



Solutia Inc.
575 Maryville Centre Drive
St. Louis, Missouri 63141

Tel: 314-674-3312
Fax: 314-674-8808

gmrina@eastman.com

April 21, 2016

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 2016 Data Report
Solutia Inc., W. G. Krummrich Plant, Sauget, IL

Dear Ms. Bury:

Enclosed please find the Long-Term Monitoring Program 1st Quarter 2016 Data Report for Solutia Inc.'s W. G. Krummrich Plant, Sauget, IL. Results from sampling of Mississippi River surface water and sediment; 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.

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

Sincerely,

A handwritten signature in blue ink, appearing to read "Gerald M. Rinaldi".

Gerald M. Rinaldi
Manager, Remediation Services

Enclosure

cc: Distribution List

DISTRIBUTION LIST

**Long-Term Monitoring Program
1st Quarter 2016 Data Report
Solutia Inc., W. G. Krummrich Plant, Sauget, IL**

USEPA

Stephanie Linebaugh
USEPA Region 5 - SR6J, 77 West Jackson Boulevard, Chicago, IL 60604

Solutia

Donn Haines 500 Monsanto Avenue, Sauget, IL 62206-1198

GSI Environmental (CD only)

Chuck Newell 2211 Norfolk Street, Suite 1000, Houston, TX 77098-4044



GROUNDWATER MONITORING REPORT

**1st QUARTER 2016 DATA REPORT
LONG-TERM MONITORING PROGRAM
SOLUTIA INC., W.G. KRUMMRICH FACILITY
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 2016

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1.0 INTRODUCTION

Golder Associates Inc. (Golder) is pleased to submit this report summarizing the 1st Quarter 2016 (1Q16) Long-Term Monitoring Program (LTMP) groundwater sampling activities at the Solutia Inc. (Solutia) W.G. Krummrich (WGK) facility (Site) in Sauget, Illinois. The facility is located at 500 Monsanto Avenue, Sauget, Illinois as shown on Figure 1.

The 1Q16 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 1Q16 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 1Q16 sampling event.

2.0 FIELD ACTIVITIES

Golder conducted 1Q16 sampling events between February 15 and February 26, 2016. Activities were performed in general accordance with the Work Plan.

2.1 Water Level Measurement

Prior to sampling during the 1Q16 event, Golder performed a synoptic round of water level measurements at 77 monitoring wells and piezometers on February 16 and February 17, 2016. 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 1Q16 sampling event, NAPL was not detected in monitoring wells or piezometers. Total depths are measured during the 1st quarter of each year. The 1Q16 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 1Q16 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 1Q16 LTMP sampling event. Laboratory provided trip blanks were included in each cooler containing samples for VOC analysis, for a total of six (6) 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), 2016 (0216)
- **“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 Stable Isotope Probing samplers (SIPs), provided by Microbial Insights, Inc. in Rockford, Tennessee, were deployed on January 4 and 5, 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 February 15 and 16, 2016, 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 concentrations in the river and in groundwater. The surface water and sediment sampling was conducted on February 15, 2016. Fluid levels in groundwater monitoring wells CPA-MW-5D, BSA-MW-5D, and BSA-MW-4D were measured on February 15, 2016. The water level elevations were measured at the following:

- CPA-MW-5D (391.27 ft AMSL)
- BSA-MW-5D (393.28 ft AMSL)
- BSA-MW-4D (394.15 ft AMSL)

The levels were higher than the Mississippi River on February 16, 2016 (~388.15 ft AMSL); therefore discharge to the river was confirmed.

Surface water and sediment samples were collected at three (3) locations, R2007-1 through R2007-3 as 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 1Q16 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 an 11.1 liter 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 eight (8) sample delivery groups (SDGs) as follows:



Sample Delivery Group (SDG)	Sample Identification
KPS160	PM1D-0216
	ESL-MW-A-0216
	ESL-MW-D1-0216
	1Q16 LTM Trip Blank #1
KPS161	GWE-5D-0216
	CPA-MW-5D-0216
	GWE-1D-0216
	GWE-2D-0216
	GWE-3D-0216
	1Q16 LTM Trip Blank #2
KPS162	BSA-MW-5D-0216
	BSA-MW-4D-0216
	CPA-MW-3D-0216
	CPA-MW-3D-0216-AD
	BSA-MW-2D-0216
	1Q16 LTM Trip Blank #3
KPS163	GWE-5D-0216
	CPA-MW-5D-0216
	GWE-1D-0216
KPS164	BSA-MW-3D-0216
	BSA-MW-3D-0216-EB
	CPA-MW-1D-0216
	1Q16 LTM Trip Blank #4
KPS165	CPA-MW-4D-0216
	CPA-MW-2D-0216
	CPA-MW-2D-0216-AD
	BSA-MW-1S-0216
	BSA-MW-1S-0216-EB
	1Q16 LTM Trip Blank #5
KRS015	SW-R2007-1-0216
	SW-R2007-2-0216
	SW-R2007-3-0216
	SW-R2007-1-0216-AD
	SW-R2007-1-0216-EB
	Trip Blank-123015
KRS016	SED-R2007-1-0216
	SED-R2007-2-0216
	SED-R2007-3-0216
	SED-R2007-1-0216-AD



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 eight (8) of the seventeen (17) monitoring wells and piezometers at concentrations ranging from 11 µg/L (GWE-3D) to 550,000 µg/L (BSA-MW-1S). 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 550,000 µg/L.
- Downgradient of Former Benzene Storage Area: Benzene was detected in four (4) of four (4) wells downgradient of the former Benzene Storage Area with concentrations ranging from 24 µg/L (BSA-MW-4D), in the DHU north of the GMCS, to 41,000 µg/L (BSA-MW-2D).
- Former Chlorobenzene Process Area: Benzene was detected in the former Chlorobenzene Process Area source area well (CPA-MW-1D) at a concentration of 3,900 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 two (2) of seven (7) wells and piezometers north of the Site at concentrations of 19 µg/L (GWE-5D) and 11 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 thirteen (13) of the seventeen (17) wells at concentrations ranging from 20.9 µg/L (PM1D) to 34,600 µg/L / 35,700 µg/L (CPA-MW-2D / CPA-MW-2D-AD). 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 three (3) of four (4) wells downgradient of the former Benzene Storage Area with concentrations ranging from 230 µg/L (BSA-MW-5D) to 2,081 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 31,100 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 102.1 µg/L / 101.8 µg/L (CPA-MW-3D and AD) to 34,600 / 35,700 µg/L (CPA-MW-2D and AD). Total chlorobenzenes were detected at a concentration of 1,400 µg/L (CPA-MW-5D) north of the GMCS.
- North of the Site: Total chlorobenzenes were detected in five (5) of seven (7) wells and piezometers north of the Site with concentrations ranging from 20.9 µg/L (PM1D) to 845 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 21 µg/L and 15 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 13 µg/L and 14 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 550 µg/L.
- Downgradient of Former Chlorobenzene Process Area: 4-Chloroaniline was detected downgradient of the former Chlorobenzene Process Area (CPA-MW-4D) at a concentration of 110 µg/L. 2-Chlorophenol was detected in CPA-MW-2D / CPA-MW-2D-AD and CPA-MW-5D at 57 / 60 µg/L and 26 µg/L respectively, in wells 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 laboratory results including data validation reports are included in Appendix E. There were no VOC or SVOC detections in the surface water samples. There were no VOC or SVOC detections in sediment samples with exception of benzene detected in SED-R2007-2 at a concentration of 1.2 µg/Kg, located downgradient of BSA-MW-5D.

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-0216 during the deployment period” and “quantification of ¹³C-enriched biomass and DIC demonstrated that indigenous microorganisms had degraded the ¹³C-labeled chlorobenzene in CPA-MW-3D-0216 during the deployment period”. Dissolved inorganic carbon (DIC) data for BSA-MW-2D-0216 indicate that “benzene had been mineralized during the deployment period.” Although DIC data for CPA-MW-3D-0215 indicate that “little or no chlorobenzene had been mineralized,” 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 Project 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



FORMER CHLOROBENZENE
PROCESS AREA

W.G. KRUMMRICH
FACILITY

AFTON
CHEMICAL

BIG RIVER
ZINC

FORMER BENZENE
STORAGE AREA

SITE I

SITE H

SITE L

SITE M

DEAD CREEK

SITE G

CERRO
FLOW
PRODUCTS

CONTAINMENT
CELL

ROUTE 3

MIDWEST
RUBBER

CENTER
ETHANOL
COMPANY, LLC.

LOT F

AMEREN

PICHEM
POTW

SITE O

AMERICAN
BOTTOMS
POTW

CLAYTON
CHEMICAL

SITE S

VEOLIA INCINERATION

KINDER
MORGAN

SITE R

SITE Q

BARRIER WALL

GROUNDWATER
PUMPING WELLS

MISSISSIPPI RIVER

LEGEND

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



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

CONSULTANT	YYYY-MM-DD	2015-12-17
	PREPARED	EPW
	DESIGN	EPW
	REVIEW	AWD
	APPROVED	MNH



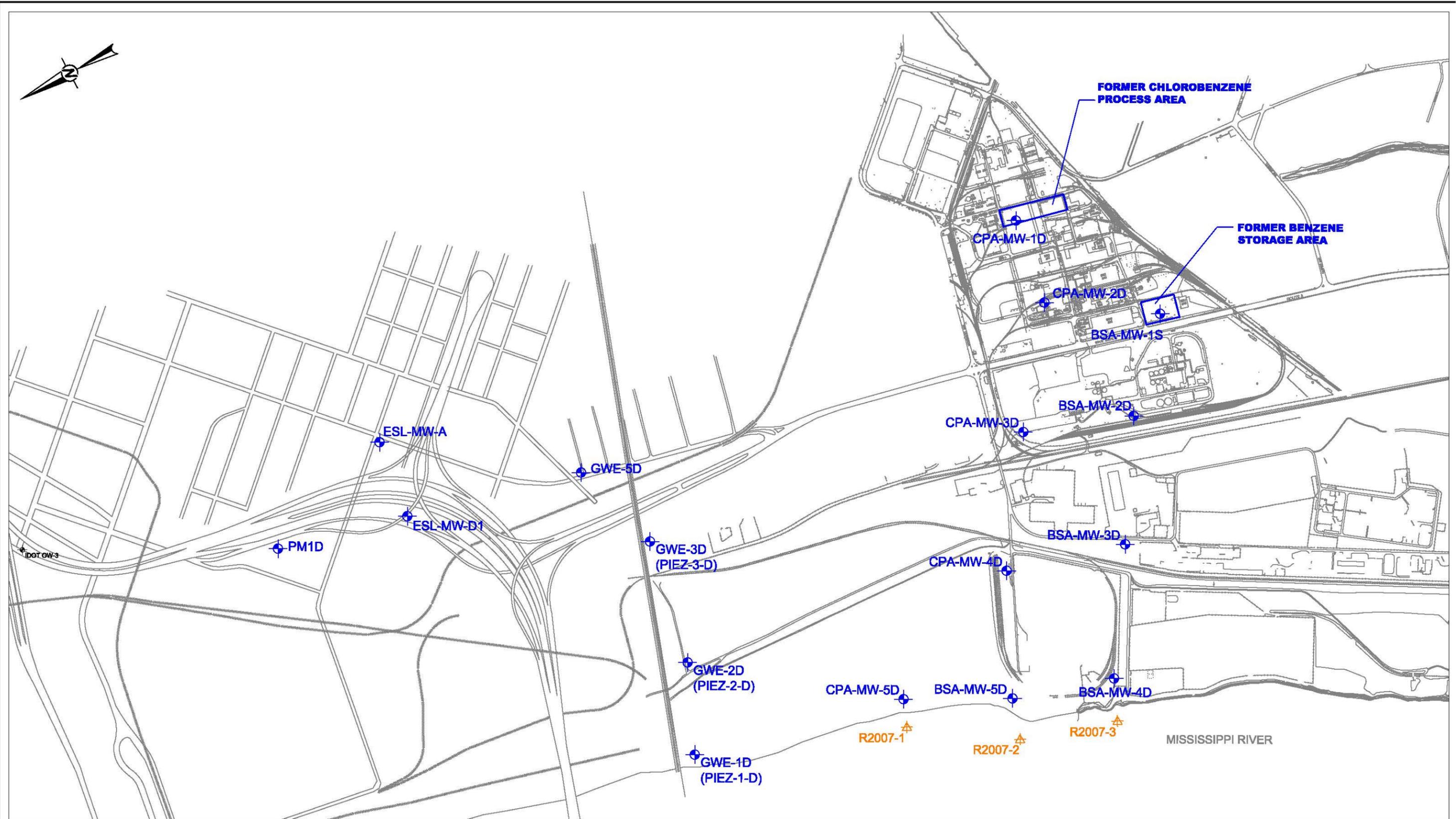
PROJECT
LONG-TERM MONITORING PROGRAM
1ST QUARTER 2016 DATA REPORT

TITLE
SITE LOCATION MAP

PROJECT No.	PHASE	Rev.	FIGURE
140-3345	0031	0	1

Path: \\nautiluscommon\Projects\140\Projects\1403345 - Solutia GW Sampling\WGK\Draw - 11\Figures\1016\Figure1016.dwg | File Name: 1403345_1016.dwg

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B 11in



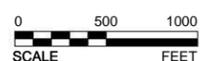
LEGEND

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 HYDROLOGIC UNIT (DHU), MIDDLE HYDROLOGIC UNIT (MHU), OR SHALLOW HYDROLOGIC UNIT (SHU), RESPECTIVELY.



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

CONSULTANT	YYYY-MM-DD	2016-03-22
	PREPARED	EPW
	DESIGN	EPW
	REVIEW	AWD
	APPROVED	MNH



PROJECT
LONG-TERM MONITORING PROGRAM
1ST QUARTER 2016 DATA REPORT

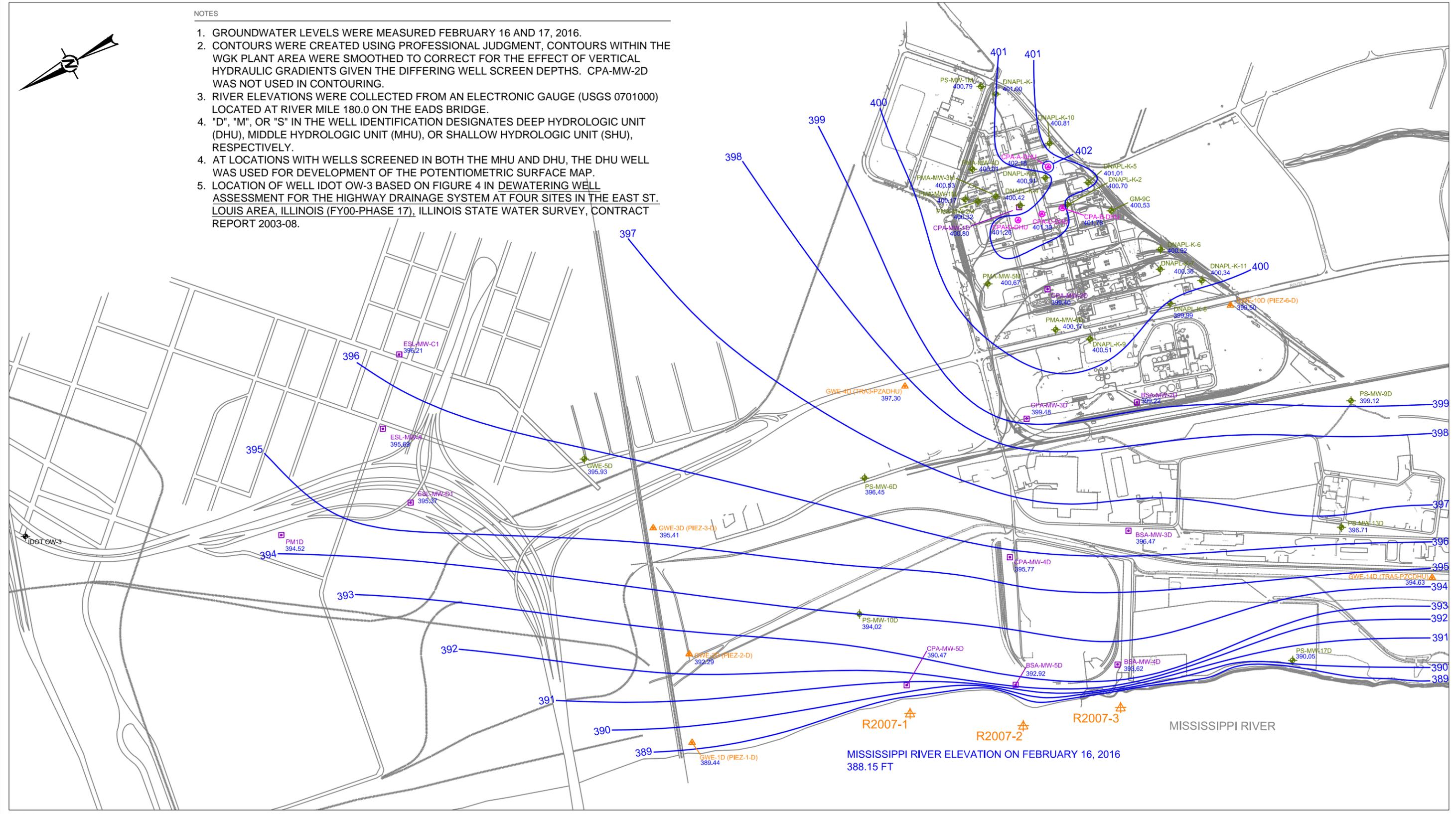
TITLE
LONG-TERM MONITORING PROGRAM WELL LOCATIONS

PROJECT No. 140-3345	PHASE: 0031	Rev. 0	FIGURE: 2
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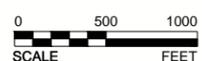
Path: \\atlas\common\Projects\140\Projects\1403345 - Saugat GW Sampling\WGK\Plan-1\Figures\1016\Figure1 - File Name: 1403345_LTMP_2.dwg

NOTES

1. GROUNDWATER LEVELS WERE MEASURED FEBRUARY 16 AND 17, 2016.
2. CONTOURS WERE CREATED USING PROFESSIONAL JUDGMENT, CONTOURS WITHIN THE W GK PLANT AREA WERE SMOOTHED TO CORRECT FOR THE EFFECT OF VERTICAL HYDRAULIC GRADIENTS GIVEN THE DIFFERING WELL SCREEN DEPTHS. CPA-MW-2D WAS 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 HYDROLOGIC UNIT (DHU), MIDDLE HYDROLOGIC UNIT (MHU), OR SHALLOW HYDROLOGIC 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 FACILITY
 SAUGET, ILLINOIS

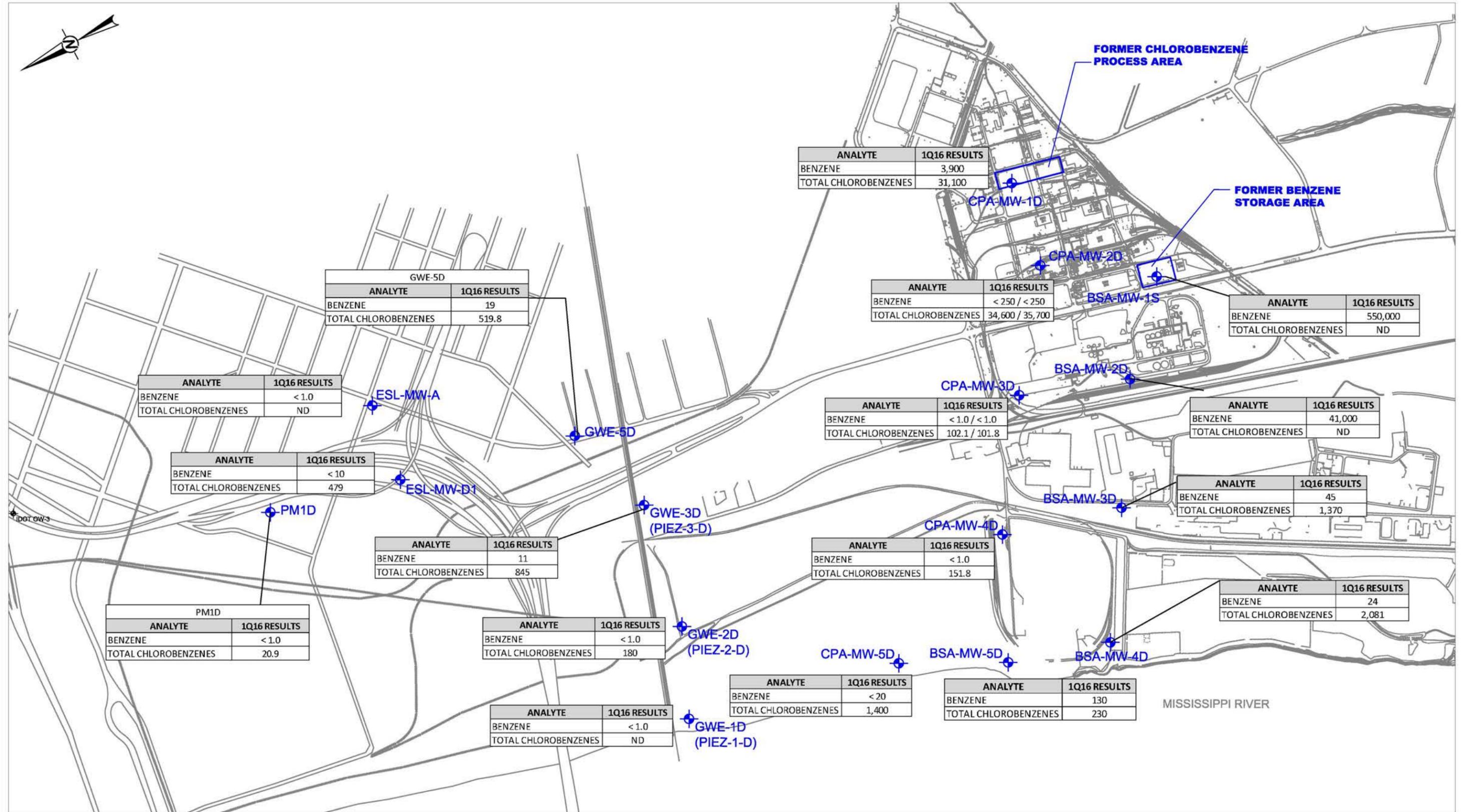
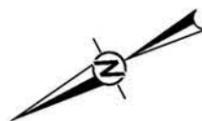
CONSULTANT	YYYY-MM-DD	2016-03-22
PREPARED	EPW	
DESIGN	SJD	
REVIEW	AWD	
APPROVED	MRS	

PROJECT
 LONG-TERM MONITORING PROGRAM
 1ST QUARTER 2016 DATA REPORT

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

PROJECT No.	PHASE:	Rev.	FIGURE:
140-3345	0031	0	3

Path: \\atlas\common\Projects\140\Projects\1403345 - Saugat GW Sampling\WGK Plant - 14\Figures\1016\Figures\1 - File Name - 1403345_LTMP_2.dwg



ANALYTE	1Q16 RESULTS
BENZENE	3,900
TOTAL CHLOROBENZENES	31,100

ANALYTE	1Q16 RESULTS
BENZENE	< 250 / < 250
TOTAL CHLOROBENZENES	34,600 / 35,700

ANALYTE	1Q16 RESULTS
BENZENE	550,000
TOTAL CHLOROBENZENES	ND

ANALYTE	1Q16 RESULTS
BENZENE	< 1.0
TOTAL CHLOROBENZENES	ND

ANALYTE	1Q16 RESULTS
BENZENE	< 10
TOTAL CHLOROBENZENES	479

ANALYTE	1Q16 RESULTS
BENZENE	< 1.0
TOTAL CHLOROBENZENES	20.9

ANALYTE	1Q16 RESULTS
BENZENE	19
TOTAL CHLOROBENZENES	519.8

ANALYTE	1Q16 RESULTS
BENZENE	11
TOTAL CHLOROBENZENES	845

ANALYTE	1Q16 RESULTS
BENZENE	< 1.0
TOTAL CHLOROBENZENES	180

ANALYTE	1Q16 RESULTS
BENZENE	< 1.0
TOTAL CHLOROBENZENES	ND

ANALYTE	1Q16 RESULTS
BENZENE	< 1.0 / < 1.0
TOTAL CHLOROBENZENES	102.1 / 101.8

ANALYTE	1Q16 RESULTS
BENZENE	41,000
TOTAL CHLOROBENZENES	ND

ANALYTE	1Q16 RESULTS
BENZENE	45
TOTAL CHLOROBENZENES	1,370

ANALYTE	1Q16 RESULTS
BENZENE	< 1.0
TOTAL CHLOROBENZENES	151.8

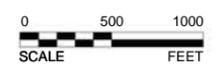
ANALYTE	1Q16 RESULTS
BENZENE	24
TOTAL CHLOROBENZENES	2,081

ANALYTE	1Q16 RESULTS
BENZENE	< 20
TOTAL CHLOROBENZENES	1,400

ANALYTE	1Q16 RESULTS
BENZENE	130
TOTAL CHLOROBENZENES	230

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 HYDROLOGIC UNIT (DHU), MIDDLE HYDROLOGIC UNIT (MHU), OR SHALLOW HYDROLOGIC UNIT (SHU), RESPECTIVELY.



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

CONSULTANT	DATE
PREPARED	2016-03-22
DESIGN	EPW
REVIEW	EPW
APPROVED	AWD
	MNH



PROJECT
 LONG-TERM MONITORING PROGRAM
 1ST QUARTER 2016 DATA REPORT

TITLE
BENZENE AND TOTAL CHLOROBENZENES RESULTS

PROJECT No.	PHASE:	Rev.	FIGURE:
140-3345	0031	0	4

Path: \\arbutel\common\Projects\140\Projects\1403345 - Saugatit GW Sampling\WGK\Plan-LL\Figures\1Q16\Figures\1 - File Name: 1403345_L1MAP_2.dwg

TABLES

Table 1
Monitoring Well Gauging Information
1Q16 Long-Term Monitoring Program
Solutia Inc., W.G. Krummrich Facility
Sauget, Illinois

Well Identification	Monitoring Well Construction Data						1Q16 - February 16 and February 17, 2016			
	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	12.18	NP	27.29	400.13
GWE-5S	408.47	408.05	17.91	27.91	390.56	380.56	11.79	NP	27.82	396.26
MHU 380-350 ft NAVD 88										
GWE-5M	408.59	408.20	48.10	58.10	360.49	350.49	12.00	NP	58.02	396.20
PMA-MW-1M	410.32	410.08	54.54	59.54	355.78	350.78	9.91	NP	59.56	400.17
PMA-MW-2M	412.26	411.93	56.87	61.87	355.39	350.39	11.61	NP	61.23	400.32
PMA-MW-3M	412.36	412.10	57.07	62.07	355.29	350.29	11.57	NP	61.77	400.53
PMA-MW-5M	411.27	410.97	52.17	57.17	359.10	354.10	10.30	NP	56.93	400.67
PS-MW-1M	409.37	412.59	37.78	42.78	371.59	366.59	11.80	NP	46.02	400.79
PM1M	413.07	412.80	51.64	61.41	361.43	351.66	18.32	NP	60.56	394.48
DHU 350 ft NAVD 88 - Bedrock										
BSA-MW-2D	412.00	415.13	68.92	73.92	343.08	338.08	15.91	NP	76.98	399.22
BSA-MW-3D	412.91	415.74	107.02	112.02	305.89	300.89	19.27	NP	114.75	396.47
BSA-MW-4D	425.00	424.69	118.54	123.54	306.46	301.46	31.07	NP	123.13	393.62
BSA-MW-5D	420.80	420.49	115.85	120.82	304.95	299.95	27.57	NP	120.90	392.92
CPA-A-DHU	413.95	416.24	108.00	113.30	305.95	300.65	14.06	NP	115.12	402.18
CPA-B-DHU	409.12	408.68	101.00	106.50	308.12	302.62	6.92	NP	105.43	401.76
CPA-C-DHU	408.92	408.57	101.00	106.00	307.92	302.92	7.18	NP	105.47	401.39
CPA-D-DHU	409.63	412.20	101.00	105.90	308.63	303.73	10.94	NP	108.21	401.26
CPA-MW-1D	408.62	412.23	66.12	71.12	342.50	337.50	11.43	NP	74.64	400.80
CPA-MW-2D	408.51	408.20	99.96	104.96	308.55	303.55	8.80	NP	104.55	399.40
CPA-MW-3D	410.87	410.67	108.20	113.20	302.67	297.67	11.19	NP	112.75	399.48
CPA-MW-4D	421.57	421.20	116.44	121.44	305.13	300.13	25.43	NP	120.91	395.77
CPA-MW-5D	411.03	413.15	107.63	112.63	303.40	298.40	22.68	NP	114.60	390.47
DNAPL-K-1	413.07	415.56	108.20	123.20	304.87	289.87	14.56	NP	123.08	401.00
DNAPL-K-2	407.94	407.72	97.63	112.63	310.31	295.31	7.02	NP	112.32	400.70
DNAPL-K-3	412.13	415.91	104.80	119.80	307.33	292.33	15.00	NP	123.28	400.91
DNAPL-K-4	409.48	412.53	102.55	117.55	306.93	291.93	12.11	NP	118.12	400.42
DNAPL-K-5	412.27	411.91	102.15	117.15	310.12	295.12	10.90	NP	116.42	401.01
DNAPL-K-6	410.43	410.09	102.47	117.47	307.96	292.96	9.57	NP	116.80	400.52
DNAPL-K-7	408.32	407.72	100.40	115.40	307.92	292.92	7.36	NP	117.27	400.36
DNAPL-K-8	408.56	411.38	102.65	117.65	305.91	290.91	11.39	NP	117.54	399.99
DNAPL-K-9	406.45	405.97	97.42	112.42	309.03	294.03	5.46	NP	111.10	400.51
DNAPL-K-10	413.50	413.25	105.43	120.43	308.07	293.07	12.44	NP	120.23	400.81
DNAPL-K-11	412.20	411.78	105.46	120.46	306.74	291.74	11.44	NP	120.20	400.34
GM-9C	409.54	411.21	88.00	108.00	321.54	301.54	10.68	NP	108.18	400.53
GWE-1D	412.80	415.60	117.00	127.00	295.80	285.80	26.16	NP	127.06	389.44
GWE-2D	417.45	417.14	127.00	137.00	290.45	280.45	24.85	NP	136.55	392.29
GWE-3D	415.03	417.66	104.60	114.60	313.06	303.06	22.25	NP	114.87	395.41
GWE-4D	406.05	405.74	74.00	80.00	332.05	326.05	8.44	NP	78.73	397.30
GWE-5D	408.79	408.38	100.43	105.43	308.36	303.36	12.45	NP	105.17	395.93
GWE-10D	410.15	412.87	102.50	112.50	307.65	297.65	13.37	NP	114.80	399.50
GWE-14D	420.47	422.90	90.00	96.00	330.47	324.47	28.27	NP	96.99	394.63
ESL-MW-A	412.93	412.59	105.50	110.50	307.43	302.43	16.90	NP	109.86	395.69
ESL-MW-C1	410.09	409.79	104.00	109.00	306.09	301.09	13.58	NP	108.59	396.21
ESL-MW-D1	416.38	416.04	114.00	119.00	302.38	297.38	20.67	NP	119.21	395.37
PMA-MW-4D	411.22	410.88	68.84	73.84	342.38	337.38	10.87	NP	73.32	400.01
PMA-MW-6D	407.63	407.32	96.49	101.49	311.14	306.14	7.15	NP	101.22	400.17
PS-MW-6D	404.11	406.63	102.32	107.32	304.31	299.31	10.18	NP	109.75	396.45
PS-MW-9D	403.92	403.52	100.40	105.40	303.52	298.52	4.40	NP	105.06	399.12
PS-MW-10D	409.63	412.18	103.78	108.78	308.40	303.40	18.16	NP	111.21	394.02
PS-MW-13D	405.80	405.53	106.08	111.08	299.72	294.72	8.82	NP	110.34	396.71
PS-MW-17D	420.22	423.26	121.25	126.25	298.97	293.97	33.21	NP	133.93	390.05
SA2-MW-1D	403.79	406.03	105.01	115.01	301.02	291.02	17.91	NP	102.25	388.12
PM1D	413.41	412.78	101.42	106.45	311.99	306.96	18.26	NP	106.58	394.52

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

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

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

NA - Wells were not accessible due to flooding

Prepared By: SID 3/3/2016

Checked By: JS 3/3/2016

Reviewed By: AWD 4/11/2016

Table 2
Groundwater Analytical Results
1Q16 Long-Term Monitoring Program
Solutia Inc., W.G. Krummrich Facility
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-0216	2/26/2016	550,000 D	<10,000	<10,000	<10,000	<10,000	NA	<9.8	NA	<9.8
BSA-MW-2D-0216	2/24/2016	41,000 D	<1,000	<1,000	<1,000	<1,000	NA	<9.8	21	<9.8
BSA-MW-3D-0216	2/25/2016	45 H	1,100 H	<20 H	<20 H	270 H	NA	13	<9.8	<9.8
BSA-MW-4D-0216	2/24/2016	24 D	2,000 D	<20	<20	81 D	NA	14	15	<9.8
BSA-MW-5D-0216	2/24/2016	130 D	230 D	<5.0	<5.0	<5.0	NA	<9.8	<9.8	<9.8
Chlorobenzene Process Area										
CPA-MW-1D-0216	2/25/2016	3,900 H	14,000 H	8,500 H	1,000 H	7,600 H	NA	<9.6	NA	550 D
CPA-MW-2D-0216	2/26/2016	<250	33,000 D	<250	<250	1,600 D	NA	57	NA	<9.7
CPA-MW-2D-0216-AD	2/26/2016	<250	34,000 D	<250	<250	1,700 D	NA	60	NA	<9.9
CPA-MW-3D-0216	2/24/2016	<1.0	100	<1.0	<1.0	2.1	<19	<9.7	NA	<9.7
CPA-MW-3D-0216-AD	2/24/2016	<1.0	100	<1.0	<1.0	1.8	<20	<9.9	NA	<9.9
CPA-MW-4D-0216	2/26/2016	<1.0	150	<1.0	<1.0	1.8	110	<9.8	NA	<9.8
CPA-MW-5D-0216	2/23/2016	<20	1,400 D	<20	<20	<20	<10	26	NA	<20
North of W.G. Krummrich Facility										
ESL-MW-A-0216	2/22/2016	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA
ESL-MW-D1-0216	2/22/2016	<10	440 D	<10	<10	39 D	NA	NA	NA	NA
GWE-1D-0216	2/23/2016	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA
GWE-2D-0216	2/23/2016	<1.0	180	<1.0	<1.0	<1.0	NA	NA	NA	NA
GWE-3D-0216	2/23/2016	11 D	790 D	<10	<10	55 D	NA	NA	NA	NA
GWE-5D-0216	2/23/2016	19	460 D	6.4	2.4	51	NA	NA	NA	NA
PM1D-0216	2/22/2016	<1.0	19	<1.0	<1.0	1.9	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
NA - sample not analyzed for select analyte
Bold - indicates concentration greater than reporting limit

Prepared By: EPW 03/22/2016
Checked By: PJJ 04/08/2016
Reviewed By: AWD 4/11/2016

Table 3
Monitored Natural Attenuation Results
1Q16 Long-Term Monitoring Program
Solutia Inc., W.G. Krummrich Facility
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-0216	2/26/2016	1,000	40	140 D	0.05	<7.5	<7.0	-	13	-	1.0	-	9,500 D	<0.050	<5.0	10 D	-	-47.13
BSA-MW-1S-F(0.2)-0216	2/26/2016	-	-	-	-	-	-	2.96	-	12	-	1.1	-	-	-	-	17	-
BSA-MW-2D-0216	2/24/2016	760	43	180 D	0.08	16	<1.0	-	5.3	-	0.71	-	14,000 D	<0.050	<25	7.8	-	-48.93
BSA-MW-2D-F(0.2)-0216	2/24/2016	-	-	-	-	-	-	3.26	-	5.2	-	0.70	-	-	-	-	7.6	-
BSA-MW-3D-0216	2/25/2016	500	28	180 D	0.09	2.9	2.1	-	11	-	0.62	-	380	<0.050	290 D	2.9	-	-24.68
BSA-MW-3D-F(0.2)-0216	2/25/2016	-	-	-	-	-	-	>3.30	-	11	-	0.62	-	-	-	-	3.1	-
BSA-MW-4D-0216	2/24/2016	640	36	140 D	0.14	6.6	<1.0	-	7.2	-	0.53	-	380	<0.050	<5.0	3.4	-	-67.35
BSA-MW-4D-F(0.2)-0216	2/24/2016	-	-	-	-	-	-	3.15	-	7.4	-	0.55	-	-	-	-	3.4	-
BSA-MW-5D-216	2/24/2016	630	39	270 D	0.12	27	<1.0	-	11	-	0.28	-	3,600 D	<0.050	<5.0	7.4	-	-103.91
BSA-MW-5D-F(0.2)-0216	2/24/2016	-	-	-	-	-	-	>3.30	-	11	-	0.27	-	-	-	-	7.9	-
Chlorobenzene Process Area																		
CPA-MW-1D-0216	2/25/2016	940	<5.0	90 D	0.10	29	<1.0	-	0.21	-	0.061	-	12,000 D	<0.050	<5.0	8.0 D	-	-13.51
CPA-MW-1D-F(0.2)-0216	2/25/2016	-	-	-	-	-	-	0.00	-	0.11	-	0.056	-	-	-	-	10	-
CPA-MW-2D-0216	2/26/2016	510	21	89 D	0.09	<7.5	<7.0	-	8.1	-	0.45	-	730 D	<0.050	94 D	1.5	-	-14.02
CPA-MW-2D-F(0.2)-0216	2/26/2016	-	-	-	-	-	-	>3.30	-	7.9	-	0.45	-	-	-	-	5.9	-
CPA-MW-3D-0216	2/24/2016	650	45	230 D	0.15	25	<1.0	-	14	-	0.73	-	12,000 D	<0.050	<5.0	6.7	-	-67.32
CPA-MW-3D-F(0.2)-0216	2/24/2016	-	-	-	-	-	-	2.43	-	14	-	0.73	-	-	-	-	6.8	-
CPA-MW-4D-0216	2/26/2016	710	35	290 D	0.07	22	<7.0	-	16	-	0.37	-	11,000 D	<0.050	<5.0	6.8	-	-54.19
CPA-MW-4D-F(0.2)-0216	2/26/2016	-	-	-	-	-	-	>3.30	-	16	-	0.37	-	-	-	-	7.9	-
CPA-MW-5D-0216	2/23/2016	620	59	240 D	0.17	7.2	<1.0	-	18	-	0.63	-	210	<0.050 J	65 D	4.0	-	12.53
CPA-MW-5D-F(0.2)-0216	2/23/2016	-	-	-	-	-	-	>3.30	-	18	-	0.64	-	-	-	-	4.4	-
North of W.G. Krummrich Facility																		
ESL-MW-A-0216	2/22/2016	350	21	86 D	0.37	<1.0	<1.0	-	12	-	0.37	-	3.4	0.39	800 D	2.5	-	-18.63
ESL-MW-A-F(0.2)-0216	2/22/2016	-	-	-	-	-	-	>3.30	-	11	-	0.36	-	-	-	-	2.7	-
ESL-MW-D1-0815	2/22/2016	390	24	110 D	0.12	<1.0	<1.0	-	0.19	-	0.41	-	42	<0.050	600 D	1.5	-	12.90
ESL-MW-D1-F(0.2)-0216	2/22/2016	-	-	-	-	-	-	0.00	-	0.25	-	0.40	-	-	-	-	1.9	-
GWE-1D-0216	2/23/2016	510	30	71 D	0.09	<1.0	<1.0	-	11	-	2.0	-	35	<0.050 J	290 D	4.7	-	3.05
GWE-1D-F(0.2)-0216	2/23/2016	-	-	-	-	-	-	>3.30	-	11	-	2.0	-	-	-	-	4.7	-
GWE-2D-0216	2/23/2016	420	38	1,100 D	0.08	<7.5	<7.0	-	25	-	0.58	-	21	<0.050	1,200 D	3.1	-	-3.36
GWE-2D-F(0.2)-0216	2/23/2016	-	-	-	-	-	-	>3.30	-	25	-	0.58	-	-	-	-	3.4	-
GWE-3D-0216	2/23/2016	450	42	1,100 D	0.03	<7.5	<7.0	-	20	-	0.71	-	68	<0.050	300 D	4.1	-	-297.00
GWE-3D-F(0.2)-0216	2/23/2016	-	-	-	-	-	-	3.05	-	22	-	0.73	-	-	-	-	4.3	-
GWE-5D-0216	2/23/2016	350	22	110 D	0.08	<1.0	<1.0	-	16	-	0.44	-	84	<0.050 J	570 D	2.4	-	-18.78
GWE-5D-F(0.2)-0216	2/23/2016	-	-	-	-	-	-	>3.30	-	15	-	0.42	-	-	-	-	2.6	-
PM1D-0216	2/22/2016	420	27	94 D	0.10	<1.0	<1.0	-	15	-	0.48	-	49	<0.050	460 D	1.5	-	-30.37
PM1D-F(0.2)-0216	2/22/2016	-	-	-	-	-	-	2.10	-	15	-	0.48	-	-	-	-	1.9	-

Notes
Dissolved Oxygen (DO) and Oxidation Reduction Potential (ORP) values represent the final field measurements prior to sampling (In-Situ - SmartTroll™)
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
J - indicates estimated value

Prepared By: EPW 03/22/2016
Checked By: PJJ 4/8/2016
Reviewed By: AWD 4/11/2016

APPENDIX A
GROUNDWATER PURGING AND SAMPLING FORMS

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 27.29 ft
 Depth to Top of Screen 22.50 ft
 Screen Length 5 ft
 Depth to Water 12.18 ft

Pumping Information:

Final Pumping Rate 300 mL/min
 System Volume 363 mL
 Calculated Sample Rate 72 sec
 Sample Rate 72 sec
 Stabilized Drawdown 0.04 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	15:26:50	15.21	7.16	2096.12	60.80	0.06	-42.15
	15:27:42	15.30	7.15	2096.93	52.70	0.06	-44.30
	15:28:34	15.39	7.15	2098.05	47.20	0.06	-46.34
	15:29:26	15.39	7.15	2086.82	46.50	0.05	-46.99
	15:30:18	15.19	7.16	2070.98	43.10	0.05	-47.13
Variance in Last 3 Readings		0.09	0.00	1.12	-5.50	0.00	-2.04
		0.00	0.00	-11.23	-0.70	-0.01	-0.65
		-0.20	0.01	-15.84	-3.40	0.00	-0.14

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 15.91 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	15:00:14	14.70	7.22	1876.89	1.16	0.13	-37.10
	15:02:01	14.99	7.23	1874.11	1.06	0.11	-41.63
	15:13:48	15.14	7.23	1869.76	1.57	0.10	-44.77
	15:05:35	15.10	7.22	1866.58	1.08	0.09	-46.89
	15:07:24	15.10	7.22	1865.00	1.09	0.08	-48.93
Variance in Last 3 Readings		0.15	0.00	-4.35	0.51	-0.01	-3.14
		-0.04	-0.01	-3.18	-0.49	-0.01	-2.12
		0.00	0.00	-1.58	0.01	-0.01	-2.04

