lab Control Sample Dup	Total/NA	Water	RSK-175	
LCSD 680-469346/7	Lab Control Sample Dup	Total/NA	Water	RSK-175	


 TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

Metals

Prep Batch: 468404

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134948-1	CPA-MW-3D-0217	Total Recoverable	Water	3005A	
680-134948-2	CPA-MW-3D-F(0.2)-0217	Dissolved	Water	3005A	
680-134948-4	BSA-MW-2D-0217	Total Recoverable	Water	3005A	
680-134948-5	BSA-MW-2D-F(0.2)-0217	Dissolved	Water	3005A	
680-134948-6	CPA-MW-2D-0217	Total Recoverable	Water	3005A	
680-134948-7	CPA-MW-2D-F(0.2)-0217	Dissolved	Water	3005A	
680-134948-9	CPA-MW-1D-0217	Total Recoverable	Water	3005A	
680-134948-10	CPA-MW-1D-F(0.2)-0217	Dissolved	Water	3005A	
680-134948-11	BSA-MW-1S-0217	Total Recoverable	Water	3005A	
680-134948-12	BSA-MW-1S-F(0.2)-0217	Dissolved	Water	3005A	
MB 680-468404/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-468404/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 468707

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134948-1	CPA-MW-3D-0217	Total Recoverable	Water	6010C	468404
680-134948-2	CPA-MW-3D-F(0.2)-0217	Dissolved	Water	6010C	468404
680-134948-4	BSA-MW-2D-0217	Total Recoverable	Water	6010C	468404
680-134948-5	BSA-MW-2D-F(0.2)-0217	Dissolved	Water	6010C	468404
680-134948-6	CPA-MW-2D-0217	Total Recoverable	Water	6010C	468404
680-134948-7	CPA-MW-2D-F(0.2)-0217	Dissolved	Water	6010C	468404
680-134948-9	CPA-MW-1D-0217	Total Recoverable	Water	6010C	468404
680-134948-10	CPA-MW-1D-F(0.2)-0217	Dissolved	Water	6010C	468404
680-134948-11	BSA-MW-1S-0217	Total Recoverable	Water	6010C	468404
680-134948-12	BSA-MW-1S-F(0.2)-0217	Dissolved	Water	6010C	468404
MB 680-468404/1-A	Method Blank	Total Recoverable	Water	6010C	468404
LCS 680-468404/2-A	Lab Control Sample	Total Recoverable	Water	6010C	468404

General Chemistry

Analysis Batch: 467760

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134948-1	CPA-MW-3D-0217	Total/NA	Water	353.2	
680-134948-4	BSA-MW-2D-0217	Total/NA	Water	353.2	
680-134948-6	CPA-MW-2D-0217	Total/NA	Water	353.2	
680-134948-9	CPA-MW-1D-0217	Total/NA	Water	353.2	
680-134948-11	BSA-MW-1S-0217	Total/NA	Water	353.2	
MB 680-467760/13	Method Blank	Total/NA	Water	353.2	
LCS 680-467760/16	Lab Control Sample	Total/NA	Water	353.2	
680-134948-4 MS	BSA-MW-2D-0217	Total/NA	Water	353.2	
680-134948-4 MSD	BSA-MW-2D-0217	Total/NA	Water	353.2	

Analysis Batch: 468131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134948-1	CPA-MW-3D-0217	Total/NA	Water	325.2	
680-134948-4	BSA-MW-2D-0217	Total/NA	Water	325.2	
680-134948-6	CPA-MW-2D-0217	Total/NA	Water	325.2	
680-134948-9	CPA-MW-1D-0217	Total/NA	Water	325.2	
680-134948-11	BSA-MW-1S-0217	Total/NA	Water	325.2	
MB 680-468131/1	Method Blank	Total/NA	Water	325.2	

MMD 4/18/17
TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

General Chemistry (Continued)

Analysis Batch: 468131 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-468131/2	Lab Control Sample	Total/NA	Water	325.2	
LCSD 680-468131/5	Lab Control Sample Dup	Total/NA	Water	325.2	

Analysis Batch: 468133

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134948-1	CPA-MW-3D-0217	Total/NA	Water	310.1	
680-134948-4	BSA-MW-2D-0217	Total/NA	Water	310.1	
680-134948-6	CPA-MW-2D-0217	Total/NA	Water	310.1	
680-134948-9	CPA-MW-1D-0217	Total/NA	Water	310.1	
680-134948-11	BSA-MW-1S-0217	Total/NA	Water	310.1	
MB 680-468133/7	Method Blank	Total/NA	Water	310.1	
LCS 680-468133/8	Lab Control Sample	Total/NA	Water	310.1	
LCSD 680-468133/34	Lab Control Sample Dup	Total/NA	Water	310.1	

Analysis Batch: 468371

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134948-1	CPA-MW-3D-0217	Total/NA	Water	375.4	
680-134948-4	BSA-MW-2D-0217	Total/NA	Water	375.4	
680-134948-6	CPA-MW-2D-0217	Total/NA	Water	375.4	
680-134948-11	BSA-MW-1S-0217	Total/NA	Water	375.4	
MB 680-468371/7	Method Blank	Total/NA	Water	375.4	
LCS 680-468371/8	Lab Control Sample	Total/NA	Water	375.4	
LCSD 680-468371/13	Lab Control Sample Dup	Total/NA	Water	375.4	

Analysis Batch: 468704

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134948-2	CPA-MW-3D-F(0.2)-0217	Dissolved	Water	415.1	
680-134948-5	BSA-MW-2D-F(0.2)-0217	Dissolved	Water	415.1	
680-134948-7	CPA-MW-2D-F(0.2)-0217	Dissolved	Water	415.1	
680-134948-10	CPA-MW-1D-F(0.2)-0217	Dissolved	Water	415.1	
680-134948-12	BSA-MW-1S-F(0.2)-0217	Dissolved	Water	415.1	
MB 680-468704/2	Method Blank	Dissolved	Water	415.1	
LCS 680-468704/3	Lab Control Sample	Dissolved	Water	415.1	
LCSD 680-468704/4	Lab Control Sample Dup	Dissolved	Water	415.1	

Analysis Batch: 468947

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134948-1	CPA-MW-3D-0217	Total/NA	Water	415.1	
680-134948-4	BSA-MW-2D-0217	Total/NA	Water	415.1	
680-134948-6	CPA-MW-2D-0217	Total/NA	Water	415.1	
680-134948-9	CPA-MW-1D-0217	Total/NA	Water	415.1	
680-134948-11	BSA-MW-1S-0217	Total/NA	Water	415.1	
MB 680-468947/2	Method Blank	Total/NA	Water	415.1	
LCS 680-468947/3	Lab Control Sample	Total/NA	Water	415.1	
LCSD 680-468947/4	Lab Control Sample Dup	Total/NA	Water	415.1	

Analysis Batch: 469008

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-134948-9	CPA-MW-1D-0217	Total/NA	Water	375.4	
MB 680-469008/4	Method Blank	Total/NA	Water	375.4	
LCS 680-469008/5	Lab Control Sample	Total/NA	Water	375.4	

JMO 4/10/17
TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.

Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1

SDG: KPS188

General Chemistry (Continued)

Analysis Batch: 469008 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 680-469008/8	Lab Control Sample Dup	Total/NA	Water	375.4	

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AMO 4/10/17
TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

Client Sample ID: CPA-MW-3D-0217

Lab Sample ID: 680-134948-1

Date Collected: 02/02/17 09:07

Matrix: Water

Date Received: 02/03/17 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	469108	02/16/17 02:57	CEJ	TAL SAV
Total/NA	Prep	3520C			467873	02/06/17 15:03	RBS	TAL SAV
Total/NA	Analysis	8270D		1	468260	02/08/17 19:54	OK	TAL SAV
Total/NA	Analysis	RSK-175		1	468923	02/14/17 19:12	JJW	TAL SAV
Total/NA	Analysis	RSK-175	RA	1	469346	02/17/17 16:21	SMC	TAL SAV
Total Recoverable	Prep	3005A			468404	02/09/17 11:02	AJR	TAL SAV
Total Recoverable	Analysis	6010C		1	468707	02/10/17 19:14	BCB	TAL SAV
Total/NA	Analysis	310.1		1	468133	02/07/17 17:38	JCM	TAL SAV
Total/NA	Analysis	325.2		5	468131	02/07/17 12:36	ALS	TAL SAV
Total/NA	Analysis	353.2		1	467760	02/03/17 16:11	GRX	TAL SAV
Total/NA	Analysis	375.4		1	468371	02/09/17 10:11	ALS	TAL SAV
Total/NA	Analysis	415.1		1	468947	02/13/17 19:50	KLD	TAL SAV

Client Sample ID: CPA-MW-3D-F(0.2)-0217

Lab Sample ID: 680-134948-2

Date Collected: 02/02/17 09:07

Matrix: Water

Date Received: 02/03/17 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			468404	02/09/17 11:02	AJR	TAL SAV
Dissolved	Analysis	6010C		1	468707	02/10/17 19:19	BCB	TAL SAV
Dissolved	Analysis	415.1		1	468704	02/11/17 08:13	KLD	TAL SAV

Client Sample ID: CPA-MW-3D-0217-AD

Lab Sample ID: 680-134948-3

Date Collected: 02/02/17 09:07

Matrix: Water

Date Received: 02/03/17 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	468809	02/13/17 21:52	CEJ	TAL SAV
Total/NA	Prep	3520C			467873	02/06/17 15:03	RBS	TAL SAV
Total/NA	Analysis	8270D		1	468260	02/08/17 20:17	OK	TAL SAV

Client Sample ID: BSA-MW-2D-0217

Lab Sample ID: 680-134948-4

Date Collected: 02/02/17 10:39

Matrix: Water

Date Received: 02/03/17 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		200	469108	02/16/17 03:43	CEJ	TAL SAV
Total/NA	Analysis	8260B	DL	500	469151	02/16/17 11:59	CEJ	TAL SAV
Total/NA	Prep	3520C			467873	02/06/17 15:03	RBS	TAL SAV
Total/NA	Analysis	8270D		1	468260	02/08/17 20:40	OK	TAL SAV
Total/NA	Analysis	RSK-175		1	468923	02/14/17 19:25	JJW	TAL SAV

AMV 4/10/17
TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

Client Sample ID: BSA-MW-2D-0217

Lab Sample ID: 680-134948-4

Date Collected: 02/02/17 10:39

Matrix: Water

Date Received: 02/03/17 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			468404	02/09/17 11:02	AJR	TAL SAV
Total Recoverable	Analysis	6010C		1	468707	02/10/17 19:35	BCB	TAL SAV
Total/NA	Analysis	310.1		1	468133	02/07/17 17:27	JCM	TAL SAV
Total/NA	Analysis	325.2		5	468131	02/07/17 11:40	ALS	TAL SAV
Total/NA	Analysis	353.2		1	467760	02/03/17 16:13	GRX	TAL SAV
Total/NA	Analysis	375.4		1	468371	02/09/17 09:49	ALS	TAL SAV
Total/NA	Analysis	415.1		1	468947	02/13/17 20:08	KLD	TAL SAV

Client Sample ID: BSA-MW-2D-F(0.2)-0217

Lab Sample ID: 680-134948-5

Date Collected: 02/02/17 10:39

Matrix: Water

Date Received: 02/03/17 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			468404	02/09/17 11:02	AJR	TAL SAV
Dissolved	Analysis	6010C		1	468707	02/10/17 19:40	BCB	TAL SAV
Dissolved	Analysis	415.1		1	468704	02/11/17 08:32	KLD	TAL SAV

Client Sample ID: CPA-MW-2D-0217

Lab Sample ID: 680-134948-6

Date Collected: 02/02/17 12:23

Matrix: Water

Date Received: 02/03/17 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		250	468678	02/12/17 13:50	CMB	TAL SAV
Total/NA	Prep	3520C			467873	02/06/17 15:03	RBS	TAL SAV
Total/NA	Analysis	8270D		1	468260	02/08/17 21:03	OK	TAL SAV
Total/NA	Analysis	RSK-175		1	468923	02/14/17 20:04	JJW	TAL SAV
Total/NA	Analysis	RSK-175	RA	1	469346	02/17/17 16:34	SMC	TAL SAV
Total Recoverable	Prep	3005A			468404	02/09/17 11:02	AJR	TAL SAV
Total Recoverable	Analysis	6010C		1	468707	02/10/17 19:45	BCB	TAL SAV
Total/NA	Analysis	310.1		1	468133	02/07/17 17:48	JCM	TAL SAV
Total/NA	Analysis	325.2		2	468131	02/07/17 11:40	ALS	TAL SAV
Total/NA	Analysis	353.2		1	467760	02/03/17 16:16	GRX	TAL SAV
Total/NA	Analysis	375.4		2	468371	02/09/17 09:32	ALS	TAL SAV
Total/NA	Analysis	415.1		1	468947	02/13/17 20:26	KLD	TAL SAV

Client Sample ID: CPA-MW-2D-F(0.2)-0217

Lab Sample ID: 680-134948-7

Date Collected: 02/02/17 12:23

Matrix: Water

Date Received: 02/03/17 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			468404	02/09/17 11:02	AJR	TAL SAV
Dissolved	Analysis	6010C		1	468707	02/10/17 19:50	BCB	TAL SAV

AWD 4/10/17
TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.

Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1

SDG: KPS188

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	415.1		1	468704	02/11/17 08:52	KLD	TAL SAV

Client Sample ID: CPA-MW-2D-0217-AD

Lab Sample ID: 680-134948-8

Date Collected: 02/02/17 12:23

Matrix: Water

Date Received: 02/03/17 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		250	468678	02/12/17 14:10	CMB	TAL SAV
Total/NA	Prep	3520C			467873	02/06/17 15:03	RBS	TAL SAV
Total/NA	Analysis	8270D		1	468260	02/08/17 21:26	OK	TAL SAV

Client Sample ID: CPA-MW-1D-0217

Lab Sample ID: 680-134948-9

Date Collected: 02/02/17 14:11

Matrix: Water

Date Received: 02/03/17 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		250	468678	02/12/17 14:31	CMB	TAL SAV
Total/NA	Prep	3520C			467873	02/06/17 15:03	RBS	TAL SAV
Total/NA	Analysis	8270D		1	468260	02/08/17 21:50	OK	TAL SAV
Total/NA	Prep	3520C	DL		467873	02/06/17 15:03	RBS	TAL SAV
Total/NA	Analysis	8270D	DL	5	468434	02/09/17 16:13	OK	TAL SAV
Total/NA	Analysis	RSK-175		1	468923	02/14/17 20:17	JJW	TAL SAV
Total/NA	Analysis	RSK-175	RA	1	469346	02/17/17 16:47	SMC	TAL SAV
Total Recoverable	Prep	3005A			468404	02/09/17 11:02	AJR	TAL SAV
Total Recoverable	Analysis	6010C		1	468707	02/10/17 19:55	BCB	TAL SAV
Total/NA	Analysis	310.1		1	468133	02/07/17 16:46	JCM	TAL SAV
Total/NA	Analysis	325.2		5	468131	02/07/17 11:41	ALS	TAL SAV
Total/NA	Analysis	353.2		1	467760	02/03/17 16:20	GRX	TAL SAV
Total/NA	Analysis	375.4		1	469008	02/14/17 13:40	ALS	TAL SAV
Total/NA	Analysis	415.1		1	468947	02/13/17 20:49	KLD	TAL SAV

Client Sample ID: CPA-MW-1D-F(0.2)-0217

Lab Sample ID: 680-134948-10

Date Collected: 02/02/17 14:11

Matrix: Water

Date Received: 02/03/17 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			468404	02/09/17 11:02	AJR	TAL SAV
Dissolved	Analysis	6010C		1	468707	02/10/17 20:01	BCB	TAL SAV
Dissolved	Analysis	415.1		1	468704	02/11/17 09:14	KLD	TAL SAV

Client Sample ID: BSA-MW-1S-0217

Lab Sample ID: 680-134948-11

Date Collected: 02/02/17 15:21

Matrix: Water

Date Received: 02/03/17 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5000	469108	02/16/17 03:20	CEJ	TAL SAV

Amo 4/10/17
TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

Client Sample ID: BSA-MW-1S-0217

Lab Sample ID: 680-134948-11

Date Collected: 02/02/17 15:21

Matrix: Water

Date Received: 02/03/17 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			467873	02/06/17 15:03	RBS	TAL SAV
Total/NA	Analysis	8270D		1	468260	02/08/17 22:13	OK	TAL SAV
Total/NA	Analysis	RSK-175		1	468923	02/14/17 20:30	JJW	TAL SAV
Total Recoverable	Prep	3005A			468404	02/09/17 11:02	AJR	TAL SAV
Total Recoverable	Analysis	6010C		1	468707	02/10/17 20:06	BCB	TAL SAV
Total/NA	Analysis	310.1		1	468133	02/07/17 18:05	JCM	TAL SAV
Total/NA	Analysis	325.2		10	468131	02/07/17 12:35	ALS	TAL SAV
Total/NA	Analysis	353.2		1	467760	02/03/17 16:21	GRX	TAL SAV
Total/NA	Analysis	375.4		1	468371	02/09/17 09:49	ALS	TAL SAV
Total/NA	Analysis	415.1		1	468947	02/13/17 21:40	KLD	TAL SAV

Client Sample ID: BSA-MW-1S-F(0.2)-0217

Lab Sample ID: 680-134948-12

Date Collected: 02/02/17 15:21

Matrix: Water

Date Received: 02/03/17 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			468404	02/09/17 11:02	AJR	TAL SAV
Dissolved	Analysis	6010C		1	468707	02/10/17 20:11	BCB	TAL SAV
Dissolved	Analysis	415.1		1	468704	02/11/17 09:35	KLD	TAL SAV

Client Sample ID: BSA-MW-1S-0217-EB

Lab Sample ID: 680-134948-13

Date Collected: 02/02/17 16:05

Matrix: Water

Date Received: 02/03/17 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	468678	02/12/17 12:07	CMB	TAL SAV
Total/NA	Prep	3520C			467873	02/06/17 15:03	RBS	TAL SAV
Total/NA	Analysis	8270D		1	468260	02/08/17 22:36	OK	TAL SAV

Client Sample ID: 1Q17 LTM Trip Blank #4

Lab Sample ID: 680-134948-14

Date Collected: 02/02/17 00:00

Matrix: Water

Date Received: 02/03/17 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	468678	02/12/17 12:28	CMB	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Amo 4/10/17
TestAmerica Savannah

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	VOCs by 8260	SVOCs by 8270	AlkylCO2 by 3101	Chloride by 3252/Sulfate by 3754	Dissolved Gases by RSK 175	Nitrate by 3532	TOC by 4151	Dissolved Fe/Mn by 6010C	DOC by 4151
CPA-MW-3D-0217	2/21/17	0907	G	W	16	N	32	111	323						
CPA-MW-3D-F(0.2)-0217		0907			4	Y								13	
CPA-MW-3D-0217-AD		0907			5	N	32								
BSA-MW-2D-0217		1039			16	N	32	111	323						
BSA-MW-2D-F(0.2)-0217		1039			4	Y								13	
CPA-MW-2D-0217		1223			16	N	32	111	323						
CPA-MW-2D-F(0.2)-0217		1223			4	Y								13	
CPA-MW-2D-0217-AD		1223			5	N	32								
CPA-MW-1D-0217		1411			16	N	32	111	323						
CPA-MW-1D-F(0.2)-0217		1411			4	Y								13	
BSA-MW-1S-0217		1521			16	N	32	111	323						
BSA-MW-1S-F(0.2)-0217		1521			4	Y								13	



680-134948 Chain of Custody

Preservation Used: 1=Ice, 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Other

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazardous ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Special Instructions/QC Requirements & Comments:

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

3.7/4.0/1.92

Custody Seal No.:

Relinquished by: Savannah Dube

Relinquished by:

Relinquished by:

Company: Colder

Date/Time: 2/21/17

Company: JAX Saw.

Date/Time: 2/23/17 1050

Company:

Date/Time: 680-134948

Company:

Date/Time:

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-134948-1

SDG Number: KPS188

Login Number: 134948

List Source: TestAmerica Savannah

List Number: 1

Creator: Banda, Christy S

Question	Answer	Comment
Radioactivity wasn't checked or is <= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: Solutia Inc.
Project/Site: 1Q17 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-134948-1
SDG: KPS188

Laboratory: TestAmerica Savannah

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
	AFCEE		SAVLAB	
Alabama	State Program	4	41450	06-30-17
Alaska (UST)	State Program	10	UST-104	11-05-17
Arizona	State Program	9	AZ808	12-14-17
Arkansas DEQ	State Program	6	88-0692	02-01-18
California	State Program	9	2939	06-30-17 *
Colorado	State Program	8	N/A	12-31-17
Connecticut	State Program	1	PH-0161	03-31-17 *
Florida	NELAP	4	E87052	06-30-17
GA Dept. of Agriculture	State Program	4	N/A	06-12-17 *
Georgia	State Program	4	N/A	06-30-17
Georgia	State Program	4	803	06-30-17
Guam	State Program	9	15-005r	04-16-17 *
Hawaii	State Program	9	N/A	06-30-17
Illinois	NELAP	5	200022	11-30-17
Indiana	State Program	5	N/A	06-30-17
Iowa	State Program	7	353	06-30-17
Kentucky (DW)	State Program	4	90084	12-31-17
Kentucky (UST)	State Program	4	18	06-30-17
Kentucky (VWV)	State Program	4	90084	12-31-17
L-A-B	DoD ELAP		L2463	09-22-19
Louisiana	NELAP	6	30690	06-30-17
Louisiana (DW)	NELAP	6	LA160019	12-31-17
Maine	State Program	1	GA00006	09-24-18
Maryland	State Program	3	250	12-31-17
Massachusetts	State Program	1	M-GA006	06-30-17
Michigan	State Program	5	9925	06-30-17
Mississippi	State Program	4	N/A	06-30-17
Nebraska	State Program	7	TestAmerica-Savannah	06-30-17
New Jersey	NELAP	2	GA769	06-30-17 *
New Mexico	State Program	6	N/A	06-30-17
New York	NELAP	2	10842	03-31-17 *
North Carolina (DW)	State Program	4	13701	07-31-17
North Carolina (VWV/SW)	State Program	4	269	12-31-17
Oklahoma	State Program	6	9984	08-31-17
Pennsylvania	NELAP	3	68-00474	06-30-17
Puerto Rico	State Program	2	GA00006	12-31-17
South Carolina	State Program	4	98001	06-30-17
Tennessee	State Program	4	TN02961	06-30-17
Texas	NELAP	6	T104704185-16-9	11-30-17
US Fish & Wildlife	Federal		LE058448-0	10-31-17
USDA	Federal		SAV 3-04	06-11-17 *
Virginia	NELAP	3	460161	06-14-17 *
Washington	State Program	10	C805	06-10-17 *
West Virginia (DW)	State Program	3	9950C	12-31-17
West Virginia DEP	State Program	3	094	06-30-17
Wisconsin	State Program	5	999819810	08-31-17
Wyoming	State Program	8	8TMS-L	06-30-16 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

AMD 4/10/17
TestAmerica Savannah

APPENDIX E
SURFACE WATER AND SEDIMENT ANALYTICAL RESULTS
(INCLUDING DATA VALIDATION REPORTS)

(On CD)



**Level IV Data Validation Summary
Solutia Inc., W.G. Krummrich, Sauget, Illinois
1Q17 Long-Term Monitoring Program**

Company Name: Golder Associates
Project Name: WGK-1Q17 LTM
Reviewer: A. Derhake
Laboratory: TestAmerica
SDG#: KRS018
Matrix: Water and Sediment

Project Manager: A. Derhake
Project Number: 140-3345
Sample Date: February 2017

Analytical Method: VOC (8260B), SVOC (8270D).

Sample Names: SW-R2007-1-0217, SW-R2007-2-0217, SW-R2007-3-0217, SW-R2007-1-0217-AD, SW-R2007-1-0217-EB, SED-R2007-1-0217, SED-R2007-2-0217, SED-R2007-3-0217, SED-R2007-1-0217-AD, 1Q17 LTM River Trip Blank

Field Information**YES NO NA**

- | | | | |
|---|-------------------------------------|--------------------------|--------------------------|
| a) Sampling dates noted? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Does the laboratory narrative indicate deficiencies? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Comments:

Terra core vials for all sediment samples lacked preservatives and were therefore unusable for sample analysis.

VOC: Samples SW-R2007-MS and SW-R-2007-MSD run outside of hold time due to laboratory error.

SVOC: 4-chloroaniline exceeded recovery criteria low for MS of sample SED-R2007-3 in batch 468829.
1,2,4-trichlorobenzene exceeded recovery criteria low for MSD of sample SED-R2007-3 in batch 468829.

Chain-of-Custody (COC)**YES NO NA**

- | | | | |
|---|-------------------------------------|--------------------------|--------------------------|
| a) Was the COC signed by both field and laboratory personnel? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Were samples received in good condition? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Comments: Samples were received at 4.6°C and 4.8°C, within the 4°C ± 2°C criteria.

General**YES NO NA**

- | | | | |
|---|-------------------------------------|-------------------------------------|--------------------------|
| a) Were hold times met for sample analysis? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Were the correct preservatives used? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Was the correct method used? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Any sample dilutions noted? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Comments: MS and MSD for SW-R2007-3 were run outside of hold time due to laboratory error. Terra core vials for all sediment samples lacked preservatives and were therefore unusable for sample analysis.

GC/MS Instrument Performance Check (IPC) and Internal Standards (IS)**YES NO NA**

- | | | | |
|---|-------------------------------------|--------------------------|--------------------------|
| a) IPC analyzed at the appropriate frequency and met the appropriate standards? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Does BFB meet the ion abundance criteria? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Internal Standard retention times and areas met appropriate criteria? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Comments: None

**Calibrations****YES NO NA**

- a) Initial calibration analyzed at the appropriate frequency and met the appropriate standards? ☒ ☐ ☐
- b) Continuing calibrations analyzed at the appropriate frequency and met the appropriate standards? ☒ ☐ ☐
- c) Initial calibration verifications and blanks analyzed at the appropriate frequency and met the appropriate standards? ☐ ☒ ☐
- d) Continuing calibration verifications and blanks analyzed at the appropriate frequency and met the appropriate standards? ☐ ☒ ☐

Comments: Some compounds did not meet calibration requirements; however, calibration criteria were met by analytes of interest. No data qualification was required.

Blanks**YES NO NA**

- a) Were blanks (trip, equipment, method) performed at required frequency? ☒ ☐ ☐
- b) Were analytes detected in any blanks? ☐ ☒ ☐

Comments: Equipment blank SW-R2007-1-0217-EB was submitted with KRS018.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)**YES NO NA**

- a) Was MS/MSD accuracy criteria met? ☐ ☒ ☐
- b) Was MS/MSD precision criteria met? ☒ ☐ ☐

Comments: 4-chloroaniline exceeded recovery criteria low for MS of sample SED-R2007-3 in batch 468829, and 1,2,4-trichlorobenzene exceeded recovery criteria low for MSD of sample SED-R2007-3 in batch 468829. Data was not qualified on MS/MSD data alone.

Laboratory Control Sample (LCS)**YES NO NA**

- a) LCS analyzed at the appropriate frequency and met appropriate standards? ☒ ☐ ☐

Comments: None

Surrogate (System Monitoring) Compounds**YES NO NA**

- a) Surrogate compounds analyzed at the appropriate frequency and met appropriate standards? ☒ ☐ ☐

Comments: None

Duplicates**YES NO NA**

- a) Were field duplicates collected? ☒ ☐ ☐
- b) Was field duplicate precision criteria met? ☒ ☐ ☐

Comments: Duplicate samples SW-R2007-1-0217-AD and SED-R2007-1-0217-AD were submitted with KRS018.

Additional Comments: None

Qualifications: None.

SDG KRS018

Sample Results from:

**SW-R2007-1
SW-R2007-2
SW-R2007-3
SED-R2007-1
SED-R2007-2
SED-R2007-3
SW-R2007-1-AD
SED-R2007-1-AD
SED-R2007-1-EB**

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-135038-1
TestAmerica Sample Delivery Group: KRS018
Client Project/Site: WGK River Sampling
Revision: 1

For:
Solutia Inc.
575 Maryville Centre Dr.
Saint Louis, Missouri 63141

Attn: Mr. Jerry Rinaldi

Kathryn Smith

Authorized for release by:
4/5/2017 10:15:11 PM

Kathryn Smith, Manager of Project Management
(912)354-7858
kathy.smith@testamericainc.com

LINKS

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results through
Total Access

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www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

AMD 4/10/17

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Case Narrative

Client: Solutia Inc.
Project/Site: WGK River Sampling

TestAmerica Job ID: 680-135038-1
SDG: KRS018

Job ID: 680-135038-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Solutia Inc.
Project: WGK River Sampling

Report Number: 680-135038-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

This report was revised on 4/5/2017 to add SDG KRS018 to the report.

RECEIPT

The samples were received on 02/07/2017; the samples arrived in good condition, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 4.6° C and 4.8° C.

Receipt Exception

The following terra core vials were received with no preservative in the vials: SED-R2007-1-0217 (680-135038-6), SED-R2007-2-0217 (680-135038-7), SED-R2007-3-0217 (680-135038-8), SED-R2007-3-0217-MS (680-135038-8[MS]), SED-R2007-3-0217-MSD (680-135038-8[MSD]) and SED-R2007-1-0217-AD (680-135038-9) and were therefore not usable.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples SW-R2007-1-0217 (680-135038-1), SW-R2007-2-0217 (680-135038-2), SW-R2007-3-0217 (680-135038-3), SW-R2007-1-0217-AD (680-135038-4), SW-R2007-1-0217-EB (680-135038-5) and 1Q17 LTM RIVER TRIP BLANK (680-135038-10) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 02/20/2017.

The following samples were analyzed outside of analytical holding and clock time due to laboratory error: SW-R2007-3-0217-MS (680-135038-3[MS]) and SW-R2007-3-0217-MSD (680-135038-3[MSD]).

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SEMIVOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples SED-R2007-1-0217 (680-135038-6), SED-R2007-2-0217 (680-135038-7), SED-R2007-3-0217 (680-135038-8) and SED-R2007-1-0217-AD (680-135038-9) were analyzed for Semivolatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8270D. The samples were prepared and analyzed on 02/13/2017.

4-Chloroaniline recovered low for the MS of sample SED-R2007-3-0217-MSMS (680-135038-8) in batch 680-468829.

1,2,4-Trichlorobenzene recovered low for the MSD of sample SED-R2007-3-0217-MSDMSD (680-135038-8) in batch 680-468829.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SEMIVOLATILE ORGANIC COMPOUNDS (AQUEOUS)

Samples SW-R2007-1-0217 (680-135038-1), SW-R2007-2-0217 (680-135038-2), SW-R2007-3-0217 (680-135038-3), SW-R2007-1-0217-AD (680-135038-4) and SW-R2007-1-0217-EB (680-135038-5) were analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 02/08/2017 and analyzed on 02/09/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Case Narrative

Client: Solutia Inc.
Project/Site: WGK River Sampling

TestAmerica Job ID: 680-135038-1
SDG: KRS018

Job ID: 680-135038-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

PERCENT SOLIDS/MOISTURE

Samples SED-R2007-1-0217 (680-135038-6), SED-R2007-2-0217 (680-135038-7), SED-R2007-3-0217 (680-135038-8) and SED-R2007-1-0217-AD (680-135038-9) were analyzed for Percent Solids/Moisture in accordance with TestAmerica SOP. The samples were analyzed on 02/07/2017.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Solutia Inc.
Project/Site: WGK River Sampling

TestAmerica Job ID: 680-135038-1
SDG: KRS018

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-135038-1	SW-R2007-1-0217	Water	02/06/17 12:50	02/07/17 09:05
680-135038-2	SW-R2007-2-0217	Water	02/06/17 12:00	02/07/17 09:05
680-135038-3	SW-R2007-3-0217	Water	02/06/17 10:30	02/07/17 09:05
680-135038-4	SW-R2007-1-0217-AD	Water	02/06/17 12:50	02/07/17 09:05
680-135038-5	SW-R2007-1-0217-EB	Water	02/06/17 13:30	02/07/17 09:05
680-135038-6	SED-R2007-1-0217	Solid	02/06/17 12:50	02/07/17 09:05
680-135038-7	SED-R2007-2-0217	Solid	02/06/17 12:00	02/07/17 09:05
680-135038-8	SED-R2007-3-0217	Solid	02/06/17 10:30	02/07/17 09:05
680-135038-9	SED-R2007-1-0217-AD	Solid	02/06/17 12:50	02/07/17 09:05
680-135038-10	1Q17 LTM RIVER TRIP BLANK	Water	02/06/17 00:00	02/07/17 09:05

AWD
4/10/17
TestAmerica Savannah

Method Summary

Client: Solutia Inc.
Project/Site: WGK River Sampling

TestAmerica Job ID: 680-135038-1
SDG: KRS018

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
Moisture	Percent Moisture	EPA	TAL SAV

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

AMP
4/10/17
TestAmerica Savannah

Definitions/Glossary

Client: Solutia Inc.
Project/Site: WGK River Sampling

TestAmerica Job ID: 680-135038-1
SDG: KRS018

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
H	Sample was prepped or analyzed beyond the specified holding time

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
F1	MS and/or MSD Recovery is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

AWD
4/10/17
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: WGK River Sampling

TestAmerica Job ID: 680-135038-1
SDG: KRS018

Client Sample ID: SW-R2007-1-0217

Lab Sample ID: 680-135038-1

☐ No Detections.

Client Sample ID: SW-R2007-2-0217

Lab Sample ID: 680-135038-2

☐ No Detections.

Client Sample ID: SW-R2007-3-0217

Lab Sample ID: 680-135038-3

☐ No Detections.

Client Sample ID: SW-R2007-1-0217-AD

Lab Sample ID: 680-135038-4

☐ No Detections.

Client Sample ID: SW-R2007-1-0217-EB

Lab Sample ID: 680-135038-5

☐ No Detections.

Client Sample ID: SED-R2007-1-0217

Lab Sample ID: 680-135038-6

☐ No Detections.

Client Sample ID: SED-R2007-2-0217

Lab Sample ID: 680-135038-7

☐ No Detections.

Client Sample ID: SED-R2007-3-0217

Lab Sample ID: 680-135038-8

☐ No Detections.

Client Sample ID: SED-R2007-1-0217-AD

Lab Sample ID: 680-135038-9

☐ No Detections.

Client Sample ID: 1Q17 LTM RIVER TRIP BLANK

Lab Sample ID: 680-135038-10

☐ No Detections.

This Detection Summary does not include radiochemical test results.