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 19.27 ft

Pumping Information:

Final Pumping Rate 300 mL/min
 System Volume 850 mL
 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	9:23:06	14.34	7.00	1791.77	4.40	0.13	-17.62
	9:25:35	14.66	7.00	1795.91	3.90	0.10	-23.41
	9:28:04	14.74	7.01	1790.21	3.74	0.11	-25.37
	9:30:33	14.76	7.01	1805.22	3.74	0.09	-27.06
	9:33:02	14.85	7.02	1799.79	3.35	0.09	-24.68
Variance in Last 3 Readings		0.08	0.01	-5.70	-0.16	0.01	-1.96
		0.02	0.00	15.01	0.00	-0.02	-1.69
		0.09	0.01	-5.43	-0.39	0.00	2.38

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 31.07 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	12:05:38	14.29	7.28	1539.84	2.74	0.26	-57.82
	12:08:17	14.65	7.27	1544.14	2.34	0.20	-63.22
	12:10:56	14.88	7.26	1541.25	1.67	0.17	-65.45
	12:13:35	15.06	7.26	1540.06	2.10	0.16	-67.25
	12:16:14	15.14	7.26	1540.47	2.65	0.14	-67.35
Variance in Last 3 Readings		0.23	-0.01	-2.89	-0.67	-0.03	-2.23
		0.18	0.00	-1.19	0.43	-0.01	-1.80
		0.08	0.00	0.41	0.55	-0.02	-0.10

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 120.90 ft
 Depth to Top of Screen 115.54 ft
 Screen Length 5 ft
 Depth to Water 27.57 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	10:11:24	14.64	7.14	2072.86	9.59	0.41	-85.76
	10:14:00	14.92	7.20	2047.26	2.43	0.23	-94.42
	10:16:36	15.18	7.22	2053.87	2.00	0.19	-99.62
	10:19:12	15.52	7.23	2047.91	2.43	0.14	-102.82
	10:21:48	15.48	7.23	2051.80	2.97	0.12	-103.91
Variance in Last 3 Readings		0.26	0.02	6.61	-0.43	-0.04	-5.20
		0.34	0.01	-5.96	0.43	-0.05	-3.20
		-0.04	0.00	3.89	0.54	-0.02	-1.09

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 74.64 ft
 Depth to Top of Screen 65.82 ft
 Screen Length 5 ft
 Depth to Water 11.43 ft

Pumping Information:

Final Pumping Rate 300 mL/min
 System Volume 599 mL
 Calculated Sample Rate 119 sec
 Sample Rate 119 sec
 Stabilized Drawdown 0.01 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	13:23:59	17.13	8.03	1734.86	4.56	0.19	2.97
	13:25:38	17.12	8.02	1734.69	3.30	0.14	0.30
	13:27:17	17.25	8.06	1740.78	2.23	0.12	-4.25
	13:28:56	17.29	8.13	1748.32	1.99	0.10	-8.02
	13:30:36	17.12	8.21	1771.90	2.02	0.10	-13.51
Variance in Last 3 Readings		0.13	0.04	6.09	-1.07	-0.02	-4.55
		0.04	0.07	7.54	-0.24	-0.02	-3.77
		-0.17	0.08	23.58	0.03	0.00	-5.49

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 108.15 ft
 Pump Placement from TOC 102.15 ft

Well Information:

Well Id CPA-MW-2D
 Well Diameter 2 in
 Well Total Depth 104.55 ft
 Depth to Top of Screen 99.65 ft
 Screen Length 5 ft
 Depth to Water 8.80 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	14:08:25	17.17	7.01	1350.86	16.50	0.12	-7.45
	14:10:43	17.21	7.01	1348.01	14.80	0.10	-9.96
	14:13:01	17.25	7.01	1345.51	14.90	0.09	-11.82
	14:15:19	17.16	7.01	1340.14	13.70	0.09	-12.94
	14:17:38	17.19	7.01	1336.40	14.00	0.09	-14.02
Variance in Last 3 Readings		0.04	0.00	-2.50	0.10	-0.01	-1.86
		-0.09	0.00	-5.37	-1.20	0.00	-1.12
		0.03	0.00	-3.74	0.30	0.00	-1.08

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 11.19 ft

Pumping Information:

Final Pumping Rate 300 mL/min
 System Volume 840 mL
 Calculated Sample Rate 167 sec
 Sample Rate 167 sec
 Stabilized Drawdown 0.01 ft

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [$\mu\text{S}/\text{cm}$]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	13:47:06	15.28	7.14	1852.82	7.52	0.22	-61.45
	13:49:33	15.10	7.13	1825.15	4.23	0.20	-64.57
	13:52:00	15.17	7.13	1830.59	2.89	0.18	-66.34
	13:54:27	15.07	7.13	1829.87	2.91	0.17	-66.90
	13:56:55	15.14	7.12	1833.28	2.79	0.15	-67.32
Variance in Last 3 Readings		0.07	0.00	5.44	-1.34	-0.02	-1.77
		-0.10	0.00	-0.72	0.02	-0.01	-0.56
		0.07	-0.01	3.41	-0.12	-0.02	-0.42

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 25.43 ft

Pumping Information:

Final Pumping Rate 300 mL/min
 System Volume 885 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	11:43:48	15.40	7.02	2198.20	16.50	0.13	-45.16
	11:46:24	15.48	7.02	2184.07	14.70	0.08	-49.32
	11:49:00	15.46	7.02	2188.20	12.30	0.09	-50.79
	11:51:36	15.55	7.02	2181.15	10.70	0.08	-52.53
	11:54:13	15.60	7.02	2179.92	9.19	0.07	-54.19
Variance in Last 3 Readings		-0.02	0.00	4.13	-2.40	0.01	-1.47
		0.09	0.00	-7.05	-1.60	-0.01	-1.74
		0.05	0.00	-1.23	-1.51	-0.01	-1.66

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 118.25 ft
 Pump Placement from TOC 112.25 ft

Well Information:

Well Id CPA-MW-5D
 Well Diameter 2 in
 Well Total Depth 114.60 ft
 Depth to Top of Screen 109.75 ft
 Screen Length 5 ft
 Depth to Water 22.68 ft

Pumping Information:

Final Pumping Rate 300 mL/min
 System Volume 849 mL
 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	10:37:09	14.83	6.97	1926.16	13.60	0.32	24.12
	10:39:38	14.97	6.97	1933.42	9.16	0.27	19.00
	10:42:07	15.15	6.97	1933.76	7.15	0.22	15.99
	10:44:37	15.21	6.98	1930.32	7.19	0.19	14.85
	10:47:06	15.19	6.98	1933.11	6.47	0.17	12.53
Variance in Last 3 Readings		0.00	0.00	0.34	-2.01	-0.05	-3.01
		0.06	0.01	-3.44	0.04	-0.03	-1.14
		-0.02	0.00	2.79	-0.72	-0.02	-2.32

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 16.90 ft

Pumping Information:

Final Pumping Rate 300 mL/min
 System Volume 817 mL
 Calculated Sample Rate 163 sec
 Sample Rate 163 sec
 Stabilized Drawdown 0.02 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	15:03:17	15.06	7.27	1837.14	21.90	0.38	-15.83
	15:05:40	15.01	7.27	1839.93	16.10	0.37	-16.86
	15:08:04	14.97	7.27	1839.29	12.50	0.38	-16.49
	15:10:29	15.02	7.27	1841.77	10.20	0.38	-15.65
	15:12:52	15.03	7.27	1835.37	8.48	0.37	-18.63
Variance in Last 3 Readings		-0.04	0.00	-0.64	-3.60	0.01	0.37
		0.05	0.00	2.48	-2.30	0.00	0.84
		0.01	0.00	-6.40	-1.72	-0.01	-2.98

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 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 20.67 ft

Pumping Information:

Final Pumping Rate 300 mL/min
 System Volume 869 mL
 Calculated Sample Rate 173 sec
 Sample Rate 173 sec
 Stabilized Drawdown 0.01 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	13:45:28	15.12	7.10	1772.66	0.64	0.26	2.79
	13:48:02	15.35	7.09	1776.09	0.60	0.19	5.02
	13:50:35	15.28	7.08	1777.66	0.57	0.16	8.34
	13:53:09	15.30	7.08	1773.55	4.69	0.14	11.51
	13:55:42	15.19	7.08	1776.10	1.31	0.12	12.90
Variance in Last 3 Readings		-0.07	-0.01	1.57	-0.03	-0.03	3.32
		0.02	0.00	-4.11	4.12	-0.02	3.17
		-0.11	0.00	2.55	-3.38	-0.02	1.39

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 127.06 ft
 Depth to Top of Screen 119.80 ft
 Screen Length 10 ft
 Depth to Water 26.16 ft

Pumping Information:

Final Pumping Rate 300 mL/min
 System Volume 770 mL
 Calculated Sample Rate 154 sec
 Sample Rate 154 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	13:27:50	13.52	7.17	1487.57	16.60	0.11	3.06
	13:30:04	13.38	7.18	1491.41	12.30	0.11	3.02
	13:32:18	13.39	7.18	1494.65	14.60	0.10	3.55
	13:34:32	13.39	7.18	1506.57	14.10	0.10	3.00
	13:36:46	13.37	7.18	1507.56	8.73	0.09	3.05
Variance in Last 3 Readings		0.01	0.00	3.24	2.30	-0.01	0.53
		0.00	0.00	11.92	-0.50	0.00	-0.55
		-0.02	0.00	0.99	-5.37	-0.01	0.05

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 136.55 ft
 Depth to Top of Screen 126.69 ft
 Screen Length 10 ft
 Depth to Water 24.85 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	14:52:06	15.20	7.06	4261.15	32.10	0.10	-4.92
	14:54:27	15.16	7.05	4299.19	23.10	0.09	-4.36
	14:56:48	15.15	7.05	4327.43	14.70	0.08	-3.99
	14:59:09	15.17	7.05	4349.82	11.30	0.08	-4.26
	15:01:30	15.10	7.06	4368.62	8.57	0.08	-3.36
Variance in Last 3 Readings		-0.01	0.00	28.24	-8.40	-0.01	0.37
		0.02	0.00	22.39	-3.40	0.00	-0.27
		-0.07	0.01	18.80	-2.73	0.00	0.90

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 114.87 ft
 Depth to Top of Screen 107.23 ft
 Screen Length 10 ft
 Depth to Water 22.25 ft

Pumping Information:

Final Pumping Rate 300 mL/min
 System Volume 708 mL
 Calculated Sample Rate 141 sec
 Sample Rate 141 sec
 Stabilized Drawdown 0.01 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	15:48:31	14.38	7.09	2935.08	7.10	0.08	-294.48
	15:50:32	14.35	7.08	3078.12	5.42	0.07	-291.13
	15:52:34	14.38	7.04	3206.71	7.02	0.06	-290.38
	15:54:36	14.38	6.96	3258.08	5.37	0.04	-294.25
	15:56:38	14.38	6.91	3288.02	4.98	0.03	-297.00
Variance in Last 3 Readings		0.03	-0.04	128.59	1.60	-0.01	0.75
		0.00	-0.08	51.37	-1.65	-0.02	-3.87
		0.00	-0.05	29.94	-0.39	-0.01	-2.75

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 0.17 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 105.17 ft
 Depth to Top of Screen 100.02 ft
 Screen Length 5 ft
 Depth to Water 12.45 ft

Pumping Information:

Final Pumping Rate 300 mL/min
 System Volume 674 mL
 Calculated Sample Rate 134 sec
 Sample Rate 134 sec
 Stabilized Drawdown 0.01 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	9:17:40	14.99	7.22	1794.33	21.90	0.09	-17.90
	9:19:34	15.02	7.23	1791.23	19.60	0.09	-18.35
	9:21:28	15.01	7.24	1793.62	18.30	0.08	-18.60
	9:23:22	15.15	7.24	1791.95	19.50	0.08	-18.00
	9:25:16	15.14	7.25	1789.03	18.50	0.08	-18.78
Variance in Last 3 Readings		-0.01	0.01	2.39	-1.30	-0.01	-0.25
		0.14	0.00	-1.67	1.20	0.00	0.60
		-0.01	0.01	-2.92	-1.00	0.00	-0.78

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 106.58 ft
 Depth to Top of Screen 100.79 ft
 Screen Length 5 ft
 Depth to Water 18.26 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	12:52:57	14.88	7.24	1525.53	3.70	0.21	-40.75
	12:55:19	15.11	7.25	1532.98	2.39	0.16	-33.69
	12:57:41	15.28	7.26	1538.36	1.36	0.13	-33.93
	13:00:03	15.30	7.26	1544.33	1.03	0.11	-33.54
	13:02:25	15.38	7.25	1549.09	0.89	0.10	-30.37
Variance in Last 3 Readings		0.17	0.01	5.38	-1.03	-0.03	-0.24
		0.02	0.00	5.97	-0.33	-0.02	0.39
		0.08	-0.01	4.76	-0.14	-0.01	3.17

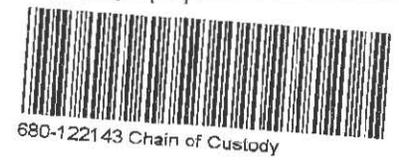
Notes:

**APPENDIX B
CHAINS-OF-CUSTODY**

Chain of Custody Record

Regulatory Program: DW NPDES RCRA Other: Family White

Client Contact		Project Manager: Amanda Derhake		Site Contact: <u>Ken Binder</u>		Date: <u>02/22/16</u>		COC No:											
Golder Associates Inc. 820 South Main Street St. Charles, MO 63301		Tel/Fax: 636-724-9191		Lab Contact: Michele Kersey		Carrier: FedEx		1 of 1 COCs											
(636) 724-9191 Phone		<input checked="" type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS		Analysis Turnaround Time				Sampler: <u>S. DiLorenzo</u>											
(636) 724-9323 <u>1016</u> FAX		TAT if different from Below: <u>Standard</u>						For Lab Use Only:											
Project Name: <u>2015 LTM GW Sampling-1403345</u>		<input checked="" type="checkbox"/> 2 weeks						Walk-in Client:											
Site: <u>Solutia WG Krummrich Facility</u>		<input type="checkbox"/> 1 week						Lab Sampling:											
P O # <u>42447936</u>		<input type="checkbox"/> 2 days						Job / SDG No.:											
		<input type="checkbox"/> 1 day																	
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 8260	Total Fe/Mn by 6010C	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Dissolved Gases by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010C	DOC by 415.1	SVOCs	Sample Specific Notes	
PMID-02/16	02/22/16	1302	G	W	14	N	3	1	1	1	3	2	3						
PMID-F(0.2)-02/16		1302			4	Y									1	3			
ESL-MW-D1-02/16		1355			14	N	3	1	1	1	3	2	3						
ESL-MW-D1-F(0.2)-02/16		1355			4	Y									1	3			
ESL-MW-A-02/16		1512			4	N	3	1	1	1	3	2	3						
ESL-MW-A-F(0.2)-02/16		1512			4	Y									1	3			
1016 LTM Trip Blank #1	-	-	-	-	2	N	2												
Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other: _____							2 4 1 1 2 1 3 3 4 3												
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.							Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)												
<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"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months												
Special Instructions/QC Requirements & Comments: VOC headspace upon sampling: Yes/No																			
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.: <u>672746</u>		Cooler Temp. (°C) <u>35.4</u>		Corr'd: <u>1-3/1.7</u>		Therm ID No.:											
Relinquished by: <u>Samantha Jones</u>		Company: <u>Golder</u>		Date/Time: <u>02/22/16/10:45</u>		Received by: <u>[Signature]</u>		Company: <u>TA-SAV</u>		Date/Time: <u>2-23-15 9:17</u>									
Relinquished by:		Company:		Date/Time:		Received by:		Company:		Date/Time:									
Relinquished by:		Company:		Date/Time:		Received in Laboratory by:		Company:		Date/Time:									



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Chain of Custody Record

Regulatory Program: DW NPDES RCRA Other: Emily White

Client Contact Golder Associates Inc. 820 South Main Street St. Charles, MO 63301 (636) 724-9191 Phone (636) 724-9323 FAX Project Name: <u>2016 LTM GW Sampling-1403345</u> Site: <u>Solutia WG Krummrich Facility</u> P O # <u>42447936</u>		Project Manager: Amanda Derhake Tel/Fax: 636-724-9191		Site Contact: <u>Emily White</u> Lab Contact: Michele Kersey		Date: <u>02/23/16</u> Carrier: FedEx		COC No: 1 of 1 COCs Sampler: <u>S. DiConSD</u> For Lab Use Only: Walk-in Client: Lab Sampling: Job / SDG No.:																															
Analysis Turnaround Time <input checked="" type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below <u>Standard</u> <input checked="" type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		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 8260		Total Fe/Mn by 6010C		Al/CO2 by 310.1		Chloride by 325.2/Sulfate by 375.4		Dissolved Gases by RSK 175		Nitrate by 353.2		TOC by 415.1		Dissolved Fe/Mn by 6010C		DOC by 415.1		SVD CS by 8210			
Sample Identification		Sample Date		Sample Time		Sample Type		Matrix		# of Cont.		Filtered Sample (Y/N)		Perform MS / MSD (Y/N)		VOCs by 8260		Total Fe/Mn by 6010C		Al/CO2 by 310.1		Chloride by 325.2/Sulfate by 375.4		Dissolved Gases by RSK 175		Nitrate by 353.2		TOC by 415.1		Dissolved Fe/Mn by 6010C		DOC by 415.1		SVD CS by 8210					
GWE-5D-0216		02/23/16		0926		G		W		14		N		3		1		1		1		3		2		3								2 coolers					
GWE-5D-F(0.2)-0216				0926						4		Y																											
CPA-MW-5D-0216				1047						16		N		3		1		1		1		3		2		3													
CPA-MW-5D-F(0.2)-0216				1047						4		Y																											
GWE-1D-0216				1337						14		N		3		1		1		1		3		2		3													
GWE-1D-F(0.2)-0216				1337						4		Y																											
GWE-2D-0216				1500						14		N		3		1		1		1		3		2		3													
GWE-2D-F(0.2)-0216				1500						4		Y																											
GWE-3D-0216				1556						14		N		3		1		1		1		3		2		3													
GWE-3D-F(0.2)-0216				1556						4		Y																											
1Q16 LTM Trip Blank #2										2		N		2																									
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.																																							
<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown																																							
Special Instructions/QC Requirements & Comments: VOC headspace upon sampling: Yes/No																																							
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temp. (°C):		Obs'd:		Corr'd:		Therm ID No.:																													
Relinquished by: <u>Savannah</u>		Company: <u>Golder</u>		Date/Time: <u>02/23/16/14</u>		Received by: <u>[Signature]</u>		Company: <u>TA-SAV</u>		Date/Time: <u>2-26-16 9:25</u>																													
Relinquished by:		Company:		Date/Time:		Received by:		Company:		Date/Time:																													
Relinquished by:		Company:		Date/Time:		Received in Laboratory by: <u>m. W. [Signature]</u>		Company: <u>TA</u>		Date/Time: <u>2/24/16 09:29</u>																													



680-122307 Chain of Custody

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2-26-16 680-122233
1.4/18
680-122307



Chain of Custody Record

Regulatory Program: DW NPDES RCRA Other: Emily White

Client Contact	Project Manager: Amanda Derhake	Site Contact: <u>Lori Bindner</u>	Date: <u>02/25/16</u>
Golder Associates Inc.	Tel/Fax: 636-724-9191	Lab Contact: Michele Kersey	Carrier: FedEx
820 South Main Street	Analysis Turnaround Time		COC No.: <u>1</u> of <u>1</u> COCs
St. Charles, MO 63301	<input checked="" type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below <u>Standard</u>		Sampler: <u>S. Dicono</u>
(636) 724-9191 Phone	<input checked="" type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		For Lab Use Only:
(636) 724-9323 FAX			Walk-in Client: <input type="checkbox"/>
Project Name: <u>305 LTM GW Sampling-1403345</u>			Lab Sampling: <input type="checkbox"/>
Site: <u>Solutia WG Krummrich Facility</u>			Job / SDG No.: <input type="checkbox"/>
P O # 42447936			

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 8260	SVOCs by 8270	Total Fe/Mn by 6010C	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Dissolved Gases by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010C	DOC by 415.1	Sample Specific Notes:
BSA-MW-3D-0216	02/25/16	0932	G	W	10	N		3	2	1	1	3	2	3				2 coolers
BSA-MW-3D-FID.2)-0216		0932			4	Y										1	3	
BSA-MW-3D-0216-EB		1010			5	N		3	2									
CPA-MW-ID-0216		1330			16	N		3	2	1	1	1	3	2	3			
CPA-MW-ID-FID.2)-0216		1330			4	Y										1	3	
IQ16 LTM Trip Blank #4	—	—	—	—	2	N		2										



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

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return to Client Disposal by Lab Archive for _____ Months

Special Instructions/QC Requirements & Comments:
 VOC headspace upon sampling: Yes/No

0.8/1.2 2.4/2.8

Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No: <u>672764/672765</u>	Cooler Temp (°C): <u>Obs'd</u>	Corr'd:	Therm ID No.:
Relinquished by: <u>Amanda Derhake</u>	Company: <u>Golder</u>	Date/Time: <u>02/25/16/11:30</u>	Received by: <u>[Signature]</u>	Company: <u>FA-SAV</u>
Relinquished by:	Company:	Date/Time:	Received by:	Company:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:
				Date/Time: <u>2-26-16 9:25</u>

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APPENDIX C
QUALITY ASSURANCE REPORT



QUALITY ASSURANCE REPORT

1st QUARTER 2016
LONG-TERM MONITORING PROGRAM
SOLUTIA INC. W.G. KRUMMRICH FACILITY
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 2016

140-3345

A world of
capabilities
delivered locally





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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 February 15 through February 26, 2016 at the Solutia Inc. (Solutia) W.G. Krummrich (WGK) facility (Site) in Sauget, Illinois. Golder collected a total of twenty seven (27) samples from groundwater monitoring wells and piezometers and twelve (12) samples from three river sampling locations as part of the 1st Quarter 2016 (1Q16) Long-Term Monitoring Program (LTMP). Seventeen (17) groundwater samples, six (6) surface water and sediment samples, six (6) 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 seven (7) sample delivery groups (SDGs) and described in the table below:

Sample Delivery Group (SDG)	Sample Identification
KPS160	PM1D-0216
	ESL-MW-A-0216
	ESL-MW-D1-0216
	1Q16 LTM Trip Blank #1
KPS161	GWE-5D-0216
	CPA-MW-5D-0216
	GWE-1D-0216
	GWE-2D-0216
	GWE-3D-0216
1Q16 LTM Trip Blank #2	
KPS162	BSA-MW-5D-0216
	BSA-MW-4D-0216
	CPA-MW-3D-0216
	CPA-MW-3D-0216-AD
	BSA-MW-2D-0216
	1Q16 LTM Trip Blank #3
KPS163	GWE-5D-0216
	CPA-MW-5D-0216
	GWE-1D-0216



Sample Delivery Group (SDG)	Sample Identification
KPS164	BSA-MW-3D-0216
	BSA-MW-3D-0216-EB
	CPA-MW-1D-0216
	1Q16 LTM Trip Blank #4
KPS165	CPA-MW-4D-0216
	CPA-MW-2D-0216
	CPA-MW-2D-0216-AD
	BSA-MW-1S-0216
	BSA-MW-1S-0216-EB
	1Q16 LTM Trip Blank #5
KRS015	SW-R2007-1-0216
	SW-R2007-2-0216
	SW-R2007-3-0216
	SW-R2007-1-0216-AD
	SW-R2007-1-0216-EB
	Trip Blank-123015
KRS016	SED-R2007-1-0216
	SED-R2007-2-0216
	SED-R2007-3-0216
	SED-R2007-1-0216-AD

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). Six (6) 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
- 4 – The analyte present in the original sample is greater than 4 times the matrix spike concentration for the MS/MSD; therefore, control limits are not applicable.
- H – Sample was prepped or analyzed beyond specified holding time.
- F1 – MS/MSD Recovery exceeds the control limits
- X – Surrogate is outside control limits
- J – Indicates estimated value

Golder data qualifiers are defined below:

- UJ – The analyte was not detected at or above the MDL; the detection limit is estimated
- 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 six (6) trip blanks were also prepared and shipped for laboratory analysis. The samples were submitted to TestAmerica, placed into eight (8) data packages or SDGs (KPS160, KPS161, KPS162, KPS163, KPS164, KPS165, KRS015, and KRS016) 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.

KPS160, KPS162, KPS164, KPS165, KRS015, and KRS016 – Samples were received at temperatures below the 4°C+/-2°C criteria. The samples were otherwise received in good condition and data qualification was not required.

KPS164 – Samples CPA-MW-1D and BSA-MW-2D were analyzed outside of hold time due to laboratory error.

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.

Six (6) laboratory prepared trip blanks were shipped and analyzed for VOCs during the 1Q16 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 1Q16 event to assess the effectiveness of the decontamination procedure. Detections were noted in the following EBs:

- BSA-MW-3D-0216-EB (SDG KPS164): benzene at 1.1 µg/L, chlorobenzene at 3.2 µg/L, and 1,4-dichlorobenzene at 3.1 µg/L



- BSA-MW-1S-0216-EB (SDG KPS165): benzene at 950 µg/L and chlorobenzene at 32 µg/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 1Q16 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 1Q16 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 ten (10) groundwater monitoring locations and three (3) river sampling locations as well as analyzed for SVOCs. An AD sample was 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 eight (8) data packages or SDGs (KPS160, KPS161, KPS162, KPS163, KPS164, KPS165, KRS015, and KRS016), 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.

KPS162, KPS163, KPS164, KPS165, KRS015, and KRS016 – Samples were received at temperatures below the 4°C±2°C criteria. The samples 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 1Q16 event, associated with sample BSA-MW-1S, BSA-MW-3D and SW-R2007-1 to assess the effectiveness of the decontamination procedure.

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. Data qualification was not required.

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; therefore, data qualification was not required.



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 1Q16 event associated with samples BSA-MW-5D, SW-R2007-3, and SED-R2007-3. 4-chloroaniline failed recovery low for MS and MSD associated with batch 680-422212 in SDG KRS016. 4-chloroaniline failed recovery low for MS and MSD associated with batch 680-423818 in SDG KPS162. 1,2,4-trichlorobenzene and 4-chloroaniline recovery low for MS and MSD sample associated with batch 680-424056 in SDG KPS165. Data was not qualified on MS/MSD data alone.

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 1Q16 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 as 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-0216 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 (KPS160, KPS161, KPS162, KPS163, KPS164, and KPS165), 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.

KPS160, KPS162, KPS163, KPS164, and KPS165 – Samples were received at temperatures below the 4°C+/-2°C criteria. The samples were otherwise received in good condition and data qualification was not required.

KPS163 – Samples GWE-5D-0216, GWE-1D-0216, and CPA-MW-5D-0216 were received outside of hold time for Nitrate-Nitrite analysis due to shipping error.

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-1S, CPA-MW-2D, CPA-MW-4D, CPA-MW-5D, BSA-MW-2D, BSA-MW-4D, ESL-MW-D1, BSA-MW-5D, SED-R2007-3, and SW-R2007-3 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 1Q16 sampling event from the Solutia Inc. WGK facility 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, 1,4-Dichlorobenzene, 1,2,4, Trichlorobenzene, Methane, TOC, Chloride, 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-4D, CPA-MW-5D
Compounds analyzed out of hold time	Nitrate-Nitrite	UJ	GWE-5D, CPA-MW-5D, GWE-1D



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)**

SDG KPS160

Sample Results from:

**PM1D
ESL-MW-A
ESL-MW-D1**



Level IV Data Validation Summary
Solutia Inc., W.G. Krummrich, Sauget, Illinois
1Q16 Long-Term Monitoring Program

Company Name: Golder Associates
Project Name: WGK-1Q16 LTM
Reviewer: A. Derhake
Laboratory: TestAmerica
SDG#: KPS160
Matrix: Water

Project Manager: A. Derhake
Project Number: 140-3345
Sample Date: February 2016

Analytical Method: VOC (8260B), 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-0216, PM1D-F(0.2)-0216, ESL-MW-D1-0216, ESL-MW-D1-F(0.2)-0216, ESL-MW-A-0216, ESL-MW-A-F(0.2)-0216, 1Q16 LTM Trip Blank #1

Field Information

YES NO NA

- a) Sampling dates noted? [X] [] []
b) Does the laboratory narrative indicate deficiencies? [X] [] []

Comments:

VOC: Insufficient volume to perform MS/MSD associated with batch 422777. Sample ESL-MW-D1-0216 required dilution prior to analysis, reporting limits were adjusted accordingly.

Dissolved Gases: No deficiencies noted.

Metals: No deficiencies noted.

Alkalinity: No deficiencies noted.

Chloride: Samples PM1D-0216, ESL-MW-D1-0216, and ESL-MW-A-0216 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 sample ESL-MW-D1-0216 in batch 423114. Samples PM1D-0216, ESL-MW-D1-0216, and ESL-MW-A-0216 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? [X] [] []
b) Were samples received in good condition? [X] [] []

Comments: Samples were received at 1.7°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: Analytes of interest met calibration standards.**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 %Rec low for MSD sample associated with batch 423114. 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, 1,4-Dichlorobenzene, Chloride, and Sulfate	D	PM1D, ESL-MW-D1, ESL-MW-A

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: 680-122143-1
TestAmerica Sample Delivery Group: KPS160
Client Project/Site: 1Q16 LTM GW Sampling - 1403345

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

Attn: Mr. Jerry Rinaldi

Michele Kersey

Authorized for release by:
3/16/2016 5:34:59 PM

Michele Kersey, Project Manager I
(912)354-7858
michele.kersey@testamericainc.com

LINKS

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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. *AWD 3/17/16*

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AWD
3/17/16

Case Narrative

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122143-1
SDG: KPS160

Job ID: 680-122143-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Solutia Inc.

Project: 1Q16 LTM GW Sampling - 1403345

Report Number: 680-122143-1

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 2/23/2016 9:17 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.7° C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples PM1D-0216 (680-122143-1), ESL-MW-D1-0216 (680-122143-3), ESL-MW-A-0216 (680-122143-5) and 1Q16 LTM Trip Blank # 1 (680-122143-7) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 02/25/2016.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-422777.

Sample ESL-MW-D1-0216 (680-122143-3)[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.

DISSOLVED GASES

Samples PM1D-0216 (680-122143-1), ESL-MW-D1-0216 (680-122143-3) and ESL-MW-A-0216 (680-122143-5) were analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 03/03/2016.

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)-0216 (680-122143-2), ESL-MW-D1-F(0.2)-0216 (680-122143-4) and ESL-MW-A-F(0.2)-0216 (680-122143-6) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 02/26/2016 and analyzed on 02/27/2016.

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

METALS (ICP)

Samples PM1D-0216 (680-122143-1), ESL-MW-D1-0216 (680-122143-3) and ESL-MW-A-0216 (680-122143-5) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 02/26/2016 and analyzed on 02/27/2016.

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

ALKALINITY

Samples PM1D-0216 (680-122143-1), ESL-MW-D1-0216 (680-122143-3) and ESL-MW-A-0216 (680-122143-5) were analyzed for

Case Narrative

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122143-1
SDG: KPS160

Job ID: 680-122143-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 02/26/2016.

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

CHLORIDE

Samples PM1D-0216 (680-122143-1), ESL-MW-D1-0216 (680-122143-3) and ESL-MW-A-0216 (680-122143-5) were analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 02/25/2016.

Samples PM1D-0216 (680-122143-1)[2X], ESL-MW-D1-0216 (680-122143-3)[5X] and ESL-MW-A-0216 (680-122143-5)[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.

NITRATE-NITRITE AS NITROGEN

Samples PM1D-0216 (680-122143-1), ESL-MW-D1-0216 (680-122143-3) and ESL-MW-A-0216 (680-122143-5) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 02/23/2016.

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

SULFATE

Samples PM1D-0216 (680-122143-1), ESL-MW-D1-0216 (680-122143-3) and ESL-MW-A-0216 (680-122143-5) were analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 02/26/2016.

Sulfate failed the recovery criteria low for the MS and MSD of sample ESL-MW-D1-0216 (680-122143-3) in batch 680-423114.

Samples PM1D-0216 (680-122143-1)[20X], ESL-MW-D1-0216 (680-122143-3)[20X] and ESL-MW-A-0216 (680-122143-5)[50X] 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-0216 (680-122143-1), ESL-MW-D1-0216 (680-122143-3) and ESL-MW-A-0216 (680-122143-5) were analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 03/04/2016.

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)-0216 (680-122143-2), ESL-MW-D1-F(0.2)-0216 (680-122143-4) and ESL-MW-A-F(0.2)-0216 (680-122143-6) were analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 03/07/2016.

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: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122143-1
SDG: KPS160

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-122143-1	PM1D-0216	Water	02/22/16 13:02	02/23/16 09:17
680-122143-2	PM1D-F(0.2)-0216	Water	02/22/16 13:02	02/23/16 09:17
680-122143-3	ESL-MW-D1-0216	Water	02/22/16 13:55	02/23/16 09:17
680-122143-4	ESL-MW-D1-F(0.2)-0216	Water	02/22/16 13:55	02/23/16 09:17
680-122143-5	ESL-MW-A-0216	Water	02/22/16 15:12	02/23/16 09:17
680-122143-6	ESL-MW-A-F(0.2)-0216	Water	02/22/16 15:12	02/23/16 09:17
680-122143-7	1Q16 LTM Trip Blank # 1	Water	02/22/16 00:00	02/23/16 09:17



AWD 3/17/16
TestAmerica Savannah

Method Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122143-1
SDG: KPS160

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL PEN
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 SL
415.1	DOC	MCAWW	TAL SL

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 PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001
TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

MWD 3/17/16
TestAmerica Savannah

Definitions/Glossary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122143-1
SDG: KPS160

Qualifiers

GC/MS 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.
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 3/17/16

TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122143-1
SDG: KPS160

Client Sample ID: PM1D-0216

Lab Sample ID: 680-122143-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	19		1.0		ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	1.9		1.0		ug/L	1		8260B	Total/NA
Methane	49		1.0		ug/L	1		RSK-175	Total/NA
Iron	15		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.48		0.010		mg/L	1		6010C	Total Recoverable
Chloride	94	D	2.0		mg/L	2		325.2	Total/NA
Sulfate	460	D	100		mg/L	20		375.4	Total/NA
Total Organic Carbon	1.5		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	420		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	27		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: PM1D-F(0.2)-0216

Lab Sample ID: 680-122143-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	15		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.48		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	1.9		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: ESL-MW-D1-0216

Lab Sample ID: 680-122143-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	440	D	10		ug/L	10		8260B	Total/NA
1,4-Dichlorobenzene	39	D	10		ug/L	10		8260B	Total/NA
Methane	42		1.0		ug/L	1		RSK-175	Total/NA
Iron	0.19		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.41		0.010		mg/L	1		6010C	Total Recoverable
Chloride	110	D	5.0		mg/L	5		325.2	Total/NA
Sulfate	600	D	100		mg/L	20		375.4	Total/NA
Total Organic Carbon	1.5		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	390		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	24		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: ESL-MW-D1-F(0.2)-0216

Lab Sample ID: 680-122143-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	0.25		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.40		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	1.9		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: ESL-MW-A-0216

Lab Sample ID: 680-122143-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methane	3.4		1.0		ug/L	1		RSK-175	Total/NA
Iron	12		0.050		mg/L	1		6010C	Total Recoverable

This Detection Summary does not include radiochemical test results.

AWD 3/17/16
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122143-1
 SDG: KPS160

Client Sample ID: ESL-MW-A-0216 (Continued)

Lab Sample ID: 680-122143-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.37		0.010		mg/L	1		6010C	Total
Chloride	86	D	2.0		mg/L	2		325.2	Recoverable Total/NA
Nitrate as N	0.39		0.050		mg/L	1		353.2	Total/NA
Sulfate	800	D	250		mg/L	50		375.4	Total/NA
Total Organic Carbon	2.5		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	21		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: ESL-MW-A-F(0.2)-0216

Lab Sample ID: 680-122143-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	11		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.36		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	2.7		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: 1Q16 LTM Trip Blank # 1

Lab Sample ID: 680-122143-7

No Detections.

This Detection Summary does not include radiochemical test results.

MWD 3/17/16
 TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122143-1
SDG: KPS160

Client Sample ID: PM1D-0216

Lab Sample ID: 680-122143-1

Date Collected: 02/22/16 13:02

Matrix: Water

Date Received: 02/23/16 09:17

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			02/25/16 03:13	1
Chlorobenzene	19		1.0		ug/L			02/25/16 03:13	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/25/16 03:13	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/25/16 03:13	1
1,4-Dichlorobenzene	1.9		1.0		ug/L			02/25/16 03:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		70 - 130		02/25/16 03:13	1
1,2-Dichloroethane-d4 (Surr)	106		70 - 130		02/25/16 03:13	1
Dibromofluoromethane (Surr)	103		70 - 130		02/25/16 03:13	1
4-Bromofluorobenzene (Surr)	99		70 - 130		02/25/16 03:13	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	49		1.0		ug/L			03/03/16 16:01	1
Ethane	1.0	U	1.0		ug/L			03/03/16 16:01	1
Ethylene	1.0	U	1.0		ug/L			03/03/16 16:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	15		0.050		mg/L		02/26/16 09:53	02/27/16 01:14	1
Manganese	0.48		0.010		mg/L		02/26/16 09:53	02/27/16 01:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	94	P	2.0		mg/L			02/25/16 17:38	2
Nitrate as N	0.050	U	0.050		mg/L			02/23/16 16:23	1
Sulfate	460	P	100		mg/L			02/26/16 09:26	20
Total Organic Carbon	1.5		1.0		mg/L			03/04/16 17:06	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	420		5.0		mg/L			02/26/16 13:45	1
Carbon Dioxide, Free	27		5.0		mg/L			02/26/16 13:45	1

AWD 3/17/16
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122143-1
 SDG: KPS160

Client Sample ID: PM1D-F(0.2)-0216

Lab Sample ID: 680-122143-2

Date Collected: 02/22/16 13:02

Matrix: Water

Date Received: 02/23/16 09:17

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	15		0.050		mg/L		02/26/16 09:53	02/27/16 01:18	1
Manganese, Dissolved	0.48		0.010		mg/L		02/26/16 09:53	02/27/16 01:18	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.9		1.0		mg/L			03/07/16 18:58	1



AWD
3/17/16
 TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122143-1
SDG: KPS160

Client Sample ID: ESL-MW-D1-0216

Lab Sample ID: 680-122143-3

Date Collected: 02/22/16 13:55

Matrix: Water

Date Received: 02/23/16 09:17

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	10	U	10		ug/L			02/25/16 13:30	10
Chlorobenzene	440		10		ug/L			02/25/16 13:30	10
1,2-Dichlorobenzene	10	U	10		ug/L			02/25/16 13:30	10
1,3-Dichlorobenzene	10	U	10		ug/L			02/25/16 13:30	10
1,4-Dichlorobenzene	39		10		ug/L			02/25/16 13:30	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	113		70 - 130		02/25/16 13:30	10
1,2-Dichloroethane-d4 (Surr)	102		70 - 130		02/25/16 13:30	10
Dibromofluoromethane (Surr)	102		70 - 130		02/25/16 13:30	10
4-Bromofluorobenzene (Surr)	96		70 - 130		02/25/16 13:30	10

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	42		1.0		ug/L			03/03/16 16:11	1
Ethane	1.0	U	1.0		ug/L			03/03/16 16:11	1
Ethylene	1.0	U	1.0		ug/L			03/03/16 16:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.19		0.050		mg/L		02/26/16 09:53	02/27/16 01:22	1
Manganese	0.41		0.010		mg/L		02/26/16 09:53	02/27/16 01:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	110	D	5.0		mg/L			02/25/16 17:36	5
Nitrate as N	0.050	U	0.050		mg/L			02/23/16 16:27	1
Sulfate	600	D	100		mg/L			02/26/16 09:28	20
Total Organic Carbon	1.5		1.0		mg/L			03/04/16 17:22	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	390		5.0		mg/L			02/26/16 14:03	1
Carbon Dioxide, Free	24		5.0		mg/L			02/26/16 14:03	1


 TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122143-1
SDG: KPS160

Client Sample ID: ESL-MW-D1-F(0.2)-0216

Lab Sample ID: 680-122143-4

Date Collected: 02/22/16 13:55

Matrix: Water

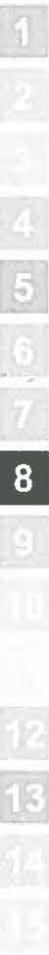
Date Received: 02/23/16 09:17

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	0.25		0.050		mg/L		02/26/16 09:53	02/27/16 01:27	1
Manganese, Dissolved	0.40		0.010		mg/L		02/26/16 09:53	02/27/16 01:27	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.9		1.0		mg/L			03/07/16 19:12	1



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TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122143-1
 SDG: KPS160

Client Sample ID: ESL-MW-A-0216

Lab Sample ID: 680-122143-5

Date Collected: 02/22/16 15:12

Matrix: Water

Date Received: 02/23/16 09:17

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			02/25/16 03:33	1
Chlorobenzene	1.0	U	1.0		ug/L			02/25/16 03:33	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/25/16 03:33	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/25/16 03:33	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/25/16 03:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	109		70 - 130		02/25/16 03:33	1
1,2-Dichloroethane-d4 (Surr)	98		70 - 130		02/25/16 03:33	1
Dibromofluoromethane (Surr)	100		70 - 130		02/25/16 03:33	1
4-Bromofluorobenzene (Surr)	97		70 - 130		02/25/16 03:33	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	3.4		1.0		ug/L			03/03/16 16:21	1
Ethane	1.0	U	1.0		ug/L			03/03/16 16:21	1
Ethylene	1.0	U	1.0		ug/L			03/03/16 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		02/26/16 09:53	02/27/16 01:31	1
Manganese	0.37		0.010		mg/L		02/26/16 09:53	02/27/16 01:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	86	D	2.0		mg/L			02/25/16 17:38	2
Nitrate as N	0.39		0.050		mg/L			02/23/16 16:29	1
Sulfate	800	D	250		mg/L			02/26/16 10:06	50
Total Organic Carbon	2.5		1.0		mg/L			03/04/16 17:48	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	350		5.0		mg/L			02/26/16 13:55	1
Carbon Dioxide, Free	21		5.0		mg/L			02/26/16 13:55	1

AWD 3/17/16
 TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122143-1
 SDG: KPS160

Client Sample ID: ESL-MW-A-F(0.2)-0216

Lab Sample ID: 680-122143-6

Date Collected: 02/22/16 15:12

Matrix: Water

Date Received: 02/23/16 09:17

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	11		0.050		mg/L		02/26/16 09:53	02/27/16 01:35	1
Manganese, Dissolved	0.36		0.010		mg/L		02/26/16 09:53	02/27/16 01:35	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	2.7		1.0		mg/L			03/07/16 19:28	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15


 TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122143-1
 SDG: KPS160

Client Sample ID: 1Q16 LTM Trip Blank # 1

Lab Sample ID: 680-122143-7

Date Collected: 02/22/16 00:00

Matrix: Water

Date Received: 02/23/16 09:17

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			02/25/16 02:53	1
Chlorobenzene	1.0	U	1.0		ug/L			02/25/16 02:53	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/25/16 02:53	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/25/16 02:53	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/25/16 02:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		70 - 130		02/25/16 02:53	1
1,2-Dichloroethane-d4 (Surr)	103		70 - 130		02/25/16 02:53	1
Dibromofluoromethane (Surr)	106		70 - 130		02/25/16 02:53	1
4-Bromofluorobenzene (Surr)	98		70 - 130		02/25/16 02:53	1




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Surrogate Summary

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122143-1
 SDG: KPS160

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 (70-130)	12DCE (70-130)	DBFM (70-130)	BFB (70-130)
680-122143-1	PM1D-0216	101	106	103	99
680-122143-3	ESL-MW-D1-0216	113	102	102	96
680-122143-5	ESL-MW-A-0216	109	98	100	97
680-122143-7	1Q16 LTM Trip Blank # 1	106	103	106	98
LCS 680-422777/4	Lab Control Sample	111	95	103	98
LCS 680-422786/5	Lab Control Sample	119	95	103	97
LCSD 680-422777/5	Lab Control Sample Dup	110	93	103	99
LCSD 680-422786/9	Lab Control Sample Dup	119	109	108	93
MB 680-422777/8	Method Blank	102	90	95	98
MB 680-422786/12	Method Blank	100	103	105	97

Surrogate Legend

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



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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122143-1
SDG: KPS160

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

Lab Sample ID: MB 680-422777/8
Matrix: Water
Analysis Batch: 422777

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			02/24/16 21:03	1
Chlorobenzene	1.0	U	1.0		ug/L			02/24/16 21:03	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/24/16 21:03	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/24/16 21:03	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/24/16 21:03	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		70 - 130		02/24/16 21:03	1
1,2-Dichloroethane-d4 (Surr)	90		70 - 130		02/24/16 21:03	1
Dibromofluoromethane (Surr)	95		70 - 130		02/24/16 21:03	1
4-Bromofluorobenzene (Surr)	98		70 - 130		02/24/16 21:03	1

Lab Sample ID: LCS 680-422777/4
Matrix: Water
Analysis Batch: 422777

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	73 - 131
Chlorobenzene	50.0	53.3		ug/L		107	80 - 120
1,2-Dichlorobenzene	50.0	52.1		ug/L		104	80 - 120
1,3-Dichlorobenzene	50.0	50.9		ug/L		102	80 - 120
1,4-Dichlorobenzene	50.0	49.8		ug/L		100	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	111		70 - 130
1,2-Dichloroethane-d4 (Surr)	95		70 - 130
Dibromofluoromethane (Surr)	103		70 - 130
4-Bromofluorobenzene (Surr)	98		70 - 130

Lab Sample ID: LCSD 680-422777/5
Matrix: Water
Analysis Batch: 422777

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	51.1		ug/L		102	73 - 131	1	30
Chlorobenzene	50.0	54.1		ug/L		108	80 - 120	2	20
1,2-Dichlorobenzene	50.0	52.1		ug/L		104	80 - 120	0	20
1,3-Dichlorobenzene	50.0	50.8		ug/L		102	80 - 120	0	20
1,4-Dichlorobenzene	50.0	49.1		ug/L		98	80 - 120	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	110		70 - 130
1,2-Dichloroethane-d4 (Surr)	93		70 - 130
Dibromofluoromethane (Surr)	103		70 - 130
4-Bromofluorobenzene (Surr)	99		70 - 130

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122143-1
SDG: KPS160

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

Lab Sample ID: MB 680-422786/12
Matrix: Water
Analysis Batch: 422786

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
	Result	Qualifier							
Benzene	1.0	U	1.0		ug/L			02/25/16 12:49	1
Chlorobenzene	1.0	U	1.0		ug/L			02/25/16 12:49	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/25/16 12:49	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/25/16 12:49	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/25/16 12:49	1
Surrogate	MB MB		Limits		Unit	D	Prepared	Analyzed	DII Fac
%Recovery	Qualifier								
Toluene-d8 (Surr)	100		70 - 130					02/25/16 12:49	1
1,2-Dichloroethane-d4 (Surr)	103		70 - 130					02/25/16 12:49	1
Dibromofluoromethane (Surr)	105		70 - 130					02/25/16 12:49	1
4-Bromofluorobenzene (Surr)	97		70 - 130					02/25/16 12:49	1

Lab Sample ID: LCS 680-422786/5
Matrix: Water
Analysis Batch: 422786

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

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. Limits	
		Result	Qualifier					
Benzene	50.0	50.2		ug/L		100	73 - 131	
Chlorobenzene	50.0	53.7		ug/L		107	80 - 120	
1,2-Dichlorobenzene	50.0	51.3		ug/L		103	80 - 120	
1,3-Dichlorobenzene	50.0	51.0		ug/L		102	80 - 120	
1,4-Dichlorobenzene	50.0	49.2		ug/L		98	80 - 120	
Surrogate	LCS LCS		Limits		Unit	D	%Rec	%Rec. Limits
%Recovery	Qualifier							
Toluene-d8 (Surr)	119		70 - 130					
1,2-Dichloroethane-d4 (Surr)	95		70 - 130					
Dibromofluoromethane (Surr)	103		70 - 130					
4-Bromofluorobenzene (Surr)	97		70 - 130					

Lab Sample ID: LCSD 680-422786/9
Matrix: Water
Analysis Batch: 422786

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

Analyte	Spike Added	LCSD LCSD		Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit	
		Result	Qualifier							
Benzene	50.0	49.3		ug/L		99	73 - 131	2	30	
Chlorobenzene	50.0	52.8		ug/L		106	80 - 120	2	20	
1,2-Dichlorobenzene	50.0	49.7		ug/L		99	80 - 120	3	20	
1,3-Dichlorobenzene	50.0	49.5		ug/L		99	80 - 120	3	20	
1,4-Dichlorobenzene	50.0	48.0		ug/L		96	80 - 120	3	20	
Surrogate	LCSD LCSD		Limits		Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
%Recovery	Qualifier									
Toluene-d8 (Surr)	119		70 - 130							
1,2-Dichloroethane-d4 (Surr)	109		70 - 130							
Dibromofluoromethane (Surr)	108		70 - 130							
4-Bromofluorobenzene (Surr)	93		70 - 130							

ANUP
3/17/16

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122143-1
SDG: KPS160

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 400-296090/2
Matrix: Water
Analysis Batch: 296090

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	1.0	U	1.0		ug/L			03/03/16 14:59	1
Ethane	1.0	U	1.0		ug/L			03/03/16 14:59	1
Ethylene	1.0	U	1.0		ug/L			03/03/16 14:59	1

Lab Sample ID: LCS 400-296090/3
Matrix: Water
Analysis Batch: 296090

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane	169	164		ug/L		97	85 - 115
Ethane	321	314		ug/L		98	85 - 115
Ethylene	299	284		ug/L		95	85 - 115

Lab Sample ID: LCSD 400-296090/4
Matrix: Water
Analysis Batch: 296090

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	169	168		ug/L		99	85 - 115	2	20
Ethane	321	323		ug/L		101	85 - 115	3	20
Ethylene	299	292		ug/L		98	85 - 115	3	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-423008/1-A
Matrix: Water
Analysis Batch: 423168

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 423008

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.050	U	0.050		mg/L		02/26/16 09:53	02/27/16 00:34	1
Iron, Dissolved	0.050	U	0.050		mg/L		02/26/16 09:53	02/27/16 00:34	1
Manganese	0.010	U	0.010		mg/L		02/26/16 09:53	02/27/16 00:34	1
Manganese, Dissolved	0.010	U	0.010		mg/L		02/26/16 09:53	02/27/16 00:34	1

Lab Sample ID: LCS 680-423008/2-A
Matrix: Water
Analysis Batch: 423168

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 423008

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	0.516		mg/L		103	80 - 120
Manganese, Dissolved	0.500	0.516		mg/L		103	80 - 120

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122143-1
SDG: KPS160

Method: 310.1 - Alkalinity

Lab Sample ID: MB 680-423232/7
Matrix: Water
Analysis Batch: 423232

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

Analyte	MB MB		RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Alkalinity	5.0	U	5.0		mg/L			02/26/16 13:29	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			02/26/16 13:29	1

Lab Sample ID: LCS 680-423232/8
Matrix: Water
Analysis Batch: 423232

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

Lab Sample ID: LCSD 680-423232/34
Matrix: Water
Analysis Batch: 423232

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

Method: 325.2 - Chloride

Lab Sample ID: MB 680-423112/47
Matrix: Water
Analysis Batch: 423112

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	1.0	U	1.0		mg/L			02/26/16 12:01	1

Lab Sample ID: LCS 680-423112/4
Matrix: Water
Analysis Batch: 423112

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

Lab Sample ID: 680-122143-3 MS
Matrix: Water
Analysis Batch: 423112

Client Sample ID: ESL-MW-D1-0216
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits

Lab Sample ID: 680-122143-3 MSD
Matrix: Water
Analysis Batch: 423112

Client Sample ID: ESL-MW-D1-0216
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122143-1
SDG: KPS160

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-422656/13
Matrix: Water
Analysis Batch: 422656

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			02/23/16 16:18	1

Lab Sample ID: LCS 680-422656/16
Matrix: Water
Analysis Batch: 422656

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	0.537		mg/L		107	75 - 125
Nitrate Nitrite as N	1.00	1.05		mg/L		105	90 - 110
Nitrite as N	0.500	0.513		mg/L		103	90 - 110

Lab Sample ID: 680-122143-1 MS
Matrix: Water
Analysis Batch: 422656

Client Sample ID: PM1D-0216
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	0.542		mg/L		108	75 - 125
Nitrate Nitrite as N	0.050	U	1.00	1.07		mg/L		107	90 - 110
Nitrite as N	0.050	U	0.500	0.528		mg/L		106	90 - 110

Lab Sample ID: 680-122143-1 MSD
Matrix: Water
Analysis Batch: 422656

Client Sample ID: PM1D-0216
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	0.538		mg/L		108	75 - 125	1	30
Nitrate Nitrite as N	0.050	U	1.00	1.07		mg/L		107	90 - 110	0	10
Nitrite as N	0.050	U	0.500	0.532		mg/L		106	90 - 110	1	10

Lab Sample ID: 680-122143-3 DU
Matrix: Water
Analysis Batch: 422656

Client Sample ID: ESL-MW-D1-0216
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 680-423114/2
Matrix: Water
Analysis Batch: 423114

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	5.0	U	5.0		mg/L			02/25/16 17:00	1

AMP
3/17/16

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122143-1
SDG: KPS160

Method: 375.4 - Sulfate (Continued)

Lab Sample ID: LCS 680-423114/1
Matrix: Water
Analysis Batch: 423114

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	21.6		mg/L		108	75 - 125

Lab Sample ID: LCSD 680-423114/5
Matrix: Water
Analysis Batch: 423114

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	20.9		mg/L		104	75 - 125	3	30

Lab Sample ID: 680-122143-3 MS
Matrix: Water
Analysis Batch: 423114

Client Sample ID: ESL-MW-D1-0216
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	600		20.0	593	4	mg/L		-41	75 - 125

Lab Sample ID: 680-122143-3 MSD
Matrix: Water
Analysis Batch: 423114

Client Sample ID: ESL-MW-D1-0216
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	600		20.0	600	4	mg/L		-6	75 - 125	1	30

Method: 415.1 - DOC

Lab Sample ID: MB 160-239463/4
Matrix: Water
Analysis Batch: 239463

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Dissolved Organic Carbon	1.0	U	1.0		mg/L			03/07/16 17:18	1

Lab Sample ID: LCS 160-239463/5
Matrix: Water
Analysis Batch: 239463

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	10.0	9.76		mg/L		98	90 - 110

Method: 415.1 - TOC

Lab Sample ID: MB 160-239410/4
Matrix: Water
Analysis Batch: 239410

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Total Organic Carbon	1.0	U	1.0		mg/L			03/04/16 15:36	1

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122143-1
SDG: KPS160

Method: 415.1 - TOC (Continued)

Lab Sample ID: LCS 160-239410/5
Matrix: Water
Analysis Batch: 239410

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	10.0	9.65		mg/L		96	90 - 110

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QC Association Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122143-1
SDG: KPS160

GC/MS VOA

Analysis Batch: 422777

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122143-1	PM1D-0216	Total/NA	Water	8260B	
680-122143-5	ESL-MW-A-0216	Total/NA	Water	8260B	
680-122143-7	1Q16 LTM Trip Blank # 1	Total/NA	Water	8260B	
LCS 680-422777/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-422777/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-422777/8	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 422786

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122143-3	ESL-MW-D1-0216	Total/NA	Water	8260B	
LCS 680-422786/5	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-422786/9	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-422786/12	Method Blank	Total/NA	Water	8260B	

GC VOA

Analysis Batch: 296090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122143-1	PM1D-0216	Total/NA	Water	RSK-175	
680-122143-3	ESL-MW-D1-0216	Total/NA	Water	RSK-175	
680-122143-5	ESL-MW-A-0216	Total/NA	Water	RSK-175	
LCS 400-296090/3	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 400-296090/4	Lab Control Sample Dup	Total/NA	Water	RSK-175	
MB 400-296090/2	Method Blank	Total/NA	Water	RSK-175	

Metals

Prep Batch: 423008

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122143-1	PM1D-0216	Total Recoverable	Water	3005A	
680-122143-2	PM1D-F(0.2)-0216	Dissolved	Water	3005A	
680-122143-3	ESL-MW-D1-0216	Total Recoverable	Water	3005A	
680-122143-4	ESL-MW-D1-F(0.2)-0216	Dissolved	Water	3005A	
680-122143-5	ESL-MW-A-0216	Total Recoverable	Water	3005A	
680-122143-6	ESL-MW-A-F(0.2)-0216	Dissolved	Water	3005A	
LCS 680-423008/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-423008/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 423168

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122143-1	PM1D-0216	Total Recoverable	Water	6010C	423008
680-122143-2	PM1D-F(0.2)-0216	Dissolved	Water	6010C	423008
680-122143-3	ESL-MW-D1-0216	Total Recoverable	Water	6010C	423008
680-122143-4	ESL-MW-D1-F(0.2)-0216	Dissolved	Water	6010C	423008
680-122143-5	ESL-MW-A-0216	Total Recoverable	Water	6010C	423008
680-122143-6	ESL-MW-A-F(0.2)-0216	Dissolved	Water	6010C	423008
LCS 680-423008/2-A	Lab Control Sample	Total Recoverable	Water	6010C	423008
MB 680-423008/1-A	Method Blank	Total Recoverable	Water	6010C	423008

AWD 3/17/16
TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122143-1
SDG: KPS160

General Chemistry

Analysis Batch: 239410

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122143-1	PM1D-0216	Total/NA	Water	415.1	
680-122143-3	ESL-MW-D1-0216	Total/NA	Water	415.1	
680-122143-5	ESL-MW-A-0216	Total/NA	Water	415.1	
LCS 160-239410/5	Lab Control Sample	Total/NA	Water	415.1	
MB 160-239410/4	Method Blank	Total/NA	Water	415.1	

Analysis Batch: 239463

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122143-2	PM1D-F(0.2)-0216	Dissolved	Water	415.1	
680-122143-4	ESL-MW-D1-F(0.2)-0216	Dissolved	Water	415.1	
680-122143-6	ESL-MW-A-F(0.2)-0216	Dissolved	Water	415.1	
LCS 160-239463/5	Lab Control Sample	Dissolved	Water	415.1	
MB 160-239463/4	Method Blank	Dissolved	Water	415.1	

Analysis Batch: 422656

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122143-1	PM1D-0216	Total/NA	Water	353.2	
680-122143-1 MS	PM1D-0216	Total/NA	Water	353.2	
680-122143-1 MSD	PM1D-0216	Total/NA	Water	353.2	
680-122143-3	ESL-MW-D1-0216	Total/NA	Water	353.2	
680-122143-3 DU	ESL-MW-D1-0216	Total/NA	Water	353.2	
680-122143-5	ESL-MW-A-0216	Total/NA	Water	353.2	
LCS 680-422656/16	Lab Control Sample	Total/NA	Water	353.2	
MB 680-422656/13	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 423112

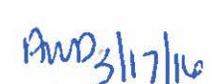
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122143-1	PM1D-0216	Total/NA	Water	325.2	
680-122143-3	ESL-MW-D1-0216	Total/NA	Water	325.2	
680-122143-3 MS	ESL-MW-D1-0216	Total/NA	Water	325.2	
680-122143-3 MSD	ESL-MW-D1-0216	Total/NA	Water	325.2	
680-122143-5	ESL-MW-A-0216	Total/NA	Water	325.2	
LCS 680-423112/4	Lab Control Sample	Total/NA	Water	325.2	
MB 680-423112/47	Method Blank	Total/NA	Water	325.2	

Analysis Batch: 423114

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122143-1	PM1D-0216	Total/NA	Water	375.4	
680-122143-3	ESL-MW-D1-0216	Total/NA	Water	375.4	
680-122143-3 MS	ESL-MW-D1-0216	Total/NA	Water	375.4	
680-122143-3 MSD	ESL-MW-D1-0216	Total/NA	Water	375.4	
680-122143-5	ESL-MW-A-0216	Total/NA	Water	375.4	
LCS 680-423114/1	Lab Control Sample	Total/NA	Water	375.4	
LCSD 680-423114/5	Lab Control Sample Dup	Total/NA	Water	375.4	
MB 680-423114/2	Method Blank	Total/NA	Water	375.4	

Analysis Batch: 423232

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122143-1	PM1D-0216	Total/NA	Water	310.1	
680-122143-3	ESL-MW-D1-0216	Total/NA	Water	310.1	
680-122143-5	ESL-MW-A-0216	Total/NA	Water	310.1	


 TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122143-1
SDG: KPS160

General Chemistry (Continued)

Analysis Batch: 423232 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-423232/8	Lab Control Sample	Total/NA	Water	310.1	
LCSD 680-423232/34	Lab Control Sample Dup	Total/NA	Water	310.1	
MB 680-423232/7	Method Blank	Total/NA	Water	310.1	

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TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122143-1
SDG: KPS160

Client Sample ID: PM1D-0216

Lab Sample ID: 680-122143-1

Date Collected: 02/22/16 13:02

Matrix: Water

Date Received: 02/23/16 09:17

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	422777	02/25/16 03:13	DAS	TAL SAV
Total/NA	Analysis	RSK-175		1	296090	03/03/16 16:01	C1M	TAL PEN
Total Recoverable	Prep	3005A			423008	02/26/16 09:53	CRW	TAL SAV
Total Recoverable	Analysis	6010C		1	423168	02/27/16 01:14	BCB	TAL SAV
Total/NA	Analysis	310.1		1	423232	02/26/16 13:45	KLD	TAL SAV
Total/NA	Analysis	325.2		2	423112	02/25/16 17:38	JME	TAL SAV
Total/NA	Analysis	353.2		1	422656	02/23/16 16:23	GRX	TAL SAV
Total/NA	Analysis	375.4		20	423114	02/26/16 09:26	JME	TAL SAV
Total/NA	Analysis	415.1		1	239410	03/04/16 17:06	JCB	TAL SL

Client Sample ID: PM1D-F(0.2)-0216

Lab Sample ID: 680-122143-2

Date Collected: 02/22/16 13:02

Matrix: Water

Date Received: 02/23/16 09:17

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			423008	02/26/16 09:53	CRW	TAL SAV
Dissolved	Analysis	6010C		1	423168	02/27/16 01:18	BCB	TAL SAV
Dissolved	Analysis	415.1		1	239463	03/07/16 18:58	JCB	TAL SL

Client Sample ID: ESL-MW-D1-0216

Lab Sample ID: 680-122143-3

Date Collected: 02/22/16 13:55

Matrix: Water

Date Received: 02/23/16 09:17

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10	422786	02/25/16 13:30	DAS	TAL SAV
Total/NA	Analysis	RSK-175		1	296090	03/03/16 16:11	C1M	TAL PEN
Total Recoverable	Prep	3005A			423008	02/26/16 09:53	CRW	TAL SAV
Total Recoverable	Analysis	6010C		1	423168	02/27/16 01:22	BCB	TAL SAV
Total/NA	Analysis	310.1		1	423232	02/26/16 14:03	KLD	TAL SAV
Total/NA	Analysis	325.2		5	423112	02/25/16 17:36	JME	TAL SAV
Total/NA	Analysis	353.2		1	422656	02/23/16 16:27	GRX	TAL SAV
Total/NA	Analysis	375.4		20	423114	02/26/16 09:28	JME	TAL SAV
Total/NA	Analysis	415.1		1	239410	03/04/16 17:22	JCB	TAL SL

Client Sample ID: ESL-MW-D1-F(0.2)-0216

Lab Sample ID: 680-122143-4

Date Collected: 02/22/16 13:55

Matrix: Water

Date Received: 02/23/16 09:17

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			423008	02/26/16 09:53	CRW	TAL SAV
Dissolved	Analysis	6010C		1	423168	02/27/16 01:27	BCB	TAL SAV

AWD 3/17/16
TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122143-1
SDG: KPS160

Client Sample ID: ESL-MW-D1-F(0.2)-0216

Lab Sample ID: 680-122143-4

Date Collected: 02/22/16 13:55
Date Received: 02/23/16 09:17

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	415.1		1	239463	03/07/16 19:12	JCB	TAL SL

Client Sample ID: ESL-MW-A-0216

Lab Sample ID: 680-122143-5

Date Collected: 02/22/16 15:12
Date Received: 02/23/16 09:17

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	422777	02/25/16 03:33	DAS	TAL SAV
Total/NA	Analysis	RSK-175		1	296090	03/03/16 16:21	C1M	TAL PEN
Total Recoverable	Prep	3005A			423008	02/26/16 09:53	CRW	TAL SAV
Total Recoverable	Analysis	6010C		1	423168	02/27/16 01:31	BCB	TAL SAV
Total/NA	Analysis	310.1		1	423232	02/26/16 13:55	KLD	TAL SAV
Total/NA	Analysis	325.2		2	423112	02/25/16 17:38	JME	TAL SAV
Total/NA	Analysis	353.2		1	422656	02/23/16 16:29	GRX	TAL SAV
Total/NA	Analysis	375.4		50	423114	02/26/16 10:06	JME	TAL SAV
Total/NA	Analysis	415.1		1	239410	03/04/16 17:48	JCB	TAL SL

Client Sample ID: ESL-MW-A-F(0.2)-0216

Lab Sample ID: 680-122143-6

Date Collected: 02/22/16 15:12
Date Received: 02/23/16 09:17

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			423008	02/26/16 09:53	CRW	TAL SAV
Dissolved	Analysis	6010C		1	423168	02/27/16 01:35	BCB	TAL SAV
Dissolved	Analysis	415.1		1	239463	03/07/16 19:28	JCB	TAL SL

Client Sample ID: 1Q16 LTM Trip Blank # 1

Lab Sample ID: 680-122143-7

Date Collected: 02/22/16 00:00
Date Received: 02/23/16 09:17

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	422777	02/25/16 02:53	DAS	TAL SAV

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001
 TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858
 TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

AWD
3/17/16

TestAmerica Savannah

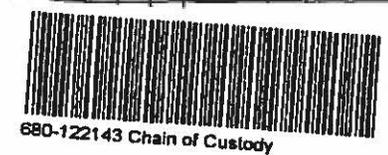
Chain of Custody Record

Savannah, GA 31404
phone 912 354.7858 fax

Regulatory Program: DW NPDES RCRA Other: Emily White

TestAmerica Laboratories, Inc.

Client Contact		Project Manager: Amanda Derhake		Site Contact: <u>Em Smolner</u>		Date: <u>02/22/16</u>		COC No:							
Golder Associates Inc.		Tel/Fax: 636-724-9191		Lab Contact: Michele Kersey		Carrier: FedEx		1 of 1 COCs							
820 South Main Street		Analysis Turnaround Time		<input checked="" type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below <u>Standard</u> <input checked="" type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Filtered Sample (Y/N) Perform MS /MSD (Y/N) VOCs by 8280 Total Fe/Mn by 6010C Alk/CO2 by 310.1 Chloride by 325.2/Sulfate by 376.4 Dissolved Gases by RSK 175 Nitrate by 353.2 TOC by 416.1 Dissolved Fe/Mn by 6010C DOC by 415.1 SVOCs		Sampler: <u>S. DiCorso</u>							
St. Charles, MO 63301		☑						For Lab Use Only:							
(636) 724-9191 Phone		☐						Walk-in Client:							
(636) 724-9323 FAX		☐						Lab Sampling:							
Project Name <u>2013 LTM GW Sampling-1403345</u>		☐						Job / SDG No.:							
Site: <u>Solutia WG Krummrich Facility</u>		☐													
P O # <u>42447936</u>		☐													
Sample Identification		Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Matrix	# of Cont.	Sample Specific Notes								
PMID-02/16		02/22/16	1302	G	W	4	N	3	1	1	1	3	2	3	
PMID-F(0.2)-02/16			1302			4	Y							1	3
ESL-MW-D1-02/16			1355			4	N	3	1	1	1	3	2	3	
ESL-MW-D1-F(0.2)-02/16			1355			4	Y							1	3
ESL-MW-A-02/16			1512			4	N	3	1	1	1	3	2	3	
ESL-MW-A-F(0.2)-02/16			1512			4	Y							1	3
10/16 LTM Trip Blank #1						2	N	2							



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Preservation Method: 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= None, 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

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return to Client Disposal by Lab Archive for _____ Months

Special Instructions/QC Requirements & Comments:
VOC headspace upon sampling: Yes/No

Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.: <u>672746</u>	Cooler Temp. (°C): _____	Cor'd: <u>1.3/1.7</u>	Therm ID No: _____
Relinquished by: <u>Samantha [Signature]</u>	Company: <u>Golder</u>	Date/Time: <u>02/22/16/10:50</u>	Received by: <u>[Signature]</u>	Company: <u>TA-SAV</u>
Relinquished by:	Company:	Date/Time:	Received by:	Company:
Relinquished by:	Company:	Date/Time:	Received In Laboratory by:	Company:

TestAmerica Savannah

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

Chain of Custody Record



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)		Sampler:		Lab PM: Kersey, Michele R		Carrier Tracking No(s):		COC No: 680-422919.1			
Client Contact: Shipping/Receiving		Phone:		E-Mail: michele.kersey@testamericainc.com				Page: Page 1 of 1			
Company: TestAmerica Laboratories, Inc.				Analysis Requested				Job #: 680-122143-1			
Address: 13715 Rider Trail North, City: Earth City State, Zip: MO, 63045		Due Date Requested: 3/8/2016		416.1/416.1 / Total Organic Carbon 416.1_Clear/FIELD_FLTRD 416.1_Disc / Dissolved Organic Carbon				Preservation Codes:			
City: Earth City		TAT Requested (days):						A - HCL		M - Hexane	
State, Zip: MO, 63045		PO #:						B - NaOH		N - None	
Phone: 314-298-8568(Tel) 314-298-8757(Fax)		WO #:						C - Zn Acetate		O - AsNaO2	
Email:		Project #: 68001754						P - Na2O4S			
Project Name: 1Q16 LTM GW Sampling - 1403345		SSOW#:						Q - Na2SO3			
Sample Identification - Client ID (Lab ID)		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=soils/sed, ST=Slurry, A=Air)			
PM1D-0216 (680-122143-1)		2/22/16		13:02 Eastern				Water			
PM1D-F(0.2)-0216 (680-122143-2)		2/22/16		13:02 Eastern				Water			
ESL-MW-D1-0216 (680-122143-3)		2/22/16		13:55 Eastern				Water			
ESL-MW-D1-F(0.2)-0216 (680-122143-4)		2/22/16		13:55 Eastern				Water			
ESL-MW-A-0216 (680-122143-5)		2/22/16		15:12 Eastern				Water			
ESL-MW-A-F(0.2)-0216 (680-122143-6)		2/22/16		15:12 Eastern				Water			
Possible Hazard Identification				Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)							
Unconfirmed				<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months							
Deliverable Requested: I, II, III, IV, Other (specify)				Special Instructions/QC Requirements:							
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:					
Relinquished by: <i>[Signature]</i>		Date/Time: 2/23/16 16:13		Company: Sew.		Relinquished by: <i>[Signature]</i>		Date/Time: 2-24-16 09:00			
Relinquished by:		Date/Time:		Company:		Relinquished by:		Date/Time:			
Relinquished by:		Date/Time:		Company:		Relinquished by:		Date/Time:			
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:							

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Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-122143-1
SDG Number: KPS160

Login Number: 122143
List Number: 1
Creator: White, Menica R

List Source: TestAmerica Savannah

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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



MWD
3/17/16

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-122143-1
SDG Number: KPS160

Login Number: 122143
List Number: 2
Creator: Clarke, Jill C

List Source: TestAmerica St. Louis
List Creation: 02/24/16 02:47 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
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	2.2
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?	False	
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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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AUC
3/17/16

Certification Summary

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122143-1
 SDG: KPS160

Laboratory: TestAmerica Savannah

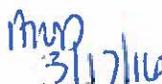
All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

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

Laboratory: TestAmerica Pensacola

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

* Certification renewal pending - certification considered valid.


 TestAmerica Savannah

Certification Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122143-1
SDG: KPS160

Laboratory: TestAmerica Pensacola (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40150	01-31-16 *
Arizona	State Program	9	AZ0710	01-11-17
Arkansas DEQ	State Program	6	88-0689	09-01-16
Florida	NELAP	4	E81010	06-30-16
Georgia	State Program	4	N/A	06-30-16
Illinois	NELAP	5	200041	10-09-16
Iowa	State Program	7	367	07-31-16
Kansas	NELAP	7	E-10253	05-31-16 *
Kentucky (UST)	State Program	4	53	06-30-16
Kentucky (WW)	State Program	4	98030	12-31-16
Louisiana	NELAP	6	30976	06-30-16
Maryland	State Program	3	233	09-30-16
Massachusetts	State Program	1	M-FL094	06-30-16
Michigan	State Program	5	9912	06-30-16
New Jersey	NELAP	2	FL006	06-30-16
North Carolina (WW/SW)	State Program	4	314	12-31-16
Oklahoma	State Program	6	9810	08-31-16
Pennsylvania	NELAP	3	68-00467	01-31-17
Rhode Island	State Program	1	LAO00307	12-30-16
South Carolina	State Program	4	96026	06-30-16
Tennessee	State Program	4	TN02907	06-30-16
Texas	NELAP	6	T104704286-15-9	09-30-16
USDA	Federal		P330-13-00193	07-01-16
Virginia	NELAP	3	460166	06-14-16
West Virginia DEP	State Program	3	136	06-30-16

Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-16
California	ELAP	9	2886	03-31-16 *
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-16
Illinois	NELAP	5	003757	11-30-16
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	05-31-16
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-10-16 *
Louisiana	NELAP	6	04080	06-30-16
Louisiana (DW)	NELAP	6	LA160008	12-31-16
Maryland	State Program	3	310	09-30-16
Missouri	State Program	7	780	06-30-16
Nevada	State Program	9	MO000542016-1	07-31-16
New Jersey	NELAP	2	MO002	06-30-16
New York	NELAP	2	11616	03-31-16 *
North Dakota	State Program	8	R207	06-30-16
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-16
Pennsylvania	NELAP	3	68-00540	02-28-17 *

* Certification renewal pending - certification considered valid.

AWP
3/17/16
TestAmerica Savannah

Certification Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122143-1
SDG: KPS160

Laboratory: TestAmerica St. Louis (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
South Carolina	State Program	4	85002001	06-30-16
Texas	NELAP	6	T104704193-15-9	07-31-16
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542015-7	07-31-16
Virginia	NELAP	3	460230	06-14-16
Washington	State Program	10	C592	08-30-16
West Virginia DEP	State Program	3	381	08-31-16



AND
3/17/16
TestAmerica Savannah

SDG KPS161

Sample Results from:

**GWE-5D
CPA-MW-5D
GWE-1D
GWE-2D
GWE-3D**



Level IV Data Validation Summary
Solutia Inc., W.G. Krummrich, Sauget, Illinois
1Q16 Long-Term Monitoring Program

Company Name: Golder Associates
Project Name: WGK-1Q16 LTM
Reviewer: A. Derhake
Laboratory: TestAmerica
SDG#: KPS161
Matrix: Water

Project Manager: A. Derhake
Project Number: 140-3345
Sample Date: February 2016

Analytical Method: VOC (8260B), 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-0216, CPA-MW-5D-0216, GWE-1D-0216, GWE-2D-0216, GWE-2D-F(0.2)-0216, GWE-3D-0216, GWE-3D-F(0.2)-0216, 1Q16 LTM Trip Blank #2

Field Information

YES NO NA

- a) Sampling dates noted? [X] [] []
b) Does the laboratory narrative indicate deficiencies? [X] [] []

Comments:

VOC: Insufficient sample volume was available to perform matrix spike/matrix spike duplicate (MS/MSD) associated with batch 423692. Insufficient sample volume was available to perform MS/MSD associated with batch 4423855. Samples GWE-5D-0216, CPA-MW-5D-0216, and GWE-3D-0216 required dilution prior to analysis, reporting limits were adjusted accordingly.

Dissolved Gases: No deficiencies noted.

Metals: No deficiencies noted.

Alkalinity: No deficiencies noted.

Chloride: Samples GWE-2D-0216 and GWE-3D-0216, required dilution prior to analysis, reporting limits were adjusted accordingly.

Nitrate-Nitrite as Nitrogen: No deficiencies noted.

Sulfate: Samples GWE-2D-0216 and GWE-3D-0216, 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? [X] [] []
b) Were samples received in good condition? [X] [] []

Comments: Samples were received at 2.0°C, within the 4°C +/- 2°C criteria.

General

YES NO NA

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

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: Analytes of interest met calibration standards.**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	Benzene, Chlorobenzene, 1,4-Dichlorobenzene, Chloride, and Sulfate	D	GWE-5D, CPA-MW-5D, GWE-3D, GWE-3D

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: 680-122233-1
TestAmerica Sample Delivery Group: KPS161
Client Project/Site: 1Q16 LTM GW Sampling - 1403345

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

Attn: Mr. Jerry Rinaldi

Michele Kersey

Authorized for release by:
3/9/2016 3:42:28 PM

Michele Kersey, Project Manager I
(912)354-7858
michele.kersey@testamericainc.com

LINKS

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results through
TotalAccess

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The
Expert**

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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.

Michele Kersey

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AWP
3/11/16

Case Narrative

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122233-1
SDG: KPS161

Job ID: 680-122233-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Solutia Inc.

Project: 1Q16 LTM GW Sampling - 1403345

Report Number: 680-122233-1

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 2/24/2016 9:29 AM, the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.0° C.

Receipt Exceptions

One cooler was not received on 2/24/16 due to a Fed Ex delivery issue. Missing cooler contains some of the volumes for the requested analyses on the chain of custody. Client was notified.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples GWE-5D-0216 (680-122233-1), CPA-MW-5D-0216 (680-122233-2), GWE-1D-0216 (680-122233-3), GWE-2D-0216 (680-122233-4), GWE-3D-0216 (680-122233-6) and 1Q16 LTM Trip Blank #2 (680-122233-8) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 03/03/2016 and 03/04/2016.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-423692.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-423855.

Samples GWE-5D-0216 (680-122233-1)[5X], CPA-MW-5D-0216 (680-122233-2)[20X] and GWE-3D-0216 (680-122233-6)[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.

DISSOLVED GASES

Samples GWE-2D-0216 (680-122233-4) and GWE-3D-0216 (680-122233-6) were analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 03/07/2016.

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

METALS (ICP)

Samples GWE-2D-F(0.2)-0216 (680-122233-5) and GWE-3D-F(0.2)-0216 (680-122233-7) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared and analyzed on 03/02/2016.

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: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122233-1
SDG: KPS161

Job ID: 680-122233-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

METALS (ICP)

Samples GWE-2D-0216 (680-122233-4) and GWE-3D-0216 (680-122233-6) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared and analyzed on 03/02/2016.

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

ALKALINITY

Samples GWE-2D-0216 (680-122233-4) and GWE-3D-0216 (680-122233-6) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 03/02/2016.

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

CHLORIDE

Samples GWE-2D-0216 (680-122233-4) and GWE-3D-0216 (680-122233-6) were analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 02/26/2016.

Samples GWE-2D-0216 (680-122233-4)[50X] and GWE-3D-0216 (680-122233-6)[50X] 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-2D-0216 (680-122233-4) and GWE-3D-0216 (680-122233-6) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 02/24/2016.

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

SULFATE

Samples GWE-2D-0216 (680-122233-4) and GWE-3D-0216 (680-122233-6) were analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 02/26/2016.

Samples GWE-2D-0216 (680-122233-4)[50X] and GWE-3D-0216 (680-122233-6)[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.

TOTAL ORGANIC CARBON

Samples GWE-2D-0216 (680-122233-4) and GWE-3D-0216 (680-122233-6) were analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 03/04/2016.

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

DISSOLVED ORGANIC CARBON (DOC)

Samples GWE-2D-F(0.2)-0216 (680-122233-5) and GWE-3D-F(0.2)-0216 (680-122233-7) were analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 03/07/2016.

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

MWD
3/11/16

Sample Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122233-1
SDG: KPS161

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-122233-1	GWE-5D-0216	Water	02/23/16 09:26	02/24/16 09:29
680-122233-2	CPA-MW-5D-0216	Water	02/23/16 10:47	02/24/16 09:29
680-122233-3	GWE-1D-0216	Water	02/23/16 13:37	02/24/16 09:29
680-122233-4	GWE-2D-0216	Water	02/23/16 15:00	02/24/16 09:29
680-122233-5	GWE-2D-F(0.2)-0216	Water	02/23/16 15:00	02/24/16 09:29
680-122233-6	GWE-3D-0216	Water	02/23/16 15:56	02/24/16 09:29
680-122233-7	GWE-3D-F(0.2)-0216	Water	02/23/16 15:56	02/24/16 09:29
680-122233-8	1Q16 LTM Trip Blank #2	Water	02/23/16 00:00	02/24/16 09:29



Handwritten signature
3/11/16

TestAmerica Savannah

Method Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122233-1
SDG: KPS161

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL BUF
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 SL
415.1	DOC	MCAWW	TAL SL

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 BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

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

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

APD
3/11/16

TestAmerica Savannah

Definitions/Glossary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122233-1
SDG: KPS161

Qualifiers

GC/MS 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.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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)

AWD
3/11/16
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122233-1
SDG: KPS161

Client Sample ID: GWE-5D-0216

Lab Sample ID: 680-122233-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	19		1.0		ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	6.4		1.0		ug/L	1		8260B	Total/NA
1,3-Dichlorobenzene	2.4		1.0		ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	51		1.0		ug/L	1		8260B	Total/NA
Chlorobenzene - DL	460	D	5.0		ug/L	5		8260B	Total/NA

Client Sample ID: CPA-MW-5D-0216

Lab Sample ID: 680-122233-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	1400	D	20		ug/L	20		8260B	Total/NA

Client Sample ID: GWE-1D-0216

Lab Sample ID: 680-122233-3

No Detections.

Client Sample ID: GWE-2D-0216

Lab Sample ID: 680-122233-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	180		1.0		ug/L	1		8260B	Total/NA
Methane	21		4.0		ug/L	1		RSK-175	Total/NA
Iron	25		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.58		0.010		mg/L	1		6010C	Total Recoverable
Chloride	1100	D	50		mg/L	50		325.2	Total/NA
Sulfate	1200	D	250		mg/L	50		375.4	Total/NA
Total Organic Carbon	3.1		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	420		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: GWE-2D-F(0.2)-0216

Lab Sample ID: 680-122233-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	25		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.58		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	3.4		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: GWE-3D-0216

Lab Sample ID: 680-122233-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	11	D	10		ug/L	10		8260B	Total/NA
Chlorobenzene	790	D	10		ug/L	10		8260B	Total/NA
1,4-Dichlorobenzene	55	D	10		ug/L	10		8260B	Total/NA
Methane	68		4.0		ug/L	1		RSK-175	Total/NA
Iron	20		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.71		0.010		mg/L	1		6010C	Total Recoverable
Chloride	1100	D	50		mg/L	50		325.2	Total/NA
Sulfate	300	D	50		mg/L	10		375.4	Total/NA

This Detection Summary does not include radiochemical test results.


 TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122233-1
 SDG: KPS161

Client Sample ID: GWE-3D-0216 (Continued)

Lab Sample ID: 680-122233-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon	4.1		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	42		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: GWE-3D-F(0.2)-0216

Lab Sample ID: 680-122233-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	22		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.73		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	4.3		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: 1Q16 LTM Trip Blank #2

Lab Sample ID: 680-122233-8

No Detections.

This Detection Summary does not include radiochemical test results.


 TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122233-1
SDG: KPS161

Client Sample ID: GWE-5D-0216

Lab Sample ID: 680-122233-1

Date Collected: 02/23/16 09:26

Matrix: Water

Date Received: 02/24/16 09:29

Method: 8260B - Volatile Organic Compounds (GC/MS)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	19		1.0		ug/L			03/03/16 16:06	1
1,2-Dichlorobenzene	6.4		1.0		ug/L			03/03/16 16:06	1
1,3-Dichlorobenzene	2.4		1.0		ug/L			03/03/16 16:06	1
1,4-Dichlorobenzene	51		1.0		ug/L			03/03/16 16:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		70 - 130					03/03/16 16:06	1
1,2-Dichloroethane-d4 (Surr)	97		70 - 130					03/03/16 16:06	1
Dibromofluoromethane (Surr)	94		70 - 130					03/03/16 16:06	1
4-Bromofluorobenzene (Surr)	94		70 - 130					03/03/16 16:06	1

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	460	▶	5.0		ug/L			03/04/16 12:40	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		70 - 130					03/04/16 12:40	5
1,2-Dichloroethane-d4 (Surr)	112		70 - 130					03/04/16 12:40	5
Dibromofluoromethane (Surr)	105		70 - 130					03/04/16 12:40	5
4-Bromofluorobenzene (Surr)	98		70 - 130					03/04/16 12:40	5

AWP
3/11/16

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122233-1
 SDG: KPS161

Client Sample ID: CPA-MW-5D-0216

Lab Sample ID: 680-122233-2

Date Collected: 02/23/16 10:47

Matrix: Water

Date Received: 02/24/16 09:29

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	20	U	20		ug/L			03/03/16 17:59	20
Chlorobenzene	1400	D	20		ug/L			03/03/16 17:59	20
1,2-Dichlorobenzene	20	U	20		ug/L			03/03/16 17:59	20
1,3-Dichlorobenzene	20	U	20		ug/L			03/03/16 17:59	20
1,4-Dichlorobenzene	20	U	20		ug/L			03/03/16 17:59	20
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		70 - 130					03/03/16 17:59	20
1,2-Dichloroethane-d4 (Surr)	100		70 - 130					03/03/16 17:59	20
Dibromofluoromethane (Surr)	97		70 - 130					03/03/16 17:59	20
4-Bromofluorobenzene (Surr)	96		70 - 130					03/03/16 17:59	20



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TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122233-1
 SDG: KPS161

Client Sample ID: GWE-1D-0216

Lab Sample ID: 680-122233-3

Date Collected: 02/23/16 13:37

Matrix: Water

Date Received: 02/24/16 09:29

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			03/03/16 16:29	1
Chlorobenzene	1.0	U	1.0		ug/L			03/03/16 16:29	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			03/03/16 16:29	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			03/03/16 16:29	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			03/03/16 16:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		70 - 130		03/03/16 16:29	1
1,2-Dichloroethane-d4 (Surr)	97		70 - 130		03/03/16 16:29	1
Dibromofluoromethane (Surr)	97		70 - 130		03/03/16 16:29	1
4-Bromofluorobenzene (Surr)	96		70 - 130		03/03/16 16:29	1



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TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122233-1
 SDG: KPS161

Client Sample ID: GWE-2D-0216

Lab Sample ID: 680-122233-4

Date Collected: 02/23/16 15:00

Matrix: Water

Date Received: 02/24/16 09:29

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			03/03/16 16:51	1
Chlorobenzene	180		1.0		ug/L			03/03/16 16:51	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			03/03/16 16:51	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			03/03/16 16:51	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			03/03/16 16:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		70 - 130		03/03/16 16:51	1
1,2-Dichloroethane-d4 (Surr)	98		70 - 130		03/03/16 16:51	1
Dibromofluoromethane (Surr)	96		70 - 130		03/03/16 16:51	1
4-Bromofluorobenzene (Surr)	98		70 - 130		03/03/16 16:51	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	21		4.0		ug/L			03/07/16 12:52	1
Ethane	7.5	U	7.5		ug/L			03/07/16 12:52	1
Ethene	7.0	U	7.0		ug/L			03/07/16 12:52	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	25		0.050		mg/L		03/02/16 08:47	03/02/16 22:51	1
Manganese	0.58		0.010		mg/L		03/02/16 08:47	03/02/16 22:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1100	U ^D	50		mg/L			02/26/16 09:34	50
Nitrate as N	0.050	U ^D	0.050		mg/L			02/24/16 17:56	1
Sulfate	1200	U ^D	250		mg/L			02/26/16 10:06	50
Total Organic Carbon	3.1		1.0		mg/L			03/04/16 18:00	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	420		5.0		mg/L			03/02/16 14:42	1
Carbon Dioxide, Free	38		5.0		mg/L			03/02/16 14:42	1

AWP
3/11/16

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122233-1
 SDG: KPS161

Client Sample ID: GWE-2D-F(0.2)-0216

Lab Sample ID: 680-122233-5

Date Collected: 02/23/16 15:00

Matrix: Water

Date Received: 02/24/16 09:29

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	25		0.050		mg/L		03/02/16 08:47	03/02/16 22:56	1
Manganese, Dissolved	0.58		0.010		mg/L		03/02/16 08:47	03/02/16 22:56	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	3.4		1.0		mg/L			03/07/16 19:40	1



AWD
3/11/16

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122233-1
SDG: KPS161

Client Sample ID: GWE-3D-0216

Lab Sample ID: 680-122233-6

Date Collected: 02/23/16 15:56

Matrix: Water

Date Received: 02/24/16 09:29

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	11	P	10		ug/L			03/04/16 13:00	10
Chlorobenzene	790	P	10		ug/L			03/04/16 13:00	10
1,2-Dichlorobenzene	10	U	10		ug/L			03/04/16 13:00	10
1,3-Dichlorobenzene	10	U	10		ug/L			03/04/16 13:00	10
1,4-Dichlorobenzene	55	D	10		ug/L			03/04/16 13:00	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		70 - 130		03/04/16 13:00	10
1,2-Dichloroethane-d4 (Surr)	113		70 - 130		03/04/16 13:00	10
Dibromofluoromethane (Surr)	107		70 - 130		03/04/16 13:00	10
4-Bromofluorobenzene (Surr)	104		70 - 130		03/04/16 13:00	10

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	68		4.0		ug/L			03/07/16 14:20	1
Ethane	7.5	U	7.5		ug/L			03/07/16 14:20	1
Ethene	7.0	U	7.0		ug/L			03/07/16 14:20	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	20		0.050		mg/L		03/02/16 08:47	03/02/16 23:01	1
Manganese	0.71		0.010		mg/L		03/02/16 08:47	03/02/16 23:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1100	P	50		mg/L			02/26/16 09:34	50
Nitrate as N	0.050	U	0.050		mg/L			02/24/16 17:59	1
Sulfate	300	D	50		mg/L			02/26/16 09:31	10
Total Organic Carbon	4.1		1.0		mg/L			03/04/16 18:16	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	450		5.0		mg/L			03/02/16 14:51	1
Carbon Dioxide, Free	42		5.0		mg/L			03/02/16 14:51	1

MVP
3/11/16

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122233-1
 SDG: KPS161

Client Sample ID: GWE-3D-F(0.2)-0216

Lab Sample ID: 680-122233-7

Date Collected: 02/23/16 15:56

Matrix: Water

Date Received: 02/24/16 09:29

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	22		0.050		mg/L		03/02/16 08:47	03/02/16 23:06	1
Manganese, Dissolved	0.73		0.010		mg/L		03/02/16 08:47	03/02/16 23:06	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	4.3		1.0		mg/L			03/07/16 19:52	1



AWD
 3/11/16

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122233-1
 SDG: KPS161

Client Sample ID: 1Q16 LTM Trip Blank #2

Lab Sample ID: 680-122233-8

Date Collected: 02/23/16 00:00

Matrix: Water

Date Received: 02/24/16 09:29

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			03/03/16 11:59	1
Chlorobenzene	1.0	U	1.0		ug/L			03/03/16 11:59	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			03/03/16 11:59	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			03/03/16 11:59	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			03/03/16 11:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		70 - 130		03/03/16 11:59	1
1,2-Dichloroethane-d4 (Surr)	96		70 - 130		03/03/16 11:59	1
Dibromofluoromethane (Surr)	96		70 - 130		03/03/16 11:59	1
4-Bromofluorobenzene (Surr)	96		70 - 130		03/03/16 11:59	1

MVP
3/1/16

TestAmerica Savannah

Surrogate Summary

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122233-1
 SDG: KPS161

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 (70-130)	12DCE (70-130)	DBFM (70-130)	BFB (70-130)
680-122233-1	GWE-5D-0216	98	97	94	94
680-122233-1 - DL	GWE-5D-0216	103	112	105	98
680-122233-2	CPA-MW-5D-0216	102	100	97	96
680-122233-3	GWE-1D-0216	101	97	97	96
680-122233-4	GWE-2D-0216	102	98	96	98
680-122233-6	GWE-3D-0216	102	113	107	104
680-122233-8	1Q16 LTM Trip Blank #2	102	96	96	96
LCS 680-423692/3	Lab Control Sample	96	96	95	98
LCS 680-423855/4	Lab Control Sample	102	104	100	94
LCSD 680-423692/4	Lab Control Sample Dup	98	94	96	97
LCSD 680-423855/5	Lab Control Sample Dup	107	106	103	99
MB 680-423692/7	Method Blank	103	96	96	99
MB 680-423855/8	Method Blank	101	108	105	106

Surrogate Legend

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



MWD
3/11/16

TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122233-1
SDG: KPS161

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

Lab Sample ID: MB 680-423692/7
Matrix: Water
Analysis Batch: 423692

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			03/03/16 10:50	1
Chlorobenzene	1.0	U	1.0		ug/L			03/03/16 10:50	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			03/03/16 10:50	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			03/03/16 10:50	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			03/03/16 10:50	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	103		70 - 130		03/03/16 10:50	1
1,2-Dichloroethane-d4 (Surr)	96		70 - 130		03/03/16 10:50	1
Dibromofluoromethane (Surr)	96		70 - 130		03/03/16 10:50	1
4-Bromofluorobenzene (Surr)	99		70 - 130		03/03/16 10:50	1

Lab Sample ID: LCS 680-423692/3
Matrix: Water
Analysis Batch: 423692

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	47.1		ug/L		94	73 - 131
Chlorobenzene	50.0	47.8		ug/L		96	80 - 120
1,2-Dichlorobenzene	50.0	48.0		ug/L		96	80 - 120
1,3-Dichlorobenzene	50.0	52.3		ug/L		105	80 - 120
1,4-Dichlorobenzene	50.0	48.1		ug/L		96	80 - 120

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	96		70 - 130
1,2-Dichloroethane-d4 (Surr)	96		70 - 130
Dibromofluoromethane (Surr)	95		70 - 130
4-Bromofluorobenzene (Surr)	98		70 - 130

Lab Sample ID: LCSD 680-423692/4
Matrix: Water
Analysis Batch: 423692

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	73 - 131	1	30
Chlorobenzene	50.0	48.8		ug/L		98	80 - 120	2	20
1,2-Dichlorobenzene	50.0	48.5		ug/L		97	80 - 120	1	20
1,3-Dichlorobenzene	50.0	52.5		ug/L		105	80 - 120	0	20
1,4-Dichlorobenzene	50.0	48.0		ug/L		96	80 - 120	0	20

Surrogate	LCSD	LCSD	Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	98		70 - 130
1,2-Dichloroethane-d4 (Surr)	94		70 - 130
Dibromofluoromethane (Surr)	96		70 - 130
4-Bromofluorobenzene (Surr)	97		70 - 130

AWD
3/11/16

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122233-1
SDG: KPS161

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

Lab Sample ID: MB 680-423855/8
Matrix: Water
Analysis Batch: 423855

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			03/04/16 10:44	1
Chlorobenzene	1.0	U	1.0		ug/L			03/04/16 10:44	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			03/04/16 10:44	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			03/04/16 10:44	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			03/04/16 10:44	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	101		70 - 130		03/04/16 10:44	1
1,2-Dichloroethane-d4 (Surr)	108		70 - 130		03/04/16 10:44	1
Dibromofluoromethane (Surr)	105		70 - 130		03/04/16 10:44	1
4-Bromofluorobenzene (Surr)	106		70 - 130		03/04/16 10:44	1

Lab Sample ID: LCS 680-423855/4
Matrix: Water
Analysis Batch: 423855

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

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Benzene	50.0	45.8		ug/L		92	73 - 131
Chlorobenzene	50.0	49.3		ug/L		99	80 - 120
1,2-Dichlorobenzene	50.0	48.3		ug/L		97	80 - 120
1,3-Dichlorobenzene	50.0	47.6		ug/L		95	80 - 120
1,4-Dichlorobenzene	50.0	46.1		ug/L		92	80 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	102		70 - 130
1,2-Dichloroethane-d4 (Surr)	104		70 - 130
Dibromofluoromethane (Surr)	100		70 - 130
4-Bromofluorobenzene (Surr)	94		70 - 130

Lab Sample ID: LCSD 680-423855/5
Matrix: Water
Analysis Batch: 423855

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

Analyte	Spike Added	LCSD LCSD		Unit	D	%Rec	%Rec. Limits	RPD	
		Result	Qualifier					RPD	Limit
Benzene	50.0	48.5		ug/L		97	73 - 131	6	30
Chlorobenzene	50.0	51.7		ug/L		103	80 - 120	5	20
1,2-Dichlorobenzene	50.0	50.6		ug/L		101	80 - 120	5	20
1,3-Dichlorobenzene	50.0	49.0		ug/L		98	80 - 120	3	20
1,4-Dichlorobenzene	50.0	48.0		ug/L		96	80 - 120	4	20

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	107		70 - 130
1,2-Dichloroethane-d4 (Surr)	106		70 - 130
Dibromofluoromethane (Surr)	103		70 - 130
4-Bromofluorobenzene (Surr)	99		70 - 130

AWD
3/11/16

TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122233-1
SDG: KPS161

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 480-289924/3
Matrix: Water
Analysis Batch: 289924

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Methane	4.0	U	4.0		ug/L			03/07/16 10:36	1
Ethane	7.5	U	7.5		ug/L			03/07/16 10:36	1
Ethene	7.0	U	7.0		ug/L			03/07/16 10:36	1

Lab Sample ID: LCS 480-289924/4
Matrix: Water
Analysis Batch: 289924

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	14.6	15.3		ug/L	105	79 - 120	
Ethene	13.6	14.4		ug/L	106	78 - 115	

Lab Sample ID: LCSD 480-289924/5
Matrix: Water
Analysis Batch: 289924

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	7.77	7.70		ug/L		99	71 - 118	0	50
Ethane	14.6	15.3		ug/L		105	79 - 120	1	50
Ethene	13.6	14.5		ug/L		106	78 - 115	1	50

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-423529/1-A
Matrix: Water
Analysis Batch: 423712

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 423529

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Iron	0.050	U	0.050		mg/L		03/02/16 08:47	03/02/16 21:20	1
Iron, Dissolved	0.050	U	0.050		mg/L		03/02/16 08:47	03/02/16 21:20	1
Manganese	0.010	U	0.010		mg/L		03/02/16 08:47	03/02/16 21:20	1
Manganese, Dissolved	0.010	U	0.010		mg/L		03/02/16 08:47	03/02/16 21:20	1

Lab Sample ID: LCS 680-423529/2-A
Matrix: Water
Analysis Batch: 423712

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 423529

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron, Dissolved	5.00	5.05		mg/L	101	80 - 120	
Manganese	0.500	0.510		mg/L	102	80 - 120	
Manganese, Dissolved	0.500	0.510		mg/L	102	80 - 120	

MWD
3/11/16
TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122233-1
SDG: KPS161

Method: 310.1 - Alkalinity

Lab Sample ID: MB 680-423723/5
Matrix: Water
Analysis Batch: 423723

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

Analyte	MB MB		RL	RL	Unit	D	Prepared	Analyzed	DII Fac
	Result	Qualifier							
Alkalinity	5.0	U	5.0		mg/L			03/02/16 14:04	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			03/02/16 14:04	1

Lab Sample ID: LCS 680-423723/6
Matrix: Water
Analysis Batch: 423723

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

Lab Sample ID: LCSD 680-423723/32
Matrix: Water
Analysis Batch: 423723

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	272		mg/L		109	80 - 120	1	30

Method: 325.2 - Chloride

Lab Sample ID: MB 680-423113/39
Matrix: Water
Analysis Batch: 423113

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
	Result	Qualifier							
Chloride	1.0	U	1.0		mg/L			02/26/16 09:09	1

Lab Sample ID: LCS 680-423113/1
Matrix: Water
Analysis Batch: 423113

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

Lab Sample ID: LCSD 680-423113/4
Matrix: Water
Analysis Batch: 423113

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	1	30

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-422775/112
Matrix: Water
Analysis Batch: 422775

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
	Result	Qualifier							
Nitrate as N	0.050	U	0.050		mg/L			02/24/16 17:53	1

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TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122233-1
SDG: KPS161

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

Lab Sample ID: MB 680-422775/34
Matrix: Water
Analysis Batch: 422775

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Nitrate as N	0.050	U	0.050		mg/L			02/24/16 15:53	1

Lab Sample ID: MB 680-422775/83
Matrix: Water
Analysis Batch: 422775

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Nitrate as N	0.050	U	0.050		mg/L			02/24/16 17:16	1

Lab Sample ID: LCS 680-422775/113
Matrix: Water
Analysis Batch: 422775

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	1.00	0.977		mg/L		98	90 - 110
Nitrite as N	0.500	0.481		mg/L		96	90 - 110

Lab Sample ID: LCS 680-422775/37
Matrix: Water
Analysis Batch: 422775

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	1.00	1.04		mg/L		104	90 - 110
Nitrite as N	0.500	0.514		mg/L		103	90 - 110

Lab Sample ID: LCS 680-422775/84
Matrix: Water
Analysis Batch: 422775

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	1.00	1.08		mg/L		108	90 - 110
Nitrite as N	0.500	0.517		mg/L		103	90 - 110

Lab Sample ID: LLCS 680-422775/15
Matrix: Water
Analysis Batch: 422775

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

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	0.0500	0.0452	J	mg/L		90	50 - 150
Nitrite as N	0.0250	0.0243	J	mg/L		97	50 - 150

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122233-1
SDG: KPS161

Method: 375.4 - Sulfate

Lab Sample ID: MB 680-423114/2
Matrix: Water
Analysis Batch: 423114

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Sulfate	5.0	U	5.0		mg/L			02/25/16 17:00	1

Lab Sample ID: LCS 680-423114/1
Matrix: Water
Analysis Batch: 423114

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	21.6		mg/L		108	75 - 125

Lab Sample ID: LCSD 680-423114/5
Matrix: Water
Analysis Batch: 423114

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	20.9		mg/L		104	75 - 125	3	30

Method: 415.1 - DOC

Lab Sample ID: MB 160-239463/4
Matrix: Water
Analysis Batch: 239463

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Dissolved Organic Carbon	1.0	U	1.0		mg/L			03/07/16 17:18	1

Lab Sample ID: LCS 160-239463/5
Matrix: Water
Analysis Batch: 239463

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	10.0	9.76		mg/L		98	90 - 110

Method: 415.1 - TOC

Lab Sample ID: MB 160-239410/4
Matrix: Water
Analysis Batch: 239410

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Total Organic Carbon	1.0	U	1.0		mg/L			03/04/16 15:36	1

Lab Sample ID: LCS 160-239410/5
Matrix: Water
Analysis Batch: 239410

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	10.0	9.65		mg/L		96	90 - 110

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QC Association Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122233-1
SDG: KPS161

GC/MS VOA

Analysis Batch: 423692

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122233-1	GWE-5D-0216	Total/NA	Water	8260B	
680-122233-2	CPA-MW-5D-0216	Total/NA	Water	8260B	
680-122233-3	GWE-1D-0216	Total/NA	Water	8260B	
680-122233-4	GWE-2D-0216	Total/NA	Water	8260B	
680-122233-8	1Q16 LTM Trip Blank #2	Total/NA	Water	8260B	
LCS 680-423692/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-423692/4	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-423692/7	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 423855

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122233-1 - DL	GWE-5D-0216	Total/NA	Water	8260B	
680-122233-6	GWE-3D-0216	Total/NA	Water	8260B	
LCS 680-423855/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-423855/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-423855/8	Method Blank	Total/NA	Water	8260B	

GC VOA

Analysis Batch: 289924

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122233-4	GWE-2D-0216	Total/NA	Water	RSK-175	
680-122233-6	GWE-3D-0216	Total/NA	Water	RSK-175	
LCS 480-289924/4	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 480-289924/5	Lab Control Sample Dup	Total/NA	Water	RSK-175	
MB 480-289924/3	Method Blank	Total/NA	Water	RSK-175	

Metals

Prep Batch: 423529

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122233-4	GWE-2D-0216	Total Recoverable	Water	3005A	
680-122233-5	GWE-2D-F(0.2)-0216	Dissolved	Water	3005A	
680-122233-6	GWE-3D-0216	Total Recoverable	Water	3005A	
680-122233-7	GWE-3D-F(0.2)-0216	Dissolved	Water	3005A	
LCS 680-423529/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-423529/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 423712

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122233-4	GWE-2D-0216	Total Recoverable	Water	6010C	423529
680-122233-5	GWE-2D-F(0.2)-0216	Dissolved	Water	6010C	423529
680-122233-6	GWE-3D-0216	Total Recoverable	Water	6010C	423529
680-122233-7	GWE-3D-F(0.2)-0216	Dissolved	Water	6010C	423529
LCS 680-423529/2-A	Lab Control Sample	Total Recoverable	Water	6010C	423529
MB 680-423529/1-A	Method Blank	Total Recoverable	Water	6010C	423529

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QC Association Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122233-1
SDG: KPS161

General Chemistry

Analysis Batch: 239410

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122233-4	GWE-2D-0216	Total/NA	Water	415.1	
680-122233-6	GWE-3D-0216	Total/NA	Water	415.1	
LCS 160-239410/5	Lab Control Sample	Total/NA	Water	415.1	
MB 160-239410/4	Method Blank	Total/NA	Water	415.1	

Analysis Batch: 239463

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122233-5	GWE-2D-F(0.2)-0216	Dissolved	Water	415.1	
680-122233-7	GWE-3D-F(0.2)-0216	Dissolved	Water	415.1	
LCS 160-239463/5	Lab Control Sample	Dissolved	Water	415.1	
MB 160-239463/4	Method Blank	Dissolved	Water	415.1	

Analysis Batch: 422775

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122233-4	GWE-2D-0216	Total/NA	Water	353.2	
680-122233-6	GWE-3D-0216	Total/NA	Water	353.2	
LCS 680-422775/113	Lab Control Sample	Total/NA	Water	353.2	
LCS 680-422775/37	Lab Control Sample	Total/NA	Water	353.2	
LCS 680-422775/84	Lab Control Sample	Total/NA	Water	353.2	
LLCS 680-422775/15	Lab Control Sample	Total/NA	Water	353.2	
MB 680-422775/112	Method Blank	Total/NA	Water	353.2	
MB 680-422775/34	Method Blank	Total/NA	Water	353.2	
MB 680-422775/83	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 423113

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122233-4	GWE-2D-0216	Total/NA	Water	325.2	
680-122233-6	GWE-3D-0216	Total/NA	Water	325.2	
LCS 680-423113/1	Lab Control Sample	Total/NA	Water	325.2	
LCSD 680-423113/4	Lab Control Sample Dup	Total/NA	Water	325.2	
MB 680-423113/39	Method Blank	Total/NA	Water	325.2	

Analysis Batch: 423114

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122233-4	GWE-2D-0216	Total/NA	Water	375.4	
680-122233-6	GWE-3D-0216	Total/NA	Water	375.4	
LCS 680-423114/1	Lab Control Sample	Total/NA	Water	375.4	
LCSD 680-423114/5	Lab Control Sample Dup	Total/NA	Water	375.4	
MB 680-423114/2	Method Blank	Total/NA	Water	375.4	

Analysis Batch: 423723

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122233-4	GWE-2D-0216	Total/NA	Water	310.1	
680-122233-6	GWE-3D-0216	Total/NA	Water	310.1	
LCS 680-423723/6	Lab Control Sample	Total/NA	Water	310.1	
LCSD 680-423723/32	Lab Control Sample Dup	Total/NA	Water	310.1	
MB 680-423723/5	Method Blank	Total/NA	Water	310.1	

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TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122233-1
SDG: KPS161

Client Sample ID: GWE-5D-0216

Lab Sample ID: 680-122233-1

Date Collected: 02/23/16 09:26

Matrix: Water

Date Received: 02/24/16 09:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B	DL	5	423855	03/04/16 12:40	DAS	TAL SAV
Total/NA	Analysis	8260B		1	423692	03/03/16 16:06	CEJ	TAL SAV

Client Sample ID: CPA-MW-5D-0216

Lab Sample ID: 680-122233-2

Date Collected: 02/23/16 10:47

Matrix: Water

Date Received: 02/24/16 09:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		20	423692	03/03/16 17:59	CEJ	TAL SAV

Client Sample ID: GWE-1D-0216

Lab Sample ID: 680-122233-3

Date Collected: 02/23/16 13:37

Matrix: Water

Date Received: 02/24/16 09:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	423692	03/03/16 16:29	CEJ	TAL SAV

Client Sample ID: GWE-2D-0216

Lab Sample ID: 680-122233-4

Date Collected: 02/23/16 15:00

Matrix: Water

Date Received: 02/24/16 09:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	423692	03/03/16 16:51	CEJ	TAL SAV
Total/NA	Analysis	RSK-175		1	289924	03/07/16 12:52	JMO	TAL BUF
Total Recoverable	Prep	3005A			423529	03/02/16 08:47	CRW	TAL SAV
Total Recoverable	Analysis	6010C		1	423712	03/02/16 22:51	BWR	TAL SAV
Total/NA	Analysis	310.1		1	423723	03/02/16 14:42	KLD	TAL SAV
Total/NA	Analysis	325.2		50	423113	02/26/16 09:34	JME	TAL SAV
Total/NA	Analysis	353.2		1	422775	02/24/16 17:56	GRX	TAL SAV
Total/NA	Analysis	375.4		50	423114	02/26/16 10:06	JME	TAL SAV
Total/NA	Analysis	415.1		1	239410	03/04/16 18:00	JCB	TAL SL

Client Sample ID: GWE-2D-F(0.2)-0216

Lab Sample ID: 680-122233-5

Date Collected: 02/23/16 15:00

Matrix: Water

Date Received: 02/24/16 09:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			423529	03/02/16 08:47	CRW	TAL SAV
Dissolved	Analysis	6010C		1	423712	03/02/16 22:56	BWR	TAL SAV
Dissolved	Analysis	415.1		1	239463	03/07/16 19:40	JCB	TAL SL

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Lab Chronicle

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122233-1
SDG: KPS161

Client Sample ID: GWE-3D-0216

Lab Sample ID: 680-122233-6

Date Collected: 02/23/16 15:56

Matrix: Water

Date Received: 02/24/16 09:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10	423855	03/04/16 13:00	DAS	TAL SAV
Total/NA	Analysis	RSK-175		1	289924	03/07/16 14:20	JMO	TAL BUF
Total Recoverable	Prep	3005A			423529	03/02/16 08:47	CRW	TAL SAV
Total Recoverable	Analysis	6010C		1	423712	03/02/16 23:01	BWR	TAL SAV
Total/NA	Analysis	310.1		1	423723	03/02/16 14:51	KLD	TAL SAV
Total/NA	Analysis	325.2		50	423113	02/26/16 09:34	JME	TAL SAV
Total/NA	Analysis	353.2		1	422775	02/24/16 17:59	GRX	TAL SAV
Total/NA	Analysis	375.4		10	423114	02/26/16 09:31	JME	TAL SAV
Total/NA	Analysis	415.1		1	239410	03/04/16 18:16	JCB	TAL SL

Client Sample ID: GWE-3D-F(0.2)-0216

Lab Sample ID: 680-122233-7

Date Collected: 02/23/16 15:56

Matrix: Water

Date Received: 02/24/16 09:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			423529	03/02/16 08:47	CRW	TAL SAV
Dissolved	Analysis	6010C		1	423712	03/02/16 23:06	BWR	TAL SAV
Dissolved	Analysis	415.1		1	239463	03/07/16 19:52	JCB	TAL SL

Client Sample ID: 1Q16 LTM Trip Blank #2

Lab Sample ID: 680-122233-8

Date Collected: 02/23/16 00:00

Matrix: Water

Date Received: 02/24/16 09:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	423692	03/03/16 11:59	CEJ	TAL SAV

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

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

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

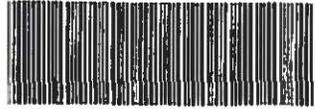
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TestAmerica Savannah

Savannah, GA 31404
phone 912.354.7858 fax

Regulatory Program: DW NPDES RCRA Other: Emily White

TestAmerica Laboratories, Inc.

Client Contact Golder Associates Inc. 820 South Main Street St. Charles, MO 63301 (636) 724-9191 Phone (636) 724-9323 FAX Project Name: <u>616 LTM GW Sampling-1403345</u> Site: <u>Solutia WG Krummrich Facility</u> P O # 42447936		Project Manager: Amanda Derhake Tel/Fax: 636-724-9191 Analysis Turnaround Time <input checked="" type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below <u>Standard</u> <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Site Contact: <u>Emily White</u> Date: <u>02/23/16</u> Lab Contact: Michele Kersey Carrier: FedEx COC No: _____ of _____ COCs Sampler: <u>S. Dicenzo</u> For Lab Use Only: Walk-in Client: _____ Lab Sampling: _____ Job / SDG No.: _____															
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 8260	Total Fe/Mn by 6010C	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Dissolved Gases by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 8010C	DOC by 415.1	<u>SVD CS by 2270</u>	Sample Specific Notes:
GWE-5D-0216		02/23/16	0926	G	W	14	N	3	1	1	1	3	2	3					2 coolers
GWE-5D-F(0.2)-0216			0926			4	Y									1	3		
CPA-MW-5D-0216			1047			16	N	3	1	1	1	3	2	3			2		
CPA-MW-5D-F(0.2)-0216			1047			4	Y									1	3		
GWE-1D-0216			1337			14	N	3	1	1	1	3	2	3					
GWE-1D-F(0.2)-0216			1337			4	Y									1	3		
GWE-2D-0216			1500			14	N	3	1	1	1	3	2	3					
GWE-2D-F(0.2)-0216			1500			4	Y									1	3		
GWE-3D-0216			1556			14	N	3	1	1	1	3	2	3					
GWE-3D-F(0.2)-0216			1556			4	Y									1	3		
1Q16 LTM Trip Blank #2						2	N	2											



680-122233 Chain of Custody

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

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return to Client Disposal by Lab Archive for _____ Months

Special Instructions/QC Requirements & Comments:
 VOC headspace upon sampling: Yes/No
680-122233

Custody Seals Intact: Yes No
 Custody Seal No.: 672749 / 672750 Cooler Temp (°C): Obs'd: 1.6 Cor'd: 2.0 Therm ID No.: _____

Relinquished by: <u>[Signature]</u>	Company: <u>Golder</u>	Date/Time: <u>02/23/16/17H</u>	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: <u>[Signature]</u>	Company: <u>TA</u>	Date/Time: <u>2/24/16 0929</u>

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-122233-1

SDG Number: KPS161

Login Number: 122233

List Number: 1

Creator: Kicklighter, Marilyn D

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?	N/A	
There are no discrepancies between the containers received and the COC.	True	one cooler not received that was shipped
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	

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Handwritten signature: AMP
3/11/16

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-122233-1

SDG Number: KPS161

Login Number: 122233

List Number: 3

Creator: Conway, Curtis R

List Source: TestAmerica Buffalo

List Creation: 03/04/16 05:03 PM

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is 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 sample IDs on the containers 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	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	False	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

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*AWD
3/11/16*

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-122233-1

SDG Number: KPS161

Login Number: 122233

List Number: 2

Creator: Clarke, Jill C

List Source: TestAmerica St. Louis

List Creation: 02/26/16 12:55 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
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	1.3
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?	False	
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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Handwritten: AWB
3/11/16

Certification Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122233-1
SDG: KPS161

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

Laboratory: TestAmerica Buffalo

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

* Certification renewal pending - certification considered valid.

AWD 3/11/16
TestAmerica Savannah

Certification Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122233-1
SDG: KPS161

Laboratory: TestAmerica Buffalo (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0686	07-06-16
California	State Program	9	1169CA	09-30-17
Connecticut	State Program	1	PH-0568	09-30-16
Florida	NELAP	4	E87672	06-30-16
Georgia	State Program	4	N/A	03-31-16 *
Georgia	State Program	4	956	03-31-16 *
Illinois	NELAP	5	200003	09-30-16
Iowa	State Program	7	374	03-01-17
Kansas	NELAP	7	E-10187	05-31-16 *
Kentucky (DW)	State Program	4	90029	12-31-16
Kentucky (UST)	State Program	4	30	03-31-16 *
Kentucky (WW)	State Program	4	90029	12-31-16
Louisiana	NELAP	6	02031	06-30-16
Maine	State Program	1	NY00044	12-04-16
Maryland	State Program	3	294	03-31-16 *
Massachusetts	State Program	1	M-NY044	06-30-16
Michigan	State Program	5	9937	03-31-16 *
Minnesota	NELAP	5	036-999-337	12-31-16
New Hampshire	NELAP Secondary AB	1	2337	11-17-16
New Jersey	NELAP	2	NY455	06-30-16
New York	NELAP	2	10026	03-31-16 *
North Dakota	State Program	8	R-176	03-31-16 *
Oklahoma	State Program	6	9421	08-31-16
Oregon	NELAP	10	NY200003	06-09-16
Pennsylvania	NELAP	3	68-00281	07-31-16
Rhode Island	State Program	1	LAO00328	12-30-16
Tennessee	State Program	4	TN02970	03-31-16 *
Texas	NELAP	6	T104704412-15-6	07-31-16
USDA	Federal		P330-11-00386	11-26-17
Virginia	NELAP	3	460185	09-14-16
Washington	State Program	10	C784	02-10-17
West Virginia DEP	State Program	3	252	09-30-16
Wisconsin	State Program	5	998310390	08-31-16

Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-16
California	ELAP	9	2886	03-31-16 *
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-16
Illinois	NELAP	5	003757	11-30-16
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	05-31-16
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-10-16 *
Louisiana	NELAP	6	04080	06-30-16
Louisiana (DW)	NELAP	6	LA160008	12-31-16
Maryland	State Program	3	310	09-30-16

* Certification renewal pending - certification considered valid.

Handwritten: PWD 5/11/16
TestAmerica Savannah

Certification Summary

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122233-1
 SDG: KPS161

Laboratory: TestAmerica St. Louis (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Missouri	State Program	7	780	06-30-16
Nevada	State Program	9	MO000542016-1	07-31-16
New Jersey	NELAP	2	MO002	06-30-16
New York	NELAP	2	11616	03-31-16 *
North Dakota	State Program	8	R207	06-30-16
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-16
Pennsylvania	NELAP	3	68-00540	02-28-17 *
South Carolina	State Program	4	85002001	06-30-16
Texas	NELAP	6	T104704193-15-9	07-31-16
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542015-7	07-31-16
Virginia	NELAP	3	460230	06-14-16
Washington	State Program	10	C592	08-30-16
West Virginia DEP	State Program	3	381	08-31-16



* Certification renewal pending - certification considered valid.

AND 3/11/16
 TestAmerica Savannah

SDG KPS162

Sample Results from:

**BSA-MW-5D
BSA-MW-4D
CPA-MW-3D
BSA-MW-2D**



Level IV Data Validation Summary
Solutia Inc., W.G. Krummrich, Sauget, Illinois
1Q16 Long-Term Monitoring Program

Company Name: Golder Associates
Project Name: WGK-1Q16 LTM
Reviewer: A. Derhake
Laboratory: TestAmerica
SDG#: KPS162
Matrix: Water

Project Manager: A. Derhake
Project Number: 140-3345
Sample Date: February 2016

Analytical Method: VOC (8260B), SVOC (8270C), 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: BSA-MW-5D-0216, BSA-MW-5D-F(0.2)-0216, BSA-MW-4D-0216, BSA-MW-4D-F(0.2)-0216, BSA-MW-2D-0216, BSA-MW-2D-F(0.2)-0216, CPA-MW-3D-0216, CPA-MW-3D-0216-AD, CPA-MW-3D-F(0.2)-0216, and 1Q16 LTM Trip Blank #3

Table with 4 columns: Field Information, YES, NO, NA. Rows include 'a) Sampling dates noted?' and 'b) Does the laboratory narrative indicate deficiencies?' with corresponding checkboxes.

Comments:

VOC: Surrogate recovery for 1Q16 LTM Trip Blank #3 was outside the upper control limits, no qualification was required as the sample did not contain any target analytes. No re-extraction and/or re-analysis was performed. Calibration check for vinyl chloride was outside of 20%; however, calibration was within 20% for all target analytes. Samples BSA-MW-5D-0216, and BSA-MW-4D-0216, BSA-MW-2D-0216 required dilution prior to analysis, reporting limits were adjusted accordingly.

SVOC: 4-chloroaniline exceeded recovery low for the MS and MSD of sample BSA-MW-5D-0216 in batch 423818.

Dissolved Gases: Samples BSA-MW-5D-0216, BSA-MW-2D-0216, and CPA-MW-3D-0216 were diluted to bring the concentration of target analytes within calibration range. Elevated reporting limits are provided

Metals: No deficiencies noted.

Alkalinity: No deficiencies noted.

Chloride: Chloride exceeded recovery low for the MS and MSD of sample BSA-MW-2D-0216 associated with batch 423113. Samples BSA-MW-5D-0216, BSA-MW-4D-0216, BSA-MW-2D-0216, and CPA-MW-3D-0216, required dilution prior to analysis, reporting limits were adjusted accordingly.

Nitrate-Nitrite as Nitrogen: No deficiencies noted.

Sulfate: Samples BSA-MW-2D-0216 required dilution prior to analysis, reporting limits were adjusted accordingly.

TOC: Samples BSA-MW-5D-0216, BSA-MW-4D-0216, CPA-MW-3D-0216, and BSA-MW-2D-0216 required dilution prior to analysis, reporting limits were adjusted accordingly.

DOC: No deficiencies noted.

Table with 4 columns: Chain-of-Custody (COC), YES, NO, NA. Rows include 'a) Was the COC signed by both field and laboratory personnel?' and 'b) Were samples received in good condition?' with corresponding checkboxes.

Comments: Some samples were received at 1.8°C, 3.4°C, and 4.4°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/DFTPP 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: Analytes of interest met calibration standards.

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: 4-chloroaniline exceeded recovery low for the MS and MSD of sample BSA-MW-5D-0216 in batch 423818. Data was no qualified on MS/MSD 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 sample CPA-MW-3D-0216-AD was submitted with SDG KPS162.**Additional Comments:** None**Qualifications:**

Quality Control Issue	Compound(s)	Qualifier	Samples Affected
Compounds analyzed at a dilution	Benzene, Chlorobenzene, 1,4-Dichlorobenzene, methane, Chloride, and Sulfate	D	BSA-MW-5D, BSA-MW-4D, BSA-MW-2D, and CPA-MW-3D

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: 680-122255-1
TestAmerica Sample Delivery Group: KPS162
Client Project/Site: 1Q16 LTM GW Sampling - 1403345

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

Attn: Mr. Jerry Rinaldi

Michele Kersey

Authorized for release by:
3/16/2016 5:44:34 PM

Michele Kersey, Project Manager I
(912)354-7858
michele.kersey@testamericainc.com

LINKS

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results through

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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.

*AWP
3/22/16*





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MWP
3/22/16

Case Narrative

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

Job ID: 680-122255-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Solutia Inc.

Project: 1Q16 LTM GW Sampling - 1403345

Report Number: 680-122255-1

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 2/25/2016 9:07 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 1.8° C, 3.4° C and 4.4° C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples BSA-MW-5D-0216 (680-122255-1), BSA-MW-4D-0216 (680-122255-3), CPA-MW-3D-0216 (680-122255-5), CPA-MW-3D-0216-AD (680-122255-7), BSA-MW-2D-0216 (680-122255-8) and 1Q16 LTM Trip Blank #3 (680-122255-10) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 03/04/2016, 03/07/2016 and 03/08/2016.

Surrogate recovery for the following sample was outside the upper control limit: 1Q16 LTM Trip Blank #3 (680-122255-10). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Vinyl chloride is a calibration check compound and was outside of 20%; however, all target analytes were within 20%.

Samples BSA-MW-5D-0216 (680-122255-1)[5X], BSA-MW-4D-0216 (680-122255-3)[20X] and BSA-MW-2D-0216 (680-122255-8)[1000X] 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.

SEMIVOLATILE ORGANIC COMPOUNDS (AQUEOUS)

Samples BSA-MW-5D-0216 (680-122255-1), BSA-MW-4D-0216 (680-122255-3), CPA-MW-3D-0216 (680-122255-5), CPA-MW-3D-0216-AD (680-122255-7) and BSA-MW-2D-0216 (680-122255-8) were analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 03/01/2016 and analyzed on 03/04/2016.

4-Chloroaniline exceeded the recovery criteria low for the MS and MSD of sample BSA-MW-5D-0216 (680-122255-1) in batch 680-423818.

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

DISSOLVED GASES

Samples BSA-MW-5D-0216 (680-122255-1), BSA-MW-4D-0216 (680-122255-3), CPA-MW-3D-0216 (680-122255-5) and BSA-MW-2D-0216 (680-122255-8) were analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 03/09/2016.

The following samples was diluted to bring the concentration of target analytes within the calibration range: BSA-MW-5D-0216 (680-122255-1) and CPA-MW-3D-0216 (680-122255-5). Elevated reporting limits (RLs) are provided.

AWD
3/22/16

TestAmerica Savannah

Case Narrative

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

Job ID: 680-122255-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

The following sample was diluted to bring the concentration of target analytes within the calibration range: BSA-MW-2D-0216 (680-122255-8). Elevated reporting limits (RLs) are provided.

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

METALS (ICP)

Samples BSA-MW-5D-F(0.2)-0216 (680-122255-2), BSA-MW-4D-F(0.2)-0216 (680-122255-4), CPA-MW-3D-F(0.2)-0216 (680-122255-6) and BSA-MW-2D-F(0.2)-0216 (680-122255-9) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared and analyzed on 03/02/2016.

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

METALS (ICP)

Samples BSA-MW-5D-0216 (680-122255-1), BSA-MW-4D-0216 (680-122255-3), CPA-MW-3D-0216 (680-122255-5) and BSA-MW-2D-0216 (680-122255-8) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared and analyzed on 03/02/2016.

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

ALKALINITY

Samples BSA-MW-5D-0216 (680-122255-1), BSA-MW-4D-0216 (680-122255-3), CPA-MW-3D-0216 (680-122255-5) and BSA-MW-2D-0216 (680-122255-8) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 03/02/2016.

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

CHLORIDE

Samples BSA-MW-5D-0216 (680-122255-1), BSA-MW-4D-0216 (680-122255-3), CPA-MW-3D-0216 (680-122255-5) and BSA-MW-2D-0216 (680-122255-8) were analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 02/25/2016 and 02/26/2016.

Chloride exceeded the recovery criteria low for the MS and MSD of sample BSA-MW-2D-0216 (680-122255-8) in batch 680-423113.

Samples BSA-MW-5D-0216 (680-122255-1)[10X], BSA-MW-4D-0216 (680-122255-3)[5X], CPA-MW-3D-0216 (680-122255-5)[5X] and BSA-MW-2D-0216 (680-122255-8)[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 BSA-MW-5D-0216 (680-122255-1), BSA-MW-4D-0216 (680-122255-3), CPA-MW-3D-0216 (680-122255-5) and BSA-MW-2D-0216 (680-122255-8) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 02/25/2016.

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

SULFATE

Samples BSA-MW-5D-0216 (680-122255-1), BSA-MW-4D-0216 (680-122255-3), CPA-MW-3D-0216 (680-122255-5) and BSA-MW-2D-0216 (680-122255-8) were analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 02/26/2016.

Sample BSA-MW-2D-0216 (680-122255-8)[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.

TOTAL ORGANIC CARBON

AWD
3/22/16

TestAmerica Savannah

Case Narrative

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

Job ID: 680-122255-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

Samples BSA-MW-5D-0216 (680-122255-1), BSA-MW-4D-0216 (680-122255-3), CPA-MW-3D-0216 (680-122255-5) and BSA-MW-2D-0216 (680-122255-8) were analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 03/04/2016.

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

DISSOLVED ORGANIC CARBON (DOC)

Samples BSA-MW-5D-F(0.2)-0216 (680-122255-2), BSA-MW-4D-F(0.2)-0216 (680-122255-4), CPA-MW-3D-F(0.2)-0216 (680-122255-6) and BSA-MW-2D-F(0.2)-0216 (680-122255-9) were analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 03/07/2016.