AMP
4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling

TestAmerica Job ID: 680-135038-1
SDG: KRS018

Client Sample ID: SW-R2007-1-0217

Lab Sample ID: 680-135038-1

Date Collected: 02/06/17 12:50

Matrix: Water

Date Received: 02/07/17 09:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.43	ug/L			02/20/17 21:53	1
Chlorobenzene	1.0	U	1.0	0.26	ug/L			02/20/17 21:53	1
1,2-Dichlorobenzene	1.0	U	1.0	0.37	ug/L			02/20/17 21:53	1
1,3-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			02/20/17 21:53	1
1,4-Dichlorobenzene	1.0	U	1.0	0.46	ug/L			02/20/17 21:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		02/20/17 21:53	1
1,2-Dichloroethane-d4 (Surr)	96		73 - 131		02/20/17 21:53	1
Dibromofluoromethane (Surr)	95		80 - 122		02/20/17 21:53	1
4-Bromofluorobenzene (Surr)	98		80 - 120		02/20/17 21:53	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	20	U	20	2.2	ug/L		02/08/17 15:28	02/09/17 22:03	1
2-Chlorophenol	9.9	U	9.9	0.86	ug/L		02/08/17 15:28	02/09/17 22:03	1
1,4-Dioxane	9.9	U	9.9	3.4	ug/L		02/08/17 15:28	02/09/17 22:03	1
1,2,4-Trichlorobenzene	9.9	U	9.9	0.55	ug/L		02/08/17 15:28	02/09/17 22:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	72		32 - 113	02/08/17 15:28	02/09/17 22:03	1
2-Fluorophenol	67		26 - 109	02/08/17 15:28	02/09/17 22:03	1
Nitrobenzene-d5	80		32 - 118	02/08/17 15:28	02/09/17 22:03	1
Phenol-d5	75		27 - 110	02/08/17 15:28	02/09/17 22:03	1
Terphenyl-d14	40		10 - 126	02/08/17 15:28	02/09/17 22:03	1
2,4,6-Tribromophenol	83		39 - 124	02/08/17 15:28	02/09/17 22:03	1

AWD
2/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling

TestAmerica Job ID: 680-135038-1
SDG: KRS018

Client Sample ID: SW-R2007-2-0217

Lab Sample ID: 680-135038-2

Date Collected: 02/06/17 12:00

Matrix: Water

Date Received: 02/07/17 09:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.43	ug/L			02/20/17 22:24	1
Chlorobenzene	1.0	U	1.0	0.26	ug/L			02/20/17 22:24	1
1,2-Dichlorobenzene	1.0	U	1.0	0.37	ug/L			02/20/17 22:24	1
1,3-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			02/20/17 22:24	1
1,4-Dichlorobenzene	1.0	U	1.0	0.46	ug/L			02/20/17 22:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		02/20/17 22:24	1
1,2-Dichloroethane-d4 (Surr)	95		73 - 131		02/20/17 22:24	1
Dibromofluoromethane (Surr)	96		80 - 122		02/20/17 22:24	1
4-Bromofluorobenzene (Surr)	98		80 - 120		02/20/17 22:24	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	20	U	20	2.2	ug/L		02/08/17 15:28	02/09/17 22:25	1
2-Chlorophenol	9.8	U	9.8	0.86	ug/L		02/08/17 15:28	02/09/17 22:25	1
1,4-Dioxane	9.8	U	9.8	3.3	ug/L		02/08/17 15:28	02/09/17 22:25	1
1,2,4-Trichlorobenzene	9.8	U	9.8	0.55	ug/L		02/08/17 15:28	02/09/17 22:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	74		32 - 113	02/08/17 15:28	02/09/17 22:25	1
2-Fluorophenol	67		26 - 109	02/08/17 15:28	02/09/17 22:25	1
Nitrobenzene-d5	77		32 - 118	02/08/17 15:28	02/09/17 22:25	1
Phenol-d5	79		27 - 110	02/08/17 15:28	02/09/17 22:25	1
Terphenyl-d14	38		10 - 126	02/08/17 15:28	02/09/17 22:25	1
2,4,6-Tribromophenol	78		39 - 124	02/08/17 15:28	02/09/17 22:25	1

AWD
4/10/17

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling

TestAmerica Job ID: 680-135038-1
SDG: KRS018

Client Sample ID: SW-R2007-3-0217

Lab Sample ID: 680-135038-3

Date Collected: 02/06/17 10:30

Matrix: Water

Date Received: 02/07/17 09:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.43	ug/L			02/20/17 22:54	1
Chlorobenzene	1.0	U	1.0	0.26	ug/L			02/20/17 22:54	1
1,2-Dichlorobenzene	1.0	U	1.0	0.37	ug/L			02/20/17 22:54	1
1,3-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			02/20/17 22:54	1
1,4-Dichlorobenzene	1.0	U	1.0	0.46	ug/L			02/20/17 22:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		02/20/17 22:54	1
1,2-Dichloroethane-d4 (Surr)	96		73 - 131		02/20/17 22:54	1
Dibromofluoromethane (Surr)	95		80 - 122		02/20/17 22:54	1
4-Bromofluorobenzene (Surr)	98		80 - 120		02/20/17 22:54	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	20	U	20	2.2	ug/L		02/08/17 15:28	02/09/17 22:47	1
2-Chlorophenol	9.9	U	9.9	0.86	ug/L		02/08/17 15:28	02/09/17 22:47	1
1,4-Dioxane	9.9	U	9.9	3.4	ug/L		02/08/17 15:28	02/09/17 22:47	1
1,2,4-Trichlorobenzene	9.9	U	9.9	0.55	ug/L		02/08/17 15:28	02/09/17 22:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	72		32 - 113	02/08/17 15:28	02/09/17 22:47	1
2-Fluorophenol	64		26 - 109	02/08/17 15:28	02/09/17 22:47	1
Nitrobenzene-d5	76		32 - 118	02/08/17 15:28	02/09/17 22:47	1
Phenol-d5	71		27 - 110	02/08/17 15:28	02/09/17 22:47	1
Terphenyl-d14	28		10 - 126	02/08/17 15:28	02/09/17 22:47	1
2,4,6-Tribromophenol	80		39 - 124	02/08/17 15:28	02/09/17 22:47	1

AMP
4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling

TestAmerica Job ID: 680-135038-1
SDG: KRS018

Client Sample ID: SW-R2007-1-0217-AD

Lab Sample ID: 680-135038-4

Date Collected: 02/06/17 12:50

Matrix: Water

Date Received: 02/07/17 09:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.43	ug/L	-		02/20/17 23:25	1
Chlorobenzene	1.0	U	1.0	0.26	ug/L			02/20/17 23:25	1
1,2-Dichlorobenzene	1.0	U	1.0	0.37	ug/L			02/20/17 23:25	1
1,3-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			02/20/17 23:25	1
1,4-Dichlorobenzene	1.0	U	1.0	0.46	ug/L			02/20/17 23:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		02/20/17 23:25	1
1,2-Dichloroethane-d4 (Surr)	96		73 - 131		02/20/17 23:25	1
Dibromofluoromethane (Surr)	97		80 - 122		02/20/17 23:25	1
4-Bromofluorobenzene (Surr)	98		80 - 120		02/20/17 23:25	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	19	U	19	2.1	ug/L	-	02/08/17 15:28	02/09/17 23:08	1
2-Chlorophenol	9.6	U	9.6	0.84	ug/L		02/08/17 15:28	02/09/17 23:08	1
1,4-Dioxane	9.6	U	9.6	3.3	ug/L		02/08/17 15:28	02/09/17 23:08	1
1,2,4-Trichlorobenzene	9.6	U	9.6	0.54	ug/L		02/08/17 15:28	02/09/17 23:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	71		32 - 113	02/08/17 15:28	02/09/17 23:08	1
2-Fluorophenol	63		26 - 109	02/08/17 15:28	02/09/17 23:08	1
Nitrobenzene-d5	76		32 - 118	02/08/17 15:28	02/09/17 23:08	1
Phenol-d5	70		27 - 110	02/08/17 15:28	02/09/17 23:08	1
Terphenyl-d14	29		10 - 126	02/08/17 15:28	02/09/17 23:08	1
2,4,6-Tribromophenol	76		39 - 124	02/08/17 15:28	02/09/17 23:08	1

AMP
4/10/17

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling

TestAmerica Job ID: 680-135038-1
SDG: KRS018

Client Sample ID: SW-R2007-1-0217-EB

Lab Sample ID: 680-135038-5

Date Collected: 02/06/17 13:30

Matrix: Water

Date Received: 02/07/17 09:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.43	ug/L			02/20/17 21:22	1
Chlorobenzene	1.0	U	1.0	0.26	ug/L			02/20/17 21:22	1
1,2-Dichlorobenzene	1.0	U	1.0	0.37	ug/L			02/20/17 21:22	1
1,3-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			02/20/17 21:22	1
1,4-Dichlorobenzene	1.0	U	1.0	0.46	ug/L			02/20/17 21:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		02/20/17 21:22	1
1,2-Dichloroethane-d4 (Surr)	94		73 - 131		02/20/17 21:22	1
Dibromofluoromethane (Surr)	95		80 - 122		02/20/17 21:22	1
4-Bromofluorobenzene (Surr)	99		80 - 120		02/20/17 21:22	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	19	U	19	2.1	ug/L		02/08/17 15:28	02/09/17 23:30	1
2-Chlorophenol	9.7	U	9.7	0.84	ug/L		02/08/17 15:28	02/09/17 23:30	1
1,4-Dioxane	9.7	U	9.7	3.3	ug/L		02/08/17 15:28	02/09/17 23:30	1
1,2,4-Trichlorobenzene	9.7	U	9.7	0.54	ug/L		02/08/17 15:28	02/09/17 23:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	52		32 - 113	02/08/17 15:28	02/09/17 23:30	1
2-Fluorophenol	46		26 - 109	02/08/17 15:28	02/09/17 23:30	1
Nitrobenzene-d5	59		32 - 118	02/08/17 15:28	02/09/17 23:30	1
Phenol-d5	52		27 - 110	02/08/17 15:28	02/09/17 23:30	1
Terphenyl-d14	23		10 - 126	02/08/17 15:28	02/09/17 23:30	1
2,4,6-Tribromophenol	56		39 - 124	02/08/17 15:28	02/09/17 23:30	1

KWP
4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling

TestAmerica Job ID: 680-135038-1
SDG: KRS018

Client Sample ID: SED-R2007-1-0217

Lab Sample ID: 680-135038-6

Date Collected: 02/06/17 12:50

Matrix: Solid

Date Received: 02/07/17 09:05

Percent Solids: 26.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	2500	U	2500	200	ug/Kg	☼	02/13/17 13:47	02/13/17 18:55	1
2-Chlorophenol	1300	U	1300	150	ug/Kg	☼	02/13/17 13:47	02/13/17 18:55	1
1,4-Dioxane	1300	U	1300	460	ug/Kg	☼	02/13/17 13:47	02/13/17 18:55	1
1,2,4-Trichlorobenzene	1300	U	1300	120	ug/Kg	☼	02/13/17 13:47	02/13/17 18:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	71		41 - 116	02/13/17 13:47	02/13/17 18:55	1
2-Fluorophenol	72		39 - 114	02/13/17 13:47	02/13/17 18:55	1
Nitrobenzene-d5	65		37 - 115	02/13/17 13:47	02/13/17 18:55	1
Phenol-d5	73		38 - 122	02/13/17 13:47	02/13/17 18:55	1
Terphenyl-d14	74		46 - 126	02/13/17 13:47	02/13/17 18:55	1
2,4,6-Tribromophenol	82		45 - 129	02/13/17 13:47	02/13/17 18:55	1

AMP
4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling

TestAmerica Job ID: 680-135038-1
SDG: KRS018

Client Sample ID: SED-R2007-2-0217

Lab Sample ID: 680-135038-7

Date Collected: 02/06/17 12:00

Matrix: Solid

Date Received: 02/07/17 09:05

Percent Solids: 85.3

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	770	U	770	61	ug/Kg	☼	02/13/17 13:47	02/13/17 19:16	1
2-Chlorophenol	390	U	390	47	ug/Kg	☼	02/13/17 13:47	02/13/17 19:16	1
1,4-Dioxane	390	U	390	140	ug/Kg	☼	02/13/17 13:47	02/13/17 19:16	1
1,2,4-Trichlorobenzene	390	U	390	36	ug/Kg	☼	02/13/17 13:47	02/13/17 19:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	73		41 - 116				02/13/17 13:47	02/13/17 19:16	1
2-Fluorophenol	76		39 - 114				02/13/17 13:47	02/13/17 19:16	1
Nitrobenzene-d5	70		37 - 115				02/13/17 13:47	02/13/17 19:16	1
Phenol-d5	77		38 - 122				02/13/17 13:47	02/13/17 19:16	1
Terphenyl-d14	80		46 - 126				02/13/17 13:47	02/13/17 19:16	1
2,4,6-Tribromophenol	82		45 - 129				02/13/17 13:47	02/13/17 19:16	1

KMP
4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling

TestAmerica Job ID: 680-135038-1
SDG: KRS018

Client Sample ID: SED-R2007-3-0217

Lab Sample ID: 680-135038-8

Date Collected: 02/06/17 10:30

Matrix: Solid

Date Received: 02/07/17 09:05

Percent Solids: 69.3

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	950	U FI	950	75	ug/Kg	☼	02/13/17 13:47	02/13/17 19:38	1
2-Chlorophenol	480	U	480	58	ug/Kg	☼	02/13/17 13:47	02/13/17 19:38	1
1,4-Dioxane	480	U	480	170	ug/Kg	☼	02/13/17 13:47	02/13/17 19:38	1
1,2,4-Trichlorobenzene	480	U FI	480	45	ug/Kg	☼	02/13/17 13:47	02/13/17 19:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	75		41 - 116	02/13/17 13:47	02/13/17 19:38	1
2-Fluorophenol	75		39 - 114	02/13/17 13:47	02/13/17 19:38	1
Nitrobenzene-d5	79		37 - 115	02/13/17 13:47	02/13/17 19:38	1
Phenol-d5	77		38 - 122	02/13/17 13:47	02/13/17 19:38	1
Terphenyl-d14	76		46 - 126	02/13/17 13:47	02/13/17 19:38	1
2,4,6-Tribromophenol	84		45 - 129	02/13/17 13:47	02/13/17 19:38	1

AMP
4/10/17

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling

TestAmerica Job ID: 680-135038-1
SDG: KRS018

Client Sample ID: SED-R2007-1-0217-AD

Lab Sample ID: 680-135038-9

Date Collected: 02/06/17 12:50

Matrix: Solid

Date Received: 02/07/17 09:05

Percent Solids: 73.7

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	890	U	890	70	ug/Kg	☼	02/13/17 13:47	02/13/17 19:59	1
2-Chlorophenol	450	U	450	54	ug/Kg	☼	02/13/17 13:47	02/13/17 19:59	1
1,4-Dioxane	450	U	450	160	ug/Kg	☼	02/13/17 13:47	02/13/17 19:59	1
1,2,4-Trichlorobenzene	450	U	450	42	ug/Kg	☼	02/13/17 13:47	02/13/17 19:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	74		41 - 116				02/13/17 13:47	02/13/17 19:59	1
2-Fluorophenol	73		39 - 114				02/13/17 13:47	02/13/17 19:59	1
Nitrobenzene-d5	69		37 - 115				02/13/17 13:47	02/13/17 19:59	1
Phenol-d5	75		38 - 122				02/13/17 13:47	02/13/17 19:59	1
Terphenyl-d14	74		46 - 126				02/13/17 13:47	02/13/17 19:59	1
2,4,6-Tribromophenol	80		45 - 129				02/13/17 13:47	02/13/17 19:59	1

AWD
4/10/17
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling

TestAmerica Job ID: 680-135038-1
SDG: KRS018

Client Sample ID: 1Q17 LTM RIVER TRIP BLANK

Lab Sample ID: 680-135038-10

Date Collected: 02/06/17 00:00

Matrix: Water

Date Received: 02/07/17 09:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.43	ug/L			02/20/17 19:50	1
Chlorobenzene	1.0	U	1.0	0.26	ug/L			02/20/17 19:50	1
1,2-Dichlorobenzene	1.0	U	1.0	0.37	ug/L			02/20/17 19:50	1
1,3-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			02/20/17 19:50	1
1,4-Dichlorobenzene	1.0	U	1.0	0.46	ug/L			02/20/17 19:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		02/20/17 19:50	1
1,2-Dichloroethane-d4 (Surr)	94		73 - 131		02/20/17 19:50	1
Dibromofluoromethane (Surr)	94		80 - 122		02/20/17 19:50	1
4-Bromofluorobenzene (Surr)	98		80 - 120		02/20/17 19:50	1

AMP
4/10/17
TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling

TestAmerica Job ID: 680-135038-1
SDG: KRS018

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

Lab Sample ID: MB 680-469669/8

Matrix: Water

Analysis Batch: 469669

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.43	ug/L			02/20/17 19:20	1
Chlorobenzene	1.0	U	1.0	0.26	ug/L			02/20/17 19:20	1
1,2-Dichlorobenzene	1.0	U	1.0	0.37	ug/L			02/20/17 19:20	1
1,3-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			02/20/17 19:20	1
1,4-Dichlorobenzene	1.0	U	1.0	0.46	ug/L			02/20/17 19:20	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		02/20/17 19:20	1
1,2-Dichloroethane-d4 (Surr)	95		73 - 131		02/20/17 19:20	1
Dibromofluoromethane (Surr)	96		80 - 122		02/20/17 19:20	1
4-Bromofluorobenzene (Surr)	97		80 - 120		02/20/17 19:20	1

Lab Sample ID: LCS 680-469669/3

Matrix: Water

Analysis Batch: 469669

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	47.4		ug/L		95	80 - 120
Chlorobenzene	50.0	47.6		ug/L		95	80 - 120
1,2-Dichlorobenzene	50.0	47.8		ug/L		96	80 - 120
1,3-Dichlorobenzene	50.0	47.6		ug/L		95	80 - 120
1,4-Dichlorobenzene	50.0	47.6		ug/L		95	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	95		80 - 120
1,2-Dichloroethane-d4 (Surr)	97		73 - 131
Dibromofluoromethane (Surr)	97		80 - 122
4-Bromofluorobenzene (Surr)	93		80 - 120

Lab Sample ID: LCSD 680-469669/4

Matrix: Water

Analysis Batch: 469669

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	47.8		ug/L		96	80 - 120	1	20
Chlorobenzene	50.0	47.5		ug/L		95	80 - 120	0	20
1,2-Dichlorobenzene	50.0	47.9		ug/L		96	80 - 120	0	20
1,3-Dichlorobenzene	50.0	47.8		ug/L		96	80 - 120	0	20
1,4-Dichlorobenzene	50.0	47.7		ug/L		95	80 - 120	0	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	95		80 - 120
1,2-Dichloroethane-d4 (Surr)	96		73 - 131
Dibromofluoromethane (Surr)	97		80 - 122
4-Bromofluorobenzene (Surr)	93		80 - 120

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4/10/17
TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling

TestAmerica Job ID: 680-135038-1
SDG: KRS018

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

Lab Sample ID: 680-135038-3 MS

Matrix: Water

Analysis Batch: 469669

Client Sample ID: SW-R2007-3-0217-MS

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	1.0	U	50.0	49.2	H	ug/L		98	80 - 120
Chlorobenzene	1.0	U	50.0	46.9	H	ug/L		94	80 - 120
1,2-Dichlorobenzene	1.0	U	50.0	47.6	H	ug/L		95	80 - 120
1,3-Dichlorobenzene	1.0	U	50.0	48.3	H	ug/L		97	80 - 120
1,4-Dichlorobenzene	1.0	U	50.0	47.8	H	ug/L		96	80 - 120

Surrogate	MS %Recovery	MS Qualifier	MS Limits
Toluene-d8 (Surr)	96		80 - 120
1,2-Dichloroethane-d4 (Surr)	97		73 - 131
Dibromofluoromethane (Surr)	99		80 - 122
4-Bromofluorobenzene (Surr)	93		80 - 120

Lab Sample ID: 680-135038-3 MSD

Matrix: Water

Analysis Batch: 469669

Client Sample ID: SW-R2007-3-0217-MSD

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	1.0	U	50.0	49.1	H	ug/L		98	80 - 120	0	20
Chlorobenzene	1.0	U	50.0	46.7	H	ug/L		93	80 - 120	0	20
1,2-Dichlorobenzene	1.0	U	50.0	47.7	H	ug/L		95	80 - 120	0	20
1,3-Dichlorobenzene	1.0	U	50.0	48.2	H	ug/L		96	80 - 120	0	20
1,4-Dichlorobenzene	1.0	U	50.0	47.5	H	ug/L		95	80 - 120	1	20