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



AWB
3/22/16

Sample Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-122255-1	BSA-MW-5D-0216	Water	02/24/16 10:22	02/25/16 09:07
680-122255-2	BSA-MW-5D-F(0.2)-0216	Water	02/24/16 10:22	02/25/16 09:07
680-122255-3	BSA-MW-4D-0216	Water	02/24/16 12:15	02/25/16 09:07
680-122255-4	BSA-MW-4D-F(0.2)-0216	Water	02/24/16 12:15	02/25/16 09:07
680-122255-5	CPA-MW-3D-0216	Water	02/24/16 13:56	02/25/16 09:07
680-122255-6	CPA-MW-3D-F(0.2)-0216	Water	02/24/16 13:56	02/25/16 09:07
680-122255-7	CPA-MW-3D-0216-AD	Water	02/24/16 13:56	02/25/16 09:07
680-122255-8	BSA-MW-2D-0216	Water	02/24/16 15:08	02/25/16 09:07
680-122255-9	BSA-MW-2D-F(0.2)-0216	Water	02/24/16 15:08	02/25/16 09:07
680-122255-10	1Q16 LTM Trip Blank #3	Water	02/24/16 00:00	02/25/16 09:07



Awp
3/22/16
TestAmerica Savannah

Method Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-12255-1
SDG: KPS162

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 PEN
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 SL
415.1	DOC	MCAWW	TAL SL

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 PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001
TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

AWP
3/22/16
TestAmerica Savannah

Definitions/Glossary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
X	Surrogate is outside control limits

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.

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)

MWP
3/22/16
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

Client Sample ID: BSA-MW-5D-0216

Lab Sample ID: 680-122255-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	130	D	5.0		ug/L	5		8260B	Total/NA
Chlorobenzene	230	D	5.0		ug/L	5		8260B	Total/NA
Methane	3600	D	20		ug/L	20		RSK-175	Total/NA
Ethane	27		1.0		ug/L	1		RSK-175	Total/NA
Iron	11		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.28		0.010		mg/L	1		6010C	Total Recoverable
Chloride	270	D	10		mg/L	10		325.2	Total/NA
Total Organic Carbon	7.4		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	630		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	39		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: BSA-MW-5D-F(0.2)-0216

Lab Sample ID: 680-122255-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	11		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.27		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	7.9		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: BSA-MW-4D-0216

Lab Sample ID: 680-122255-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	24	D	20		ug/L	20		8260B	Total/NA
Chlorobenzene	2000	D	20		ug/L	20		8260B	Total/NA
1,4-Dichlorobenzene	81	D	20		ug/L	20		8260B	Total/NA
1,4-Dioxane	15		9.8		ug/L	1		8270D	Total/NA
2-Chlorophenol	14		9.8		ug/L	1		8270D	Total/NA
Methane	380		1.0		ug/L	1		RSK-175	Total/NA
Ethane	6.6		1.0		ug/L	1		RSK-175	Total/NA
Iron	7.2		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.53		0.010		mg/L	1		6010C	Total Recoverable
Chloride	140	D	5.0		mg/L	5		325.2	Total/NA
Total Organic Carbon	3.4		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	640		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	36		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: BSA-MW-4D-F(0.2)-0216

Lab Sample ID: 680-122255-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	7.4		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.55		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	3.4		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: CPA-MW-3D-0216

Lab Sample ID: 680-122255-5

This Detection Summary does not include radiochemical test results.

AWD
3/22/16
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

Client Sample ID: CPA-MW-3D-0216 (Continued)

Lab Sample ID: 680-122255-5

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	2.1		1.0		ug/L	1		8260B	Total/NA
Methane	12000	D	25		ug/L	25		RSK-175	Total/NA
Ethane	25		1.0		ug/L	1		RSK-175	Total/NA
Iron	14		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.73		0.010		mg/L	1		6010C	Total Recoverable
Chloride	230	D	5.0		mg/L	5		325.2	Total/NA
Total Organic Carbon	6.7		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	650		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: CPA-MW-3D-F(0.2)-0216

Lab Sample ID: 680-122255-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	14		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.73		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	6.8		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: CPA-MW-3D-0216-AD

Lab Sample ID: 680-122255-7

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	1.8		1.0		ug/L	1		8260B	Total/NA

Client Sample ID: BSA-MW-2D-0216

Lab Sample ID: 680-122255-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	41000	D	1000		ug/L	1000		8260B	Total/NA
1,4-Dioxane	21		9.8		ug/L	1		8270D	Total/NA
Methane	14000	D	25		ug/L	25		RSK-175	Total/NA
Ethane	16		1.0		ug/L	1		RSK-175	Total/NA
Iron	5.3		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.71		0.010		mg/L	1		6010C	Total Recoverable
Chloride	180	D	5.0		mg/L	5		325.2	Total/NA
Total Organic Carbon	7.8		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	760		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	43		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: BSA-MW-2D-F(0.2)-0216

Lab Sample ID: 680-122255-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	5.2		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.70		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	7.6		1.0		mg/L	1		415.1	Dissolved

This Detection Summary does not include radiochemical test results.

AUP
3/22/16
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

Client Sample ID: 1Q16 LTM Trip Blank #3

Lab Sample ID: 680-122255-10

No Detections.

- 1
- 2
- 3
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This Detection Summary does not include radiochemical test results.

AWP
3/22/16
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

Client Sample ID: BSA-MW-5D-0216

Lab Sample ID: 680-122255-1

Date Collected: 02/24/16 10:22

Matrix: Water

Date Received: 02/25/16 09:07

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	130	D	5.0		ug/L			03/04/16 17:07	5
Chlorobenzene	230	D	5.0		ug/L			03/04/16 17:07	5
1,2-Dichlorobenzene	5.0	U	5.0		ug/L			03/04/16 17:07	5
1,3-Dichlorobenzene	5.0	U	5.0		ug/L			03/04/16 17:07	5
1,4-Dichlorobenzene	5.0	U	5.0		ug/L			03/04/16 17:07	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		70 - 130		03/04/16 17:07	5
1,2-Dichloroethane-d4 (Surr)	124		70 - 130		03/04/16 17:07	5
Dibromofluoromethane (Surr)	115		70 - 130		03/04/16 17:07	5
4-Bromofluorobenzene (Surr)	96		70 - 130		03/04/16 17:07	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		03/01/16 17:21	03/04/16 00:26	1
1,4-Dioxane	9.8	U	9.8		ug/L		03/01/16 17:21	03/04/16 00:26	1
2-Chlorophenol	9.8	U	9.8		ug/L		03/01/16 17:21	03/04/16 00:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	89		39 - 124	03/01/16 17:21	03/04/16 00:26	1
2-Fluorobiphenyl	71		32 - 113	03/01/16 17:21	03/04/16 00:26	1
2-Fluorophenol	60		26 - 109	03/01/16 17:21	03/04/16 00:26	1
Terphenyl-d14	75		10 - 126	03/01/16 17:21	03/04/16 00:26	1
Phenol-d5	62		27 - 110	03/01/16 17:21	03/04/16 00:26	1
Nitrobenzene-d5	69		32 - 118	03/01/16 17:21	03/04/16 00:26	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	3600	D	20		ug/L			03/09/16 16:47	20
Ethane	27		1.0		ug/L			03/09/16 14:28	1
Ethylene	1.0	U	1.0		ug/L			03/09/16 14:28	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	11		0.050		mg/L		03/02/16 08:47	03/02/16 22:05	1
Manganese	0.28		0.010		mg/L		03/02/16 08:47	03/02/16 22:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	270	D	10		mg/L			02/26/16 09:19	10
Nitrate as N	0.050	U	0.050		mg/L			02/25/16 15:23	1
Sulfate	5.0	U	5.0		mg/L			02/26/16 08:31	1
Total Organic Carbon	7.4		1.0		mg/L			03/04/16 18:32	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	630		5.0		mg/L			03/02/16 15:10	1
Carbon Dioxide, Free	39		5.0		mg/L			03/02/16 15:10	1

AWP
3/22/16
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
 SDG: KPS162

Client Sample ID: BSA-MW-5D-F(0.2)-0216

Lab Sample ID: 680-122255-2

Date Collected: 02/24/16 10:22

Matrix: Water

Date Received: 02/25/16 09:07

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	11		0.050		mg/L		03/02/16 08:47	03/02/16 22:10	1
Manganese, Dissolved	0.27		0.010		mg/L		03/02/16 08:47	03/02/16 22:10	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	7.9		1.0		mg/L			03/07/16 20:05	1



AWP
 3/22/16
 TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

Client Sample ID: BSA-MW-4D-0216

Lab Sample ID: 680-122255-3

Date Collected: 02/24/16 12:15

Matrix: Water

Date Received: 02/25/16 09:07

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	24	B	20		ug/L			03/04/16 17:49	20
Chlorobenzene	2000	B	20		ug/L			03/04/16 17:49	20
1,2-Dichlorobenzene	20	U	20		ug/L			03/04/16 17:49	20
1,3-Dichlorobenzene	20	U	20		ug/L			03/04/16 17:49	20
1,4-Dichlorobenzene	81	D	20		ug/L			03/04/16 17:49	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		70 - 130		03/04/16 17:49	20
1,2-Dichloroethane-d4 (Surr)	118		70 - 130		03/04/16 17:49	20
Dibromofluoromethane (Surr)	111		70 - 130		03/04/16 17:49	20
4-Bromofluorobenzene (Surr)	96		70 - 130		03/04/16 17:49	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		03/01/16 17:21	03/04/16 22:52	1
1,4-Dioxane	15		9.8		ug/L		03/01/16 17:21	03/04/16 22:52	1
2-Chlorophenol	14		9.8		ug/L		03/01/16 17:21	03/04/16 22:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	69		39 - 124	03/01/16 17:21	03/04/16 22:52	1
2-Fluorobiphenyl	58		32 - 113	03/01/16 17:21	03/04/16 22:52	1
2-Fluorophenol	44		26 - 109	03/01/16 17:21	03/04/16 22:52	1
Terphenyl-d14	41		10 - 126	03/01/16 17:21	03/04/16 22:52	1
Phenol-d5	55		27 - 110	03/01/16 17:21	03/04/16 22:52	1
Nitrobenzene-d5	63		32 - 118	03/01/16 17:21	03/04/16 22:52	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	380		1.0		ug/L			03/09/16 14:38	1
Ethane	6.6		1.0		ug/L			03/09/16 14:38	1
Ethylene	1.0	U	1.0		ug/L			03/09/16 14:38	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	7.2		0.050		mg/L		03/02/16 08:47	03/02/16 22:15	1
Manganese	0.53		0.010		mg/L		03/02/16 08:47	03/02/16 22:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	140	D	5.0		mg/L			02/26/16 09:19	5
Nitrate as N	0.050	U	0.050		mg/L			02/25/16 15:29	1
Sulfate	5.0	U	5.0		mg/L			02/26/16 08:31	1
Total Organic Carbon	3.4		1.0		mg/L			03/04/16 18:48	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	640		5.0		mg/L			03/02/16 15:35	1
Carbon Dioxide, Free	36		5.0		mg/L			03/02/16 15:35	1

AWP
3/22/16
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
 SDG: KPS162

Client Sample ID: BSA-MW-4D-F(0.2)-0216

Lab Sample ID: 680-122255-4

Date Collected: 02/24/16 12:15

Matrix: Water

Date Received: 02/25/16 09:07

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	7.4		0.050		mg/L		03/02/16 08:47	03/02/16 21:40	1
Manganese, Dissolved	0.55		0.010		mg/L		03/02/16 08:47	03/02/16 21:40	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	3.4		1.0		mg/L			03/07/16 20:19	1



MWD
3/22/16

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

Client Sample ID: CPA-MW-3D-0216

Lab Sample ID: 680-122255-5

Date Collected: 02/24/16 13:56

Matrix: Water

Date Received: 02/25/16 09:07

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			03/07/16 15:41	1
Chlorobenzene	100		1.0		ug/L			03/07/16 15:41	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			03/07/16 15:41	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			03/07/16 15:41	1
1,4-Dichlorobenzene	2.1		1.0		ug/L			03/07/16 15:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	117		70 - 130		03/07/16 15:41	1
1,2-Dichloroethane-d4 (Surr)	102		70 - 130		03/07/16 15:41	1
Dibromofluoromethane (Surr)	119		70 - 130		03/07/16 15:41	1
4-Bromofluorobenzene (Surr)	105		70 - 130		03/07/16 15:41	1

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		03/01/16 17:21	03/04/16 23:14	1
2-Chlorophenol	9.7	U	9.7		ug/L		03/01/16 17:21	03/04/16 23:14	1
4-Chloroaniline	19	U	19		ug/L		03/01/16 17:21	03/04/16 23:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	69		39 - 124	03/01/16 17:21	03/04/16 23:14	1
2-Fluorobiphenyl	61		32 - 113	03/01/16 17:21	03/04/16 23:14	1
2-Fluorophenol	57		26 - 109	03/01/16 17:21	03/04/16 23:14	1
Terphenyl-d14	62		10 - 126	03/01/16 17:21	03/04/16 23:14	1
Phenol-d5	66		27 - 110	03/01/16 17:21	03/04/16 23:14	1
Nitrobenzene-d5	73		32 - 118	03/01/16 17:21	03/04/16 23:14	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	12000	U	25		ug/L			03/09/16 16:57	25
Ethane	25		1.0		ug/L			03/09/16 14:49	1
Ethylene	1.0	U	1.0		ug/L			03/09/16 14:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	14		0.050		mg/L		03/02/16 08:47	03/02/16 22:21	1
Manganese	0.73		0.010		mg/L		03/02/16 08:47	03/02/16 22:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	230	U	5.0		mg/L			02/26/16 08:37	5
Nitrate as N	0.050	U	0.050		mg/L			02/25/16 15:31	1
Sulfate	5.0	U	5.0		mg/L			02/26/16 08:31	1
Total Organic Carbon	6.7		1.0		mg/L			03/04/16 19:04	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	650		5.0		mg/L			03/02/16 15:47	1
Carbon Dioxide, Free	45		5.0		mg/L			03/02/16 15:47	1

AWD
3/22/16
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
 SDG: KPS162

Client Sample ID: CPA-MW-3D-F(0.2)-0216

Lab Sample ID: 680-122255-6

Date Collected: 02/24/16 13:56

Matrix: Water

Date Received: 02/25/16 09:07

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	14		0.050		mg/L		03/02/16 08:47	03/02/16 22:36	1
Manganese, Dissolved	0.73		0.010		mg/L		03/02/16 08:47	03/02/16 22:36	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	6.8		1.0		mg/L			03/07/16 20:33	1



AWD
3/22/16
 TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

Client Sample ID: CPA-MW-3D-0216-AD

Lab Sample ID: 680-122255-7

Date Collected: 02/24/16 13:56

Matrix: Water

Date Received: 02/25/16 09:07

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			03/08/16 11:29	1
Chlorobenzene	100		1.0		ug/L			03/08/16 11:29	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			03/08/16 11:29	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			03/08/16 11:29	1
1,4-Dichlorobenzene	1.8		1.0		ug/L			03/08/16 11:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		70 - 130		03/08/16 11:29	1
1,2-Dichloroethane-d4 (Surr)	95		70 - 130		03/08/16 11:29	1
Dibromofluoromethane (Surr)	95		70 - 130		03/08/16 11:29	1
4-Bromofluorobenzene (Surr)	96		70 - 130		03/08/16 11:29	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		03/01/16 17:21	03/04/16 23:37	1
2-Chlorophenol	9.9	U	9.9		ug/L		03/01/16 17:21	03/04/16 23:37	1
4-Chloroaniline	20	U	20		ug/L		03/01/16 17:21	03/04/16 23:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	71		39 - 124	03/01/16 17:21	03/04/16 23:37	1
2-Fluorobiphenyl	57		32 - 113	03/01/16 17:21	03/04/16 23:37	1
2-Fluorophenol	44		26 - 109	03/01/16 17:21	03/04/16 23:37	1
Terphenyl-d14	50		10 - 126	03/01/16 17:21	03/04/16 23:37	1
Phenol-d5	57		27 - 110	03/01/16 17:21	03/04/16 23:37	1
Nitrobenzene-d5	63		32 - 118	03/01/16 17:21	03/04/16 23:37	1

AWD
3/22/16
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

Client Sample ID: BSA-MW-2D-0216

Lab Sample ID: 680-122255-8

Date Collected: 02/24/16 15:08

Matrix: Water

Date Received: 02/25/16 09:07

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	41000	D	1000		ug/L			03/04/16 19:35	1000
Chlorobenzene	1000	U	1000		ug/L			03/04/16 19:35	1000
1,2-Dichlorobenzene	1000	U	1000		ug/L			03/04/16 19:35	1000
1,3-Dichlorobenzene	1000	U	1000		ug/L			03/04/16 19:35	1000
1,4-Dichlorobenzene	1000	U	1000		ug/L			03/04/16 19:35	1000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		70 - 130		03/04/16 19:35	1000
1,2-Dichloroethane-d4 (Surr)	103		70 - 130		03/04/16 19:35	1000
Dibromofluoromethane (Surr)	99		70 - 130		03/04/16 19:35	1000
4-Bromofluorobenzene (Surr)	97		70 - 130		03/04/16 19:35	1000

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		03/01/16 17:21	03/04/16 23:59	1
1,4-Dioxane	21		9.8		ug/L		03/01/16 17:21	03/04/16 23:59	1
2-Chlorophenol	9.8	U	9.8		ug/L		03/01/16 17:21	03/04/16 23:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	75		39 - 124	03/01/16 17:21	03/04/16 23:59	1
2-Fluorobiphenyl	65		32 - 113	03/01/16 17:21	03/04/16 23:59	1
2-Fluorophenol	60		26 - 109	03/01/16 17:21	03/04/16 23:59	1
Terphenyl-d14	56		10 - 126	03/01/16 17:21	03/04/16 23:59	1
Phenol-d5	71		27 - 110	03/01/16 17:21	03/04/16 23:59	1
Nitrobenzene-d5	82		32 - 118	03/01/16 17:21	03/04/16 23:59	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	14000	D	25		ug/L			03/09/16 18:12	25
Ethane	16		1.0		ug/L			03/09/16 14:59	1
Ethylene	1.0	U	1.0		ug/L			03/09/16 14:59	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	5.3		0.050		mg/L		03/02/16 08:47	03/02/16 22:41	1
Manganese	0.71		0.010		mg/L		03/02/16 08:47	03/02/16 22:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	180	D	5.0		mg/L			02/25/16 17:59	5
Nitrate as N	0.050	U	0.050		mg/L			02/25/16 15:20	1
Sulfate	25	U	25		mg/L			02/26/16 09:03	5
Total Organic Carbon	7.8		1.0		mg/L			03/04/16 19:19	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	760		5.0		mg/L			03/02/16 16:00	1
Carbon Dioxide, Free	43		5.0		mg/L			03/02/16 16:00	1

AWP 3/22/16
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
 SDG: KPS162

Client Sample ID: BSA-MW-2D-F(0.2)-0216

Lab Sample ID: 680-122255-9

Date Collected: 02/24/16 15:08

Matrix: Water

Date Received: 02/25/16 09:07

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	5.2		0.050		mg/L		03/02/16 08:47	03/02/16 22:46	1
Manganese, Dissolved	0.70		0.010		mg/L		03/02/16 08:47	03/02/16 22:46	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	7.6		1.0		mg/L			03/07/16 20:47	1



AWD
3/22/16

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
 SDG: KPS162

Client Sample ID: 1Q16 LTM Trip Blank #3

Lab Sample ID: 680-122255-10

Date Collected: 02/24/16 00:00

Matrix: Water

Date Received: 02/25/16 09:07

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			03/04/16 15:42	1
Chlorobenzene	1.0	U	1.0		ug/L			03/04/16 15:42	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			03/04/16 15:42	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			03/04/16 15:42	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			03/04/16 15:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	134	X	70 - 130		03/04/16 15:42	1
1,2-Dichloroethane-d4 (Surr)	98		70 - 130		03/04/16 15:42	1
Dibromofluoromethane (Surr)	100		70 - 130		03/04/16 15:42	1
4-Bromofluorobenzene (Surr)	100		70 - 130		03/04/16 15:42	1



AWP
3/2/16

TestAmerica Savannah

Surrogate Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

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 (70-130)	12DCE (70-130)	DBFM (70-130)	BFB (70-130)
680-122255-1	BSA-MW-5D-0216	95	124	115	96
680-122255-1 MS	BSA-MW-5D-0216	96	97	94	95
680-122255-1 MSD	BSA-MW-5D-0216	95	100	95	98
680-122255-3	BSA-MW-4D-0216	95	118	111	96
680-122255-5	CPA-MW-3D-0216	117	102	119	105
680-122255-7	CPA-MW-3D-0216-AD	102	95	95	96
680-122255-8	BSA-MW-2D-0216	102	103	99	97
680-122255-10	1Q16 LTM Trip Blank #3	134 X	98	100	100
LCS 680-423928/5	Lab Control Sample	122	100	102	96
LCS 680-424083/4	Lab Control Sample	99	96	101	99
LCS 680-424217/3	Lab Control Sample	98	98	97	97
LCSD 680-423928/6	Lab Control Sample Dup	98	104	105	99
LCSD 680-424083/5	Lab Control Sample Dup	101	100	105	103
LCSD 680-424217/4	Lab Control Sample Dup	96	97	96	95
MB 680-423928/9	Method Blank	103	100	99	128
MB 680-424083/8	Method Blank	102	98	101	97
MB 680-424217/7	Method Blank	102	98	96	95

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)
680-122255-1	BSA-MW-5D-0216	89	71	60	75	62	69
680-122255-1 MS	BSA-MW-5D-0216	86	75	64	50	67	72
680-122255-1 MSD	BSA-MW-5D-0216	78	66	59	42	55	71
680-122255-3	BSA-MW-4D-0216	69	58	44	41	55	63
680-122255-5	CPA-MW-3D-0216	69	61	57	62	66	73
680-122255-7	CPA-MW-3D-0216-AD	71	57	44	50	57	63
680-122255-8	BSA-MW-2D-0216	75	65	60	56	71	82
LCS 680-423391/13-A	Lab Control Sample	86	78	62	91	69	75
MB 680-423391/12-A	Method Blank	108	79	69	95	71	74

Surrogate Legend

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

MWD
3/22/16

TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

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

Lab Sample ID: MB 680-423928/9
Matrix: Water
Analysis Batch: 423928

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			03/04/16 15:21	1
Chlorobenzene	1.0	U	1.0		ug/L			03/04/16 15:21	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			03/04/16 15:21	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			03/04/16 15:21	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			03/04/16 15:21	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	103		70 - 130		03/04/16 15:21	1
1,2-Dichloroethane-d4 (Surr)	100		70 - 130		03/04/16 15:21	1
Dibromofluoromethane (Surr)	99		70 - 130		03/04/16 15:21	1
4-Bromofluorobenzene (Surr)	128		70 - 130		03/04/16 15:21	1

Lab Sample ID: LCS 680-423928/5
Matrix: Water
Analysis Batch: 423928

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chlorobenzene	50.0	47.9		ug/L		96	80 - 120
1,2-Dichlorobenzene	50.0	47.9		ug/L		96	80 - 120
1,3-Dichlorobenzene	50.0	48.7		ug/L		97	80 - 120
1,4-Dichlorobenzene	50.0	47.9		ug/L		96	80 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	122		70 - 130
1,2-Dichloroethane-d4 (Surr)	100		70 - 130
Dibromofluoromethane (Surr)	102		70 - 130
4-Bromofluorobenzene (Surr)	96		70 - 130

Lab Sample ID: LCSD 680-423928/6
Matrix: Water
Analysis Batch: 423928

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	51.2		ug/L		102	73 - 131	0	30
Chlorobenzene	50.0	49.0		ug/L		98	80 - 120	2	20
1,2-Dichlorobenzene	50.0	47.0		ug/L		94	80 - 120	2	20
1,3-Dichlorobenzene	50.0	49.0		ug/L		98	80 - 120	1	20
1,4-Dichlorobenzene	50.0	47.8		ug/L		96	80 - 120	0	20

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	98		70 - 130
1,2-Dichloroethane-d4 (Surr)	104		70 - 130
Dibromofluoromethane (Surr)	105		70 - 130
4-Bromofluorobenzene (Surr)	99		70 - 130

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

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

Lab Sample ID: MB 680-424083/8
Matrix: Water
Analysis Batch: 424083

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			03/07/16 11:11	1
Chlorobenzene	1.0	U	1.0		ug/L			03/07/16 11:11	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			03/07/16 11:11	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			03/07/16 11:11	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			03/07/16 11:11	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		70 - 130		03/07/16 11:11	1
1,2-Dichloroethane-d4 (Surr)	98		70 - 130		03/07/16 11:11	1
Dibromofluoromethane (Surr)	101		70 - 130		03/07/16 11:11	1
4-Bromofluorobenzene (Surr)	97		70 - 130		03/07/16 11:11	1

Lab Sample ID: LCS 680-424083/4
Matrix: Water
Analysis Batch: 424083

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	48.8		ug/L		98	73 - 131
Chlorobenzene	50.0	48.7		ug/L		97	80 - 120
1,2-Dichlorobenzene	50.0	50.3		ug/L		101	80 - 120
1,3-Dichlorobenzene	50.0	51.7		ug/L		103	80 - 120
1,4-Dichlorobenzene	50.0	50.1		ug/L		100	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	99		70 - 130
1,2-Dichloroethane-d4 (Surr)	96		70 - 130
Dibromofluoromethane (Surr)	101		70 - 130
4-Bromofluorobenzene (Surr)	99		70 - 130

Lab Sample ID: LCSD 680-424083/5
Matrix: Water
Analysis Batch: 424083

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	51.0		ug/L		102	73 - 131	4	30
Chlorobenzene	50.0	50.3		ug/L		101	80 - 120	3	20
1,2-Dichlorobenzene	50.0	51.4		ug/L		103	80 - 120	2	20
1,3-Dichlorobenzene	50.0	52.5		ug/L		105	80 - 120	2	20
1,4-Dichlorobenzene	50.0	51.8		ug/L		104	80 - 120	3	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	101		70 - 130
1,2-Dichloroethane-d4 (Surr)	100		70 - 130
Dibromofluoromethane (Surr)	105		70 - 130
4-Bromofluorobenzene (Surr)	103		70 - 130


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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

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

Lab Sample ID: MB 680-424217/7
Matrix: Water
Analysis Batch: 424217

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			03/08/16 10:22	1
Chlorobenzene	1.0	U	1.0		ug/L			03/08/16 10:22	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			03/08/16 10:22	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			03/08/16 10:22	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			03/08/16 10:22	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	102		70 - 130		03/08/16 10:22	1
1,2-Dichloroethane-d4 (Surr)	98		70 - 130		03/08/16 10:22	1
Dibromofluoromethane (Surr)	96		70 - 130		03/08/16 10:22	1
4-Bromofluorobenzene (Surr)	95		70 - 130		03/08/16 10:22	1

Lab Sample ID: LCS 680-424217/3
Matrix: Water
Analysis Batch: 424217

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chlorobenzene	50.0	47.9		ug/L		96	80 - 120
1,2-Dichlorobenzene	50.0	46.9		ug/L		94	80 - 120
1,3-Dichlorobenzene	50.0	51.8		ug/L		104	80 - 120
1,4-Dichlorobenzene	50.0	47.3		ug/L		95	80 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	98		70 - 130
1,2-Dichloroethane-d4 (Surr)	98		70 - 130
Dibromofluoromethane (Surr)	97		70 - 130
4-Bromofluorobenzene (Surr)	97		70 - 130

Lab Sample ID: LCSD 680-424217/4
Matrix: Water
Analysis Batch: 424217

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
Chlorobenzene	50.0	46.9		ug/L		94	80 - 120	2	20
1,2-Dichlorobenzene	50.0	46.8		ug/L		94	80 - 120	0	20
1,3-Dichlorobenzene	50.0	51.4		ug/L		103	80 - 120	1	20
1,4-Dichlorobenzene	50.0	46.5		ug/L		93	80 - 120	2	20

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	96		70 - 130
1,2-Dichloroethane-d4 (Surr)	97		70 - 130
Dibromofluoromethane (Surr)	96		70 - 130
4-Bromofluorobenzene (Surr)	95		70 - 130

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

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

Lab Sample ID: 680-122255-1 MS
Matrix: Water
Analysis Batch: 424217

Client Sample ID: BSA-MW-5D-0216
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	130		250	350		ug/L		88	73 - 131
Chlorobenzene	230		250	452		ug/L		87	80 - 120
1,2-Dichlorobenzene	5.0	U	250	239		ug/L		95	80 - 120
1,3-Dichlorobenzene	5.0	U	250	261		ug/L		105	80 - 120
1,4-Dichlorobenzene	5.0	U	250	240		ug/L		96	80 - 120

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	96		70 - 130
1,2-Dichloroethane-d4 (Surr)	97		70 - 130
Dibromofluoromethane (Surr)	94		70 - 130
4-Bromofluorobenzene (Surr)	95		70 - 130

Lab Sample ID: 680-122255-1 MSD
Matrix: Water
Analysis Batch: 424217

Client Sample ID: BSA-MW-5D-0216
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	130		250	347		ug/L		87	73 - 131	1	30
Chlorobenzene	230		250	450		ug/L		86	80 - 120	1	20
1,2-Dichlorobenzene	5.0	U	250	246		ug/L		98	80 - 120	3	20
1,3-Dichlorobenzene	5.0	U	250	263		ug/L		105	80 - 120	1	20
1,4-Dichlorobenzene	5.0	U	250	244		ug/L		97	80 - 120	2	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	95		70 - 130
1,2-Dichloroethane-d4 (Surr)	100		70 - 130
Dibromofluoromethane (Surr)	95		70 - 130
4-Bromofluorobenzene (Surr)	98		70 - 130

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

Lab Sample ID: MB 680-423391/12-A
Matrix: Water
Analysis Batch: 423818

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 423391

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	10	U	10		ug/L		03/01/16 17:21	03/03/16 23:37	1
1,4-Dioxane	10	U	10		ug/L		03/01/16 17:21	03/03/16 23:37	1
2-Chlorophenol	10	U	10		ug/L		03/01/16 17:21	03/03/16 23:37	1
4-Chloroaniline	20	U	20		ug/L		03/01/16 17:21	03/03/16 23:37	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	108		39 - 124	03/01/16 17:21	03/03/16 23:37	1
2-Fluorobiphenyl	79		32 - 113	03/01/16 17:21	03/03/16 23:37	1
2-Fluorophenol	69		26 - 109	03/01/16 17:21	03/03/16 23:37	1
Terphenyl-d14	95		10 - 126	03/01/16 17:21	03/03/16 23:37	1
Phenol-d5	71		27 - 110	03/01/16 17:21	03/03/16 23:37	1

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

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

Lab Sample ID: MB 680-423391/12-A
Matrix: Water
Analysis Batch: 423818

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 423391

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Nitrobenzene-d5	74		32 - 118	03/01/16 17:21	03/03/16 23:37	1

Lab Sample ID: LCS 680-423391/13-A
Matrix: Water
Analysis Batch: 423818

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 423391

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1,4-Dioxane	100	50.9		ug/L		51	22 - 130
2-Chlorophenol	100	71.7		ug/L		72	39 - 130
4-Chloroaniline	100	63.1		ug/L		63	42 - 130

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
2,4,6-Tribromophenol	86		39 - 124
2-Fluorobiphenyl	78		32 - 113
2-Fluorophenol	62		26 - 109
Terphenyl-d14	91		10 - 126
Phenol-d5	69		27 - 110
Nitrobenzene-d5	75		32 - 118

Lab Sample ID: 680-122255-1 MS
Matrix: Water
Analysis Batch: 423818

Client Sample ID: BSA-MW-5D-0216
Prep Type: Total/NA
Prep Batch: 423391

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
1,4-Dioxane	9.8	U	98.8	53.9		ug/L		55	22 - 130
2-Chlorophenol	9.8	U	98.8	74.6		ug/L		73	39 - 130
4-Chloroaniline	42	F1	98.8	69.1	F1	ug/L		28	42 - 130

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
2,4,6-Tribromophenol	86		39 - 124
2-Fluorobiphenyl	75		32 - 113
2-Fluorophenol	64		26 - 109
Terphenyl-d14	50		10 - 126
Phenol-d5	67		27 - 110
Nitrobenzene-d5	72		32 - 118

Lab Sample ID: 680-122255-1 MSD
Matrix: Water
Analysis Batch: 423818

Client Sample ID: BSA-MW-5D-0216
Prep Type: Total/NA
Prep Batch: 423391

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	
										RPD	Limit
1,2,4-Trichlorobenzene	9.8	U	96.9	55.8		ug/L		58	33 - 130	5	50
1,4-Dioxane	9.8	U	96.9	49.4		ug/L		51	22 - 130	9	50
2-Chlorophenol	9.8	U	96.9	69.4		ug/L		69	39 - 130	7	50
4-Chloroaniline	42	F1	96.9	53.4	F1	ug/L		12	42 - 130	26	50

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

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

Lab Sample ID: 680-122255-1 MSD
Matrix: Water
Analysis Batch: 423818

Client Sample ID: BSA-MW-5D-0216
Prep Type: Total/NA
Prep Batch: 423391

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
2,4,6-Tribromophenol	78		39 - 124
2-Fluorobiphenyl	66		32 - 113
2-Fluorophenol	59		26 - 109
Terphenyl-d14	42		10 - 126
Phenol-d5	55		27 - 110
Nitrobenzene-d5	71		32 - 118

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 400-296768/2
Matrix: Water
Analysis Batch: 296768

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Methane	1.0	U	1.0		ug/L			03/09/16 10:44	1
Ethane	1.0	U	1.0		ug/L			03/09/16 10:44	1
Ethylene	1.0	U	1.0		ug/L			03/09/16 10:44	1

Lab Sample ID: LCS 400-296768/3
Matrix: Water
Analysis Batch: 296768

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

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Methane	169	171		ug/L		101	85 - 115
Ethane	321	329		ug/L		103	85 - 115
Ethylene	299	300		ug/L		100	85 - 115

Lab Sample ID: LCSD 400-296768/4
Matrix: Water
Analysis Batch: 296768

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

Analyte	Spike Added	LCSD LCSD		Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
		Result	Qualifier						
Methane	169	173		ug/L		102	85 - 115	1	20
Ethane	321	333		ug/L		104	85 - 115	1	20
Ethylene	299	304		ug/L		101	85 - 115	1	20

Lab Sample ID: MB 400-296858/2
Matrix: Water
Analysis Batch: 296858

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Methane	1.0	U	1.0		ug/L			03/09/16 17:41	1
Ethane	1.0	U	1.0		ug/L			03/09/16 17:41	1
Ethylene	1.0	U	1.0		ug/L			03/09/16 17:41	1

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

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

Lab Sample ID: LCS 400-296858/3
Matrix: Water
Analysis Batch: 296858

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane	169	161		ug/L		95	85 - 115
Ethane	321	309		ug/L		96	85 - 115
Ethylene	299	293		ug/L		98	85 - 115

Lab Sample ID: LCSD 400-296858/4
Matrix: Water
Analysis Batch: 296858

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	169	160		ug/L		94	85 - 115	0	20
Ethane	321	311		ug/L		97	85 - 115	1	20
Ethylene	299	297		ug/L		99	85 - 115	1	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-423529/1-A
Matrix: Water
Analysis Batch: 423712

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 423529

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.050	U	0.050		mg/L		03/02/16 08:47	03/02/16 21:20	1
Iron, Dissolved	0.050	U	0.050		mg/L		03/02/16 08:47	03/02/16 21:20	1
Manganese	0.010	U	0.010		mg/L		03/02/16 08:47	03/02/16 21:20	1
Manganese, Dissolved	0.010	U	0.010		mg/L		03/02/16 08:47	03/02/16 21:20	1

Lab Sample ID: LCS 680-423529/2-A
Matrix: Water
Analysis Batch: 423712

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 423529

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	5.00	5.05		mg/L		101	80 - 120
Iron, Dissolved	5.00	5.05		mg/L		101	80 - 120
Manganese	0.500	0.510		mg/L		102	80 - 120
Manganese, Dissolved	0.500	0.510		mg/L		102	80 - 120

Lab Sample ID: 680-122255-4 MS
Matrix: Water
Analysis Batch: 423712

Client Sample ID: BSA-MW-4D-F(0.2)-0216
Prep Type: Dissolved
Prep Batch: 423529

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	7.4		5.00	12.3		mg/L		97	75 - 125
Iron, Dissolved	7.4		5.00	12.3		mg/L		97	75 - 125
Manganese	0.55		0.500	1.04		mg/L		99	75 - 125
Manganese, Dissolved	0.55		0.500	1.04		mg/L		99	75 - 125

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 680-122255-4 MSD
Matrix: Water
Analysis Batch: 423712

Client Sample ID: BSA-MW-4D-F(0.2)-0216
Prep Type: Dissolved
Prep Batch: 423529

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec. RPD		
				Result	Qualifier				Limits	RPD	Limit
Iron	7.4		5.00	12.3		mg/L		98	75 - 125	0	20
Iron, Dissolved	7.4		5.00	12.3		mg/L		98	75 - 125	0	20
Manganese	0.55		0.500	1.05		mg/L		100	75 - 125	0	20
Manganese, Dissolved	0.55		0.500	1.05		mg/L		100	75 - 125	0	20

Method: 310.1 - Alkalinity

Lab Sample ID: MB 680-423723/5
Matrix: Water
Analysis Batch: 423723

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

Analyte	MB MB		RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Alkalinity	5.0	U	5.0		mg/L			03/02/16 14:04	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			03/02/16 14:04	1

Lab Sample ID: LCS 680-423723/6
Matrix: Water
Analysis Batch: 423723

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

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. RPD	
		Result	Qualifier				Limits	Limit
Alkalinity	250	269		mg/L		108	80 - 120	

Lab Sample ID: LCSD 680-423723/32
Matrix: Water
Analysis Batch: 423723

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

Analyte	Spike Added	LCSD LCSD		Unit	D	%Rec	%Rec. RPD		
		Result	Qualifier				Limits	RPD	Limit
Alkalinity	250	272		mg/L		109	80 - 120	1	30

Lab Sample ID: 680-122255-1 DU
Matrix: Water
Analysis Batch: 423723

Client Sample ID: BSA-MW-5D-0216
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU DU		Unit	D	RPD	Limit
			Result	Qualifier				
Alkalinity	630		621		mg/L		2	30
Carbon Dioxide, Free	39		30.3		mg/L		26	30

Method: 325.2 - Chloride

Lab Sample ID: MB 680-423113/39
Matrix: Water
Analysis Batch: 423113

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	1.0	U	1.0		mg/L			02/26/16 09:09	1

AWD 3/22/16
TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

Method: 325.2 - Chloride (Continued)

Lab Sample ID: LCS 680-423113/1
Matrix: Water
Analysis Batch: 423113

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	25.9		mg/L		104	85 - 115

Lab Sample ID: LCSD 680-423113/4
Matrix: Water
Analysis Batch: 423113

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	1	30

Lab Sample ID: 680-122255-8 MS
Matrix: Water
Analysis Batch: 423113

Client Sample ID: BSA-MW-2D-0216
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	180		25.0	197	4	mg/L		69	85 - 115

Lab Sample ID: 680-122255-8 MSD
Matrix: Water
Analysis Batch: 423113

Client Sample ID: BSA-MW-2D-0216
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	180		25.0	198	4	mg/L		72	85 - 115	0	30

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-422938/13
Matrix: Water
Analysis Batch: 422938

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			02/25/16 15:15	1

Lab Sample ID: LCS 680-422938/16
Matrix: Water
Analysis Batch: 422938

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	0.512		mg/L		102	75 - 125
Nitrate Nitrite as N	1.00	0.978		mg/L		98	90 - 110
Nitrite as N	0.500	0.466		mg/L		93	90 - 110

Lab Sample ID: 680-122255-8 MS
Matrix: Water
Analysis Batch: 422938

Client Sample ID: BSA-MW-2D-0216
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	0.555		mg/L		111	75 - 125
Nitrate Nitrite as N	0.050	U	1.00	1.07		mg/L		107	90 - 110
Nitrite as N	0.050	U	0.500	0.515		mg/L		103	90 - 110

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TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

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

Lab Sample ID: 680-122255-8 MSD
Matrix: Water
Analysis Batch: 422938

Client Sample ID: BSA-MW-2D-0216
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	0.555		mg/L		111	75 - 125	0	30
Nitrate Nitrite as N	0.050	U	1.00	1.07		mg/L		107	90 - 110	0	10
Nitrite as N	0.050	U	0.500	0.515		mg/L		103	90 - 110	0	10

Lab Sample ID: 680-122255-1 DU
Matrix: Water
Analysis Batch: 422938

Client Sample ID: BSA-MW-5D-0216
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 680-423114/2
Matrix: Water
Analysis Batch: 423114

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			02/25/16 17:00	1

Lab Sample ID: LCS 680-423114/1
Matrix: Water
Analysis Batch: 423114

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	21.6		mg/L		108	75 - 125

Lab Sample ID: LCSD 680-423114/5
Matrix: Water
Analysis Batch: 423114

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	20.9		mg/L		104	75 - 125	3	30

Lab Sample ID: MB 680-423115/19
Matrix: Water
Analysis Batch: 423115

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			02/26/16 09:33	1

Lab Sample ID: LCS 680-423115/15
Matrix: Water
Analysis Batch: 423115

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	19.6		mg/L		98	75 - 125

AWD 3/22/16
TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

Method: 375.4 - Sulfate (Continued)

Lab Sample ID: LCSD 680-423115/18
Matrix: Water
Analysis Batch: 423115

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	21.1		mg/L		105	75 - 125	7	30

Lab Sample ID: 680-122255-8 MS
Matrix: Water
Analysis Batch: 423115

Client Sample ID: BSA-MW-2D-0216
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	25	U	20.0	25	U	mg/L		105	75 - 125

Lab Sample ID: 680-122255-8 MSD
Matrix: Water
Analysis Batch: 423115

Client Sample ID: BSA-MW-2D-0216
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	25	U	20.0	25	U	mg/L		105	75 - 125	0	30

Method: 415.1 - DOC

Lab Sample ID: MB 160-239463/4
Matrix: Water
Analysis Batch: 239463

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			03/07/16 17:18	1

Lab Sample ID: LCS 160-239463/5
Matrix: Water
Analysis Batch: 239463

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	10.0	9.76		mg/L		98	90 - 110

Method: 415.1 - TOC

Lab Sample ID: MB 160-239410/4
Matrix: Water
Analysis Batch: 239410

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			03/04/16 15:36	1

Lab Sample ID: LCS 160-239410/5
Matrix: Water
Analysis Batch: 239410

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	10.0	9.65		mg/L		96	90 - 110

AWD 3/22/16
TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

GC/MS VOA

Analysis Batch: 423928

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122255-1	BSA-MW-5D-0216	Total/NA	Water	8260B	
680-122255-3	BSA-MW-4D-0216	Total/NA	Water	8260B	
680-122255-8	BSA-MW-2D-0216	Total/NA	Water	8260B	
680-122255-10	1Q16 LTM Trip Blank #3	Total/NA	Water	8260B	
LCS 680-423928/5	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-423928/6	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-423928/9	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 424083

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122255-5	CPA-MW-3D-0216	Total/NA	Water	8260B	
LCS 680-424083/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-424083/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-424083/8	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 424217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122255-1 MS	BSA-MW-5D-0216	Total/NA	Water	8260B	
680-122255-1 MSD	BSA-MW-5D-0216	Total/NA	Water	8260B	
680-122255-7	CPA-MW-3D-0216-AD	Total/NA	Water	8260B	
LCS 680-424217/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-424217/4	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-424217/7	Method Blank	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 423391

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122255-1	BSA-MW-5D-0216	Total/NA	Water	3520C	
680-122255-1 MS	BSA-MW-5D-0216	Total/NA	Water	3520C	
680-122255-1 MSD	BSA-MW-5D-0216	Total/NA	Water	3520C	
680-122255-3	BSA-MW-4D-0216	Total/NA	Water	3520C	
680-122255-5	CPA-MW-3D-0216	Total/NA	Water	3520C	
680-122255-7	CPA-MW-3D-0216-AD	Total/NA	Water	3520C	
680-122255-8	BSA-MW-2D-0216	Total/NA	Water	3520C	
LCS 680-423391/13-A	Lab Control Sample	Total/NA	Water	3520C	
MB 680-423391/12-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 423818

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122255-1	BSA-MW-5D-0216	Total/NA	Water	8270D	423391
680-122255-1 MS	BSA-MW-5D-0216	Total/NA	Water	8270D	423391
680-122255-1 MSD	BSA-MW-5D-0216	Total/NA	Water	8270D	423391
LCS 680-423391/13-A	Lab Control Sample	Total/NA	Water	8270D	423391
MB 680-423391/12-A	Method Blank	Total/NA	Water	8270D	423391

Analysis Batch: 424002

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122255-3	BSA-MW-4D-0216	Total/NA	Water	8270D	423391
680-122255-5	CPA-MW-3D-0216	Total/NA	Water	8270D	423391

AWD 3/22/16
TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

GC/MS Semi VOA (Continued)

Analysis Batch: 424002 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122255-7	CPA-MW-3D-0216-AD	Total/NA	Water	8270D	423391
680-122255-8	BSA-MW-2D-0216	Total/NA	Water	8270D	423391

GC VOA

Analysis Batch: 296768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122255-1	BSA-MW-5D-0216	Total/NA	Water	RSK-175	
680-122255-1	BSA-MW-5D-0216	Total/NA	Water	RSK-175	
680-122255-3	BSA-MW-4D-0216	Total/NA	Water	RSK-175	
680-122255-5	CPA-MW-3D-0216	Total/NA	Water	RSK-175	
680-122255-5	CPA-MW-3D-0216	Total/NA	Water	RSK-175	
680-122255-8	BSA-MW-2D-0216	Total/NA	Water	RSK-175	
LCS 400-296768/3	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 400-296768/4	Lab Control Sample Dup	Total/NA	Water	RSK-175	
MB 400-296768/2	Method Blank	Total/NA	Water	RSK-175	

Analysis Batch: 296858

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122255-8	BSA-MW-2D-0216	Total/NA	Water	RSK-175	
LCS 400-296858/3	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 400-296858/4	Lab Control Sample Dup	Total/NA	Water	RSK-175	
MB 400-296858/2	Method Blank	Total/NA	Water	RSK-175	

Metals

Prep Batch: 423529

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122255-1	BSA-MW-5D-0216	Total Recoverable	Water	3005A	
680-122255-2	BSA-MW-5D-F(0.2)-0216	Dissolved	Water	3005A	
680-122255-3	BSA-MW-4D-0216	Total Recoverable	Water	3005A	
680-122255-4	BSA-MW-4D-F(0.2)-0216	Dissolved	Water	3005A	
680-122255-4 MS	BSA-MW-4D-F(0.2)-0216	Dissolved	Water	3005A	
680-122255-4 MSD	BSA-MW-4D-F(0.2)-0216	Dissolved	Water	3005A	
680-122255-5	CPA-MW-3D-0216	Total Recoverable	Water	3005A	
680-122255-6	CPA-MW-3D-F(0.2)-0216	Dissolved	Water	3005A	
680-122255-8	BSA-MW-2D-0216	Total Recoverable	Water	3005A	
680-122255-9	BSA-MW-2D-F(0.2)-0216	Dissolved	Water	3005A	
LCS 680-423529/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-423529/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 423712

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122255-1	BSA-MW-5D-0216	Total Recoverable	Water	6010C	423529
680-122255-2	BSA-MW-5D-F(0.2)-0216	Dissolved	Water	6010C	423529
680-122255-3	BSA-MW-4D-0216	Total Recoverable	Water	6010C	423529
680-122255-4	BSA-MW-4D-F(0.2)-0216	Dissolved	Water	6010C	423529
680-122255-4 MS	BSA-MW-4D-F(0.2)-0216	Dissolved	Water	6010C	423529
680-122255-4 MSD	BSA-MW-4D-F(0.2)-0216	Dissolved	Water	6010C	423529
680-122255-5	CPA-MW-3D-0216	Total Recoverable	Water	6010C	423529

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QC Association Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

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Metals (Continued)

Analysis Batch: 423712 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122255-6	CPA-MW-3D-F(0.2)-0216	Dissolved	Water	6010C	423529
680-122255-8	BSA-MW-2D-0216	Total Recoverable	Water	6010C	423529
680-122255-9	BSA-MW-2D-F(0.2)-0216	Dissolved	Water	6010C	423529
LCS 680-423529/2-A	Lab Control Sample	Total Recoverable	Water	6010C	423529
MB 680-423529/1-A	Method Blank	Total Recoverable	Water	6010C	423529

General Chemistry

Analysis Batch: 239410

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122255-1	BSA-MW-5D-0216	Total/NA	Water	415.1	
680-122255-3	BSA-MW-4D-0216	Total/NA	Water	415.1	
680-122255-5	CPA-MW-3D-0216	Total/NA	Water	415.1	
680-122255-8	BSA-MW-2D-0216	Total/NA	Water	415.1	
LCS 160-239410/5	Lab Control Sample	Total/NA	Water	415.1	
MB 160-239410/4	Method Blank	Total/NA	Water	415.1	

Analysis Batch: 239463

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122255-2	BSA-MW-5D-F(0.2)-0216	Dissolved	Water	415.1	
680-122255-4	BSA-MW-4D-F(0.2)-0216	Dissolved	Water	415.1	
680-122255-6	CPA-MW-3D-F(0.2)-0216	Dissolved	Water	415.1	
680-122255-9	BSA-MW-2D-F(0.2)-0216	Dissolved	Water	415.1	
LCS 160-239463/5	Lab Control Sample	Dissolved	Water	415.1	
MB 160-239463/4	Method Blank	Dissolved	Water	415.1	

Analysis Batch: 422938

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122255-1	BSA-MW-5D-0216	Total/NA	Water	353.2	
680-122255-1 DU	BSA-MW-5D-0216	Total/NA	Water	353.2	
680-122255-3	BSA-MW-4D-0216	Total/NA	Water	353.2	
680-122255-5	CPA-MW-3D-0216	Total/NA	Water	353.2	
680-122255-8	BSA-MW-2D-0216	Total/NA	Water	353.2	
680-122255-8 MS	BSA-MW-2D-0216	Total/NA	Water	353.2	
680-122255-8 MSD	BSA-MW-2D-0216	Total/NA	Water	353.2	
LCS 680-422938/16	Lab Control Sample	Total/NA	Water	353.2	
MB 680-422938/13	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 423113

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122255-1	BSA-MW-5D-0216	Total/NA	Water	325.2	
680-122255-3	BSA-MW-4D-0216	Total/NA	Water	325.2	
680-122255-5	CPA-MW-3D-0216	Total/NA	Water	325.2	
680-122255-8	BSA-MW-2D-0216	Total/NA	Water	325.2	
680-122255-8 MS	BSA-MW-2D-0216	Total/NA	Water	325.2	
680-122255-8 MSD	BSA-MW-2D-0216	Total/NA	Water	325.2	
LCS 680-423113/1	Lab Control Sample	Total/NA	Water	325.2	
LCSD 680-423113/4	Lab Control Sample Dup	Total/NA	Water	325.2	
MB 680-423113/39	Method Blank	Total/NA	Water	325.2	

AWD 3/22/16
TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

General Chemistry (Continued)

Analysis Batch: 423114

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122255-1	BSA-MW-5D-0216	Total/NA	Water	375.4	
680-122255-3	BSA-MW-4D-0216	Total/NA	Water	375.4	
LCS 680-423114/1	Lab Control Sample	Total/NA	Water	375.4	
LCSD 680-423114/5	Lab Control Sample Dup	Total/NA	Water	375.4	
MB 680-423114/2	Method Blank	Total/NA	Water	375.4	

Analysis Batch: 423115

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122255-5	CPA-MW-3D-0216	Total/NA	Water	375.4	
680-122255-8	BSA-MW-2D-0216	Total/NA	Water	375.4	
680-122255-8 MS	BSA-MW-2D-0216	Total/NA	Water	375.4	
680-122255-8 MSD	BSA-MW-2D-0216	Total/NA	Water	375.4	
LCS 680-423115/15	Lab Control Sample	Total/NA	Water	375.4	
LCSD 680-423115/18	Lab Control Sample Dup	Total/NA	Water	375.4	
MB 680-423115/19	Method Blank	Total/NA	Water	375.4	

Analysis Batch: 423723

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122255-1	BSA-MW-5D-0216	Total/NA	Water	310.1	
680-122255-1 DU	BSA-MW-5D-0216	Total/NA	Water	310.1	
680-122255-3	BSA-MW-4D-0216	Total/NA	Water	310.1	
680-122255-5	CPA-MW-3D-0216	Total/NA	Water	310.1	
680-122255-8	BSA-MW-2D-0216	Total/NA	Water	310.1	
LCS 680-423723/6	Lab Control Sample	Total/NA	Water	310.1	
LCSD 680-423723/32	Lab Control Sample Dup	Total/NA	Water	310.1	
MB 680-423723/5	Method Blank	Total/NA	Water	310.1	

PAVVO 3/22/16
TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

Client Sample ID: BSA-MW-5D-0216

Lab Sample ID: 680-122255-1

Date Collected: 02/24/16 10:22

Matrix: Water

Date Received: 02/25/16 09:07

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	423928	03/04/16 17:07	DAS	TAL SAV
Total/NA	Prep	3520C			423391	03/01/16 17:21	CEW	TAL SAV
Total/NA	Analysis	8270D		1	423818	03/04/16 00:26	JEM	TAL SAV
Total/NA	Analysis	RSK-175		1	296768	03/09/16 14:28	RM	TAL PEN
Total/NA	Analysis	RSK-175		20	296768	03/09/16 16:47	RM	TAL PEN
Total Recoverable	Prep	3005A			423529	03/02/16 08:47	CRW	TAL SAV
Total Recoverable	Analysis	6010C		1	423712	03/02/16 22:05	BWR	TAL SAV
Total/NA	Analysis	310.1		1	423723	03/02/16 15:10	KLD	TAL SAV
Total/NA	Analysis	325.2		10	423113	02/26/16 09:19	JME	TAL SAV
Total/NA	Analysis	353.2		1	422938	02/25/16 15:23	GRX	TAL SAV
Total/NA	Analysis	375.4		1	423114	02/26/16 08:31	JME	TAL SAV
Total/NA	Analysis	415.1		1	239410	03/04/16 18:32	JCB	TAL SL

Client Sample ID: BSA-MW-5D-F(0.2)-0216

Lab Sample ID: 680-122255-2

Date Collected: 02/24/16 10:22

Matrix: Water

Date Received: 02/25/16 09:07

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			423529	03/02/16 08:47	CRW	TAL SAV
Dissolved	Analysis	6010C		1	423712	03/02/16 22:10	BWR	TAL SAV
Dissolved	Analysis	415.1		1	239463	03/07/16 20:05	JCB	TAL SL

Client Sample ID: BSA-MW-4D-0216

Lab Sample ID: 680-122255-3

Date Collected: 02/24/16 12:15

Matrix: Water

Date Received: 02/25/16 09:07

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		20	423928	03/04/16 17:49	DAS	TAL SAV
Total/NA	Prep	3520C			423391	03/01/16 17:21	CEW	TAL SAV
Total/NA	Analysis	8270D		1	424002	03/04/16 22:52	JEM	TAL SAV
Total/NA	Analysis	RSK-175		1	296768	03/09/16 14:38	RM	TAL PEN
Total Recoverable	Prep	3005A			423529	03/02/16 08:47	CRW	TAL SAV
Total Recoverable	Analysis	6010C		1	423712	03/02/16 22:15	BWR	TAL SAV
Total/NA	Analysis	310.1		1	423723	03/02/16 15:35	KLD	TAL SAV
Total/NA	Analysis	325.2		5	423113	02/26/16 09:19	JME	TAL SAV
Total/NA	Analysis	353.2		1	422938	02/25/16 15:29	GRX	TAL SAV
Total/NA	Analysis	375.4		1	423114	02/26/16 08:31	JME	TAL SAV
Total/NA	Analysis	415.1		1	239410	03/04/16 18:48	JCB	TAL SL

AWO 3/22/16
TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

Client Sample ID: BSA-MW-4D-F(0.2)-0216

Lab Sample ID: 680-122255-4

Date Collected: 02/24/16 12:15

Matrix: Water

Date Received: 02/25/16 09:07

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			423529	03/02/16 08:47	CRW	TAL SAV
Dissolved	Analysis	6010C		1	423712	03/02/16 21:40	BWR	TAL SAV
Dissolved	Analysis	415.1		1	239463	03/07/16 20:19	JCB	TAL SL

Client Sample ID: CPA-MW-3D-0216

Lab Sample ID: 680-122255-5

Date Collected: 02/24/16 13:56

Matrix: Water

Date Received: 02/25/16 09:07

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	424083	03/07/16 15:41	CAR	TAL SAV
Total/NA	Prep	3520C			423391	03/01/16 17:21	CEW	TAL SAV
Total/NA	Analysis	8270D		1	424002	03/04/16 23:14	JEM	TAL SAV
Total/NA	Analysis	RSK-175		1	296768	03/09/16 14:49	RM	TAL PEN
Total/NA	Analysis	RSK-175		25	296768	03/09/16 16:57	RM	TAL PEN
Total Recoverable	Prep	3005A			423529	03/02/16 08:47	CRW	TAL SAV
Total Recoverable	Analysis	6010C		1	423712	03/02/16 22:21	BWR	TAL SAV
Total/NA	Analysis	310.1		1	423723	03/02/16 15:47	KLD	TAL SAV
Total/NA	Analysis	325.2		5	423113	02/26/16 08:37	JME	TAL SAV
Total/NA	Analysis	353.2		1	422938	02/25/16 15:31	GRX	TAL SAV
Total/NA	Analysis	375.4		1	423115	02/26/16 08:31	JME	TAL SAV
Total/NA	Analysis	415.1		1	239410	03/04/16 19:04	JCB	TAL SL

Client Sample ID: CPA-MW-3D-F(0.2)-0216

Lab Sample ID: 680-122255-6

Date Collected: 02/24/16 13:56

Matrix: Water

Date Received: 02/25/16 09:07

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			423529	03/02/16 08:47	CRW	TAL SAV
Dissolved	Analysis	6010C		1	423712	03/02/16 22:36	BWR	TAL SAV
Dissolved	Analysis	415.1		1	239463	03/07/16 20:33	JCB	TAL SL

Client Sample ID: CPA-MW-3D-0216-AD

Lab Sample ID: 680-122255-7

Date Collected: 02/24/16 13:56

Matrix: Water

Date Received: 02/25/16 09:07

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	424217	03/08/16 11:29	CEJ	TAL SAV
Total/NA	Prep	3520C			423391	03/01/16 17:21	CEW	TAL SAV
Total/NA	Analysis	8270D		1	424002	03/04/16 23:37	JEM	TAL SAV

AWD 3/22/16
TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

Client Sample ID: BSA-MW-2D-0216

Lab Sample ID: 680-122255-8

Date Collected: 02/24/16 15:08

Matrix: Water

Date Received: 02/25/16 09:07

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1000	423928	03/04/16 19:35	DAS	TAL SAV
Total/NA	Prep	3520C			423391	03/01/16 17:21	CEW	TAL SAV
Total/NA	Analysis	8270D		1	424002	03/04/16 23:59	JEM	TAL SAV
Total/NA	Analysis	RSK-175		1	296768	03/09/16 14:59	RM	TAL PEN
Total/NA	Analysis	RSK-175		25	296858	03/09/16 18:12	RM	TAL PEN
Total Recoverable	Prep	3005A			423529	03/02/16 08:47	CRW	TAL SAV
Total Recoverable	Analysis	6010C		1	423712	03/02/16 22:41	BWR	TAL SAV
Total/NA	Analysis	310.1		1	423723	03/02/16 16:00	KLD	TAL SAV
Total/NA	Analysis	325.2		5	423113	02/25/16 17:59	JME	TAL SAV
Total/NA	Analysis	353.2		1	422938	02/25/16 15:20	GRX	TAL SAV
Total/NA	Analysis	375.4		5	423115	02/26/16 09:03	JME	TAL SAV
Total/NA	Analysis	415.1		1	239410	03/04/16 19:19	JCB	TAL SL

Client Sample ID: BSA-MW-2D-F(0.2)-0216

Lab Sample ID: 680-122255-9

Date Collected: 02/24/16 15:08

Matrix: Water

Date Received: 02/25/16 09:07

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			423529	03/02/16 08:47	CRW	TAL SAV
Dissolved	Analysis	6010C		1	423712	03/02/16 22:46	BWR	TAL SAV
Dissolved	Analysis	415.1		1	239463	03/07/16 20:47	JCB	TAL SL

Client Sample ID: 1Q16 LTM Trip Blank #3

Lab Sample ID: 680-122255-10

Date Collected: 02/24/16 00:00

Matrix: Water

Date Received: 02/25/16 09:07

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	423928	03/04/16 15:42	DAS	TAL SAV

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

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

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

AWD 3/22/16
TestAmerica Savannah

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-122255-1

SDG Number: KPS162

Login Number: 122255

List Number: 1

Creator: White, Menica R

List Source: TestAmerica Savannah

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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



AWP
3/22/10

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-122255-1

SDG Number: KPS162

Login Number: 122255

List Number: 2

Creator: Clarke, Jill C

List Source: TestAmerica St. Louis

List Creation: 02/26/16 12:55 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
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	1.3
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?	False	
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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



AWP
3/22/16

Certification Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

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

Laboratory: TestAmerica Pensacola

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

* Certification renewal pending - certification considered valid.

AWD 3/22/16
TestAmerica Savannah

Certification Summary

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
 SDG: KPS162

Laboratory: TestAmerica Pensacola (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40150	01-31-16 *
Arizona	State Program	9	AZ0710	01-11-17
Arkansas DEQ	State Program	6	88-0689	09-01-16
Florida	NELAP	4	E81010	06-30-16
Georgia	State Program	4	N/A	06-30-16
Illinois	NELAP	5	200041	10-09-16
Iowa	State Program	7	367	07-31-16
Kansas	NELAP	7	E-10253	05-31-16 *
Kentucky (UST)	State Program	4	53	06-30-16
Kentucky (WW)	State Program	4	98030	12-31-16
Louisiana	NELAP	6	30976	06-30-16
Maryland	State Program	3	233	09-30-16
Massachusetts	State Program	1	M-FL094	06-30-16
Michigan	State Program	5	9912	06-30-16
New Jersey	NELAP	2	FL006	06-30-16
North Carolina (WW/SW)	State Program	4	314	12-31-16
Oklahoma	State Program	6	9810	08-31-16
Pennsylvania	NELAP	3	68-00467	01-31-17
Rhode Island	State Program	1	LAO00307	12-30-16
South Carolina	State Program	4	96026	06-30-16
Tennessee	State Program	4	TN02907	06-30-16
Texas	NELAP	6	T104704286-15-9	09-30-16
USDA	Federal		P330-13-00193	07-01-16
Virginia	NELAP	3	460166	06-14-16
West Virginia DEP	State Program	3	136	06-30-16

Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-16
California	ELAP	9	2886	03-31-16 *
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-16
Illinois	NELAP	5	003757	11-30-16
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	05-31-16
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-10-16 *
Louisiana	NELAP	6	04080	06-30-16
Louisiana (DW)	NELAP	6	LA160008	12-31-16
Maryland	State Program	3	310	09-30-16
Missouri	State Program	7	780	06-30-16
Nevada	State Program	9	MO000542016-1	07-31-16
New Jersey	NELAP	2	MO002	06-30-16
New York	NELAP	2	11616	03-31-16 *
North Dakota	State Program	8	R207	06-30-16
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-16
Pennsylvania	NELAP	3	68-00540	02-28-17 *

* Certification renewal pending - certification considered valid.

AWD 3/22/16
 TestAmerica Savannah



Certification Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122255-1
SDG: KPS162

Laboratory: TestAmerica St. Louis (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
South Carolina	State Program	4	85002001	06-30-16
Texas	NELAP	6	T104704193-15-9	07-31-16
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542015-7	07-31-16
Virginia	NELAP	3	460230	06-14-16
Washington	State Program	10	C592	08-30-16
West Virginia DEP	State Program	3	381	08-31-16



AWD 3/22/16
TestAmerica Savannah

SDG KPS163

Sample Results from:

**GWE-5D
CPA-MW-5D
GWE-1D**



Level IV Data Validation Summary
Solutia Inc., W.G. Krummrich, Sauget, Illinois
1Q16 Long-Term Monitoring Program

Company Name: Golder Associates
Project Name: WGK-1Q16 LTM
Reviewer: A. Derhake
Laboratory: TestAmerica
SDG#: KPS163
Matrix: Water

Project Manager: A. Derhake
Project Number: 140-3345
Sample Date: February 2016

Analytical Method: SVOC (8270C), 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-0216, GWE-5D-F(0.2)-0216, GWE-1D-0216, GWE-1D-F(0.2)-0216, CPA-MW-5D-0216, CPA-MW-5D-F(0.2)-0216

Field Information

YES NO NA

- a) Sampling dates noted? [X] [] []
b) Does the laboratory narrative indicate deficiencies? [X] [] []

Comments:

SVOC: No deficiencies noted.

Dissolved Gases: No deficiencies noted.

Metals: No deficiencies noted.

Alkalinity: No deficiencies noted.

Chloride: Samples GWE-5D-0216, CPA-MW-5D-0216, and GWE-1D-0216 required dilution prior to analysis, reporting limits were adjusted accordingly.

Nitrate-Nitrite as Nitrogen: No deficiencies noted.

Sulfate: Samples GWE-5D-0216, CPA-MW-5D-0216, and GWE-1D-0216 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? [X] [] []
b) Were samples received in good condition? [X] [] []

Comments: Samples were received at 1.8°C, outside the 4°C +/- 2°C criteria.

General

YES NO NA

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

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 DFTPP 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: None**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	Chloride and Sulfate	D	GWE-5D, CPA-MW-5D , GWE-1D
Analyzed outside of hold time	Nitrate	UJ	GWE-5D, CPA-MW-5D, GWE-1D

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: 680-122307-1

TestAmerica Sample Delivery Group: KPS163

Client Project/Site: 1Q16 LTM GW Sampling - 1403345

For:

Solutia Inc.

575 Maryville Centre Dr.

Saint Louis, Missouri 63141

Attn: Mr. Jerry Rinaldi

Michele Kersey

Authorized for release by:

3/16/2016 5:57:50 PM

Michele Kersey, Project Manager I

(912)354-7858

michele.kersey@testamericainc.com

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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.

*AWD
3/22/16*

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Handwritten signature: MWD
3/22/16

Case Narrative

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122307-1
SDG: KPS163

Job ID: 680-122307-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Solutia Inc.

Project: 1Q16 LTM GW Sampling - 1403345

Report Number: 680-122307-1

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 2/26/2016 9:25 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.8° C.

Receipt Exceptions

Method(s) 353.2: The following samples were received outside of the holding time for nitrate analysis: GWE-5D-0216 (680-122307-1), CPA-MW-5D-0216 (680-122307-3) and GWE-1D-0216 (680-122307-5). Per the client the lab is to proceed with the analysis.

SEMIVOLATILE ORGANIC COMPOUNDS (AQUEOUS)

Sample CPA-MW-5D-0216 (680-122307-3) was analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 03/01/2016 and analyzed on 03/05/2016.

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

DISSOLVED GASES

Samples GWE-5D-0216 (680-122307-1), CPA-MW-5D-0216 (680-122307-3) and GWE-1D-0216 (680-122307-5) were analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 03/08/2016.

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

METALS (ICP)

Samples GWE-5D-F(0.2)-0216 (680-122307-2), CPA-MW-5D-F(0.2)-0216 (680-122307-4) and GWE-1D-F(0.2)-0216 (680-122307-6) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared and analyzed on 03/02/2016.

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

METALS (ICP)

Samples GWE-5D-0216 (680-122307-1), CPA-MW-5D-0216 (680-122307-3) and GWE-1D-0216 (680-122307-5) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared and analyzed on 03/02/2016.

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

ALKALINITY

Samples GWE-5D-0216 (680-122307-1), CPA-MW-5D-0216 (680-122307-3) and GWE-1D-0216 (680-122307-5) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 03/02/2016.

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

MWP
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Case Narrative

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122307-1
SDG: KPS163

Job ID: 680-122307-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

CHLORIDE

Samples GWE-5D-0216 (680-122307-1), CPA-MW-5D-0216 (680-122307-3) and GWE-1D-0216 (680-122307-5) were analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 03/11/2016.

Samples GWE-5D-0216 (680-122307-1)[5X], CPA-MW-5D-0216 (680-122307-3)[5X] and GWE-1D-0216 (680-122307-5)[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.

NITRATE-NITRITE AS NITROGEN

Samples GWE-5D-0216 (680-122307-1), CPA-MW-5D-0216 (680-122307-3) and GWE-1D-0216 (680-122307-5) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 02/26/2016.

The following samples was received outside of holding time: GWE-5D-0216 (680-122307-1), CPA-MW-5D-0216 (680-122307-3) and GWE-1D-0216 (680-122307-5).

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

SULFATE

Samples GWE-5D-0216 (680-122307-1), CPA-MW-5D-0216 (680-122307-3) and GWE-1D-0216 (680-122307-5) were analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 03/09/2016.

Samples GWE-5D-0216 (680-122307-1)[50X], CPA-MW-5D-0216 (680-122307-3)[5X] and GWE-1D-0216 (680-122307-5)[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.

TOTAL ORGANIC CARBON

Samples GWE-5D-0216 (680-122307-1), CPA-MW-5D-0216 (680-122307-3) and GWE-1D-0216 (680-122307-5) were analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 03/08/2016.

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)-0216 (680-122307-2), CPA-MW-5D-F(0.2)-0216 (680-122307-4) and GWE-1D-F(0.2)-0216 (680-122307-6) were analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 03/07/2016.

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: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122307-1
SDG: KPS163

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-122307-1	GWE-5D-0216	Water	02/23/16 09:26	02/26/16 09:25
680-122307-2	GWE-5D-F(0.2)-0216	Water	02/23/16 09:26	02/26/16 09:25
680-122307-3	CPA-MW-5D-0216	Water	02/23/16 10:47	02/26/16 09:25
680-122307-4	CPA-MW-5D-F(0.2)-0216	Water	02/23/16 10:47	02/26/16 09:25
680-122307-5	GWE-1D-0216	Water	02/23/16 13:37	02/26/16 09:25
680-122307-6	GWE-1D-F(0.2)-0216	Water	02/23/16 13:37	02/26/16 09:25



MWP
3/22/16
TestAmerica Savannah

Method Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122307-1
SDG: KPS163

Method	Method Description	Protocol	Laboratory
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL PEN
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 SL
415.1	DOC	MCAWW	TAL SL

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 PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001
- TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858
- TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

MWD 3/22/16
TestAmerica Savannah

Definitions/Glossary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122307-1
SDG: KPS163

Qualifiers

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
H	Sample was prepped or analyzed beyond the specified holding time
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)

AWD 3/22/16
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122307-1
SDG: KPS163

Client Sample ID: GWE-5D-0216

Lab Sample ID: 680-122307-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methane	84		1.0		ug/L	1		RSK-175	Total/NA
Iron	16		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.44		0.010		mg/L	1		6010C	Total Recoverable
Chloride	110	D	5.0		mg/L	5		325.2	Total/NA
Sulfate	570	D	250		mg/L	50		375.4	Total/NA
Total Organic Carbon	2.4		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	22		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: GWE-5D-F(0.2)-0216

Lab Sample ID: 680-122307-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	15		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.42		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	2.6		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: CPA-MW-5D-0216

Lab Sample ID: 680-122307-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Chlorophenol	26		10		ug/L	1		8270D	Total/NA
Methane	210		1.0		ug/L	1		RSK-175	Total/NA
Ethane	7.2		1.0		ug/L	1		RSK-175	Total/NA
Iron	18		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.63		0.010		mg/L	1		6010C	Total Recoverable
Chloride	240	B	5.0		mg/L	5		325.2	Total/NA
Sulfate	65	B	25		mg/L	5		375.4	Total/NA
Total Organic Carbon	4.0		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	620		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-5D-F(0.2)-0216

Lab Sample ID: 680-122307-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	18		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.64		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	4.4		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: GWE-1D-0216

Lab Sample ID: 680-122307-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methane	35		1.0		ug/L	1		RSK-175	Total/NA
Iron	11		0.050		mg/L	1		6010C	Total Recoverable
Manganese	2.0		0.010		mg/L	1		6010C	Total Recoverable

This Detection Summary does not include radiochemical test results.

MWD 3/22/16
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122307-1
 SDG: KPS163

Client Sample ID: GWE-1D-0216 (Continued)

Lab Sample ID: 680-122307-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	71	2	2.0		mg/L	2		325.2	Total/NA
Sulfate	290	2	50		mg/L	10		375.4	Total/NA
Total Organic Carbon	4.7		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	510		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	30		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: GWE-1D-F(0.2)-0216

Lab Sample ID: 680-122307-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	11		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	2.0		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	4.7		1.0		mg/L	1		415.1	Dissolved

This Detection Summary does not include radiochemical test results.

AWD 5/22/16
 TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122307-1
 SDG: KPS163

Client Sample ID: GWE-5D-0216

Lab Sample ID: 680-122307-1

Date Collected: 02/23/16 09:26

Matrix: Water

Date Received: 02/26/16 09:25

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	84		1.0		ug/L			03/08/16 14:03	1
Ethane	1.0	U	1.0		ug/L			03/08/16 14:03	1
Ethylene	1.0	U	1.0		ug/L			03/08/16 14:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	16		0.050		mg/L		03/02/16 08:47	03/02/16 23:11	1
Manganese	0.44		0.010		mg/L		03/02/16 08:47	03/02/16 23:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	110	D	5.0		mg/L			03/11/16 12:13	5
Nitrate as N	0.050	U <i>MJ</i>	0.050		mg/L			02/26/16 15:59	1
Sulfate	570	D	250		mg/L			03/09/16 14:39	50
Total Organic Carbon	2.4		1.0		mg/L			03/08/16 18:54	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	350		5.0		mg/L			03/02/16 16:39	1
Carbon Dioxide, Free	22		5.0		mg/L			03/02/16 16:39	1

AWD 3/22/16
 TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122307-1
 SDG: KPS163

Client Sample ID: GWE-5D-F(0.2)-0216
 Date Collected: 02/23/16 09:26
 Date Received: 02/26/16 09:25

Lab Sample ID: 680-122307-2
 Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	15		0.050		mg/L		03/02/16 08:47	03/02/16 23:16	1
Manganese, Dissolved	0.42		0.010		mg/L		03/02/16 08:47	03/02/16 23:16	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	2.6		1.0		mg/L			03/07/16 21:40	1



AWD 3/22/16
 TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122307-1
SDG: KPS163

Client Sample ID: CPA-MW-5D-0216

Lab Sample ID: 680-122307-3

Date Collected: 02/23/16 10:47

Matrix: Water

Date Received: 02/26/16 09:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	10	U	10		ug/L		03/01/16 17:21	03/05/16 01:06	1
2-Chlorophenol	26		10		ug/L		03/01/16 17:21	03/05/16 01:06	1
4-Chloroaniline	20	U	20		ug/L		03/01/16 17:21	03/05/16 01:06	1

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	74		39 - 124				03/01/16 17:21	03/05/16 01:06	1
2-Fluorobiphenyl	65		32 - 113				03/01/16 17:21	03/05/16 01:06	1
2-Fluorophenol	57		26 - 109				03/01/16 17:21	03/05/16 01:06	1
Terphenyl-d14	70		10 - 126				03/01/16 17:21	03/05/16 01:06	1
Phenol-d5	69		27 - 110				03/01/16 17:21	03/05/16 01:06	1
Nitrobenzene-d5	74		32 - 118				03/01/16 17:21	03/05/16 01:06	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	210		1.0		ug/L			03/08/16 14:12	1
Ethane	7.2		1.0		ug/L			03/08/16 14:12	1
Ethylene	1.0	U	1.0		ug/L			03/08/16 14:12	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	18		0.050		mg/L		03/02/16 08:47	03/02/16 23:21	1
Manganese	0.63		0.010		mg/L		03/02/16 08:47	03/02/16 23:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	240	D	5.0		mg/L			03/11/16 11:59	5
Nitrate as N	0.050	U <i>HJ</i>	0.050		mg/L			02/26/16 16:00	1
Sulfate	65	D	25		mg/L			03/09/16 13:33	5
Total Organic Carbon	4.0		1.0		mg/L			03/08/16 19:11	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	620		5.0		mg/L			03/02/16 17:02	1
Carbon Dioxide, Free	59		5.0		mg/L			03/02/16 17:02	1

AWD 3/22/16
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122307-1
 SDG: KPS163

Client Sample ID: CPA-MW-5D-F(0.2)-0216
 Date Collected: 02/23/16 10:47
 Date Received: 02/26/16 09:25

Lab Sample ID: 680-122307-4
 Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	18		0.050		mg/L		03/02/16 08:47	03/02/16 23:36	1
Manganese, Dissolved	0.64		0.010		mg/L		03/02/16 08:47	03/02/16 23:36	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	4.4		1.0		mg/L			03/07/16 21:54	1



AWO 3/22/16
 TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122307-1
 SDG: KPS163

Client Sample ID: GWE-1D-0216
 Date Collected: 02/23/16 13:37
 Date Received: 02/26/16 09:25

Lab Sample ID: 680-122307-5
 Matrix: Water

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	35		1.0		ug/L			03/08/16 14:32	1
Ethane	1.0	U	1.0		ug/L			03/08/16 14:32	1
Ethylene	1.0	U	1.0		ug/L			03/08/16 14:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	11		0.050		mg/L		03/02/16 08:47	03/02/16 23:41	1
Manganese	2.0		0.010		mg/L		03/02/16 08:47	03/02/16 23:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	71	D	2.0		mg/L			03/11/16 11:57	2
Nitrate as N	0.050	U	0.050		mg/L			02/26/16 16:01	1
Sulfate	290	D	50		mg/L			03/09/16 13:33	10
Total Organic Carbon	4.7		1.0		mg/L			03/08/16 19:48	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	510		5.0		mg/L			03/02/16 17:13	1
Carbon Dioxide, Free	30		5.0		mg/L			03/02/16 17:13	1

AWO 3/22/16
 TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122307-1
 SDG: KPS163

Client Sample ID: GWE-1D-F(0.2)-0216
 Date Collected: 02/23/16 13:37
 Date Received: 02/26/16 09:25

Lab Sample ID: 680-122307-6
 Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	11		0.050		mg/L		03/02/16 08:47	03/02/16 23:46	1
Manganese, Dissolved	2.0		0.010		mg/L		03/02/16 08:47	03/02/16 23:46	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	4.7		1.0		mg/L			03/07/16 22:05	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

MWD 3/22/16
 TestAmerica Savannah

Surrogate Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122307-1
SDG: KPS163

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)
680-122307-3	CPA-MW-5D-0216	74	65	57	70	69	74

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: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122307-1
SDG: KPS163

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 400-296635/2
Matrix: Water
Analysis Batch: 296635

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
	Result	Qualifier							
Methane	1.0	U	1.0		ug/L			03/08/16 12:38	1
Ethane	1.0	U	1.0		ug/L			03/08/16 12:38	1
Ethylene	1.0	U	1.0		ug/L			03/08/16 12:38	1

Lab Sample ID: LCS 400-296635/3
Matrix: Water
Analysis Batch: 296635

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Methane	169	179		ug/L		106	85 - 115		
Ethane	321	343		ug/L		107	85 - 115		
Ethylene	299	315		ug/L		105	85 - 115		

Lab Sample ID: LCSD 400-296635/4
Matrix: Water
Analysis Batch: 296635

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Methane	169	183		ug/L		108	85 - 115	2	20
Ethane	321	351		ug/L		109	85 - 115	2	20
Ethylene	299	321		ug/L		107	85 - 115	2	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-423529/1-A
Matrix: Water
Analysis Batch: 423712

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 423529

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
	Result	Qualifier							
Iron	0.050	U	0.050		mg/L		03/02/16 08:47	03/02/16 21:20	1
Iron, Dissolved	0.050	U	0.050		mg/L		03/02/16 08:47	03/02/16 21:20	1
Manganese	0.010	U	0.010		mg/L		03/02/16 08:47	03/02/16 21:20	1
Manganese, Dissolved	0.010	U	0.010		mg/L		03/02/16 08:47	03/02/16 21:20	1

Lab Sample ID: LCS 680-423529/2-A
Matrix: Water
Analysis Batch: 423712

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 423529

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Iron	5.00	5.05		mg/L		101	80 - 120		
Iron, Dissolved	5.00	5.05		mg/L		101	80 - 120		
Manganese	0.500	0.510		mg/L		102	80 - 120		
Manganese, Dissolved	0.500	0.510		mg/L		102	80 - 120		

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122307-1
SDG: KPS163

Method: 310.1 - Alkalinity

Lab Sample ID: MB 680-423723/5
Matrix: Water
Analysis Batch: 423723

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

Analyte	MB MB		RL	RL	Unit	D	Prepared	Analyzed	DII Fac
	Result	Qualifier							
Alkalinity	5.0	U	5.0		mg/L			03/02/16 14:04	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			03/02/16 14:04	1

Lab Sample ID: LCS 680-423723/6
Matrix: Water
Analysis Batch: 423723

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
Alkalinity	250	269		mg/L		108	80 - 120		

Lab Sample ID: LCSD 680-423723/32
Matrix: Water
Analysis Batch: 423723

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	272		mg/L		109	80 - 120	1	30

Lab Sample ID: 680-122307-1 DU
Matrix: Water
Analysis Batch: 423723

Client Sample ID: GWE-5D-0216
Prep Type: Total/NA

Analyte	Sample Sample		DU Result	DU Qualifier	Unit	D	Prepared	Analyzed	RPD	
	Result	Qualifier							RPD	Limit
Alkalinity	350		371		mg/L				5	30
Carbon Dioxide, Free	22		18.9		mg/L				13	30

Method: 325.2 - Chloride

Lab Sample ID: MB 680-424791/2
Matrix: Water
Analysis Batch: 424791

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
	Result	Qualifier							
Chloride	1.0	U	1.0		mg/L			03/11/16 11:55	1

Lab Sample ID: LCS 680-424791/1
Matrix: Water
Analysis Batch: 424791

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
Chloride	25.0	26.3		mg/L		105	85 - 115		

Lab Sample ID: LCSD 680-424791/9
Matrix: Water
Analysis Batch: 424791

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	26.7		mg/L		107	85 - 115	2	30

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122307-1
SDG: KPS163

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-423143/13
Matrix: Water
Analysis Batch: 423143

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Nitrate as N	0.050	U	0.050		mg/L			02/26/16 15:42	1

Lab Sample ID: LCS 680-423143/16
Matrix: Water
Analysis Batch: 423143

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	0.504		mg/L		101	75 - 125
Nitrate Nitrite as N	1.00	1.01		mg/L		101	90 - 110
Nitrite as N	0.500	0.506		mg/L		101	90 - 110

Method: 375.4 - Sulfate

Lab Sample ID: MB 680-424485/2
Matrix: Water
Analysis Batch: 424485

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Sulfate	5.0	U	5.0		mg/L			03/09/16 12:14	1

Lab Sample ID: LCS 680-424485/1
Matrix: Water
Analysis Batch: 424485

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	22.0		mg/L		110	75 - 125

Lab Sample ID: LCSD 680-424485/7
Matrix: Water
Analysis Batch: 424485

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	22.0		mg/L		110	75 - 125	0	30

Method: 415.1 - DOC

Lab Sample ID: MB 160-239463/4
Matrix: Water
Analysis Batch: 239463

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Dissolved Organic Carbon	1.0	U	1.0		mg/L			03/07/16 17:18	1

Lab Sample ID: LCS 160-239463/5
Matrix: Water
Analysis Batch: 239463

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	10.0	9.76		mg/L		98	90 - 110

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122307-1
SDG: KPS163

Method: 415.1 - TOC

Lab Sample ID: MB 160-239751/4
Matrix: Water
Analysis Batch: 239751

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Total Organic Carbon	1.0	U	1.0		mg/L			03/08/16 15:29	1

Lab Sample ID: LCS 160-239751/5
Matrix: Water
Analysis Batch: 239751

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	10.0	9.62		mg/L		96	90 - 110

Lab Sample ID: 680-122307-3 MS
Matrix: Water
Analysis Batch: 239751

Client Sample ID: CPA-MW-5D-0216
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	4.0		5.00	9.24		mg/L		105	76 - 120

Lab Sample ID: 680-122307-3 DU
Matrix: Water
Analysis Batch: 239751

Client Sample ID: CPA-MW-5D-0216
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon	4.0		4.05		mg/L		1	20

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TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122307-1
SDG: KPS163

GC/MS Semi VOA

Prep Batch: 423391

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122307-3	CPA-MW-5D-0216	Total/NA	Water	3520C	

Analysis Batch: 424002

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122307-3	CPA-MW-5D-0216	Total/NA	Water	8270D	423391

GC VOA

Analysis Batch: 296635

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122307-1	GWE-5D-0216	Total/NA	Water	RSK-175	
680-122307-3	CPA-MW-5D-0216	Total/NA	Water	RSK-175	
680-122307-5	GWE-1D-0216	Total/NA	Water	RSK-175	
LCS 400-296635/3	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 400-296635/4	Lab Control Sample Dup	Total/NA	Water	RSK-175	
MB 400-296635/2	Method Blank	Total/NA	Water	RSK-175	

Metals

Prep Batch: 423529

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122307-1	GWE-5D-0216	Total Recoverable	Water	3005A	
680-122307-2	GWE-5D-F(0.2)-0216	Dissolved	Water	3005A	
680-122307-3	CPA-MW-5D-0216	Total Recoverable	Water	3005A	
680-122307-4	CPA-MW-5D-F(0.2)-0216	Dissolved	Water	3005A	
680-122307-5	GWE-1D-0216	Total Recoverable	Water	3005A	
680-122307-6	GWE-1D-F(0.2)-0216	Dissolved	Water	3005A	
LCS 680-423529/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-423529/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 423712