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
Toluene-d8 (Surr)	96		80 - 120
1,2-Dichloroethane-d4 (Surr)	96		73 - 131
Dibromofluoromethane (Surr)	97		80 - 122
4-Bromofluorobenzene (Surr)	93		80 - 120

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

Lab Sample ID: MB 680-468170/9-A

Matrix: Water

Analysis Batch: 468433

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 468170

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	20	U	20	2.2	ug/L		02/08/17 15:28	02/09/17 20:36	1
2-Chlorophenol	10	U	10	0.87	ug/L		02/08/17 15:28	02/09/17 20:36	1
1,4-Dioxane	10	U	10	3.4	ug/L		02/08/17 15:28	02/09/17 20:36	1
1,2,4-Trichlorobenzene	10	U	10	0.56	ug/L		02/08/17 15:28	02/09/17 20:36	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	78		32 - 113	02/08/17 15:28	02/09/17 20:36	1
2-Fluorophenol	75		26 - 109	02/08/17 15:28	02/09/17 20:36	1
Nitrobenzene-d5	84		32 - 118	02/08/17 15:28	02/09/17 20:36	1
Phenol-d5	73		27 - 110	02/08/17 15:28	02/09/17 20:36	1
Terphenyl-d14	74		10 - 126	02/08/17 15:28	02/09/17 20:36	1

TestAmerica Savannah
MD 4/10/17
4/5/2017

QC Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling

TestAmerica Job ID: 680-135038-1
SDG: KRS018

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

Lab Sample ID: MB 680-468170/9-A
Matrix: Water
Analysis Batch: 468433

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 468170

Surrogate	MB MB %Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	89		39 - 124	02/08/17 15:28	02/09/17 20:36	1

Lab Sample ID: LCS 680-468170/10-A
Matrix: Water
Analysis Batch: 468433

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 468170
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
4-Chloroaniline	100	79.5		ug/L		79	42 - 130
2-Chlorophenol	100	73.4		ug/L		73	39 - 130
1,4-Dioxane	100	48.2		ug/L		48	22 - 130
1,2,4-Trichlorobenzene	100	70.8		ug/L		71	33 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl	78		32 - 113
2-Fluorophenol	63		26 - 109
Nitrobenzene-d5	79		32 - 118
Phenol-d5	73		27 - 110
Terphenyl-d14	66		10 - 126
2,4,6-Tribromophenol	86		39 - 124

Lab Sample ID: 680-135038-3 MS
Matrix: Water
Analysis Batch: 468433

Client Sample ID: SW-R2007-3-0217-MS
Prep Type: Total/NA
Prep Batch: 468170
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
4-Chloroaniline	20	U	101	58.6		ug/L		58	42 - 130
2-Chlorophenol	9.9	U	101	65.9		ug/L		66	39 - 130
1,4-Dioxane	9.9	U	101	45.9		ug/L		46	22 - 130
1,2,4-Trichlorobenzene	9.9	U	101	64.0		ug/L		64	33 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
2-Fluorobiphenyl	68		32 - 113
2-Fluorophenol	58		26 - 109
Nitrobenzene-d5	77		32 - 118
Phenol-d5	66		27 - 110
Terphenyl-d14	29		10 - 126
2,4,6-Tribromophenol	79		39 - 124

Lab Sample ID: 680-135038-3 MSD
Matrix: Water
Analysis Batch: 468433

Client Sample ID: SW-R2007-3-0217-MSD
Prep Type: Total/NA
Prep Batch: 468170
%Rec. RPD

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
4-Chloroaniline	20	U	97.6	55.9		ug/L		57	42 - 130	5	50
2-Chlorophenol	9.9	U	97.6	61.0		ug/L		63	39 - 130	8	50
1,4-Dioxane	9.9	U	97.6	40.4		ug/L		41	22 - 130	13	50
1,2,4-Trichlorobenzene	9.9	U	97.6	54.1		ug/L		55	33 - 130	17	50

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4/5/2017

QC Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling

TestAmerica Job ID: 680-135038-1
SDG: KRS018

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

Lab Sample ID: 680-135038-3 MSD

Matrix: Water

Analysis Batch: 468433

Client Sample ID: SW-R2007-3-0217-MSD

Prep Type: Total/NA

Prep Batch: 468170

Surrogate	MSD %Recovery	MSD Qualifier	Limits
2-Fluorobiphenyl	64		32 - 113
2-Fluorophenol	57		26 - 109
Nitrobenzene-d5	67		32 - 118
Phenol-d5	65		27 - 110
Terphenyl-d14	37		10 - 126
2,4,6-Tribromophenol	75		39 - 124

Lab Sample ID: MB 680-468775/13-A

Matrix: Solid

Analysis Batch: 468829

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 468775

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	660	U	660	52	ug/Kg		02/13/17 13:47	02/13/17 18:35	1
2-Chlorophenol	330	U	330	40	ug/Kg		02/13/17 13:47	02/13/17 18:35	1
1,4-Dioxane	330	U	330	120	ug/Kg		02/13/17 13:47	02/13/17 18:35	1
1,2,4-Trichlorobenzene	330	U	330	31	ug/Kg		02/13/17 13:47	02/13/17 18:35	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	74		41 - 116	02/13/17 13:47	02/13/17 18:35	1
2-Fluorophenol	76		39 - 114	02/13/17 13:47	02/13/17 18:35	1
Nitrobenzene-d5	74		37 - 115	02/13/17 13:47	02/13/17 18:35	1
Phenol-d5	79		38 - 122	02/13/17 13:47	02/13/17 18:35	1
Terphenyl-d14	88		46 - 126	02/13/17 13:47	02/13/17 18:35	1
2,4,6-Tribromophenol	87		45 - 129	02/13/17 13:47	02/13/17 18:35	1

Lab Sample ID: LCS 680-468775/14-A

Matrix: Solid

Analysis Batch: 468829

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 468775

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
4-Chloroaniline	3320	2100		ug/Kg		63	10 - 130
2-Chlorophenol	3320	2900		ug/Kg		87	47 - 130
1,4-Dioxane	3320	1570		ug/Kg		47	14 - 130
1,2,4-Trichlorobenzene	3320	2820		ug/Kg		85	47 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl	85		41 - 116
2-Fluorophenol	86		39 - 114
Nitrobenzene-d5	81		37 - 115
Phenol-d5	87		38 - 122
Terphenyl-d14	94		46 - 126
2,4,6-Tribromophenol	96		45 - 129

TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling

TestAmerica Job ID: 680-135038-1
SDG: KRS018

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

Lab Sample ID: 680-135038-8 MS

Matrix: Solid

Analysis Batch: 468829

Client Sample ID: SED-R2007-3-0217-MS

Prep Type: Total/NA

Prep Batch: 468775

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
4-Chloroaniline	950	U F1	4590	1180	F1	ug/Kg	☼	26	36 - 130
2-Chlorophenol	480	U	4590	2720		ug/Kg	☼	59	51 - 130
1,4-Dioxane	480	U	4590	1330		ug/Kg	☼	29	10 - 130
1,2,4-Trichlorobenzene	480	U F1	4590	2530		ug/Kg	☼	55	51 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
2-Fluorobiphenyl	54		41 - 116
2-Fluorophenol	57		39 - 114
Nitrobenzene-d5	51		37 - 115
Phenol-d5	57		38 - 122
Terphenyl-d14	57		46 - 126
2,4,6-Tribromophenol	59		45 - 129

Lab Sample ID: 680-135038-8 MSD

Matrix: Solid

Analysis Batch: 468829

Client Sample ID: SED-R2007-3-0217-MSD

Prep Type: Total/NA

Prep Batch: 468775

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
4-Chloroaniline	950	U F1	4570	1870		ug/Kg	☼	41	36 - 130	45	50
2-Chlorophenol	480	U	4570	2450		ug/Kg	☼	54	51 - 130	10	50
1,4-Dioxane	480	U	4570	1260		ug/Kg	☼	28	10 - 130	5	50
1,2,4-Trichlorobenzene	480	U F1	4570	2300	F1	ug/Kg	☼	50	51 - 130	10	50

Surrogate	MSD %Recovery	MSD Qualifier	Limits
2-Fluorobiphenyl	50		41 - 116
2-Fluorophenol	52		39 - 114
Nitrobenzene-d5	50		37 - 115
Phenol-d5	53		38 - 122
Terphenyl-d14	54		46 - 126
2,4,6-Tribromophenol	55		45 - 129

AMP
4/6/17
TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.
Project/Site: WGK River Sampling

TestAmerica Job ID: 680-135038-1
SDG: KRS018

GC/MS VOA

Analysis Batch: 469669

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-135038-1	SW-R2007-1-0217	Total/NA	Water	8260B	
680-135038-2	SW-R2007-2-0217	Total/NA	Water	8260B	
680-135038-3	SW-R2007-3-0217	Total/NA	Water	8260B	
680-135038-4	SW-R2007-1-0217-AD	Total/NA	Water	8260B	
680-135038-5	SW-R2007-1-0217-EB	Total/NA	Water	8260B	
680-135038-10	1Q17 LTM RIVER TRIP BLANK	Total/NA	Water	8260B	
MB 680-469669/8	Method Blank	Total/NA	Water	8260B	
LCS 680-469669/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-469669/4	Lab Control Sample Dup	Total/NA	Water	8260B	
680-135038-3 MS	SW-R2007-3-0217-MS	Total/NA	Water	8260B	
680-135038-3 MSD	SW-R2007-3-0217-MSD	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 468170

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-135038-1	SW-R2007-1-0217	Total/NA	Water	3520C	
680-135038-2	SW-R2007-2-0217	Total/NA	Water	3520C	
680-135038-3	SW-R2007-3-0217	Total/NA	Water	3520C	
680-135038-4	SW-R2007-1-0217-AD	Total/NA	Water	3520C	
680-135038-5	SW-R2007-1-0217-EB	Total/NA	Water	3520C	
MB 680-468170/9-A	Method Blank	Total/NA	Water	3520C	
LCS 680-468170/10-A	Lab Control Sample	Total/NA	Water	3520C	
680-135038-3 MS	SW-R2007-3-0217-MS	Total/NA	Water	3520C	
680-135038-3 MSD	SW-R2007-3-0217-MSD	Total/NA	Water	3520C	

Analysis Batch: 468433

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-135038-1	SW-R2007-1-0217	Total/NA	Water	8270D	468170
680-135038-2	SW-R2007-2-0217	Total/NA	Water	8270D	468170
680-135038-3	SW-R2007-3-0217	Total/NA	Water	8270D	468170
680-135038-4	SW-R2007-1-0217-AD	Total/NA	Water	8270D	468170
680-135038-5	SW-R2007-1-0217-EB	Total/NA	Water	8270D	468170
MB 680-468170/9-A	Method Blank	Total/NA	Water	8270D	468170
LCS 680-468170/10-A	Lab Control Sample	Total/NA	Water	8270D	468170
680-135038-3 MS	SW-R2007-3-0217-MS	Total/NA	Water	8270D	468170
680-135038-3 MSD	SW-R2007-3-0217-MSD	Total/NA	Water	8270D	468170

Prep Batch: 468775

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-135038-6	SED-R2007-1-0217	Total/NA	Solid	3546	
680-135038-7	SED-R2007-2-0217	Total/NA	Solid	3546	
680-135038-8	SED-R2007-3-0217	Total/NA	Solid	3546	
680-135038-9	SED-R2007-1-0217-AD	Total/NA	Solid	3546	
MB 680-468775/13-A	Method Blank	Total/NA	Solid	3546	
LCS 680-468775/14-A	Lab Control Sample	Total/NA	Solid	3546	
680-135038-8 MS	SED-R2007-3-0217-MS	Total/NA	Solid	3546	
680-135038-8 MSD	SED-R2007-3-0217-MSD	Total/NA	Solid	3546	

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QC Association Summary

Client: Solutia Inc.
Project/Site: WGK River Sampling

TestAmerica Job ID: 680-135038-1
SDG: KRS018

GC/MS Semi VOA (Continued)

Analysis Batch: 468829

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-135038-6	SED-R2007-1-0217	Total/NA	Solid	8270D	468775
680-135038-7	SED-R2007-2-0217	Total/NA	Solid	8270D	468775
680-135038-8	SED-R2007-3-0217	Total/NA	Solid	8270D	468775
680-135038-9	SED-R2007-1-0217-AD	Total/NA	Solid	8270D	468775
MB 680-468775/13-A	Method Blank	Total/NA	Solid	8270D	468775
LCS 680-468775/14-A	Lab Control Sample	Total/NA	Solid	8270D	468775
680-135038-8 MS	SED-R2007-3-0217-MS	Total/NA	Solid	8270D	468775
680-135038-8 MSD	SED-R2007-3-0217-MSD	Total/NA	Solid	8270D	468775

General Chemistry

Analysis Batch: 468067

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-135038-6	SED-R2007-1-0217	Total/NA	Solid	Moisture	
680-135038-7	SED-R2007-2-0217	Total/NA	Solid	Moisture	
680-135038-8	SED-R2007-3-0217	Total/NA	Solid	Moisture	
680-135038-9	SED-R2007-1-0217-AD	Total/NA	Solid	Moisture	
680-135038-8 MS	SED-R2007-3-0217-MS	Total/NA	Solid	Moisture	
680-135038-8 MSD	SED-R2007-3-0217-MSD	Total/NA	Solid	Moisture	

ARM 4/10/17
TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: WGK River Sampling

TestAmerica Job ID: 680-135038-1
SDG: KRS018

Client Sample ID: SW-R2007-1-0217

Lab Sample ID: 680-135038-1

Date Collected: 02/06/17 12:50

Matrix: Water

Date Received: 02/07/17 09:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	469669	02/20/17 21:53	CEJ	TAL SAV
Total/NA	Prep	3520C			1011.7 mL	1 mL	468170	02/08/17 15:28	RBS	TAL SAV
Total/NA	Analysis	8270D		1			468433	02/09/17 22:03	OK	TAL SAV

Client Sample ID: SW-R2007-2-0217

Lab Sample ID: 680-135038-2

Date Collected: 02/06/17 12:00

Matrix: Water

Date Received: 02/07/17 09:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	469669	02/20/17 22:24	CEJ	TAL SAV
Total/NA	Prep	3520C			1016.2 mL	1 mL	468170	02/08/17 15:28	RBS	TAL SAV
Total/NA	Analysis	8270D		1			468433	02/09/17 22:25	OK	TAL SAV

Client Sample ID: SW-R2007-3-0217

Lab Sample ID: 680-135038-3

Date Collected: 02/06/17 10:30

Matrix: Water

Date Received: 02/07/17 09:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	469669	02/20/17 22:54	CEJ	TAL SAV
Total/NA	Prep	3520C			1011.7 mL	1 mL	468170	02/08/17 15:28	RBS	TAL SAV
Total/NA	Analysis	8270D		1			468433	02/09/17 22:47	OK	TAL SAV

Client Sample ID: SW-R2007-1-0217-AD

Lab Sample ID: 680-135038-4

Date Collected: 02/06/17 12:50

Matrix: Water

Date Received: 02/07/17 09:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	469669	02/20/17 23:25	CEJ	TAL SAV
Total/NA	Prep	3520C			1040.8 mL	1 mL	468170	02/08/17 15:28	RBS	TAL SAV
Total/NA	Analysis	8270D		1			468433	02/09/17 23:08	OK	TAL SAV

Client Sample ID: SW-R2007-1-0217-EB

Lab Sample ID: 680-135038-5

Date Collected: 02/06/17 13:30

Matrix: Water

Date Received: 02/07/17 09:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	469669	02/20/17 21:22	CEJ	TAL SAV
Total/NA	Prep	3520C			1031.5 mL	1 mL	468170	02/08/17 15:28	RBS	TAL SAV
Total/NA	Analysis	8270D		1			468433	02/09/17 23:30	OK	TAL SAV

AMP
4/10/17
TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: WGK River Sampling

TestAmerica Job ID: 680-135038-1
SDG: KRS018

Client Sample ID: SED-R2007-1-0217

Lab Sample ID: 680-135038-6

Date Collected: 02/06/17 12:50

Matrix: Solid

Date Received: 02/07/17 09:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			468067	02/07/17 16:00	EDE	TAL SAV

Client Sample ID: SED-R2007-1-0217

Lab Sample ID: 680-135038-6

Date Collected: 02/06/17 12:50

Matrix: Solid

Date Received: 02/07/17 09:05

Percent Solids: 26.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			30.05 g	1 mL	468775	02/13/17 13:47	JAS	TAL SAV
Total/NA	Analysis	8270D		1			468829	02/13/17 18:55	OK	TAL SAV

Client Sample ID: SED-R2007-2-0217

Lab Sample ID: 680-135038-7

Date Collected: 02/06/17 12:00

Matrix: Solid

Date Received: 02/07/17 09:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			468067	02/07/17 16:00	EDE	TAL SAV

Client Sample ID: SED-R2007-2-0217

Lab Sample ID: 680-135038-7

Date Collected: 02/06/17 12:00

Matrix: Solid

Date Received: 02/07/17 09:05

Percent Solids: 85.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			30.10 g	1 mL	468775	02/13/17 13:47	JAS	TAL SAV
Total/NA	Analysis	8270D		1			468829	02/13/17 19:16	OK	TAL SAV

Client Sample ID: SED-R2007-3-0217

Lab Sample ID: 680-135038-8

Date Collected: 02/06/17 10:30

Matrix: Solid

Date Received: 02/07/17 09:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			468067	02/07/17 16:00	EDE	TAL SAV

Client Sample ID: SED-R2007-3-0217

Lab Sample ID: 680-135038-8

Date Collected: 02/06/17 10:30

Matrix: Solid

Date Received: 02/07/17 09:05

Percent Solids: 69.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			30.09 g	1 mL	468775	02/13/17 13:47	JAS	TAL SAV
Total/NA	Analysis	8270D		1			468829	02/13/17 19:38	OK	TAL SAV

Am
4/10/17
TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: WGK River Sampling

TestAmerica Job ID: 680-135038-1
SDG: KRS018

Client Sample ID: SED-R2007-1-0217-AD

Lab Sample ID: 680-135038-9

Date Collected: 02/06/17 12:50

Matrix: Solid

Date Received: 02/07/17 09:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			468067	02/07/17 16:00	EDE	TAL SAV