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122307-1	GWE-5D-0216	Total Recoverable	Water	6010C	423529
680-122307-2	GWE-5D-F(0.2)-0216	Dissolved	Water	6010C	423529
680-122307-3	CPA-MW-5D-0216	Total Recoverable	Water	6010C	423529
680-122307-4	CPA-MW-5D-F(0.2)-0216	Dissolved	Water	6010C	423529
680-122307-5	GWE-1D-0216	Total Recoverable	Water	6010C	423529
680-122307-6	GWE-1D-F(0.2)-0216	Dissolved	Water	6010C	423529
LCS 680-423529/2-A	Lab Control Sample	Total Recoverable	Water	6010C	423529
MB 680-423529/1-A	Method Blank	Total Recoverable	Water	6010C	423529

General Chemistry

Analysis Batch: 239463

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122307-2	GWE-5D-F(0.2)-0216	Dissolved	Water	415.1	
680-122307-4	CPA-MW-5D-F(0.2)-0216	Dissolved	Water	415.1	
680-122307-6	GWE-1D-F(0.2)-0216	Dissolved	Water	415.1	
LCS 160-239463/5	Lab Control Sample	Dissolved	Water	415.1	
MB 160-239463/4	Method Blank	Dissolved	Water	415.1	

AWD 3/22/16
TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122307-1
 SDG: KPS163



General Chemistry (Continued)

Analysis Batch: 239751

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122307-1	GWE-5D-0216	Total/NA	Water	415.1	
680-122307-3	CPA-MW-5D-0216	Total/NA	Water	415.1	
680-122307-3 DU	CPA-MW-5D-0216	Total/NA	Water	415.1	
680-122307-3 MS	CPA-MW-5D-0216	Total/NA	Water	415.1	
680-122307-5	GWE-1D-0216	Total/NA	Water	415.1	
LCS 160-239751/5	Lab Control Sample	Total/NA	Water	415.1	
MB 160-239751/4	Method Blank	Total/NA	Water	415.1	

Analysis Batch: 423143

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122307-1	GWE-5D-0216	Total/NA	Water	353.2	
680-122307-3	CPA-MW-5D-0216	Total/NA	Water	353.2	
680-122307-5	GWE-1D-0216	Total/NA	Water	353.2	
LCS 680-423143/16	Lab Control Sample	Total/NA	Water	353.2	
MB 680-423143/13	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 423723

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122307-1	GWE-5D-0216	Total/NA	Water	310.1	
680-122307-1 DU	GWE-5D-0216	Total/NA	Water	310.1	
680-122307-3	CPA-MW-5D-0216	Total/NA	Water	310.1	
680-122307-5	GWE-1D-0216	Total/NA	Water	310.1	
LCS 680-423723/6	Lab Control Sample	Total/NA	Water	310.1	
LCSD 680-423723/32	Lab Control Sample Dup	Total/NA	Water	310.1	
MB 680-423723/5	Method Blank	Total/NA	Water	310.1	

Analysis Batch: 424485

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122307-1	GWE-5D-0216	Total/NA	Water	375.4	
680-122307-3	CPA-MW-5D-0216	Total/NA	Water	375.4	
680-122307-5	GWE-1D-0216	Total/NA	Water	375.4	
LCS 680-424485/1	Lab Control Sample	Total/NA	Water	375.4	
LCSD 680-424485/7	Lab Control Sample Dup	Total/NA	Water	375.4	
MB 680-424485/2	Method Blank	Total/NA	Water	375.4	

Analysis Batch: 424791

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122307-1	GWE-5D-0216	Total/NA	Water	325.2	
680-122307-3	CPA-MW-5D-0216	Total/NA	Water	325.2	
680-122307-5	GWE-1D-0216	Total/NA	Water	325.2	
LCS 680-424791/1	Lab Control Sample	Total/NA	Water	325.2	
LCSD 680-424791/9	Lab Control Sample Dup	Total/NA	Water	325.2	
MB 680-424791/2	Method Blank	Total/NA	Water	325.2	

AWD 3/22/16
 TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122307-1
SDG: KPS163

Client Sample ID: GWE-5D-0216

Lab Sample ID: 680-122307-1

Date Collected: 02/23/16 09:26

Matrix: Water

Date Received: 02/26/16 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	RSK-175		1	296635	03/08/16 14:03	C1M	TAL PEN
Total Recoverable	Prep	3005A			423529	03/02/16 08:47	CRW	TAL SAV
Total Recoverable	Analysis	6010C		1	423712	03/02/16 23:11	BWR	TAL SAV
Total/NA	Analysis	310.1		1	423723	03/02/16 16:39	KLD	TAL SAV
Total/NA	Analysis	325.2		5	424791	03/11/16 12:13	JME	TAL SAV
Total/NA	Analysis	353.2		1	423143	02/26/16 15:59	GRX	TAL SAV
Total/NA	Analysis	375.4		50	424485	03/09/16 14:39	JME	TAL SAV
Total/NA	Analysis	415.1		1	239751	03/08/16 18:54	JCB	TAL SL

Client Sample ID: GWE-5D-F(0.2)-0216

Lab Sample ID: 680-122307-2

Date Collected: 02/23/16 09:26

Matrix: Water

Date Received: 02/26/16 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			423529	03/02/16 08:47	CRW	TAL SAV
Dissolved	Analysis	6010C		1	423712	03/02/16 23:16	BWR	TAL SAV
Dissolved	Analysis	415.1		1	239463	03/07/16 21:40	JCB	TAL SL

Client Sample ID: CPA-MW-5D-0216

Lab Sample ID: 680-122307-3

Date Collected: 02/23/16 10:47

Matrix: Water

Date Received: 02/26/16 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			423391	03/01/16 17:21	CEW	TAL SAV
Total/NA	Analysis	8270D		1	424002	03/05/16 01:06	JEM	TAL SAV
Total/NA	Analysis	RSK-175		1	296635	03/08/16 14:12	C1M	TAL PEN
Total Recoverable	Prep	3005A			423529	03/02/16 08:47	CRW	TAL SAV
Total Recoverable	Analysis	6010C		1	423712	03/02/16 23:21	BWR	TAL SAV
Total/NA	Analysis	310.1		1	423723	03/02/16 17:02	KLD	TAL SAV
Total/NA	Analysis	325.2		5	424791	03/11/16 11:59	JME	TAL SAV
Total/NA	Analysis	353.2		1	423143	02/26/16 16:00	GRX	TAL SAV
Total/NA	Analysis	375.4		5	424485	03/09/16 13:33	JME	TAL SAV
Total/NA	Analysis	415.1		1	239751	03/08/16 19:11	JCB	TAL SL

Client Sample ID: CPA-MW-5D-F(0.2)-0216

Lab Sample ID: 680-122307-4

Date Collected: 02/23/16 10:47

Matrix: Water

Date Received: 02/26/16 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			423529	03/02/16 08:47	CRW	TAL SAV
Dissolved	Analysis	6010C		1	423712	03/02/16 23:36	BWR	TAL SAV

AWS 3/20/16
TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122307-1
SDG: KPS163

Client Sample ID: CPA-MW-5D-F(0.2)-0216

Lab Sample ID: 680-122307-4

Date Collected: 02/23/16 10:47

Matrix: Water

Date Received: 02/26/16 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	415.1		1	239463	03/07/16 21:54	JCB	TAL SL

Client Sample ID: GWE-1D-0216

Lab Sample ID: 680-122307-5

Date Collected: 02/23/16 13:37

Matrix: Water

Date Received: 02/26/16 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	RSK-175		1	296635	03/08/16 14:32	C1M	TAL PEN
Total Recoverable	Prep	3005A			423529	03/02/16 08:47	CRW	TAL SAV
Total Recoverable	Analysis	6010C		1	423712	03/02/16 23:41	BWR	TAL SAV
Total/NA	Analysis	310.1		1	423723	03/02/16 17:13	KLD	TAL SAV
Total/NA	Analysis	325.2		2	424791	03/11/16 11:57	JME	TAL SAV
Total/NA	Analysis	353.2		1	423143	02/26/16 16:01	GRX	TAL SAV
Total/NA	Analysis	375.4		10	424485	03/09/16 13:33	JME	TAL SAV
Total/NA	Analysis	415.1		1	239751	03/08/16 19:48	JCB	TAL SL

Client Sample ID: GWE-1D-F(0.2)-0216

Lab Sample ID: 680-122307-6

Date Collected: 02/23/16 13:37

Matrix: Water

Date Received: 02/26/16 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			423529	03/02/16 08:47	CRW	TAL SAV
Dissolved	Analysis	6010C		1	423712	03/02/16 23:46	BWR	TAL SAV
Dissolved	Analysis	415.1		1	239463	03/07/16 22:05	JCB	TAL SL

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001
 TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858
 TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

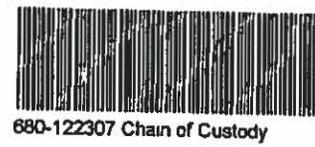
AWD 3/22/16
TestAmerica Savannah

Savannah, GA 31404
phone 912.354.7858 fax

Regulatory Program: DW NPDES RCRA Other: Emily White

TestAmerica Laboratories, Inc.

Client Contact		Project Manager: Amanda Derhake		Site Contact: Bob Blaker		Date: 02/23/16		COC No:											
Golder Associates Inc. 820 South Main Street St. Charles, MO 63301 (636) 724-9191 Phone (636) 724-9323 FAX		Tel/Fax: 636-724-9191		Lab Contact: Michele Kersey		Carrier: FedEx		of COCs											
Project Name: <u>2016 LTM GW Sampling-1403345</u>		Analysis Turnaround Time		Filtered Sample (Y/N) Perform MS / MSD (Y/N) VOCs by 8260 Total Fe/Mn by 6010C Alk/CO2 by 310.1 Chloride by 325.2/Sulfate by 375.4 Dissolved Gases by RSK 176 Nitrate by 363.2 TOC by 415.1 Dissolved Fe/Mn by 6010C DOC by 415.1 <u>SVD Cs by 2670</u>		<input checked="" type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below <u>Standard</u>		Sampler: <u>S. DiConza</u> For Lab Use Only: Walk-in Client: Lab Sampling: Job / SDG No.:											
Site: <u>Solutia WG Krummrich Facility</u>		<input checked="" type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day				Sample Specific Notes:													
P O # <u>42447938</u>																			
Sample Identification		Sample Date	Sample Time	Sample Type (C=Corp, G=Grab)	Matrix	# of Cont.	Filtered	Perform MS / MSD	VOCs	Total Fe/Mn	Alk/CO2	Chloride	Dissolved Gases	Nitrate	TOC	Dissolved Fe/Mn	DOC	Sample Specific Notes:	
<u>GWE-5D-0216</u>		<u>02/23/16</u>	<u>0926</u>	<u>G</u>	<u>W</u>	<u>14</u>	<u>N</u>	<u>3</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>3</u>	<u>2</u>	<u>3</u>					<u>2 COOLERS</u>
<u>GWF-5D-F(0.2)-0216</u>			<u>0926</u>			<u>4</u>	<u>Y</u>									<u>1</u>	<u>3</u>		
<u>CPA-MW-5D-0216</u>			<u>1047</u>			<u>16</u>	<u>N</u>	<u>3</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>3</u>	<u>2</u>	<u>3</u>			<u>2</u>		
<u>CPA-MW-5D-F(0.2)-0216</u>			<u>1047</u>			<u>4</u>	<u>Y</u>									<u>1</u>	<u>3</u>		
<u>GWE-1D-0216</u>			<u>1337</u>			<u>14</u>	<u>N</u>	<u>3</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>3</u>	<u>2</u>	<u>3</u>					
<u>GWE-1D-F(0.2)-0216</u>			<u>1337</u>			<u>4</u>	<u>Y</u>									<u>1</u>	<u>3</u>		
<u>GWE-2D-0216</u>			<u>1500</u>			<u>14</u>	<u>N</u>	<u>3</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>3</u>	<u>2</u>	<u>3</u>					
<u>GWE-2D-F(0.2)-0216</u>			<u>1500</u>			<u>4</u>	<u>Y</u>									<u>1</u>	<u>3</u>		
<u>GWE-3D-0216</u>			<u>1556</u>			<u>14</u>	<u>N</u>	<u>3</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>3</u>	<u>2</u>	<u>3</u>					
<u>GWE-3D-F(0.2)-0216</u>			<u>1556</u>			<u>4</u>	<u>Y</u>									<u>1</u>	<u>3</u>		
<u>1Q16 LTM Trip Blank #2</u>						<u>2</u>	<u>N</u>	<u>2</u>											



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

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return to Client
 Disposal by Lab
 Archive for _____ Months

Special Instructions/QC Requirements & Comments:
 VOC headspace upon sampling: Yes/No

2-26-16 680-122233
ML
680-122307

Custody Seals Intact: Yes No

Custody Seal No.: 672749/672750

Relinquished by: [Signature] **Company:** Golder **Date/Time:** 02/23/16 1:11

Relinquished by: [Signature] **Company:** Golder **Date/Time:** 02/23/16 1:11

Relinquished by: [Signature] **Company:** Golder **Date/Time:** 02/23/16 1:11

Received by: [Signature] **Company:** TA-SAV **Date/Time:** 2-26-16 9:25

Received in Laboratory by: [Signature] **Company:** TA **Date/Time:** 2/24/16 09:29

RMD 3/22/16

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

Chain of Custody Record



TestAmerica
 THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)		Sampler:		Lab P/N:		Carrier Tracking No(s):		COC No:					
Client Contact: Shipping/Receiving		Phone:		Kersey, Michele R				680-423374.1					
Company: TestAmerica Laboratories, Inc.				E-Mail: michele.kersey@testamericainc.com				Page: Page 1 of 1					
Address: 13715 Rider Trail North,		Due Date Requested: 3/11/2016		<table border="1"> <tr> <th colspan="2">Analysis Requested</th> </tr> <tr> <td>416.1/416.1 / Total Organic Carbon</td> <td></td> </tr> <tr> <td>416.1, Diss/FIELD_FLTRD 416.1, Diss / Dissolved Organic Carbon</td> <td></td> </tr> </table>		Analysis Requested		416.1/416.1 / Total Organic Carbon		416.1, Diss/FIELD_FLTRD 416.1, Diss / Dissolved Organic Carbon		Job #: 680-122307-1	
Analysis Requested													
416.1/416.1 / Total Organic Carbon													
416.1, Diss/FIELD_FLTRD 416.1, Diss / Dissolved Organic Carbon													
City: Earth City		TAT Requested (days):		Preservation Codes:									
State, Zip: MO, 63045				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 - Na2S2SO3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecalhydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDTA Z - other (specify)									
Phone: 314-298-8566(Tel) 314-298-8757(Fax)		PO #:						Other:					
Email:		WO #:											
Project Name: 1Q16 LTM GW Sampling - 1403345		Project #: 68001754											
Site:		SSOW#:											
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=other, ST=THRU, AA=)	Special Instructions/Note:							
GWE-5D-0216 (680-122307-1)	2/23/16	09:26 Eastern		Water		X							
GWE-5D-F(0.2)-0216 (680-122307-2)	2/23/16	09:26 Eastern		Water		X							
CPA-MW-5D-0216 (680-122307-3)	2/23/16	10:47 Eastern		Water		X							
CPA-MW-5D-F(0.2)-0216 (680-122307-4)	2/23/16	10:47 Eastern		Water		X							
GWE-1D-0216 (680-122307-5)	2/23/16	13:37 Eastern		Water		X							
GWE-1D-F(0.2)-0216 (680-122307-6)	2/23/16	13:37 Eastern		Water		X							
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)							
Unconfirmed						<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months							
Deliverable Requested: I, II, III, IV, Other (specify)						Special Instructions/QC Requirements:							
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:							
Relinquished by: <i>[Signature]</i>		Date/Time: 02/26/16 1532		Company: <i>[Signature]</i>		Received by: <i>[Signature]</i>		Date/Time: 2/27/16 0835					
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:					
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:					
Custody Seats Intact: Δ Yes Δ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:									

Page 26 of 31

AWD 3/22/16

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-122307-1

SDG Number: KPS163

Login Number: 122307

List Source: TestAmerica Savannah

List Number: 1

Creator: White, Menica R

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.	False	one vial broken at lab
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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-122307-1

SDG Number: KPS163

Login Number: 122307

List Number: 2

Creator: Daniels, Brian J

List Source: TestAmerica St. Louis

List Creation: 02/29/16 09:59 AM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
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	1.4
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?	False	
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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



AWP
3/22/16

Certification Summary

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122307-1
 SDG: KPS163

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

Laboratory: TestAmerica Pensacola

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

* Certification renewal pending - certification considered valid.


 TestAmerica Savannah
 3/22/16

Certification Summary

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122307-1
 SDG: KPS163



Laboratory: TestAmerica Pensacola (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40150	01-31-16 *
Arizona	State Program	9	AZ0710	01-11-17
Arkansas DEQ	State Program	6	88-0689	09-01-16
Florida	NELAP	4	E81010	06-30-16
Georgia	State Program	4	N/A	06-30-16
Illinois	NELAP	5	200041	10-09-16
Iowa	State Program	7	367	07-31-16
Kansas	NELAP	7	E-10253	05-31-16 *
Kentucky (UST)	State Program	4	53	06-30-16
Kentucky (WW)	State Program	4	98030	12-31-16
Louisiana	NELAP	6	30976	06-30-16
Maryland	State Program	3	233	09-30-16
Massachusetts	State Program	1	M-FL094	06-30-16
Michigan	State Program	5	9912	06-30-16
New Jersey	NELAP	2	FL006	06-30-16
North Carolina (WW/SW)	State Program	4	314	12-31-16
Oklahoma	State Program	6	9810	08-31-16
Pennsylvania	NELAP	3	68-00467	01-31-17
Rhode Island	State Program	1	LAO00307	12-30-16
South Carolina	State Program	4	96026	06-30-16
Tennessee	State Program	4	TN02907	06-30-16
Texas	NELAP	6	T104704286-15-9	09-30-16
USDA	Federal		P330-13-00193	07-01-16
Virginia	NELAP	3	460166	06-14-16
West Virginia DEP	State Program	3	136	06-30-16

Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-16
California	ELAP	9	2886	03-31-16 *
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-16
Illinois	NELAP	5	003757	11-30-16
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	05-31-16
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-10-16 *
Louisiana	NELAP	6	04080	06-30-16
Louisiana (DW)	NELAP	6	LA160008	12-31-16
Maryland	State Program	3	310	09-30-16
Missouri	State Program	7	780	06-30-16
Nevada	State Program	9	MO000542016-1	07-31-16
New Jersey	NELAP	2	MO002	06-30-16
New York	NELAP	2	11616	03-31-16 *
North Dakota	State Program	8	R207	06-30-16
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-16
Pennsylvania	NELAP	3	68-00540	02-28-17 *

* Certification renewal pending - certification considered valid.

AWD
 TestAmerica Savannah
 3/22/16

Certification Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122307-1
SDG: KPS163

Laboratory: TestAmerica St. Louis (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
South Carolina	State Program	4	85002001	06-30-16
Texas	NELAP	6	T104704193-15-9	07-31-16
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542015-7	07-31-16
Virginia	NELAP	3	460230	06-14-16
Washington	State Program	10	C592	08-30-16
West Virginia DEP	State Program	3	381	08-31-16



AWD
TestAmerica Savannah
3/22/16

SDG KPS164

Sample Results from:

**BSA-MW-3D
CPA-MW-1D**



Level IV Data Validation Summary
Solutia Inc., W.G. Krummrich, Sauget, Illinois
1Q16 Long-Term Monitoring Program

Company Name: Golder Associates
Project Name: WGK-1Q16 LTM
Reviewer: A. Derhake
Laboratory: TestAmerica
SDG#: KPS164
Matrix: Water

Project Manager: A. Derhake
Project Number: 140-3345
Sample Date: February 2016

Analytical Method: VOC (8260B), SVOC (8270C), 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: BSA-MW-3D-0216, BSA-MW-3D-F(0.2)-0216, BSA-MW-3D-0216-EB, CPA-MW-1D-0216, CPA-MW-1D-F(0.2)-0216, 1Q16 LTM Trip Blank #4

Table with 4 columns: Field Information, YES, NO, NA. Rows include 'a) Sampling dates noted?' and 'b) Does the laboratory narrative indicate deficiencies?'.

Comments:

VOC: Samples BSA-MW-3D-0216 and CPA-MW-1D-0216 were analyzed outside of hold time due to laboratory error. Samples BSA-MW-3D and CPA-MW-1D required dilution prior to analysis, reporting limits were adjusted accordingly. Vinyl chloride calibration check was outside 20%; however, all target analytes were within 20%.

SVOC: Sample CPA-MW-1D-0216 was diluted to bring concentration of target analytes within calibration range, elevated reporting limits were provided.

Dissolved Gases: Sample CPA-MW-1D-0216 was diluted to bring concentration of target analytes within calibration range, elevated reporting limits were provided.

Metals: No deficiencies noted.

Alkalinity: No deficiencies noted.

Chloride: Samples BSA-MW-3D-0216 and CPA-MW-1D-0216 required dilution prior to analysis, reporting limits were adjusted accordingly.

Nitrate-Nitrite as Nitrogen: No deficiencies noted.

Sulfate: Sample BSA-MW-3D-0216 required dilution prior to analysis, reporting limits were adjusted accordingly.

TOC: Sample CPA-MW-1D-0216 associated with batch 239751 was diluted to bring concentrations of the target analyte within calibration range, elevated reporting limits were provided.

DOC: No deficiencies noted.

Table with 4 columns: Chain-of-Custody (COC), YES, NO, NA. Rows include 'a) Was the COC signed by both field and laboratory personnel?' and 'b) Were samples received in good condition?'.

Comments: Samples were received at 1.2°C and 1.8°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 and DFTPP 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: Analytes of interest met calibration standards.

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-3D was submitted with SDG KPS164. Benzene, chlorobenze, 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: 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	1,2,4-Trichlorobenzene, Methane, TOC, Chloride, Sulfate	D	BSA-MW-3D, CPA-MW-1D

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: 680-122321-1
TestAmerica Sample Delivery Group: KPS164
Client Project/Site: 1Q16 LTM GW Sampling - 1403345
Revision: 1

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

Attn: Mr. Jerry Rinaldi



Authorized for release by:
3/28/2016 5:13:05 PM
Bernard Kirkland, Manager of Project Management
(912)354-7858 e.3238
bernard.kirkland@testamericainc.com

Designee for
Michele Kersey, Project Manager I
(912)354-7858
michele.kersey@testamericainc.com

LINKS

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AWD
3/28/16

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.

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Case Narrative

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122321-1
SDG: KPS164

Job ID: 680-122321-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Solutia Inc.

Project: 1Q16 LTM GW Sampling - 1403345

Report Number: 680-122321-1

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.

Report revised 3/28/2016 to include volatile results for samples BSA-MW-3D-0216 (680-122321-1) and CPA-MW-1D-0216 (680-122321-4) which were analyzed outside of holding time due to laboratory error.

RECEIPT

The samples were received on 2/26/2016 9:25 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.2° C and 2.8° C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples BSA-MW-3D-0216 (680-122321-1), BSA-MW-3D-0216-EB (680-122321-3), CPA-MW-1D-0216 (680-122321-4) and 1Q16 LTM Trip Blank #4 (680-122321-6) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 03/04/2016 and 03/23/2016.

Samples BSA-MW-3D-0216 (680-122321-1) and CPA-MW-1D-0216 (680-122321-4) were analyzed outside of holding time due to laboratory error.

Samples BSA-MW-3D-0216 (680-122321-1)[20X] and CPA-MW-1D-0216 (680-122321-4)[250X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Vinyl chloride is a calibration check compound and was outside of 20%; however, all target analytes were within 20%.

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-0216 (680-122321-1), BSA-MW-3D-0216-EB (680-122321-3) and CPA-MW-1D-0216 (680-122321-4) were analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 03/03/2016 and analyzed on 03/05/2016 and 03/10/2016.

The following sample was diluted to bring the concentration of target analytes within the calibration range: CPA-MW-1D-0216 (680-122321-4). Elevated reporting limits (RLs) are provided.

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

DISSOLVED GASES

Samples BSA-MW-3D-0216 (680-122321-1) and CPA-MW-1D-0216 (680-122321-4) were analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 03/10/2016.

The following sample was diluted to bring the concentration of target analytes within the calibration range: CPA-MW-1D-0216

Case Narrative

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122321-1
SDG: KPS164

Job ID: 680-122321-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

(680-122321-4). Elevated reporting limits (RLs) are provided.

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

METALS (ICP)

Samples BSA-MW-3D-F(0.2)-0216 (680-122321-2) and CPA-MW-1D-F(0.2)-0216 (680-122321-5) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 03/02/2016 and analyzed on 03/02/2016 and 03/07/2016.

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

METALS (ICP)

Samples BSA-MW-3D-0216 (680-122321-1) and CPA-MW-1D-0216 (680-122321-4) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 03/02/2016 and analyzed on 03/02/2016 and 03/07/2016.

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

ALKALINITY

Samples BSA-MW-3D-0216 (680-122321-1) and CPA-MW-1D-0216 (680-122321-4) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 03/02/2016.

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

CHLORIDE

Samples BSA-MW-3D-0216 (680-122321-1) and CPA-MW-1D-0216 (680-122321-4) were analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 03/11/2016.

Samples BSA-MW-3D-0216 (680-122321-1)[5X] and CPA-MW-1D-0216 (680-122321-4)[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.

NITRATE-NITRITE AS NITROGEN

Samples BSA-MW-3D-0216 (680-122321-1) and CPA-MW-1D-0216 (680-122321-4) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 02/26/2016.

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

SULFATE

Samples BSA-MW-3D-0216 (680-122321-1) and CPA-MW-1D-0216 (680-122321-4) were analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 03/09/2016.

Sample BSA-MW-3D-0216 (680-122321-1)[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.

TOTAL ORGANIC CARBON

Samples BSA-MW-3D-0216 (680-122321-1) and CPA-MW-1D-0216 (680-122321-4) were analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 03/08/2016.

The following samples in TOC batch 160-239751 were diluted to bring the concentrations of the target analyte within the calibration range: CPA-MW-1D-0216 (680-122321-4). Elevated reporting limits (RLs) are provided.

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

DISSOLVED ORGANIC CARBON (DOC)

Case Narrative

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122321-1
SDG: KPS164

Job ID: 680-122321-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

Samples BSA-MW-3D-F(0.2)-0216 (680-122321-2) and CPA-MW-1D-F(0.2)-0216 (680-122321-5) were analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 03/07/2016.

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: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122321-1
SDG: KPS164

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-122321-1	BSA-MW-3D-0216	Water	02/25/16 09:32	02/26/16 09:25
680-122321-2	BSA-MW-3D-F(0.2)-0216	Water	02/25/16 09:32	02/26/16 09:25
680-122321-3	BSA-MW-3D-0216-EB	Water	02/25/16 10:10	02/26/16 09:25
680-122321-4	CPA-MW-1D-0216	Water	02/25/16 13:30	02/26/16 09:25
680-122321-5	CPA-MW-1D-F(0.2)-0216	Water	02/25/16 13:30	02/26/16 09:25
680-122321-6	1Q16 LTM Trip Blank #4	Water	02/25/16 00:00	02/26/16 09:25

AWD 3/28/16
TestAmerica Savannah

Method Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122321-1
SDG: KPS164

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 PEN
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 SL
415.1	DOC	MCAWW	TAL SL

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 PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

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

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

AWP
3/28/16
TestAmerica Savannah

Definitions/Glossary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122321-1
SDG: KPS164

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
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.

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)

AWD 3/28/16
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122321-1
SDG: KPS164

Client Sample ID: BSA-MW-3D-0216

Lab Sample ID: 680-122321-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	45	H	20		ug/L	20		8260B	Total/NA
Chlorobenzene	1100	H	20		ug/L	20		8260B	Total/NA
1,4-Dichlorobenzene	270	H	20		ug/L	20		8260B	Total/NA
2-Chlorophenol	13		9.8		ug/L	1		8270D	Total/NA
Methane	380		1.0		ug/L	1		RSK-175	Total/NA
Ethane	2.9		1.0		ug/L	1		RSK-175	Total/NA
Ethylene	2.1		1.0		ug/L	1		RSK-175	Total/NA
Iron	11		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.62		0.010		mg/L	1		6010C	Total Recoverable
Chloride	180		5.0		mg/L	5		325.2	Total/NA
Sulfate	290		50		mg/L	10		375.4	Total/NA
Total Organic Carbon	2.9		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	500		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	28		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: BSA-MW-3D-F(0.2)-0216

Lab Sample ID: 680-122321-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	11		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.62		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	3.1		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: BSA-MW-3D-0216-EB

Lab Sample ID: 680-122321-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.1		1.0		ug/L	1		8260B	Total/NA
Chlorobenzene	3.2		1.0		ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	3.1		1.0		ug/L	1		8260B	Total/NA

Client Sample ID: CPA-MW-1D-0216

Lab Sample ID: 680-122321-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	3900	H	250		ug/L	250		8260B	Total/NA
Chlorobenzene	14000	H	250		ug/L	250		8260B	Total/NA
1,2-Dichlorobenzene	8500	H	250		ug/L	250		8260B	Total/NA
1,3-Dichlorobenzene	1000	H	250		ug/L	250		8260B	Total/NA
1,4-Dichlorobenzene	7600	H	250		ug/L	250		8260B	Total/NA
1,2,4-Trichlorobenzene - DL	550		48		ug/L	5		8270D	Total/NA
Methane	12000		25		ug/L	25		RSK-175	Total/NA
Ethane	29		1.0		ug/L	1		RSK-175	Total/NA
Iron	0.21		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.061		0.010		mg/L	1		6010C	Total Recoverable
Chloride	90		2.0		mg/L	2		325.2	Total/NA
Total Organic Carbon - DL	8.0		2.0		mg/L	2		415.1	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	940		5.0		mg/L	1		310.1	Total/NA

This Detection Summary does not include radiochemical test results.

AWD
3/28/16
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122321-1
SDG: KPS164

Client Sample ID: CPA-MW-1D-F(0.2)-0216

Lab Sample ID: 680-122321-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	0.11		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.056		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	10		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: 1Q16 LTM Trip Blank #4

Lab Sample ID: 680-122321-6

No Detections.

This Detection Summary does not include radiochemical test results.

AWD 3/28/16
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122321-1
SDG: KPS164

Client Sample ID: BSA-MW-3D-0216

Lab Sample ID: 680-122321-1

Date Collected: 02/25/16 09:32

Matrix: Water

Date Received: 02/26/16 09:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	45	H	20		ug/L			03/23/16 16:52	20
Chlorobenzene	1100	H	20		ug/L			03/23/16 16:52	20
1,2-Dichlorobenzene	20	U H	20		ug/L			03/23/16 16:52	20
1,3-Dichlorobenzene	20	U H	20		ug/L			03/23/16 16:52	20
1,4-Dichlorobenzene	270	H	20		ug/L			03/23/16 16:52	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		70 - 130		03/23/16 16:52	20
1,2-Dichloroethane-d4 (Surr)	102		70 - 130		03/23/16 16:52	20
Dibromofluoromethane (Surr)	108		70 - 130		03/23/16 16:52	20
4-Bromofluorobenzene (Surr)	88		70 - 130		03/23/16 16:52	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		03/03/16 15:46	03/05/16 21:16	1
1,4-Dioxane	9.8	U	9.8		ug/L		03/03/16 15:46	03/05/16 21:16	1
2-Chlorophenol	13		9.8		ug/L		03/03/16 15:46	03/05/16 21:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	64		39 - 124	03/03/16 15:46	03/05/16 21:16	1
2-Fluorobiphenyl	59		32 - 113	03/03/16 15:46	03/05/16 21:16	1
2-Fluorophenol	55		26 - 109	03/03/16 15:46	03/05/16 21:16	1
Terphenyl-d14	25		10 - 126	03/03/16 15:46	03/05/16 21:16	1
Phenol-d5	65		27 - 110	03/03/16 15:46	03/05/16 21:16	1
Nitrobenzene-d5	71		32 - 118	03/03/16 15:46	03/05/16 21:16	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	380		1.0		ug/L			03/10/16 13:06	1
Ethane	2.9		1.0		ug/L			03/10/16 13:06	1
Ethylene	2.1		1.0		ug/L			03/10/16 13:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	11		0.050		mg/L		03/02/16 08:47	03/02/16 23:51	1
Manganese	0.62		0.010		mg/L		03/02/16 08:47	03/02/16 23:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	180		5.0		mg/L			03/11/16 11:59	5
Nitrate as N	0.050	U	0.050		mg/L			02/26/16 16:06	1
Sulfate	290		50		mg/L			03/09/16 13:33	10
Total Organic Carbon	2.9		1.0		mg/L			03/08/16 20:02	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	500		5.0		mg/L			03/02/16 18:07	1
Carbon Dioxide, Free	28		5.0		mg/L			03/02/16 18:07	1

AWP
3/28/16
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122321-1
 SDG: KPS164

Client Sample ID: BSA-MW-3D-F(0.2)-0216

Lab Sample ID: 680-122321-2

Date Collected: 02/25/16 09:32

Matrix: Water

Date Received: 02/26/16 09:25

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	11		0.050		mg/L		03/02/16 08:47	03/02/16 23:56	1
Manganese, Dissolved	0.62		0.010		mg/L		03/02/16 08:47	03/02/16 23:56	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	3.1		1.0		mg/L			03/07/16 22:17	1

AWD 3/28/16
 TestAmerica Savannah



Client Sample Results

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122321-1
 SDG: KPS164

Client Sample ID: BSA-MW-3D-0216-EB

Lab Sample ID: 680-122321-3

Date Collected: 02/25/16 10:10

Matrix: Water

Date Received: 02/26/16 09:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.1		1.0		ug/L			03/04/16 16:46	1
Chlorobenzene	3.2		1.0		ug/L			03/04/16 16:46	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			03/04/16 16:46	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			03/04/16 16:46	1
1,4-Dichlorobenzene	3.1		1.0		ug/L			03/04/16 16:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		70 - 130		03/04/16 16:46	1
1,2-Dichloroethane-d4 (Surr)	100		70 - 130		03/04/16 16:46	1
Dibromofluoromethane (Surr)	99		70 - 130		03/04/16 16:46	1
4-Bromofluorobenzene (Surr)	99		70 - 130		03/04/16 16:46	1

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		03/03/16 15:46	03/05/16 21:38	1
1,4-Dioxane	9.6	U	9.6		ug/L		03/03/16 15:46	03/05/16 21:38	1
2-Chlorophenol	9.6	U	9.6		ug/L		03/03/16 15:46	03/05/16 21:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	60		39 - 124	03/03/16 15:46	03/05/16 21:38	1
2-Fluorobiphenyl	57		32 - 113	03/03/16 15:46	03/05/16 21:38	1
2-Fluorophenol	52		26 - 109	03/03/16 15:46	03/05/16 21:38	1
Terphenyl-d14	59		10 - 126	03/03/16 15:46	03/05/16 21:38	1
Phenol-d5	61		27 - 110	03/03/16 15:46	03/05/16 21:38	1
Nitrobenzene-d5	68		32 - 118	03/03/16 15:46	03/05/16 21:38	1

AWD
3/28/16

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122321-1
SDG: KPS164

Client Sample ID: CPA-MW-1D-0216

Lab Sample ID: 680-122321-4

Date Collected: 02/25/16 13:30

Matrix: Water

Date Received: 02/26/16 09:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	3900	H	250		ug/L			03/23/16 17:13	250
Chlorobenzene	14000	H	250		ug/L			03/23/16 17:13	250
1,2-Dichlorobenzene	8500	H	250		ug/L			03/23/16 17:13	250
1,3-Dichlorobenzene	1000	H	250		ug/L			03/23/16 17:13	250
1,4-Dichlorobenzene	7600	H	250		ug/L			03/23/16 17:13	250

Surrogate

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		70 - 130		03/23/16 17:13	250
1,2-Dichloroethane-d4 (Surr)	96		70 - 130		03/23/16 17:13	250
Dibromofluoromethane (Surr)	102		70 - 130		03/23/16 17:13	250
4-Bromofluorobenzene (Surr)	86		70 - 130		03/23/16 17:13	250

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorophenol	9.6	U	9.6		ug/L		03/03/16 15:46	03/05/16 22:01	1

Surrogate

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	62		39 - 124	03/03/16 15:46	03/05/16 22:01	1
2-Fluorobiphenyl	53		32 - 113	03/03/16 15:46	03/05/16 22:01	1
2-Fluorophenol	33		26 - 109	03/03/16 15:46	03/05/16 22:01	1
Terphenyl-d14	25		10 - 126	03/03/16 15:46	03/05/16 22:01	1
Phenol-d5	39		27 - 110	03/03/16 15:46	03/05/16 22:01	1
Nitrobenzene-d5	61		32 - 118	03/03/16 15:46	03/05/16 22:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	550		48		ug/L		03/03/16 15:46	03/10/16 19:48	5

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	12000		25		ug/L			03/10/16 16:46	25
Ethane	29		1.0		ug/L			03/10/16 13:27	1
Ethylene	1.0	U	1.0		ug/L			03/10/16 13:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.21		0.050		mg/L		03/02/16 13:49	03/07/16 19:27	1
Manganese	0.061		0.010		mg/L		03/02/16 13:49	03/07/16 19:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	90		2.0		mg/L			03/11/16 11:57	2
Nitrate as N	0.050	U	0.050		mg/L			02/26/16 16:07	1
Sulfate	5.0	U	5.0		mg/L			03/09/16 13:11	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	940		5.0		mg/L			03/02/16 18:21	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			03/02/16 18:21	1

General Chemistry - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	8.0		2.0		mg/L			03/08/16 20:18	2

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PWD 3/28/16
3/28/2016

Client Sample Results

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122321-1
 SDG: KPS164

Client Sample ID: CPA-MW-1D-F(0.2)-0216

Lab Sample ID: 680-122321-5

Date Collected: 02/25/16 13:30

Matrix: Water

Date Received: 02/26/16 09:25

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	0.11		0.050		mg/L		03/02/16 13:49	03/07/16 19:31	1
Manganese, Dissolved	0.056		0.010		mg/L		03/02/16 13:49	03/07/16 19:31	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	10		1.0		mg/L			03/07/16 22:31	1



AWD
3/28/16

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122321-1
 SDG: KPS164

Client Sample ID: 1Q16 LTM Trip Blank #4

Lab Sample ID: 680-122321-6

Date Collected: 02/25/16 00:00

Matrix: Water

Date Received: 02/26/16 09:25

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			03/04/16 16:25	1
Chlorobenzene	1.0	U	1.0		ug/L			03/04/16 16:25	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			03/04/16 16:25	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			03/04/16 16:25	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			03/04/16 16:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		70 - 130		03/04/16 16:25	1
1,2-Dichloroethane-d4 (Surr)	104		70 - 130		03/04/16 16:25	1
Dibromofluoromethane (Surr)	103		70 - 130		03/04/16 16:25	1
4-Bromofluorobenzene (Surr)	96		70 - 130		03/04/16 16:25	1

MWD 3/28/16
 TestAmerica Savannah

Surrogate Summary

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122321-1
 SDG: KPS164

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 (70-130)	12DCE (70-130)	DBFM (70-130)	BFB (70-130)
680-122321-1	BSA-MW-3D-0216	98	102	108	88
680-122321-3	BSA-MW-3D-0216-EB	105	100	99	99
680-122321-4	CPA-MW-1D-0216	98	96	102	86
680-122321-6	1Q16 LTM Trip Blank #4	97	104	103	96
LCS 680-423928/5	Lab Control Sample	122	100	102	96
LCS 680-426213/4	Lab Control Sample	100	88	96	79
LCSD 680-423928/6	Lab Control Sample Dup	98	104	105	99
LCSD 680-426213/5	Lab Control Sample Dup	104	101	104	86
MB 680-423928/9	Method Blank	103	100	99	128
MB 680-426213/9	Method Blank	101	90	99	87

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)
680-122321-1	BSA-MW-3D-0216	64	59	55	25	65	71
680-122321-3	BSA-MW-3D-0216-EB	60	57	52	59	61	68
680-122321-4	CPA-MW-1D-0216	62	53	33	25	39	61
LCS 680-423713/10-A	Lab Control Sample	68	64	53	61	57	70
MB 680-423713/9-A	Method Blank	71	64	66	75	75	77

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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 3/28/16

TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122321-1
SDG: KPS164

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

Lab Sample ID: MB 680-423928/9
Matrix: Water
Analysis Batch: 423928

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			03/04/16 15:21	1
Chlorobenzene	1.0	U	1.0		ug/L			03/04/16 15:21	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			03/04/16 15:21	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			03/04/16 15:21	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			03/04/16 15:21	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	103		70 - 130		03/04/16 15:21	1
1,2-Dichloroethane-d4 (Surr)	100		70 - 130		03/04/16 15:21	1
Dibromofluoromethane (Surr)	99		70 - 130		03/04/16 15:21	1
4-Bromofluorobenzene (Surr)	128		70 - 130		03/04/16 15:21	1

Lab Sample ID: LCS 680-423928/5
Matrix: Water
Analysis Batch: 423928

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chlorobenzene	50.0	47.9		ug/L		96	80 - 120
1,2-Dichlorobenzene	50.0	47.9		ug/L		96	80 - 120
1,3-Dichlorobenzene	50.0	48.7		ug/L		97	80 - 120
1,4-Dichlorobenzene	50.0	47.9		ug/L		96	80 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	122		70 - 130
1,2-Dichloroethane-d4 (Surr)	100		70 - 130
Dibromofluoromethane (Surr)	102		70 - 130
4-Bromofluorobenzene (Surr)	96		70 - 130

Lab Sample ID: LCSD 680-423928/6
Matrix: Water
Analysis Batch: 423928

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	51.2		ug/L		102	73 - 131	0	30
Chlorobenzene	50.0	49.0		ug/L		98	80 - 120	2	20
1,2-Dichlorobenzene	50.0	47.0		ug/L		94	80 - 120	2	20
1,3-Dichlorobenzene	50.0	49.0		ug/L		98	80 - 120	1	20
1,4-Dichlorobenzene	50.0	47.8		ug/L		96	80 - 120	0	20

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	98		70 - 130
1,2-Dichloroethane-d4 (Surr)	104		70 - 130
Dibromofluoromethane (Surr)	105		70 - 130
4-Bromofluorobenzene (Surr)	99		70 - 130

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122321-1
SDG: KPS164

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

Lab Sample ID: MB 680-426213/9
Matrix: Water
Analysis Batch: 426213

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			03/23/16 10:52	1
Chlorobenzene	1.0	U	1.0		ug/L			03/23/16 10:52	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			03/23/16 10:52	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			03/23/16 10:52	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			03/23/16 10:52	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		70 - 130		03/23/16 10:52	1
1,2-Dichloroethane-d4 (Surr)	90		70 - 130		03/23/16 10:52	1
Dibromofluoromethane (Surr)	99		70 - 130		03/23/16 10:52	1
4-Bromofluorobenzene (Surr)	87		70 - 130		03/23/16 10:52	1