Client Sample ID: SED-R2007-1-0217-AD

Lab Sample ID: 680-135038-9

Date Collected: 02/06/17 12:50

Matrix: Solid

Date Received: 02/07/17 09:05

Percent Solids: 73.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			30.10 g	1 mL	468775	02/13/17 13:47	JAS	TAL SAV
Total/NA	Analysis	8270D		1			468829	02/13/17 19:59	OK	TAL SAV

Client Sample ID: 1Q17 LTM RIVER TRIP BLANK

Lab Sample ID: 680-135038-10

Date Collected: 02/06/17 00:00

Matrix: Water

Date Received: 02/07/17 09:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	469669	02/20/17 19:50	CEJ	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

AMP
4/10/17
TestAmerica Savannah

Chain of Custody Record

TestAmerica

Client Information		Lab PM		Carrier Tracking No(s)	
Client Contact	Company	Lab PM	Carrier Tracking No(s)	Page	Page 1 of 2
S. Dicenzo	Samartha Dicenzo	Kersey, Michele R	680-80709-33145.1		
Phone	636-724-9191	E-Mail	kersey@testamarcinc.com		
Address:		Job #		Preservation Codes:	
820 South Main Street Suite 100				M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4.5 Z - other (specify)	
City	St. Charles			Other:	
State, Zip	MO, 63301				
Phone	636-724-9191				
Email	kersey@testamarcinc.com				
Project #	68004114				
SSOW#					
Due Date Requested:		Analysis Requested		Special Instructions/Note:	
TAT Requested (days):					
Standard					
Sample Date		Sample Time		Sample Type	
2/6/17	1250	G		Water	
	1200			Water	
	1030			Water	
	1030			Water	
	1030			Water	
	1250			Water	
	1330			Water	
	1250			Solid	
	1200			Solid	
	1030			Solid	
Sample Identification		Sample Date		Sample Time	
SW-R2007-1-0117-0217	2/6/17	1250		G	
SW-R2007-2-0117-0217		1200			
SW-R2007-3-0117-0217		1030			
SW-R2007-3-0117-0217-MS		1030			
SW-R2007-3-0117-0217-MSD		1030			
SW-R2007-1-0117-0217-AD		1250			
SED-R2007-1-0117-0217-EB		1330			
SW-R2007-0117					
SED-R2007-1-0117-0217		1250			
SED-R2007-2-0117-0217		1200			
SED-R2007-3-0117-0217		1030			
Possible Hazard Identification		Sample Date		Sample Time	
Non-Hazard	Flammable				
Poison 8	Unknown				
Skin Irritant	Radiological				
Deliverable Requested I, II, III, IV, Other (specify)		Sample Date		Sample Time	
Empty Kit Relinquished by:		Date		Time	
Relinquished by:		Date		Time	
Relinquished by:		Date		Time	
Custody Seal No		Date		Time	
Custody Seal No		Date		Time	
Custody Seal No		Date		Time	

TestAmerica Savannah

5102 LaRoche Avenue
Savannah, GA 31404
Phone (912) 354-7858 Fax (912) 352-0165

Chain of Custody Record

TestAmerica

TestAmerica, Inc. (912) 354-7858

Client Information Client Contact: <u>S. Dikense / T. Goodwin</u> Phone: <u>636-724-9191</u> Company: <u>Samantha Dikense</u> Address: <u>Golder Associates Inc.</u> 820 South Main Street Suite 100 City: <u>St. Charles</u> State: <u>MO</u> Zip: <u>63301</u> Phone: <u>636-724-9191</u> Email: <u>sdikense@golder.com</u> Project Name: <u>WCK River Sampling 1Q17</u> Site: <u>SSOW#</u>		Lab PM Kersey, Michele R E-Mail: <u>michele.kersey@testamericainc.com</u>		Carrier Tracking (N/A) COC No: <u>880-80709-33145.2</u> Page: <u>Page 2 of 2</u> Job #: <u></u>																																																																																				
Analysis Requested Due Date Requested: <u>Standard</u> TAT Requested (days): <u>Standard</u> PO #: <u></u> WO #: <u></u> Project #: <u>68004114</u> SOW#: <u></u>																																																																																								
Sample Identification <table border="1"> <thead> <tr> <th>Sample Identification</th> <th>Sample Date</th> <th>Sample Time</th> <th>Sample Type (C=Comp, G=grab)</th> <th>Matrix (Weed, Solid, Overhead, AT-Tank, AAI)</th> <th>Preservation Code:</th> <th>Field Filled Sample (Yes or No)</th> <th>Perform MS/MSD (Yes or No)</th> <th>8270C - 8270 SVOC (5L)</th> <th>8260B - 8260 VOC (5M)</th> <th>8270C - 8270 SVOC (5ED)</th> <th>8260B - 8260 VOC (5ED)</th> <th>Total Number of Containers</th> <th>Special Instructions/Note:</th> </tr> </thead> <tbody> <tr> <td>SED-R2007-3 0817-MS 0817-MS</td> <td>2/16/17</td> <td>1030</td> <td>G</td> <td>Solid</td> <td></td> <td>N</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>5</td> <td></td> </tr> <tr> <td>SED-R2007-3 0817-MSD 0817-MSD</td> <td></td> <td>1030</td> <td></td> <td>Solid</td> <td></td> <td>N</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>5</td> <td></td> </tr> <tr> <td>SED-R2007-1 0817-AD 0817-AD</td> <td></td> <td>1250</td> <td></td> <td>Solid</td> <td></td> <td>N</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>5</td> <td></td> </tr> <tr> <td>SED-R2007-0117</td> <td></td> <td></td> <td></td> <td>Solid</td> <td></td> <td>N</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>1Q17 LTM River Trip Blank</td> <td></td> <td></td> <td></td> <td>Water</td> <td></td> <td>N</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>3</td> <td></td> </tr> </tbody> </table>					Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Weed, Solid, Overhead, AT-Tank, AAI)	Preservation Code:	Field Filled Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270C - 8270 SVOC (5L)	8260B - 8260 VOC (5M)	8270C - 8270 SVOC (5ED)	8260B - 8260 VOC (5ED)	Total Number of Containers	Special Instructions/Note:	SED-R2007-3 0817-MS 0817-MS	2/16/17	1030	G	Solid		N						5		SED-R2007-3 0817-MSD 0817-MSD		1030		Solid		N						5		SED-R2007-1 0817-AD 0817-AD		1250		Solid		N						5		SED-R2007-0117				Solid		N								1Q17 LTM River Trip Blank				Water		N						3	
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Weed, Solid, Overhead, AT-Tank, AAI)	Preservation Code:	Field Filled Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270C - 8270 SVOC (5L)	8260B - 8260 VOC (5M)	8270C - 8270 SVOC (5ED)	8260B - 8260 VOC (5ED)	Total Number of Containers	Special Instructions/Note:																																																																											
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SED-R2007-0117				Solid		N																																																																																		
1Q17 LTM River Trip Blank				Water		N						3																																																																												
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: <input type="checkbox"/> I, II, III, IV, Other (specify) <input type="checkbox"/> Archive For <input type="checkbox"/> Months																																																																																								
Special Instructions/OC Requirements: Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab																																																																																								
Time Date: <u>2/16/17</u> 1630 Company: <u>Golder</u> Date/Time: <u>2/16/17</u> 1630 Company: <u>Golder</u> Date/Time: <u></u> Company: <u></u> Date/Time: <u></u> Company: <u></u>																																																																																								
Custody Seal Intact: <u>Yes</u> <input type="checkbox"/> No <input type="checkbox"/> Custody Seal No: <u>4.8/4.6°C</u>																																																																																								

Amo 4/18/17
4/5/2017

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-135038-1

SDG Number: KRS018

Login Number: 135038

List Number: 1

Creator: Banda, Christy S

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is <= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: Solutia Inc.
Project/Site: WGK River Sampling

TestAmerica Job ID: 680-135038-1
SDG: KRS018

Laboratory: TestAmerica Savannah

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Illinois	NELAP	5	200022	11-30-17

1
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14

APVD 4/10/17
TestAmerica Savannah

APPENDIX F
MICROBIAL INSIGHTS DATA PACKAGE
(On CD)



10515 Research Drive
Knoxville, TN 37932
Phone: (865) 573-8188
Fax: (865) 573-8133

Client: Amanda Derhake
Golder Associates Inc.
820 S. Main Street
Suite 100
St. Charles, MO 63301

Phone: 636-724-9191

Fax: 636-724-9393

Identifier: 0750A

Date Rec: 01/27/2017

Report Date: 03/28/2017

Client Project #: 1403345

Client Project Name: W.G. Krummrich

Purchase Order #:

Analysis Requested: PLFA, Stable Isotope Probing, Standard Bio-Trap

Reviewed By:

A handwritten signature in black ink, appearing to read 'Joan Spurr', written over a light blue rectangular background.

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MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
Tel. (865) 573-8188 Fax. (865) 573-8133

PLFA

Client: Golder Associates Inc.
Project: W.G. Krummrich

MI Project Number: 0750A
Date Received: 01/27/2017

Sample Information

Sample Name:	BSA-MW-1S-02 17	BSA-MW-2D-02 17	BSA-MW-3D -0217	BSA-MW-4D-0 217	BSA-MW-5D-02 17
Sample Date:	01/26/2017	01/26/2017	01/26/2017	01/26/2017	01/26/2017
Sample Matrix:	Std. Bio-Trap	Adv. Bio-Trap	Std. Bio-Trap	Std. Bio-Trap	Std. Bio-Trap
Analyst:	KH	KH	KH	KH	KH

Biomass

Total Biomass (cells/mL)	1.15E+05	2.33E+05	5.34E+04	6.69E+04	1.94E+05
--------------------------	----------	----------	----------	----------	----------

Community Structure (% total PLFA)

	2.49	2.50	0.00	0.00	0.39
Firmicutes (TerBrSats)	75.92	53.97	48.28	67.57	44.57
Proteobacteria (Monos)	0.71	0.00	0.00	0.00	0.00
Anaerobic metal reducers (BrMonos)	0.53	1.75	0.00	0.91	1.19
SRB/Actinomycetes (MidBrSats)	19.43	12.40	49.07	30.32	42.19
General (Nsats)	0.93	29.37	2.65	1.20	11.66
Eukaryotes (polyenoics)					

Physiological Status (Proteobacteria only)

	0.55	0.19	0.18	0.20	0.09
Slowed Growth	2.06	0.09	0.00	0.00	0.09
Decreased Permeability					

Legend:

NA = Not Analyzed NS = Not Sampled

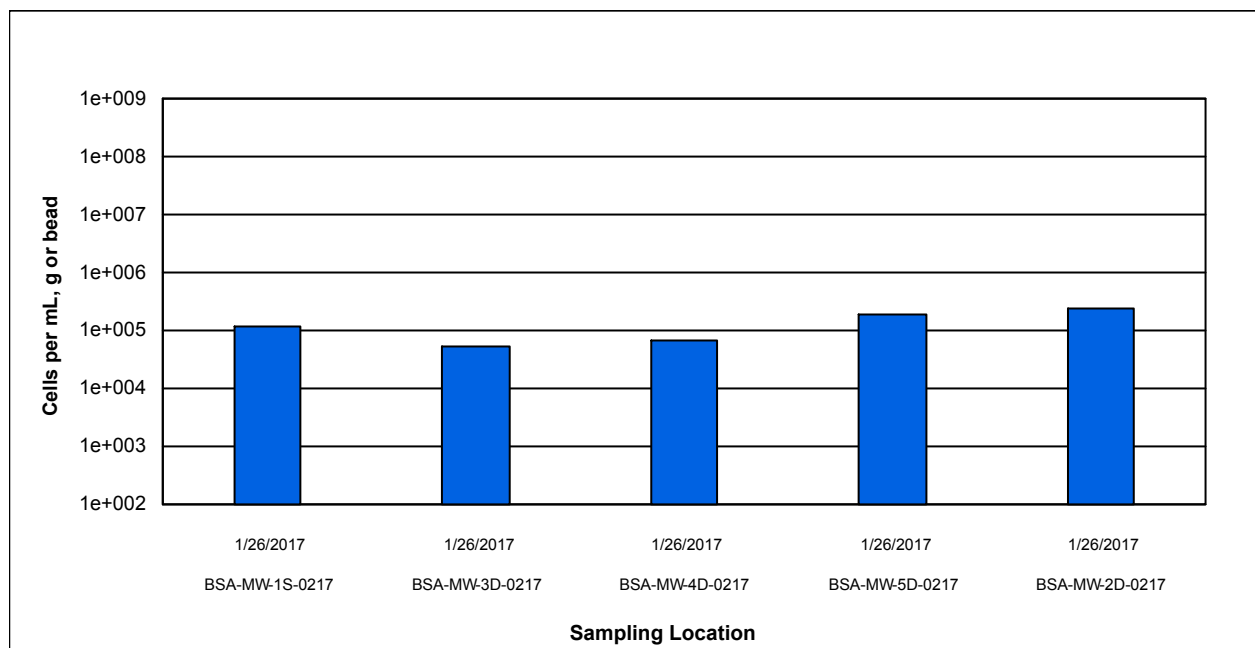
Client: **Golder Associates Inc.**
Project: W.G. KrummrichMI Project Number: **0750A**
Date Received: 01/27/2017

Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass

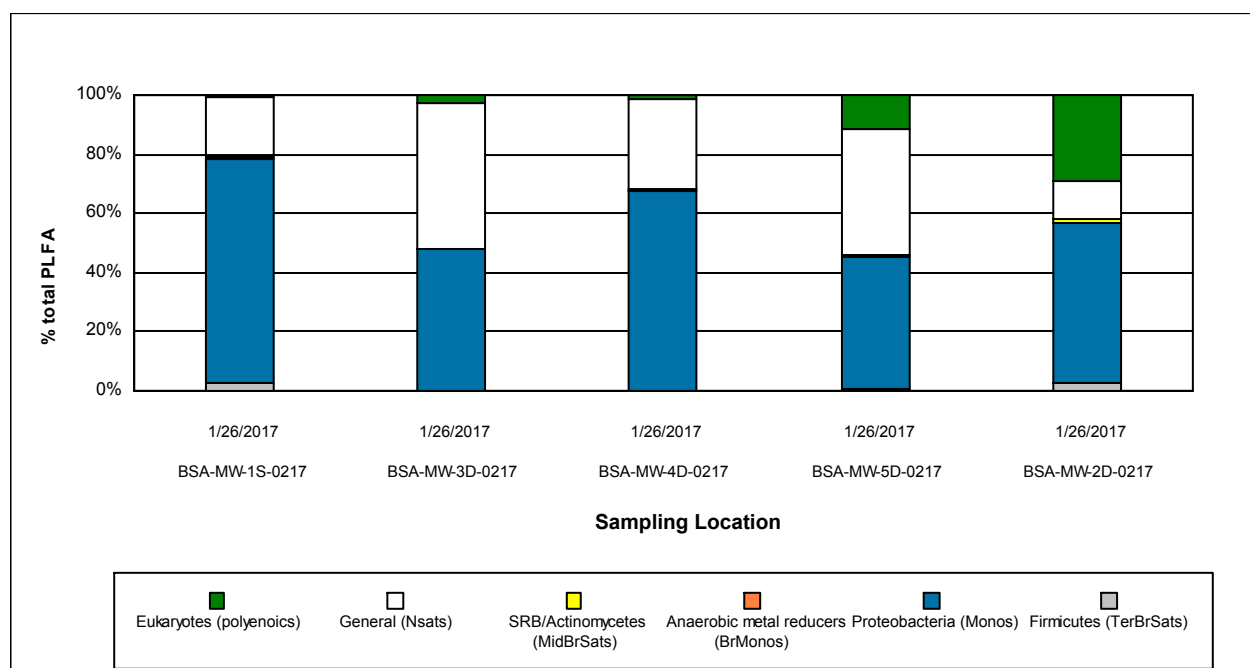


Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis.

MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
Tel. (865) 573-8188 Fax. (865) 573-8133

PLFA

Client: Golder Associates Inc.
Project: W.G. Krummrich

MI Project Number: 0750A
Date Received: 01/27/2017

Sample Information

Sample Name:	CPA-MW-1D-02 17	CPA-MW-2D-02 17	CPA-MW-3D -0217	CPA-MW-4D-0 217	CPA-MW-5D-0 217
Sample Date:	01/26/2017	01/26/2017	01/26/2017	01/26/2017	01/26/2017
Sample Matrix:	Std. Bio-Trap	Std. Bio-Trap	Adv. Bio-Trap	Std. Bio-Trap	Std. Bio-Trap
Analyst:	KH	KH	KH	KH	KH

Biomass

Total Biomass (cells/mL)	1.24E+05	1.11E+05	1.38E+05	8.72E+04	4.78E+04
--------------------------	----------	----------	----------	----------	----------

Community Structure (% total PLFA)

	1.66	3.58	0.87	0.98	1.15
Firmicutes (TerBrSats)	70.31	70.59	61.96	55.45	54.38
Proteobacteria (Monos)	0.00	0.00	1.77	0.00	0.00
Anaerobic metal reducers (BrMonos)	7.05	0.94	3.37	21.87	0.00
SRB/Actinomycetes (MidBrSats)	20.47	23.81	21.29	19.39	40.22
General (Nsats)	0.53	1.06	10.75	2.30	4.24
Eukaryotes (polyenoics)					

Physiological Status (Proteobacteria only)

	0.93	0.56	0.52	0.10	0.36
Slowed Growth	0.27	0.08	0.03	0.04	0.00
Decreased Permeability					

Legend:

NA = Not Analyzed NS = Not Sampled

Client: Golder Associates Inc.
Project: W.G. Krummrich

MI Project Number: 0750A
Date Received: 01/27/2017

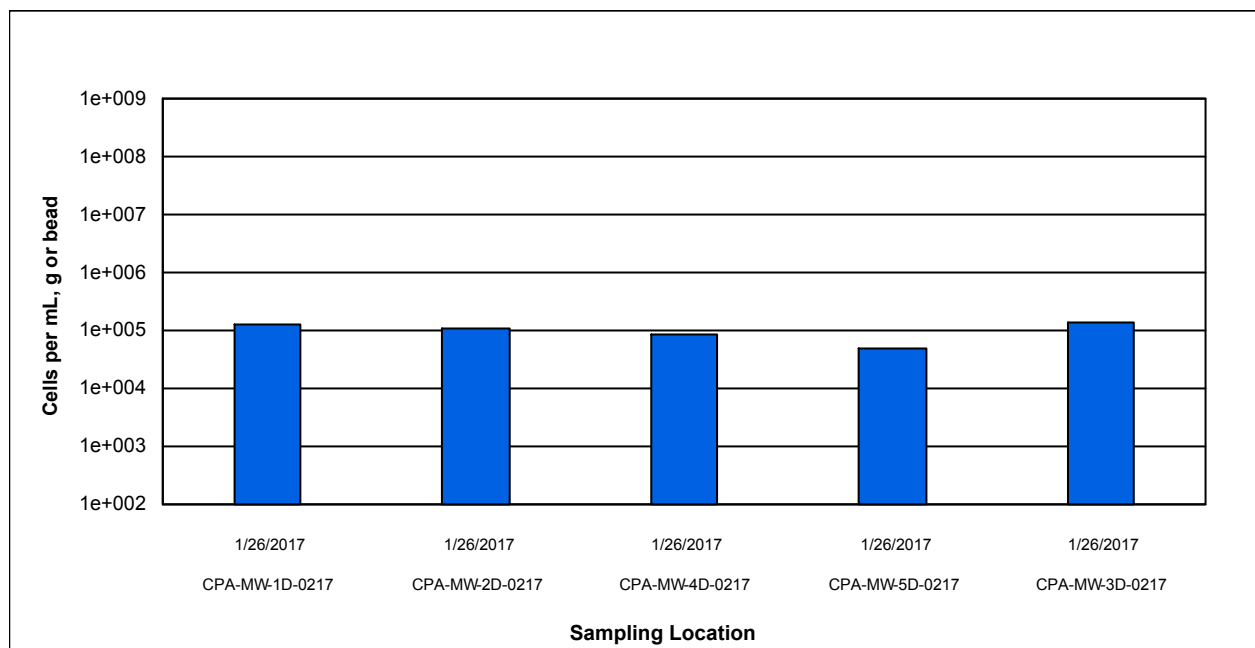


Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass

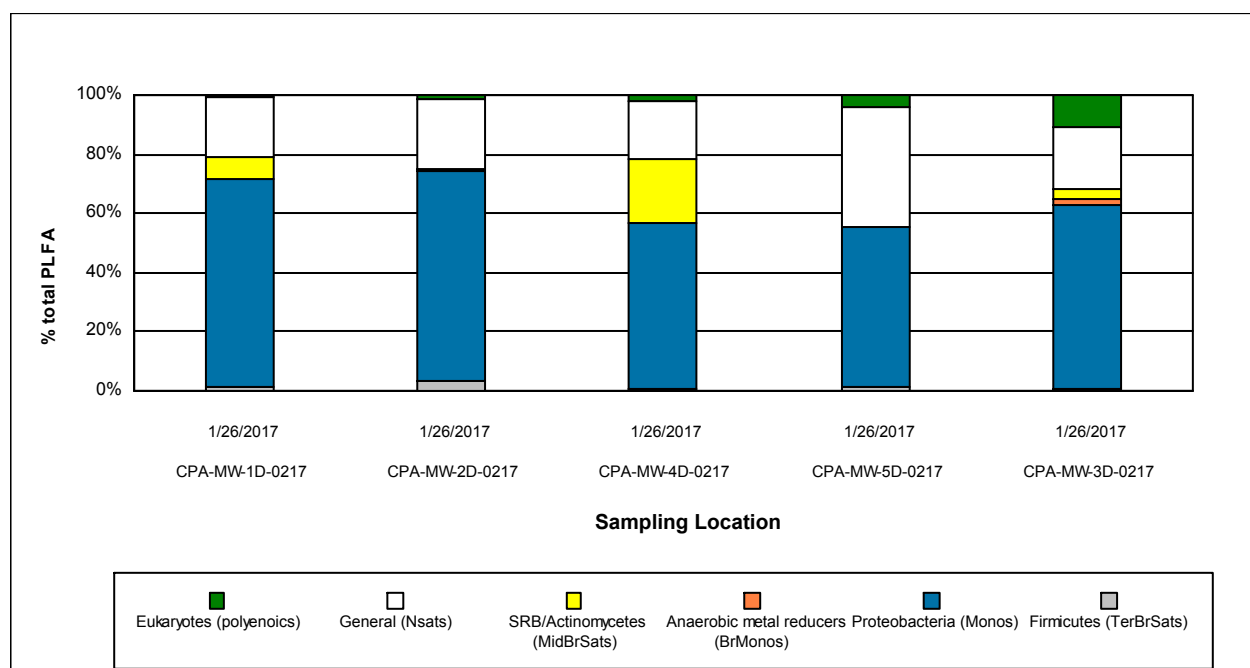


Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis.



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Identifier: 075OA

Date Rec: 01/27/2017

Report Date: 03/28/2017

Client Project #: 1403345

Client Project Name: W.G. Krummrich

Purchase Order #:

Comments: Please note results for sample BSA-MW-3D-0217 and CPA-MW-5D-0217 fell between reporting and detection limits for PLFA analysis.

Phospholipid Fatty Acid Analysis

Interpretation Guidelines

Phospholipids fatty acids (PLFA) are a main component of the membrane (essentially the “skin”) of microbes and provide a powerful tool for assessing microbial responses to changes in their environment. This type of analysis provides direct information for assessing and monitoring sites where bioremediation processes, including natural attenuation, are of interest. Analysis of the types and amount of PLFA provides a broad based understanding of the entire microbial community with information obtained in three key areas viable biomass, community structure and metabolic activity.

What is the detection limit for PLFA?

Our limit of detection for PLFA analysis is ~150 picomoles of total PLFA and our limit of quantification is ~500 picomoles of total PLFA. Samples which contain PLFA amounts at or below 150 pmol cannot be used to determine biomass, likewise samples with PLFA content below ~500 pmol are generally considered to contain too few fatty acids to discuss community composition.

How should I interpret the PLFA results?

Interpreting the results obtained from PLFA analysis can be somewhat difficult, so this document was designed to provide a technical guideline. For convenience, this guideline has been divided into the three key areas.

Viable Biomass

PLFA analysis is one of the most reliable and accurate methods available for the determination of viable microbial biomass. Phospholipids break down rapidly upon cell death (21, 23), so biomass calculations based on PLFA content do not contain ‘fossil’ lipids of dead cells.

How is biomass measured?

Viable biomass is determined from the total amount of PLFA detected in a given sample. Since, phospholipids are an essential part of intact cell membranes they provide an accurate measure of viable cells.

How is biomass calculated?

Biomass levels are reported as cells per gram, mL or bead, and are calculated using a conversion factor of 20,000 cells/pmole of PLFA. This conversion factor is based upon cells grown in laboratory media, and varies somewhat with the type of organism and environmental conditions.

What does the concentration of biomass mean?

The overall abundance of microbes within a given sample is often used as an indicator of the potential for bioremediation to occur, but understanding the levels of biomass within each sample can be cumbersome. The following are benchmarks that can be used to understand whether the biomass levels are low, moderate or high.

Low	Moderate	High
10^3 to 10^4 cells	10^5 to 10^6 cells	10^7 to 10^8 cells

How do I know if a change in biomass is significant?

One of the primary functions of using PLFA analysis at contaminated sites is to evaluate how a community responds following a given treatment, but how does one know if the changes observed between two events are significant? As a general rule, biomass levels which increase or decrease by at least an order of magnitude are considered to be significant. However, changes in biomass levels of less than an order of magnitude may still show a trend. It is important to remember that many factors can affect microbial growth, so factors other than the treatment could be influencing the changes observed between sampling events. Some of the factors to consider are: temperature, moisture, pH, etc. The following illustration depicts three types of changes that occurred over time and the conclusions that could be drawn.

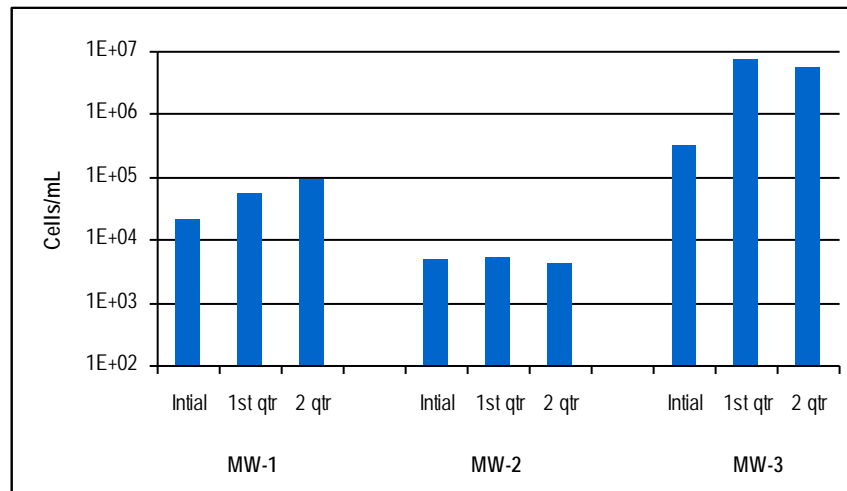


Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass (associated with higher organisms).

Conclusions from graph above:

- MW-1 showed a trend of biomass levels increasing steadily over time, although cell concentrations were ~10⁴ cells/mL at each sampling event.
- MW-2 showed no notable trends or significant changes in biomass concentrations.
- MW-3 showed a significant increase in biomass levels between the initial and 1st quarter sampling events (from ~10⁵ to ~10⁶ cells/mL).

Community Structure:

The PLFA in a sample can be separated into particular types, and the resulting PLFA “profile” reflects the proportions of the categories of organisms present in the sample. Because groups of bacteria differ in their metabolic capabilities, determining which bacterial groups are present and their relative distributions within the community can provide information on what metabolic processes are occurring at that location. This in turn can also provide information on the subsurface conditions (i.e. oxidation/reduction status, etc.). Table 1 describes the six major structural groups used and their potential relevance to site specific projects.

Table 1. Description of PLFA structural groups.

PLFA Structural Group	General classification	Potential Relevance to Bioremediation Studies
Monoenoic (Monos)	Abundant in Proteobacteria (Gram negative bacteria), typically fast growing, utilize many carbon sources, and adapt quickly to a variety of environments.	Proteobacteria is one of the largest groups of bacteria and represents a wide variety of both aerobes and anaerobes. The majority of Hydrocarbon utilizing bacteria fall within the Proteobacteria
Terminally Branched Saturated (TerBrSats)	Characteristic of Firmicutes (Low G+C Gram-positive bacteria), and also found in Bacteriodes, and some Gram-negative bacteria (especially anaerobes).	Firmicutes are indicative of presence of anaerobic fermenting bacteria (mainly <i>Clostridia</i> / <i>Bacteriodes</i> -like), which produce the H ₂ necessary for reductive dechlorination
Branched Monoenoic (BrMonos)	Found in the cell membranes of micro-aerophiles and anaerobes, such as sulfate- or iron-reducing bacteria	In contaminated environments high proportions are often associated with anaerobic sulfate and iron reducing bacteria
Mid-Chain Branched Saturated (MidBrSats)	Common in sulfate reducing bacteria and also Actinobacteria (High G+C Gram-positive bacteria).	In contaminated environments high proportions are often associated with anaerobic sulfate and iron reducing bacteria
Normal Saturated (Nsats)	Found in all organisms.	High proportions often indicate less diverse populations.
Polyenoic	Found in eukaryotes such as fungi, protozoa, algae, higher plants, and animals.	Eukaryotic scavengers will often rise up and prey on contaminant utilizing bacteria

Following are answers to some of the common questions about community composition and some detailed descriptions of some typical shifts which can be observed between sampling events.

How is the community structure data presented?

Community structure data is presented as percentage (%) of the total amount of PLFA. In order to relate the complex mixture of PLFA to the organisms present, the ratio of a specific PLFA group is determined (detailed in Table 1 above), and this corresponds to the proportion of the related bacterial classification within the overall community structure. Because normal saturated PLFA are found in both prokaryotes (bacteria) and eukaryotes (fungi, protozoa, diatoms etc), their distribution provides little insight into the types of microbes that are present at a sampling location. However, high proportions of normal saturates are often associated with less diverse microbial populations.

How can community structure data be used to manage my site?

It is important to understand that microbial communities are often a mixture of different types of bacteria (e.g. aerobes, sulfate reducers, methanogens, etc) with the abundance of each group behaving like a seesaw, i.e. as the population of one group increases, another is likely decreasing, mostly due to competition for available resources. The PLFA profile of a sample provides a “fingerprint” of the microbial community, showing relative proportions of the specific bacterial types at the time of sampling. This is a great tool for detecting shifts within the community over time and also to evaluate similarities/differences between sampling locations. It is important to note that PLFA analysis of community structure is analyzing the microbes directly, not just secondary breakdown products. So this provides evidence of how the entire microbial community is responding to the treatment.

How do I recognize community shifts and what they mean?

Shifts in the community structure are indications of changing conditions and their effect on the microbial community, and, by extension on the metabolic processes occurring at the sampling location. Some of the more commonly seen shifts within the community are illustrated and discussed below:

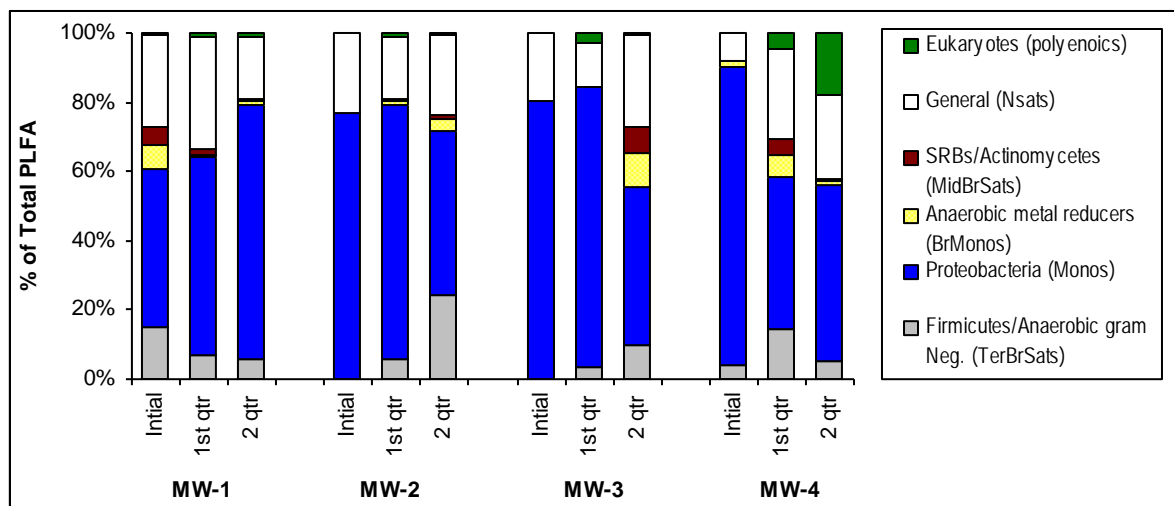


Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis. See Table 1 for detailed descriptions of structural groups.

- **Increased Proteobacteria**

Proportions of Proteobacteria are of interest because it is one of the largest groups of bacteria and represents a wide variety of both aerobe and anaerobes. The majority of hydrocarbons (including benzene and naphthalene) are metabolized by some member of Proteobacteria, mainly due to their ability to grow opportunistically, quickly taking advantage of available food (i.e. hydrocarbons), and adapting quickly to changes in the environment. The detection of increased proportions of Proteobacteria coupled with increased biomass suggests that the Proteobacteria are consuming something. In situations where it is important to determine the extent to which the Proteobacteria are utilizing anaerobic or aerobic pathways, it is possible to measure relative proportions of specific biomarkers that are associated with anaerobic or aerobic pathways thus separating the Proteobacteria into different groups, based on pathways used. Sample MW-1 from Figure 2 depicts a shift in community structure where the proportion of Proteobacteria has increased over time.

- **Increased Firmicutes/Anaerobic Gram negative bacteria**

Increased proportions of Firmicutes/Anaerobic Gram negative bacteria generally indicate that conditions are becoming more reductive (i.e. more anaerobic). Proportions of Firmicutes are of particular interest in sites contaminated with chlorinated hydrocarbons because Firmicutes include anaerobic fermenting bacteria (mainly *Clostridia/Bacteriodes*-like), which produce the H_2 necessary for reductive dechlorination.

Enhanced bioremediation of chlorinated solvents often employs the injection of fermentable substrates which, when utilized by fermenting bacteria, results in the release of H_2 . Engineered shifts in the microbial community can be shown by observing increased proportions Firmicutes following an injection of fermentable substrate. Through long-term monitoring of the community structure it is possible to know when re-injection may be necessary or desirable. Sample MW-2 from Figure 2 depicts a shift in community structure where the proportion of Firmicutes has increased over time.

- **Increased anaerobic metal reducing bacteria (BrMonos) and SRB/Actinomycetes (MidBrSats)**

An increase in the proportions of metal and sulfate reducing bacterial groups, especially when combined with shifts in the other bacterial groups, can provide information helpful to monitoring bioremediation. Generally, an increase in metal and sulfate reducers points to more reduced (anaerobic) conditions at the sampled location. This is especially true if there is an increase in Firmicutes at the same time. Large increases in either metal and sulfate reducers, particularly if accompanied by a decrease in Firmicutes, may suggest that conditions are becoming increasingly reduced. In this situation the metal and sulfate reducers may be out-competing dechlorinators for available H_2 , thereby limiting the potential for reductive dechlorination at that location. Sample MW-3 from Figure 2 depicts a shift in community structure where the proportion of metal reducing bacteria has increased over time.

- **Increased Eukaryotes**

Eukaryotes include organisms such as fungi, protozoa, and diatoms. At a contaminated location, an increase in eukaryotes, particularly if seen with a decrease in the contaminant utilizing bacteria, suggests that eukaryotic scavengers are preying upon what had been an abundance of bacteria which were consuming the contaminant. Sample MW-4 from Figure 2 depicts a shift in community structure where the proportion of eukaryotes has increased over time.

Physiological status of Proteobacteria

The membrane of a microbe adapts to the changing conditions of its environment, and these changes are reflected in the PLFA. Toxic compounds or environmental conditions may disrupt the membrane and some bacteria respond by making *trans* fatty acids instead of the usual *cis* fatty acids (7) in order to strengthen the cell membrane, making it less permeable. Many Proteobacteria respond to lack of available substrate or to highly toxic conditions by making cyclopropyl (7) or mid-chain branched fatty acids (20) which point to less energy expenditure and a slowed growth rate. The physiological status ratios for Decreased Permeability (*trans/cis* ratio) and for Slowed Growth (*cy/cis* ratio) are based on dividing the amount of the fatty acid induced by environmental conditions by the amount of its biosynthetic precursor.

What does slowed growth or decreased permeability mean?

Ratios for slowed growth and for decreased permeability of the cell membrane provide information on the “health” of the Gram negative community, that is, how this population is responding to the conditions present in the environment. It should be noted that one must be cautious when interpreting these measures from only one sampling event. The most effective way to use the physiological status indicators is in long term monitoring and comparing how these ratios increase/decrease over time.

A marked increase in either of these ratios suggests a change in environment which is less favorable to the Gram negative Proteobacteria population. The ratio for slowed growth is a relative measure, and does not directly correspond to log or stationary phases of growth, but is useful as a comparison of growth rates among sampling locations and also over time. An increase in this ratio (i.e. slower growth rate) suggests a change in conditions which is not as supportive of rapid, “healthy” growth of the Gram negative population, often due to reduced available substrate (food). A larger ratio for decreased permeability suggests that the environment has become more toxic to the Gram negative population, requiring energy expenditure to produce *trans* fatty acids in order to make the membrane more rigid.

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SITE LOGIC Report

Stable Isotope Probing (SIP) Study

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MI Identifier: 0750A

Report Date: 03/28/2017

Project: WG Krummrich, 1403345

Comments: Please note results for sample BSA-MW-3D-0217 and CPA-MW-5D-0217 fell between reporting and detection limits for PLFA analysis.

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Executive Summary

A Stable Isotope Probing (SIP) study was performed to determine whether biodegradation of benzene and chlorobenzene is occurring under existing site conditions. Bio-Trap® samplers baited with ^{13}C labeled benzene and ^{13}C labeled chlorobenzene were deployed in monitoring wells BSA-MW-2D-0217 and CPA-MW-3D-0217, respectively. Following a 27-day deployment period, the Bio-Traps were recovered to quantify ^{13}C incorporation into biomass and dissolved inorganic carbon (DIC). A complete summary of the SIP results is provided in Table 1 and Figures 1 through 5. Tables 2 and 3 and Figures 6 through 9 contain summaries of PLFA analysis performed on standard Bio-Trap samplers deployed in BSA and CPA monitoring wells.

Stable Isotope Probing (SIP)

- The detection of ^{13}C -enriched biomass and DIC confirmed that benzene biodegradation had occurred at BSA-MW-2D-0217 during the deployment period.
 - Total PLFA biomass for well BSA-MW-2D-0217 ($2.33\text{E}+05$ cells/bead) was in the moderate range.
 - The average PLFA $\delta^{13}\text{C}$ value was 3,706‰, indicating a high level of incorporation of ^{13}C -labeled benzene into microbial biomass.
 - The average DIC $\delta^{13}\text{C}$ value was 4,919‰, indicating that benzene was mineralized under current site conditions.
 - The PLFA community structure was primarily composed of monoenoids (53.97%) followed by eukaryotes (29.37%). Indicators of normal saturates, firmicutes, and actinomycetes were also detected.
- Evidence for biodegradation of chlorobenzene in CPA-MW-3D-0217 was inconclusive, as the ^{13}C -enriched biomass fell below the detection limit.
 - The average DIC $\delta^{13}\text{C}$ value, -6‰, was near background levels and indicated little to no chlorobenzene was mineralized during the deployment period.
 - Total PLFA biomass for well CPA-MW-3D-0217 ($1.38\text{E}+05$ cells/bead) was in the moderate range.
 - The PLFA community structure was primarily composed of monoenoids (61.96%) followed by normal saturates (21.29%). Indicators of eukaryotes, actinomycetes, anaerobic metal reducers, and firmicutes were also detected.

PLFA Analysis - Standard Bio-Traps

- Total biomass concentrations in the standard BSA bio-traps fell within the low to moderate range (10^4 to 10^5 cells/bead). Total biomass in BSA-MW-3D-0217 fell between the reporting and detection limits for PLFA.
- The community structures in the standard BSA bio-traps indicated that monoenoids and normal saturates were the most abundant groups.
- In the CPA wells, total PLFA biomass concentrations fell within the low to moderate range (10^4 to 10^5 cells/bead). The total biomass fell between the reporting and detection limits for PLFA in CPA-MW-5D-0217.
- The microbial community structures in the CPA wells were primarily composed of a large portion of monoenoids followed by normal saturates similar to the BSA wells.

Overview of Approach

Stable Isotope Probing (SIP)

Stable isotope probing (SIP) is an innovative method to track the environmental fate of a “labeled” contaminant of concern to unambiguously demonstrate biodegradation. Two stable carbon isotopes exist in nature – carbon 12 (^{12}C) which accounts for 99% of carbon and carbon 13 (^{13}C) which is considerably less abundant (~1%). With the SIP method, the Bio-Trap® sampler is baited with a specially synthesized form of the contaminant containing ^{13}C labeled carbon. Since ^{13}C is rare, the labeled compound can be readily differentiated from the contaminants present at the site. Following deployment, the Bio-Trap® is recovered and three approaches are used to conclusively demonstrate biodegradation of the contaminant of concern.

- The loss of the labeled compound provides an estimate of the degradation rate (% loss of ^{13}C).
- Quantification of ^{13}C enriched phospholipid fatty acids (PLFA) indicates incorporation into microbial biomass.
- Quantification of ^{13}C enriched dissolved inorganic carbon (DIC) indicates contaminant mineralization.

Phospholipid Fatty Acids (PLFA)

PLFA are a primary component of the membrane of all living cells including bacteria. PLFA decomposes rapidly upon cell death (1, 2), so the total amount of PLFA present in a sample is indicative of the viable biomass. When combined with stable isotope probing (SIP), incorporation of ^{13}C into PLFA is a conclusive indicator of biodegradation.

Some organisms produce “signature” types of PLFA allowing quantification of important microbial functional groups (e.g. iron reducers, sulfate reducers, or fermenters). The relative proportions of the groups of PLFA provide a “fingerprint” of the microbial community. In addition, *Proteobacteria* modify specific PLFA during periods of slow growth or in response to environmental stress providing an index of their health and metabolic activity.

Results

Table 1. Summary of the results obtained from the Bio-Trap® Units. Interpretation guidelines and definitions are found later in the document.

Sample Name	BSA-MW-2D-0217	CPA-MW-3D-0217
Sample Date	1-26-2017	1-26-2017
¹³C Contaminant Loss		
¹³ C Benzene Pre-deployment (µg/bead)	259 ± 21	---
¹³ C Benzene Post-deployment (µg/bead)	247 ± 19	---
¹³ C Chlorobenzene Pre-deployment (µg/bead)	---	188 ± 37
¹³ C Chlorobenzene Post-deployment (µg/bead)	---	204 ± 26
Biomass & ¹³C Incorporation		
Total Biomass (Cells/bead)	2.33E+05	1.38E+05
¹³ C Enriched Biomass (Cells/bead)	1.01E+04	ND
Average PLFA Del (‰)	3706	ND
Maximum PLFA Del (‰)	7720	ND
¹³C Mineralization		
DIC Del (‰)	4919.2	-6.1
% 13C	6.2	1.1
Community Structure (% total PLFA)		
Firmicutes (TerBrSats)	2.50	0.87
Proteobacteria (Monos)	53.97	61.96
Anaerobic metal reducers (BrMonos)	0.00	1.77
Actinomycetes (MidBrSats)	1.75	3.37
General (Nsats)	12.40	21.29
Eukaryotes (Polyenoics)	29.37	10.75
Physiological Status (Proteobacteria only)		
Slowed Growth	0.19	0.52
Decreased Permeability	0.09	0.03

Legend:

NA = Not analyzed NS = Not sampled J = Estimated result below PQL but above LQL I = Inhibited < or ND= Result not detected

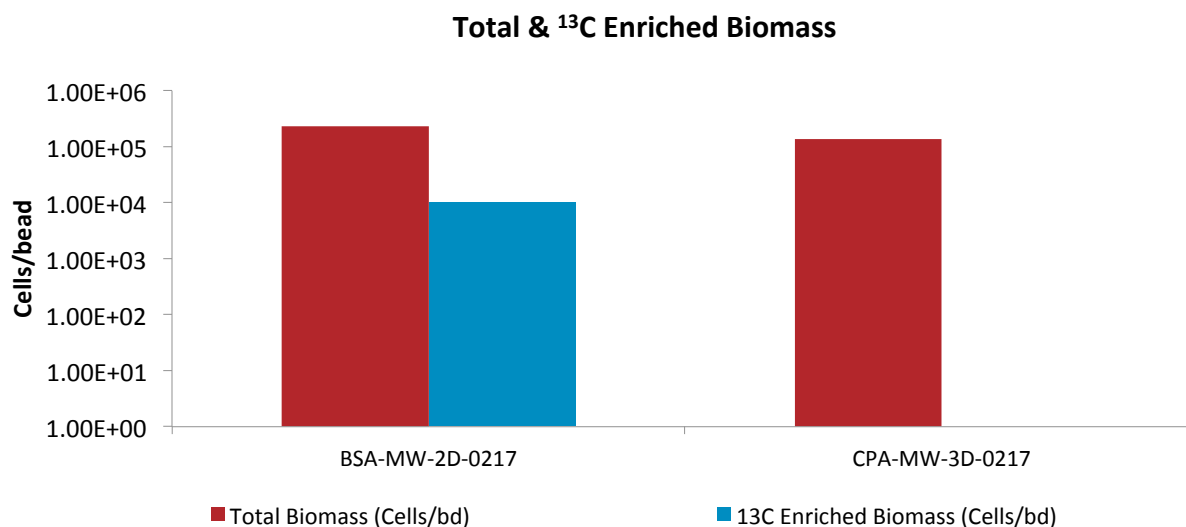


Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass (associated with higher organisms).

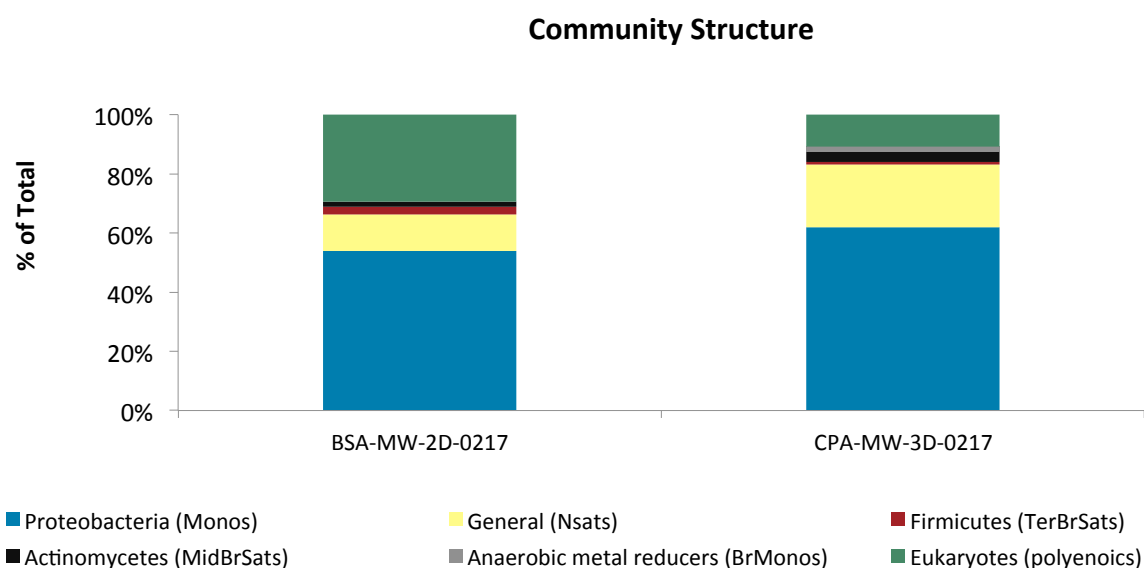


Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis. See the table in the interpretation section for detailed descriptions of the structural groups.

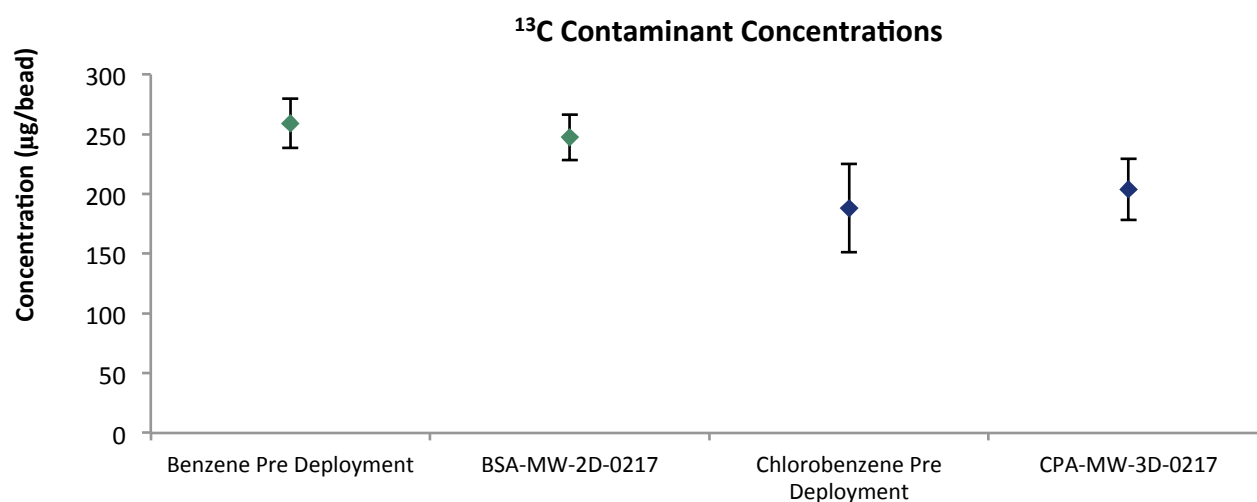


Figure 3. Comparison of Pre-deployment concentrations loaded on Bio-Sep beads to the concentrations detected after incubation.

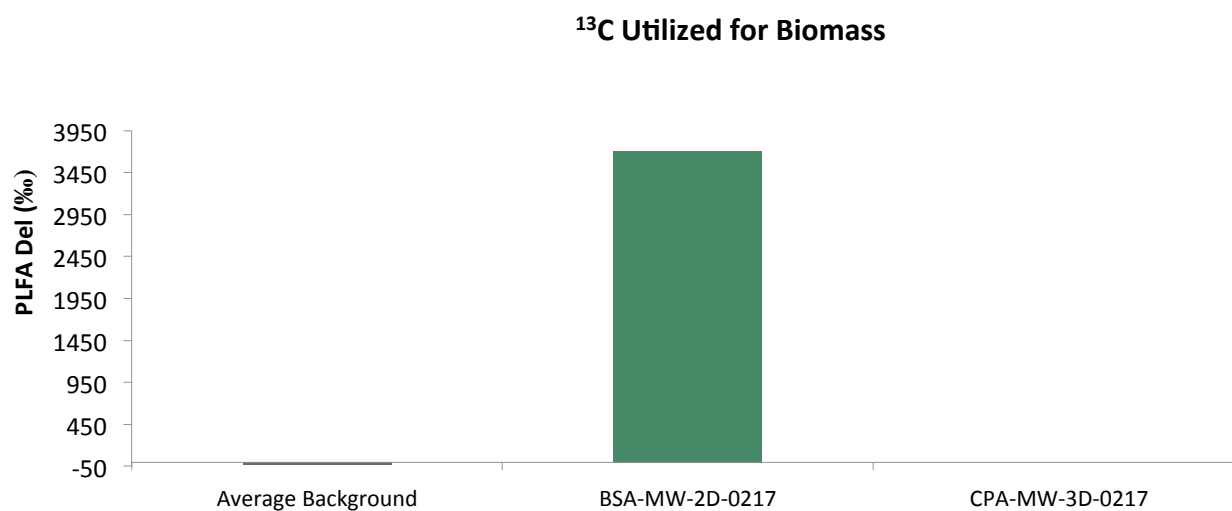


Figure 4. Comparison of the average Del value obtained from PLFA biomarkers from each Bio-Trap[®] unit to the average background Del observed in samples not exposed to ^{13}C enriched compounds.

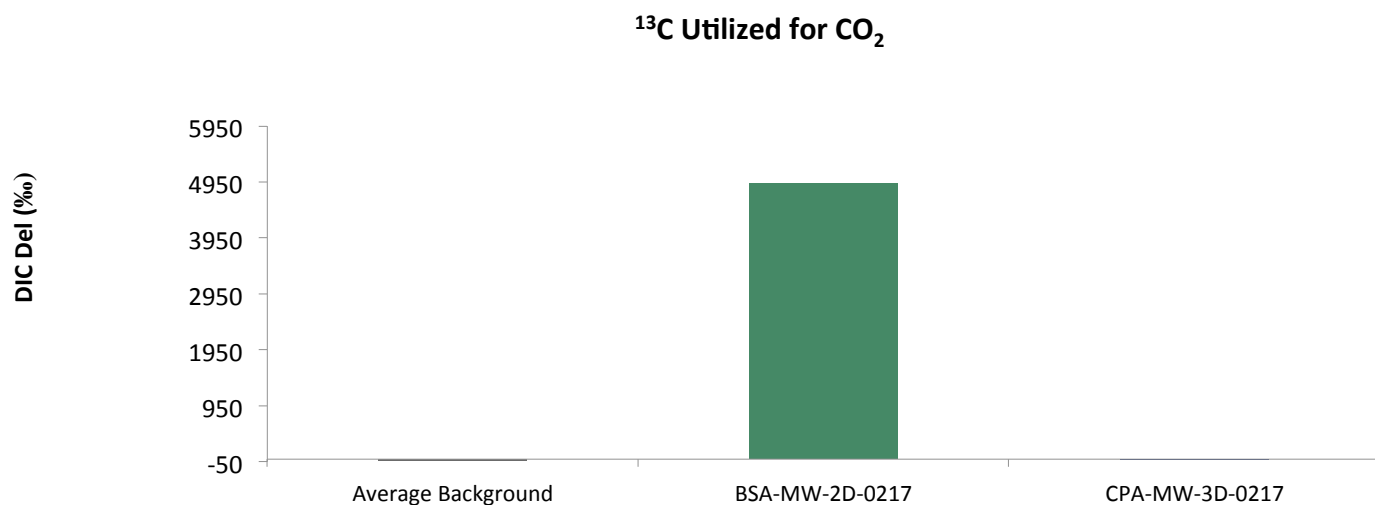


Figure 5. Comparison of the Del value obtained from DIC from each Bio-Trap[®] unit to the average background Del observed in samples not exposed to ^{13}C enriched compounds.

Table 2. Summary of the PLFA results for the benzene wells obtained from the Bio-Trap® Units.

Sample Name	BSA-MW-1S	BSA-MW-2D	BSA-MW-3D	BSA-MW-4D	BSA-MW-5D
Sample Date	1-26-2017	1-26-2017	1-26-2017	1-26-2017	1-26-2017
Biomass Concentration					
Total Biomass (Cells/bead)	1.15E+05	2.33E+05	5.34E+04 (J)	6.69E+04	1.94E+05
Community Structure (% total PLFA)					
Firmicutes (TerBrSats)	2.49	2.50	0.00	0.00	0.39
Proteobacteria (Monos)	75.92	53.97	48.28	67.57	44.57
Anaerobic metal reducers (BrMonos)	0.71	0.00	0.00	0.00	0.00
Actinomycetes (MidBrSats)	0.53	1.75	0.00	0.91	1.19
General (Nsats)	19.43	12.40	49.07	30.32	42.19
Eukaryotes (Polyenoics)	0.93	29.37	2.65	1.20	11.66
Physiological Status (Proteobacteria only)					
Slowed Growth	0.55	0.19	0.18	0.20	0.09
Decreased Permeability	2.06	0.09	0.00	0.00	0.09

Legend: ND= Non Detect J = Estimated value between detection limit and reporting limit

Table 3. Summary of the PLFA results for the chlorobenzene wells obtained from the Bio-Trap® Units.

Sample Name	CPA-MW-1D	CPA-MW-2D	CPA-MW-3D	CPA-MW-4D	CPA-MW-5D
Sample Date	1-26-2017	1-26-2017	1-26-2017	1-26-2017	1-26-2017
Biomass Concentration					
Total Biomass (Cells/bead)	1.24E+05	1.11E+05	1.38E+05	8.72E+04	4.78E+04 (J)
Community Structure (% total PLFA)					
Firmicutes (TerBrSats)	1.66	3.58	0.87	0.98	1.15
Proteobacteria (Monos)	70.31	70.59	61.96	55.45	54.38
Anaerobic metal reducers (BrMonos)	0.00	0.00	1.77	0.00	0.00
Actinomycetes (MidBrSats)	7.05	0.94	3.37	21.87	0.00
General (Nsats)	20.47	23.81	21.29	19.39	40.22
Eukaryotes (Polyenoics)	0.53	1.06	10.75	2.30	4.24
Physiological Status (Proteobacteria only)					
Slowed Growth	0.93	0.56	0.52	0.10	0.36
Decreased Permeability	0.27	0.08	0.03	0.04	0.00

Legend: ND= Non Detect J = Estimated value between detection limit and reporting limit

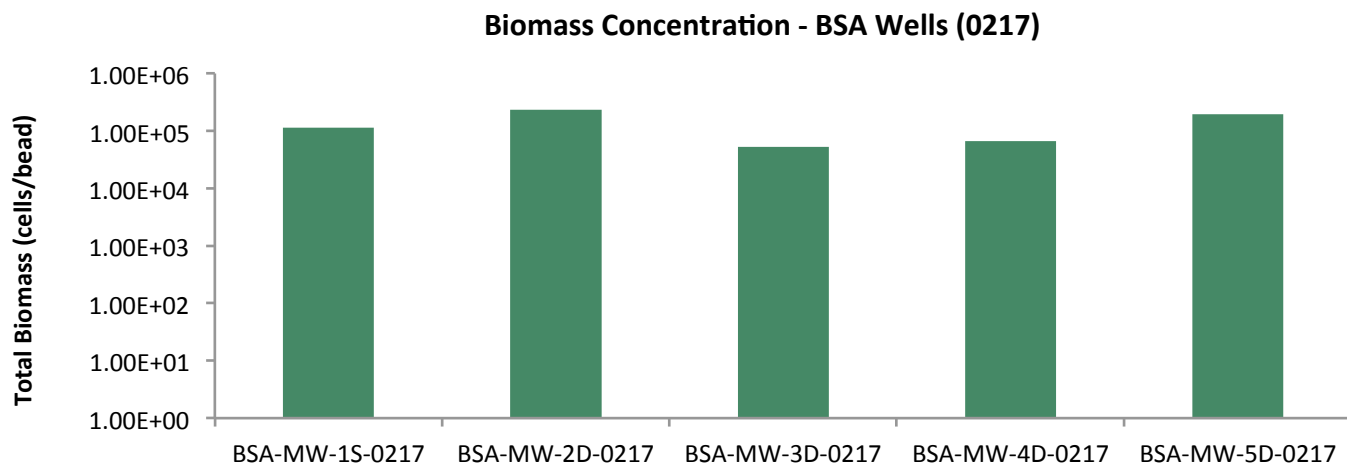


Figure 6. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass (associated with higher organisms).

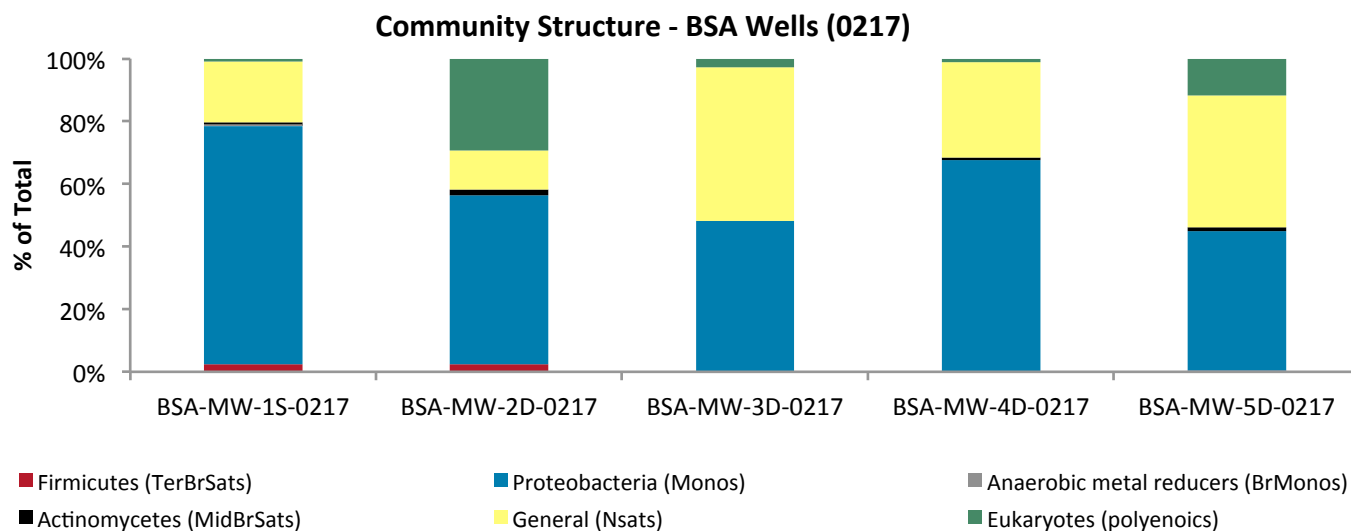


Figure 7. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis. See the table in the interpretation section for detailed descriptions of the structural groups.

Biomass Concentration - CPA Wells (0217)

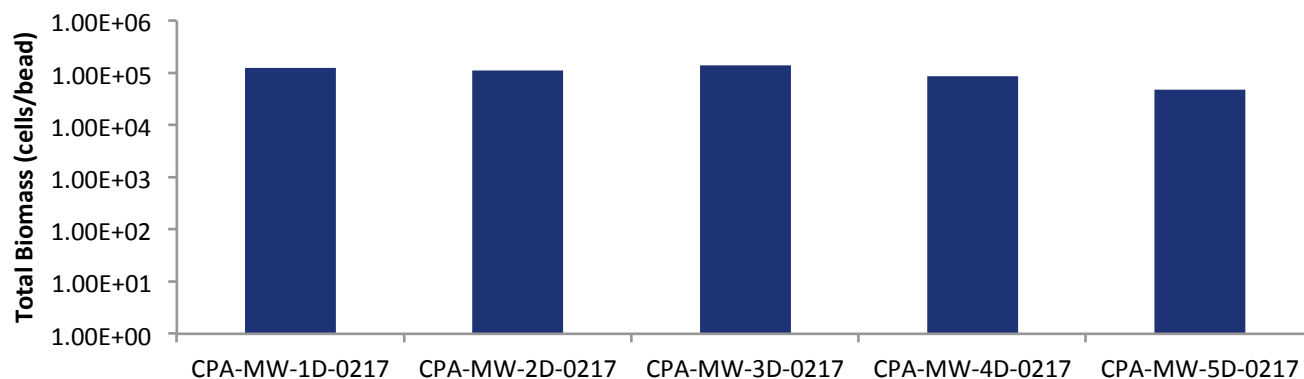


Figure 8. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass (associated with higher organisms).

Community Structure - CPA Wells (0217)

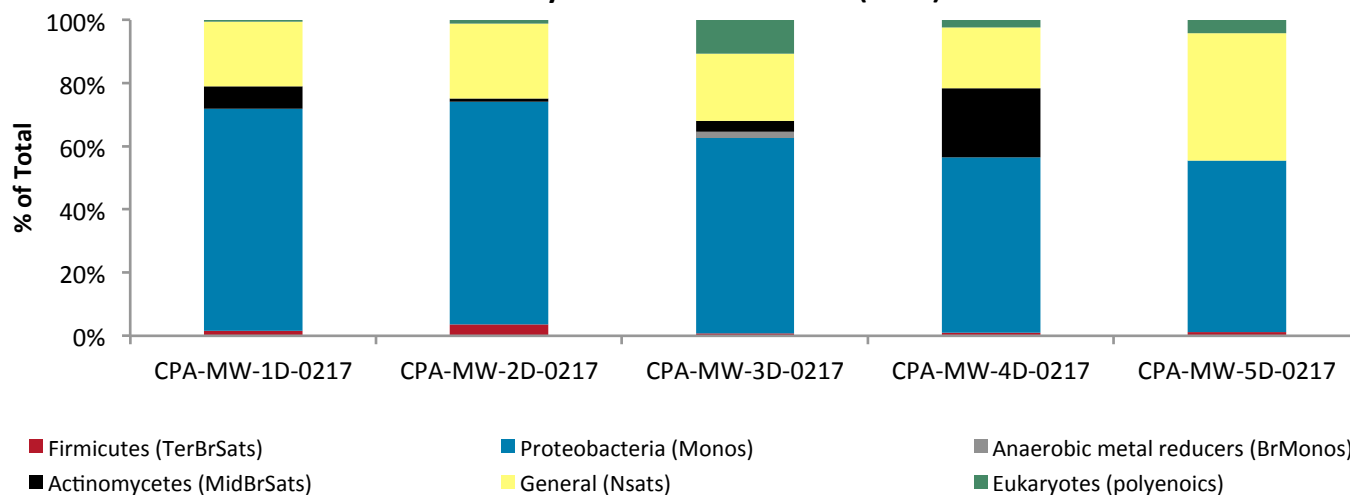


Figure 9. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis. See the table in the interpretation section for detailed descriptions of the structural groups.

Interpretation

Interpretation of the results of the SIP Bio-Trap® study must be performed with due consideration of site conditions, site activities, and the desired treatment mechanism. The following discussion describes interpretation of results in general terms and is meant to serve as a guide.

Contaminant Concentration: Bio-Traps® are baited with a ^{13}C labeled contaminant of concern and a pre-deployment concentration is determined prior to shipping. Following deployment, Bio-Traps® are recovered for analysis including measurement of the concentration of the ^{13}C labeled contaminant remaining. Pre- and post-deployment concentrations are used to calculate percent loss.

Biomass Concentrations: PLFA analysis is one of the most reliable and accurate methods available for the determination of viable (live) biomass. Phospholipids break down rapidly upon cell death, so biomass calculations based on PLFA content do not include “fossil” lipids from dead cells. Total biomass (cells/bead) is calculated from total PLFA using a conversion factor of 20,000 cells/pmole of PLFA. When making comparisons between wells, treatments, or over time, differences of one order of magnitude or more are considered significant.

Total Biomass		
Low	Moderate	High
10^3 to 10^4 cells	10^5 to 10^6 cells	10^7 to 10^8 cells

For SIP studies, the ^{13}C enriched PLFA is also determined to conclusively demonstrate contaminant biodegradation and quantify incorporation into biomass as a result of the ^{13}C being used for cellular growth. The % ^{13}C incorporation (^{13}C enriched biomass/total biomass) is also provided in the data summary table, but the value must be interpreted carefully especially when comparing wells or treatments. Typically, biodegradation of a contaminant of concern is performed by a small subset of the total microbial community. For Bio-Traps® with large total biomass, the % ^{13}C incorporation value could be low despite significant ^{13}C labeled biomass and loss of the compound. The % ^{13}C incorporation should be viewed in light of total biomass, percent loss, and dissolved inorganic carbon (DIC) results.

^{13}C enrichment data is often reported as a del value. The del value is the difference between the isotopic ratio ($^{13}\text{C}/^{12}\text{C}$) of the sample (R_x) and a standard (R_{std}) normalized to the isotopic ratio of the standard (R_{std}) and multiplied by 1,000 (units are parts per thousand, denoted ‰).

R_{std} is the naturally occurring isotopic ratio and is approximately 0.011180 (roughly 1% of naturally occurring carbon is ^{13}C). The isotopic ratio, R_x , of PLFA is typically less than the R_{std} under natural conditions, resulting in a del value between -20 and -30‰. For a SIP Bio-Trap® study, biodegradation and incorporation of the ^{13}C labeled compound into PLFA results in a larger $^{13}\text{C}/^{12}\text{C}$ ratio (R_x) and thus del values greater than under natural conditions. Typical PLFA del values are provided below.

PLFA Del (‰)		
Low	Moderate	High
0 to 100	100 to 1,000	>1,000

Dissolved Inorganic Carbon (DIC): Often, bacteria can utilize the ^{13}C labeled compound as both a carbon and energy source. The ^{13}C portion used as a carbon source for growth can be incorporated into PLFA as discussed above, while the ^{13}C used for energy is oxidized to $^{13}\text{CO}_2$ (mineralized).

^{13}C enriched CO_2 data is often reported as a del value as described above for PLFA. Under natural conditions, the R_x of CO_2 is approximately the same as R_{std} (0.01118 or about 1.1% ^{13}C). For an SIP Bio-Trap® study, mineralization of the ^{13}C labeled contaminant of concern would lead to a greater value of R_x (increased $^{13}\text{CO}_2$ production) and thus a positive del value. As with PLFA, del values between 0 and 100‰ are considered low, values between 100 and 1,000‰ are considered moderate, and values greater than 1,000‰ are considered high. Thus DIC % ^{13}C are considered low if the value is less than 1.23%, moderate if between 1.23 and 2.24%, and high if greater than 2.24%.

Dissolved Inorganic Carbon (DIC) Del and % ^{13}C		
Low	Moderate	High
0 to 100	100 to 1,000	>1,000
1.11 to 1.23%	1.23 to 2.24%	>2.24%

Community Structure (% total PLFA): Community structure data is presented as a percentage of PLFA structural groups normalized to the total PLFA biomass. The relative proportions of the PLFA structural groups provide a “fingerprint” of the types of microbial groups (e.g. anaerobes, sulfate reducers, etc.) present and therefore offer insight into the dominant metabolic processes occurring at the sample location. Thorough interpretation of the PLFA structural groups depends in part on an understanding of site conditions and the desired microbial biodegradation pathways. For example, an increase in mid chain branched saturated PLFA (MidBrSats), indicative of sulfate reducing bacteria (SRB) and *Actinomycetes*, may be desirable at a site where anaerobic BTEX biodegradation is the treatment mechanism, but would not be desirable for a corrective action promoting aerobic BTEX or MTBE biodegradation. The following table provides a brief summary of each PLFA structural group and its potential relevance to bioremediation.

Table 2. Description of PLFA structural groups.

PLFA Structural Group	General classification	Potential Relevance to Bioremediation Studies
Monoenoic (Monos)	Abundant in Proteobacteria (Gram negative bacteria), typically fast growing, utilize many carbon sources, and adapt quickly to a variety of environments.	Proteobacteria is one of the largest groups of bacteria and represents a wide variety of both aerobes and anaerobes. The majority of Hydrocarbon utilizing bacteria fall within the Proteobacteria
Terminally Branched Saturated (TerBrSats)	Characteristic of Firmicutes (Low G+C Gram-positive bacteria), and also found in Bacteriodes, and some Gram-negative bacteria (especially anaerobes).	Firmicutes are indicative of presence of anaerobic fermenting bacteria (mainly <i>Clostridia/Bacteriodes</i> -like), which produce the H_2 necessary for reductive dechlorination
Branched Monoenoic (BrMonos)	Found in the cell membranes of micro-aerophiles and anaerobes, such as sulfate- or iron-reducing bacteria	In contaminated environments high proportions are often associated with anaerobic sulfate and iron reducing bacteria
Mid-Chain Branched Saturated (MidBrSats)	Common in sulfate reducing bacteria and also Actinobacteria (High G+C Gram-positive bacteria).	In contaminated environments high proportions are often associated with anaerobic sulfate and iron reducing bacteria
Normal Saturated (Nsats)	Found in all organisms.	High proportions often indicate less diverse populations.
Polyenoic	Found in higher plants, and animals.	Eukaryotic scavengers will often prey on contaminant utilizing bacteria.

Physiological Status (*Proteobacteria*): Some *Proteobacteria* modify specific PLFA as a strategy to adapt to stressful environmental conditions (3, 4). For example, *cis* monounsaturated fatty acids may be modified to cyclopropyl fatty acids during periods of slowed growth or modified to *trans* monounsaturated fatty acids to decrease membrane permeability in response to environmental stress. The ratio of product to substrate fatty acid thus provides an index of their health and metabolic activity. In general, status ratios greater than 0.25 indicate a response to unfavorable environmental conditions.

Glossary

Del: A Del value is the difference between the isotopic ratio ($^{13}\text{C}/^{12}\text{C}$) of the sample (R_x) and a standard (R_{std}) normalized to the isotopic ratio of the standard (R_{std}) and multiplied by 1,000 (units are parts per thousand denoted ‰).

$$\text{Del} = (R_x - R_{\text{std}}) / R_{\text{std}} \times 1000$$

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