Lab Sample ID: LCS 680-426213/4
Matrix: Water
Analysis Batch: 426213

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	46.6		ug/L		93	73 - 131
Chlorobenzene	50.0	50.3		ug/L		101	80 - 120
1,2-Dichlorobenzene	50.0	46.0		ug/L		92	80 - 120
1,3-Dichlorobenzene	50.0	45.1		ug/L		90	80 - 120
1,4-Dichlorobenzene	50.0	45.2		ug/L		90	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	100		70 - 130
1,2-Dichloroethane-d4 (Surr)	88		70 - 130
Dibromofluoromethane (Surr)	96		70 - 130
4-Bromofluorobenzene (Surr)	79		70 - 130

Lab Sample ID: LCSD 680-426213/5
Matrix: Water
Analysis Batch: 426213

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	51.9		ug/L		104	73 - 131	11	30
Chlorobenzene	50.0	52.6		ug/L		105	80 - 120	4	20
1,2-Dichlorobenzene	50.0	49.7		ug/L		99	80 - 120	8	20
1,3-Dichlorobenzene	50.0	49.2		ug/L		98	80 - 120	9	20
1,4-Dichlorobenzene	50.0	49.0		ug/L		98	80 - 120	8	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	104		70 - 130
1,2-Dichloroethane-d4 (Surr)	101		70 - 130
Dibromofluoromethane (Surr)	104		70 - 130
4-Bromofluorobenzene (Surr)	86		70 - 130

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122321-1
SDG: KPS164

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

Lab Sample ID: MB 680-423713/9-A
Matrix: Water
Analysis Batch: 424056

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 423713

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,2,4-Trichlorobenzene	10	U	10		ug/L		03/03/16 15:46	03/05/16 20:09	1
1,4-Dioxane	10	U	10		ug/L		03/03/16 15:46	03/05/16 20:09	1
2-Chlorophenol	10	U	10		ug/L		03/03/16 15:46	03/05/16 20:09	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2,4,6-Tribromophenol	71		39 - 124	03/03/16 15:46	03/05/16 20:09	1
2-Fluorobiphenyl	64		32 - 113	03/03/16 15:46	03/05/16 20:09	1
2-Fluorophenol	66		26 - 109	03/03/16 15:46	03/05/16 20:09	1
Terphenyl-d14	75		10 - 126	03/03/16 15:46	03/05/16 20:09	1
Phenol-d5	75		27 - 110	03/03/16 15:46	03/05/16 20:09	1
Nitrobenzene-d5	77		32 - 118	03/03/16 15:46	03/05/16 20:09	1

Lab Sample ID: LCS 680-423713/10-A
Matrix: Water
Analysis Batch: 424056

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 423713

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
1,2,4-Trichlorobenzene	100	51.3		ug/L		51	33 - 130
1,4-Dioxane	100	53.7		ug/L		54	22 - 130
2-Chlorophenol	100	62.1		ug/L		62	39 - 130
4-Chloroaniline	100	53.8		ug/L		54	42 - 130

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
2,4,6-Tribromophenol	68		39 - 124
2-Fluorobiphenyl	64		32 - 113
2-Fluorophenol	53		26 - 109
Terphenyl-d14	61		10 - 126
Phenol-d5	57		27 - 110
Nitrobenzene-d5	70		32 - 118

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 400-296938/2
Matrix: Water
Analysis Batch: 296938

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Methane	1.0	U	1.0		ug/L			03/10/16 11:33	1
Ethane	1.0	U	1.0		ug/L			03/10/16 11:33	1
Ethylene	1.0	U	1.0		ug/L			03/10/16 11:33	1

Lab Sample ID: LCS 400-296938/3
Matrix: Water
Analysis Batch: 296938

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

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Methane	169	171		ug/L		101	85 - 115

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122321-1
SDG: KPS164

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

Lab Sample ID: LCS 400-296938/3
Matrix: Water
Analysis Batch: 296938

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	321	327		ug/L		102	85 - 115
Ethylene	299	300		ug/L		100	85 - 115

Lab Sample ID: LCSD 400-296938/4
Matrix: Water
Analysis Batch: 296938

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	169	158		ug/L		93	85 - 115	8	20
Ethane	321	303		ug/L		94	85 - 115	8	20
Ethylene	299	278		ug/L		93	85 - 115	8	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-423529/1-A
Matrix: Water
Analysis Batch: 423712

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 423529

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.050	U	0.050		mg/L		03/02/16 08:47	03/02/16 21:20	1
Iron, Dissolved	0.050	U	0.050		mg/L		03/02/16 08:47	03/02/16 21:20	1
Manganese	0.010	U	0.010		mg/L		03/02/16 08:47	03/02/16 21:20	1
Manganese, Dissolved	0.010	U	0.010		mg/L		03/02/16 08:47	03/02/16 21:20	1

Lab Sample ID: LCS 680-423529/2-A
Matrix: Water
Analysis Batch: 423712

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 423529

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	5.00	5.05		mg/L		101	80 - 120
Iron, Dissolved	5.00	5.05		mg/L		101	80 - 120
Manganese	0.500	0.510		mg/L		102	80 - 120
Manganese, Dissolved	0.500	0.510		mg/L		102	80 - 120

Lab Sample ID: MB 680-423646/1-A
Matrix: Water
Analysis Batch: 424231

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 423646

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.050	U	0.050		mg/L		03/02/16 13:49	03/07/16 18:20	1
Iron, Dissolved	0.050	U	0.050		mg/L		03/02/16 13:49	03/07/16 18:20	1
Manganese	0.010	U	0.010		mg/L		03/02/16 13:49	03/07/16 18:20	1
Manganese, Dissolved	0.010	U	0.010		mg/L		03/02/16 13:49	03/07/16 18:20	1

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122321-1
SDG: KPS164

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 680-423646/2-A
Matrix: Water
Analysis Batch: 424231

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 423646
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Iron	5.00	4.91		mg/L		98	80 - 120
Iron, Dissolved	5.00	4.91		mg/L		98	80 - 120
Manganese	0.500	0.508		mg/L		102	80 - 120
Manganese, Dissolved	0.500	0.508		mg/L		102	80 - 120

Method: 310.1 - Alkalinity

Lab Sample ID: MB 680-423723/35
Matrix: Water
Analysis Batch: 423723

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			03/02/16 17:48	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			03/02/16 17:48	1

Lab Sample ID: MB 680-423723/5
Matrix: Water
Analysis Batch: 423723

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			03/02/16 14:04	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			03/02/16 14:04	1

Lab Sample ID: LCS 680-423723/36
Matrix: Water
Analysis Batch: 423723

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Alkalinity	250	270		mg/L		108	80 - 120

Lab Sample ID: LCS 680-423723/6
Matrix: Water
Analysis Batch: 423723

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Alkalinity	250	269		mg/L		108	80 - 120

Lab Sample ID: LCSD 680-423723/32
Matrix: Water
Analysis Batch: 423723

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Alkalinity	250	272		mg/L		109	80 - 120	1	30

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TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122321-1
SDG: KPS164

Method: 310.1 - Alkalinity (Continued)

Lab Sample ID: LCSD 680-423723/61
Matrix: Water
Analysis Batch: 423723

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	250	272		mg/L		109	80 - 120	1	30

Method: 325.2 - Chloride

Lab Sample ID: MB 680-424791/2
Matrix: Water
Analysis Batch: 424791

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			03/11/16 11:55	1

Lab Sample ID: LCS 680-424791/1
Matrix: Water
Analysis Batch: 424791

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	26.3		mg/L		105	85 - 115

Lab Sample ID: LCSD 680-424791/9
Matrix: Water
Analysis Batch: 424791

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	25.0	26.7		mg/L		107	85 - 115	2	30

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-423143/13
Matrix: Water
Analysis Batch: 423143

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			02/26/16 15:42	1

Lab Sample ID: LCS 680-423143/16
Matrix: Water
Analysis Batch: 423143

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	0.504		mg/L		101	75 - 125
Nitrate Nitrite as N	1.00	1.01		mg/L		101	90 - 110
Nitrite as N	0.500	0.506		mg/L		101	90 - 110

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TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122321-1
SDG: KPS164

Method: 375.4 - Sulfate

Lab Sample ID: MB 680-424485/2
Matrix: Water
Analysis Batch: 424485

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			03/09/16 12:14	1

Lab Sample ID: LCS 680-424485/1
Matrix: Water
Analysis Batch: 424485

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	22.0		mg/L		110	75 - 125

Lab Sample ID: LCSD 680-424485/7
Matrix: Water
Analysis Batch: 424485

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	22.0		mg/L		110	75 - 125	0	30

Method: 415.1 - DOC

Lab Sample ID: MB 160-239463/4
Matrix: Water
Analysis Batch: 239463

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			03/07/16 17:18	1

Lab Sample ID: LCS 160-239463/5
Matrix: Water
Analysis Batch: 239463

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	10.0	9.76		mg/L		98	90 - 110

Method: 415.1 - TOC

Lab Sample ID: MB 160-239751/4
Matrix: Water
Analysis Batch: 239751

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			03/08/16 15:29	1

Lab Sample ID: LCS 160-239751/5
Matrix: Water
Analysis Batch: 239751

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	10.0	9.62		mg/L		96	90 - 110

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QC Association Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122321-1
SDG: KPS164

GC/MS VOA

Analysis Batch: 423928

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122321-3	BSA-MW-3D-0216-EB	Total/NA	Water	8260B	
680-122321-6	1Q16 LTM Trip Blank #4	Total/NA	Water	8260B	
LCS 680-423928/5	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-423928/6	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-423928/9	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 426213

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122321-1	BSA-MW-3D-0216	Total/NA	Water	8260B	
680-122321-4	CPA-MW-1D-0216	Total/NA	Water	8260B	
LCS 680-426213/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-426213/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-426213/9	Method Blank	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 423713

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122321-1	BSA-MW-3D-0216	Total/NA	Water	3520C	
680-122321-3	BSA-MW-3D-0216-EB	Total/NA	Water	3520C	
680-122321-4 - DL	CPA-MW-1D-0216	Total/NA	Water	3520C	
680-122321-4	CPA-MW-1D-0216	Total/NA	Water	3520C	
LCS 680-423713/10-A	Lab Control Sample	Total/NA	Water	3520C	
MB 680-423713/9-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 424056

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122321-1	BSA-MW-3D-0216	Total/NA	Water	8270D	423713
680-122321-3	BSA-MW-3D-0216-EB	Total/NA	Water	8270D	423713
680-122321-4	CPA-MW-1D-0216	Total/NA	Water	8270D	423713
LCS 680-423713/10-A	Lab Control Sample	Total/NA	Water	8270D	423713
MB 680-423713/9-A	Method Blank	Total/NA	Water	8270D	423713

Analysis Batch: 424648

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122321-4 - DL	CPA-MW-1D-0216	Total/NA	Water	8270D	423713

GC VOA

Analysis Batch: 296938

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122321-1	BSA-MW-3D-0216	Total/NA	Water	RSK-175	
680-122321-4	CPA-MW-1D-0216	Total/NA	Water	RSK-175	
680-122321-4	CPA-MW-1D-0216	Total/NA	Water	RSK-175	
LCS 400-296938/3	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 400-296938/4	Lab Control Sample Dup	Total/NA	Water	RSK-175	
MB 400-296938/2	Method Blank	Total/NA	Water	RSK-175	

MWP
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TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122321-1
SDG: KPS164

Metals

Prep Batch: 423529

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122321-1	BSA-MW-3D-0216	Total Recoverable	Water	3005A	
680-122321-2	BSA-MW-3D-F(0.2)-0216	Dissolved	Water	3005A	
LCS 680-423529/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-423529/1-A	Method Blank	Total Recoverable	Water	3005A	

Prep Batch: 423646

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122321-4	CPA-MW-1D-0216	Total Recoverable	Water	3005A	
680-122321-5	CPA-MW-1D-F(0.2)-0216	Dissolved	Water	3005A	
LCS 680-423646/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-423646/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 423712

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122321-1	BSA-MW-3D-0216	Total Recoverable	Water	6010C	423529
680-122321-2	BSA-MW-3D-F(0.2)-0216	Dissolved	Water	6010C	423529
LCS 680-423529/2-A	Lab Control Sample	Total Recoverable	Water	6010C	423529
MB 680-423529/1-A	Method Blank	Total Recoverable	Water	6010C	423529

Analysis Batch: 424231

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122321-4	CPA-MW-1D-0216	Total Recoverable	Water	6010C	423646
680-122321-5	CPA-MW-1D-F(0.2)-0216	Dissolved	Water	6010C	423646
LCS 680-423646/2-A	Lab Control Sample	Total Recoverable	Water	6010C	423646
MB 680-423646/1-A	Method Blank	Total Recoverable	Water	6010C	423646

General Chemistry

Analysis Batch: 239463

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122321-2	BSA-MW-3D-F(0.2)-0216	Dissolved	Water	415.1	
680-122321-5	CPA-MW-1D-F(0.2)-0216	Dissolved	Water	415.1	
LCS 160-239463/5	Lab Control Sample	Dissolved	Water	415.1	
MB 160-239463/4	Method Blank	Dissolved	Water	415.1	

Analysis Batch: 239751

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122321-1	BSA-MW-3D-0216	Total/NA	Water	415.1	
680-122321-4 - DL	CPA-MW-1D-0216	Total/NA	Water	415.1	
LCS 160-239751/5	Lab Control Sample	Total/NA	Water	415.1	
MB 160-239751/4	Method Blank	Total/NA	Water	415.1	

Analysis Batch: 423143

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122321-1	BSA-MW-3D-0216	Total/NA	Water	353.2	
680-122321-4	CPA-MW-1D-0216	Total/NA	Water	353.2	
LCS 680-423143/16	Lab Control Sample	Total/NA	Water	353.2	
MB 680-423143/13	Method Blank	Total/NA	Water	353.2	

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TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122321-1
SDG: KPS164

General Chemistry (Continued)

Analysis Batch: 423723

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122321-1	BSA-MW-3D-0216	Total/NA	Water	310.1	
680-122321-4	CPA-MW-1D-0216	Total/NA	Water	310.1	
LCS 680-423723/36	Lab Control Sample	Total/NA	Water	310.1	
LCS 680-423723/6	Lab Control Sample	Total/NA	Water	310.1	
LCSD 680-423723/32	Lab Control Sample Dup	Total/NA	Water	310.1	
LCSD 680-423723/61	Lab Control Sample Dup	Total/NA	Water	310.1	
MB 680-423723/5	Method Blank	Total/NA	Water	310.1	
MB 680-423723/5	Method Blank	Total/NA	Water	310.1	

Analysis Batch: 424485

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122321-1	BSA-MW-3D-0216	Total/NA	Water	375.4	
680-122321-4	CPA-MW-1D-0216	Total/NA	Water	375.4	
LCS 680-424485/1	Lab Control Sample	Total/NA	Water	375.4	
LCSD 680-424485/7	Lab Control Sample Dup	Total/NA	Water	375.4	
MB 680-424485/2	Method Blank	Total/NA	Water	375.4	

Analysis Batch: 424791

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122321-1	BSA-MW-3D-0216	Total/NA	Water	325.2	
680-122321-4	CPA-MW-1D-0216	Total/NA	Water	325.2	
LCS 680-424791/1	Lab Control Sample	Total/NA	Water	325.2	
LCSD 680-424791/9	Lab Control Sample Dup	Total/NA	Water	325.2	
MB 680-424791/2	Method Blank	Total/NA	Water	325.2	

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TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122321-1
SDG: KPS164

Client Sample ID: BSA-MW-3D-0216

Lab Sample ID: 680-122321-1

Date Collected: 02/25/16 09:32

Matrix: Water

Date Received: 02/26/16 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		20	426213	03/23/16 16:52	CAR	TAL SAV
Total/NA	Prep	3520C			423713	03/03/16 15:46	RBS	TAL SAV
Total/NA	Analysis	8270D		1	424056	03/05/16 21:16	SMC	TAL SAV
Total/NA	Analysis	RSK-175		1	296938	03/10/16 13:06	RM	TAL PEN
Total Recoverable	Prep	3005A			423529	03/02/16 08:47	CRW	TAL SAV
Total Recoverable	Analysis	6010C		1	423712	03/02/16 23:51	BWR	TAL SAV
Total/NA	Analysis	310.1		1	423723	03/02/16 18:07	KLD	TAL SAV
Total/NA	Analysis	325.2		5	424791	03/11/16 11:59	JME	TAL SAV
Total/NA	Analysis	353.2		1	423143	02/26/16 16:06	GRX	TAL SAV
Total/NA	Analysis	375.4		10	424485	03/09/16 13:33	JME	TAL SAV
Total/NA	Analysis	415.1		1	239751	03/08/16 20:02	JCB	TAL SL

Client Sample ID: BSA-MW-3D-F(0.2)-0216

Lab Sample ID: 680-122321-2

Date Collected: 02/25/16 09:32

Matrix: Water

Date Received: 02/26/16 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			423529	03/02/16 08:47	CRW	TAL SAV
Dissolved	Analysis	6010C		1	423712	03/02/16 23:56	BWR	TAL SAV
Dissolved	Analysis	415.1		1	239463	03/07/16 22:17	JCB	TAL SL

Client Sample ID: BSA-MW-3D-0216-EB

Lab Sample ID: 680-122321-3

Date Collected: 02/25/16 10:10

Matrix: Water

Date Received: 02/26/16 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	423928	03/04/16 16:46	DAS	TAL SAV
Total/NA	Prep	3520C			423713	03/03/16 15:46	RBS	TAL SAV
Total/NA	Analysis	8270D		1	424056	03/05/16 21:38	SMC	TAL SAV

Client Sample ID: CPA-MW-1D-0216

Lab Sample ID: 680-122321-4

Date Collected: 02/25/16 13:30

Matrix: Water

Date Received: 02/26/16 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		250	426213	03/23/16 17:13	CAR	TAL SAV
Total/NA	Prep	3520C			423713	03/03/16 15:46	RBS	TAL SAV
Total/NA	Analysis	8270D		1	424056	03/05/16 22:01	SMC	TAL SAV
Total/NA	Prep	3520C	DL		423713	03/03/16 15:46	RBS	TAL SAV
Total/NA	Analysis	8270D	DL	5	424648	03/10/16 19:48	DAH	TAL SAV
Total/NA	Analysis	RSK-175		1	296938	03/10/16 13:27	RM	TAL PEN
Total/NA	Analysis	RSK-175		25	296938	03/10/16 16:46	RM	TAL PEN

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TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122321-1
SDG: KPS164

Client Sample ID: CPA-MW-1D-0216

Lab Sample ID: 680-122321-4

Date Collected: 02/25/16 13:30

Matrix: Water

Date Received: 02/26/16 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			423646	03/02/16 13:49	CRW	TAL SAV
Total Recoverable	Analysis	6010C		1	424231	03/07/16 19:27	BCB	TAL SAV
Total/NA	Analysis	310.1		1	423723	03/02/16 18:21	KLD	TAL SAV
Total/NA	Analysis	325.2		2	424791	03/11/16 11:57	JME	TAL SAV
Total/NA	Analysis	353.2		1	423143	02/26/16 16:07	GRX	TAL SAV
Total/NA	Analysis	375.4		1	424485	03/09/16 13:11	JME	TAL SAV
Total/NA	Analysis	415.1	DL	2	239751	03/08/16 20:18	JCB	TAL SL

Client Sample ID: CPA-MW-1D-F(0.2)-0216

Lab Sample ID: 680-122321-5

Date Collected: 02/25/16 13:30

Matrix: Water

Date Received: 02/26/16 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			423646	03/02/16 13:49	CRW	TAL SAV
Dissolved	Analysis	6010C		1	424231	03/07/16 19:31	BCB	TAL SAV
Dissolved	Analysis	415.1		1	239463	03/07/16 22:31	JCB	TAL SL

Client Sample ID: 1Q16 LTM Trip Blank #4

Lab Sample ID: 680-122321-6

Date Collected: 02/25/16 00:00

Matrix: Water

Date Received: 02/26/16 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	423928	03/04/16 16:25	DAS	TAL SAV

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

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

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

AWD
3/28/16

TestAmerica Savannah

Chain of Custody Record

Savannah, GA 31404
phone 912.354.7858 fax

Regulatory Program: DW NPDES RCRA Other: Emily White

TestAmerica Laboratories, Inc.

Client Contact Golder Associates Inc. 820 South Main Street St. Charles, MO 63301 (836) 724-9191 Phone (836) 724-9323 FAX Project Name: <u>LTM GW Sampling-1403345</u> Site: <u>Solutia WG Krummch Facility</u> P O # 42447936		Project Manager: <u>Amanda Derhake</u> Tel/Fax: 636-724-9191 Analysis Turnaround Time <input checked="" type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below <u>Standard</u> <input checked="" type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Site Contact: <u>Lyn Blodges</u> Lab Contact: <u>Michele Kersey</u> Date: <u>02/25/16</u> Carrier: <u>FedEx</u>		COC No. <u> </u> <u> </u> of <u> </u> COCs Sampler: <u>S. DICONS</u> For Lab Use Only: Walk-in Client: <input type="checkbox"/> Lab Sampling: <input type="checkbox"/> Job / SDG No.: <u> </u>													
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 8260	SVOCs by 8270	Total Fe/Mn by 6010C	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Dissolved Gases by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010C	DOC by 415.1	Sample Specific Notes:
<u>BSA-MW-3D-0216</u>		<u>02/25/16</u>	<u>0932</u>	<u>G</u>	<u>W</u>	<u>10</u>	<u>N</u>	<u>3</u>	<u>2</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>3</u>	<u>2</u>	<u>3</u>				<u>2 coolers</u>
<u>BSA-MW-3D-FID.2)-0216</u>			<u>0932</u>	<u>I</u>		<u>4</u>	<u>Y</u>										<u>1</u>	<u>3</u>	
<u>BSA-MW-3D-0216-EB</u>			<u>1010</u>	<u>I</u>		<u>5</u>	<u>N</u>	<u>3</u>	<u>2</u>										
<u>CPA-MW-ID-0216</u>			<u>1330</u>	<u>I</u>		<u>16</u>	<u>N</u>	<u>3</u>	<u>2</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>3</u>	<u>2</u>	<u>3</u>				
<u>CPA-MW-ID-FID.2)-0216</u>			<u>1330</u>	<u>I</u>		<u>4</u>	<u>Y</u>										<u>1</u>	<u>3</u>	
<u>IQ16 LTM Trip Blank #4</u>				<u>I</u>		<u>2</u>	<u>N</u>	<u>2</u>											
Preservation: 1-None, 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																			
<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown																			
Special Instructions/QC Requirements & Comments: VOC headspace upon sampling: Yes/No																			
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.: <u>672764/672765</u>		Cooler Temp. (°C) Obs'd: <u>0.8/1.2</u>		Corr'd: <u>2.4/2.8</u>													
Relinquished by: <u>Savannah</u>		Company: <u>Golder</u>		Date/Time: <u>02/25/16</u>		Received by: <u>[Signature]</u>		Company: <u>TA-SAV</u>		Date/Time: <u>2-26-16 9:25</u>									
Relinquished by:		Company:		Date/Time:		Received by:		Company:		Date/Time:									
Relinquished by:		Company:		Date/Time:		Received in Laboratory by:		Company:		Date/Time:									



680-122321 Chain of Custody

RWD 3/25/16

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-122321-1

SDG Number: KPS164

Login Number: 122321

List Number: 1

Creator: White, Menica R

List Source: TestAmerica Savannah

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	



Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-122321-1

SDG Number: KPS164

Login Number: 122321

List Number: 2

Creator: Clarke, Jill C

List Source: TestAmerica St. Louis

List Creation: 03/01/16 12:36 PM

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
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	0.3
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?	False	
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").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



AMP
3/28/16

Certification Summary

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122321-1
 SDG: KPS164

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

Laboratory: TestAmerica Pensacola

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

* Certification renewal pending - certification considered valid.

Handwritten: mwp
3/28/16

TestAmerica Savannah

Certification Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122321-1
SDG: KPS164

Laboratory: TestAmerica Pensacola (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40150	01-31-16 *
Arizona	State Program	9	AZ0710	01-11-17
Arkansas DEQ	State Program	6	88-0689	09-01-16
Florida	NELAP	4	E81010	06-30-16
Georgia	State Program	4	N/A	06-30-16
Illinois	NELAP	5	200041	10-09-16
Iowa	State Program	7	367	07-31-16
Kansas	NELAP	7	E-10253	05-31-16 *
Kentucky (UST)	State Program	4	53	06-30-16
Kentucky (WW)	State Program	4	98030	12-31-16
Louisiana	NELAP	6	30976	06-30-16
Maryland	State Program	3	233	09-30-16
Massachusetts	State Program	1	M-FL094	06-30-16
Michigan	State Program	5	9912	06-30-16
New Jersey	NELAP	2	FL006	06-30-16
North Carolina (WW/SW)	State Program	4	314	12-31-16
Oklahoma	State Program	6	9810	08-31-16
Pennsylvania	NELAP	3	68-00467	01-31-17
Rhode Island	State Program	1	LAO00307	12-30-16
South Carolina	State Program	4	96026	06-30-16
Tennessee	State Program	4	TN02907	06-30-16
Texas	NELAP	6	T104704286-15-9	09-30-16
USDA	Federal		P330-13-00193	07-01-16
Virginia	NELAP	3	460166	06-14-16
West Virginia DEP	State Program	3	136	06-30-16

Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-16
California	ELAP	9	2886	03-31-16 *
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-16
Illinois	NELAP	5	003757	11-30-16
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	05-31-16
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-10-16 *
Louisiana	NELAP	6	04080	06-30-16
Louisiana (DW)	NELAP	6	LA160008	12-31-16
Maryland	State Program	3	310	09-30-16
Missouri	State Program	7	780	06-30-16
Nevada	State Program	9	MO000542016-1	07-31-16
New Jersey	NELAP	2	MO002	06-30-16
New York	NELAP	2	11616	03-31-16 *
North Dakota	State Program	8	R207	06-30-16
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-16
Pennsylvania	NELAP	3	68-00540	02-28-17 *

* Certification renewal pending - certification considered valid.

AWD
3/28/16

TestAmerica Savannah



Certification Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122321-1
SDG: KPS164

Laboratory: TestAmerica St. Louis (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
South Carolina	State Program	4	85002001	06-30-16
Texas	NELAP	6	T104704193-15-9	07-31-16
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542015-7	07-31-16
Virginia	NELAP	3	460230	06-14-16
Washington	State Program	10	C592	08-30-16
West Virginia DEP	State Program	3	381	08-31-16



MWD
3/28/16

TestAmerica Savannah

SDG KPS165
Sample Results from:

CPA-MW-4D
CPA-MW-2D
BSA-MW-1S



Level IV Data Validation Summary
Solutia Inc., W.G. Krummrich, Sauget, Illinois
1Q16 Long-Term Monitoring Program

Company Name: Golder Associates
Project Name: WGK-1Q16 LTM
Reviewer: A. Derhake
Laboratory: TestAmerica
SDG#: KPS165
Matrix: Water

Project Manager: A. Derhake
Project Number: 140-3345
Sample Date: February 2016

Analytical Method: VOC (8260B), SVOC (8270C), 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-4D-0216, CPA-MW-4D-F(0.2)-0216, CPA-MW-2D-0216, CPA-MW-2D-F(0.2)-0216, CPA-MW-2D-0216-AD, BSA-MW-1S-0216, BSA-MW-1S-F(0.2)-0216, BSA-MW-1S-0216-EB, 1Q16 LTM Trip Blank #5

Field Information

YES NO NA

- a) Sampling dates noted? [X] [] []
b) Does the laboratory narrative indicate deficiencies? [X] [] []

Comments:

VOC: Samples CPA-MW-2D-0216, CPA-MW-2D-0216-AD, BSA-MW-1S-0216, and BSA-MW-1S-0216-EB required dilution prior to analysis, reporting limits were adjusted accordingly.

SVOC: 1,2,4-trichlorobenzene and 4-chloroaniline exceeded recovery criteria low for MS and MSD sample of CPA-MW-4DMS in batch 424056.

Dissolved Gases: Samples CPA-MW-4D-0216, CPA-MW-2D-0216, and BSA-MW-1S-0216 were diluted to bring the concentration of target analytes within calibration range, elevated reporting limits are provided.

Metals: No deficiencies noted.

Alkalinity: No deficiencies noted.

Chloride: Samples CPA-MW-4D-0216, CPA-MW-2D-0216, and BSA-MW-1S-0216 required dilution prior to analysis, reporting limits were adjusted accordingly.

Nitrate-Nitrite as Nitrogen: No deficiencies noted.

Sulfate: Sample CPA-MW-2D-0216 required dilution prior to analysis, reporting limits were adjusted accordingly.

TOC: Sample BSA-MW-1S-0216 associated with batch 239751 was diluted to bring the concentration of target analytes within calibration range, elevated reporting limits are provided.

DOC: No deficiencies noted.

Chain-of-Custody (COC)

YES NO NA

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

Comments: Samples were received at 0.5°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: Analytes of interest met calibration standards.

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 KPS165. Benzene 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?
- b) Was MS/MSD precision criteria met?

Comments: 1,2,4-trichlorobenzene and 4-chloroaniline recovery low for MS and MSD sample associated with batch 424056. 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	Benzene, Chlorobenzene, 1,4-Dichlorobenzene, Methane, Total Organic Carbon, Chloride and Sulfate	D	CPA-MW-4D, CPA-MW-2D, CPA-MW-2D-AD, 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: 680-122353-1
TestAmerica Sample Delivery Group: KPS165
Client Project/Site: 1Q16 LTM GW Sampling - 1403345

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

Attn: Mr. Jerry Rinaldi

Michele Kersey

Authorized for release by:
3/16/2016 6:05:08 PM

Michele Kersey, Project Manager I
(912)354-7858
michele.kersey@testamericainc.com

LINKS

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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.

*MWP
3/16/16*

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AWP
3/22/16

Case Narrative

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

Job ID: 680-122353-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Solutia Inc.

Project: 1Q16 LTM GW Sampling - 1403345

Report Number: 680-122353-1

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 2/27/2016 9:56 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.5° C and 4.0° C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples CPA-MW-4D-0216 (680-122353-1), CPA-MW-2D-0216 (680-122353-3), CPA-MW-2D-0216-AD (680-122353-5), BSA-MW-1S-0216 (680-122353-6), BSA-MW-1S-0216-EB (680-122353-8) and 1Q16 LTM Trip Blank #5 (680-122353-9) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 03/04/2016, 03/08/2016 and 03/09/2016.

Samples CPA-MW-2D-0216 (680-122353-3)[250X], CPA-MW-2D-0216-AD (680-122353-5)[250X], BSA-MW-1S-0216 (680-122353-6) [10000X] and BSA-MW-1S-0216-EB (680-122353-8)[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 CPA-MW-4D-0216 (680-122353-1), CPA-MW-2D-0216 (680-122353-3), CPA-MW-2D-0216-AD (680-122353-5), BSA-MW-1S-0216 (680-122353-6) and BSA-MW-1S-0216-EB (680-122353-8) were analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 03/03/2016 and analyzed on 03/05/2016.

1,2,4-Trichlorobenzene and 4-Chloroaniline exceeded the recovery criteria low for the MS and MSD of sample CPA-MW-4D-0216MS (680-122353-1) in batch 680-424056.

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

DISSOLVED GASES

Samples CPA-MW-4D-0216 (680-122353-1), CPA-MW-2D-0216 (680-122353-3) and BSA-MW-1S-0216 (680-122353-6) were analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 03/08/2016.

The following samples were diluted to bring the concentration of target analytes within the calibration range: CPA-MW-4D-0216 (680-122353-1), CPA-MW-2D-0216 (680-122353-3) and BSA-MW-1S-0216 (680-122353-6). Elevated reporting limits (RLs) are provided.

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

METALS (ICP)

Samples CPA-MW-4D-F(0.12)-0216 (680-122353-2), CPA-MW-2D-F(0.2)-0216 (680-122353-4) and BSA-MW-1S-F(0.2)-0216

MWD
3/22/16

Case Narrative

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

Job ID: 680-122353-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

(680-122353-7) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 03/02/2016 and analyzed on 03/07/2016.

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

METALS (ICP)

Samples CPA-MW-4D-0216 (680-122353-1), CPA-MW-2D-0216 (680-122353-3) and BSA-MW-1S-0216 (680-122353-6) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 03/02/2016 and analyzed on 03/07/2016.

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

ALKALINITY

Samples CPA-MW-4D-0216 (680-122353-1), CPA-MW-2D-0216 (680-122353-3) and BSA-MW-1S-0216 (680-122353-6) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 03/02/2016.

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

CHLORIDE

Samples CPA-MW-4D-0216 (680-122353-1), CPA-MW-2D-0216 (680-122353-3) and BSA-MW-1S-0216 (680-122353-6) were analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 03/11/2016.

Samples CPA-MW-4D-0216 (680-122353-1)[5X], CPA-MW-2D-0216 (680-122353-3)[5X] and BSA-MW-1S-0216 (680-122353-6)[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 CPA-MW-4D-0216 (680-122353-1), CPA-MW-2D-0216 (680-122353-3) and BSA-MW-1S-0216 (680-122353-6) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 02/27/2016.

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

SULFATE

Samples CPA-MW-4D-0216 (680-122353-1), CPA-MW-2D-0216 (680-122353-3) and BSA-MW-1S-0216 (680-122353-6) were analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 03/09/2016.

Sample CPA-MW-2D-0216 (680-122353-3)[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.

TOTAL ORGANIC CARBON

Samples CPA-MW-4D-0216 (680-122353-1), CPA-MW-2D-0216 (680-122353-3) and BSA-MW-1S-0216 (680-122353-6) were analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 03/08/2016.

The following samples in TOC batch 160-239751 were diluted to bring the concentrations of the target analyte within the calibration range: BSA-MW-1S-0216 (680-122353-6). Elevated reporting limits (RLs) are provided.

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-4D-F(0.12)-0216 (680-122353-2), CPA-MW-2D-F(0.2)-0216 (680-122353-4) and BSA-MW-1S-F(0.2)-0216 (680-122353-7) were analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 03/07/2016.

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: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-122353-1	CPA-MW-4D-0216	Water	02/26/16 11:55	02/27/16 09:56
680-122353-2	CPA-MW-4D-F(0.12)-0216	Water	02/26/16 11:55	02/27/16 09:56
680-122353-3	CPA-MW-2D-0216	Water	02/26/16 14:18	02/27/16 09:56
680-122353-4	CPA-MW-2D-F(0.2)-0216	Water	02/26/16 14:18	02/27/16 09:56
680-122353-5	CPA-MW-2D-0216-AD	Water	02/26/16 14:18	02/27/16 09:56
680-122353-6	BSA-MW-1S-0216	Water	02/26/16 15:32	02/27/16 09:56
680-122353-7	BSA-MW-1S-F(0.2)-0216	Water	02/26/16 15:32	02/27/16 09:56
680-122353-8	BSA-MW-1S-0216-EB	Water	02/26/16 16:08	02/27/16 09:56
680-122353-9	1Q16 LTM Trip Blank #5	Water	02/26/16 00:00	02/27/16 09:56

AWP
3/22/16
TestAmerica Savannah

Method Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

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 BUF
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 SL
415.1	DOC	MCAWW	TAL SL

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 BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

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

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

AWP
3/22/16
TestAmerica Savannah

Definitions/Glossary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

Qualifiers

GC/MS VOA

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

GC/MS Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
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.

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
3/22/16
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

Client Sample ID: CPA-MW-4D-0216

Lab Sample ID: 680-122353-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	150		1.0		ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	1.8		1.0		ug/L	1		8260B	Total/NA
4-Chloroaniline	110	F	20		ug/L	1		8270D	Total/NA
Ethane	22		7.5		ug/L	1		RSK-175	Total/NA
Methane - DL	11000	D	400		ug/L	100		RSK-175	Total/NA
Iron	16		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.37		0.010		mg/L	1		6010C	Total Recoverable
Chloride	290	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	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	710		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	35		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: CPA-MW-4D-F(0.12)-0216

Lab Sample ID: 680-122353-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	16		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.37		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	7.9		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: CPA-MW-2D-0216

Lab Sample ID: 680-122353-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	33000	B	250		ug/L	250		8260B	Total/NA
1,4-Dichlorobenzene	1600	B	250		ug/L	250		8260B	Total/NA
2-Chlorophenol	57		9.7		ug/L	1		8270D	Total/NA
Methane - DL	730	D	400		ug/L	100		RSK-175	Total/NA
Iron	8.1		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.45		0.010		mg/L	1		6010C	Total Recoverable
Chloride	89	B	5.0		mg/L	5		325.2	Total/NA
Sulfate	94		25		mg/L	5		375.4	Total/NA
Total Organic Carbon	1.5		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	510		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	21		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: CPA-MW-2D-F(0.2)-0216

Lab Sample ID: 680-122353-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	7.9		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.45		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	5.9		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: CPA-MW-2D-0216-AD

Lab Sample ID: 680-122353-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	34000	D	250		ug/L	250		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

AWP3/22/16
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

Client Sample ID: CPA-MW-2D-0216-AD (Continued)

Lab Sample ID: 680-122353-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dichlorobenzene	1700	D	250		ug/L	250		8260B	Total/NA
2-Chlorophenol	60		9.9		ug/L	1		8270D	Total/NA

Client Sample ID: BSA-MW-1S-0216

Lab Sample ID: 680-122353-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	550000	D	10000		ug/L	10000		8260B	Total/NA
Methane - DL	9500		400		ug/L	100		RSK-175	Total/NA
Iron	13		0.050		mg/L	1		6010C	Total Recoverable
Manganese	1.0		0.010		mg/L	1		6010C	Total Recoverable
Chloride	140	D	5.0		mg/L	5		325.2	Total/NA
Total Organic Carbon - DL	10	D	5.0		mg/L	5		415.1	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	1000		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: BSA-MW-1S-F(0.2)-0216

Lab Sample ID: 680-122353-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	12		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	1.1		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	17		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: BSA-MW-1S-0216-EB

Lab Sample ID: 680-122353-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	950	D	20		ug/L	20		8260B	Total/NA
Chlorobenzene	32	D	20		ug/L	20		8260B	Total/NA

Client Sample ID: 1Q16 LTM Trip Blank #5

Lab Sample ID: 680-122353-9

No Detections.

This Detection Summary does not include radiochemical test results.

AWP
3/22/16
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

Client Sample ID: CPA-MW-4D-0216

Lab Sample ID: 680-122353-1

Date Collected: 02/26/16 11:55

Matrix: Water

Date Received: 02/27/16 09:56

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			03/08/16 11:52	1
Chlorobenzene	150		1.0		ug/L			03/08/16 11:52	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			03/08/16 11:52	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			03/08/16 11:52	1
1,4-Dichlorobenzene	1.8		1.0		ug/L			03/08/16 11:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		70 - 130		03/08/16 11:52	1
1,2-Dichloroethane-d4 (Surr)	95		70 - 130		03/08/16 11:52	1
Dibromofluoromethane (Surr)	93		70 - 130		03/08/16 11:52	1
4-Bromofluorobenzene (Surr)	95		70 - 130		03/08/16 11:52	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 PT	9.8		ug/L		03/03/16 15:46	03/05/16 22:23	1
2-Chlorophenol	9.8	U	9.8		ug/L		03/03/16 15:46	03/05/16 22:23	1
4-Chloroaniline	110	PT	20		ug/L		03/03/16 15:46	03/05/16 22:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	57		39 - 124	03/03/16 15:46	03/05/16 22:23	1
2-Fluorobiphenyl	41		32 - 113	03/03/16 15:46	03/05/16 22:23	1
2-Fluorophenol	42		26 - 109	03/03/16 15:46	03/05/16 22:23	1
Terphenyl-d14	40		10 - 126	03/03/16 15:46	03/05/16 22:23	1
Phenol-d5	50		27 - 110	03/03/16 15:46	03/05/16 22:23	1
Nitrobenzene-d5	54		32 - 118	03/03/16 15:46	03/05/16 22:23	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	22		7.5		ug/L			03/08/16 12:58	1
Ethene	7.0	U	7.0		ug/L			03/08/16 12:58	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	11000		400		ug/L			03/08/16 14:16	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	16		0.050		mg/L		03/02/16 13:49	03/07/16 19:35	1
Manganese	0.37		0.010		mg/L		03/02/16 13:49	03/07/16 19:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	290	U	5.0		mg/L			03/11/16 11:59	5
Nitrate as N	0.050	U	0.050		mg/L			02/27/16 13:46	1
Sulfate	5.0	U	5.0		mg/L			03/09/16 13:11	1
Total Organic Carbon	6.8		1.0		mg/L			03/08/16 20:31	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	710		5.0		mg/L			03/02/16 18:40	1
Carbon Dioxide, Free	35		5.0		mg/L			03/02/16 18:40	1

AWB 3/22/16
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

Client Sample ID: CPA-MW-4D-F(0.12)-0216

Lab Sample ID: 680-122353-2

Date Collected: 02/26/16 11:55

Matrix: Water

Date Received: 02/27/16 09:56

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	16		0.050		mg/L		03/02/16 13:49	03/07/16 19:40	1
Manganese, Dissolved	0.37		0.010		mg/L		03/02/16 13:49	03/07/16 19:40	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	7.9		1.0		mg/L			03/07/16 22:45	1

AWJ
3/22/16
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

Client Sample ID: CPA-MW-2D-0216

Lab Sample ID: 680-122353-3

Date Collected: 02/26/16 14:18

Matrix: Water

Date Received: 02/27/16 09:56

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	250	U	250		ug/L			03/04/16 19:56	250
Chlorobenzene	33000	D	250		ug/L			03/04/16 19:56	250
1,2-Dichlorobenzene	250	U	250		ug/L			03/04/16 19:56	250
1,3-Dichlorobenzene	250	U	250		ug/L			03/04/16 19:56	250
1,4-Dichlorobenzene	1600	D	250		ug/L			03/04/16 19:56	250

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		70 - 130		03/04/16 19:56	250
1,2-Dichloroethane-d4 (Surr)	100		70 - 130		03/04/16 19:56	250
Dibromofluoromethane (Surr)	101		70 - 130		03/04/16 19:56	250
4-Bromofluorobenzene (Surr)	98		70 - 130		03/04/16 19:56	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		03/03/16 15:46	03/05/16 22:46	1
2-Chlorophenol	57		9.7		ug/L		03/03/16 15:46	03/05/16 22:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	60		39 - 124	03/03/16 15:46	03/05/16 22:46	1
2-Fluorobiphenyl	55		32 - 113	03/03/16 15:46	03/05/16 22:46	1
2-Fluorophenol	42		26 - 109	03/03/16 15:46	03/05/16 22:46	1
Terphenyl-d14	27		10 - 126	03/03/16 15:46	03/05/16 22:46	1
Phenol-d5	50		27 - 110	03/03/16 15:46	03/05/16 22:46	1
Nitrobenzene-d5	63		32 - 118	03/03/16 15:46	03/05/16 22:46	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	7.5	U	7.5		ug/L			03/08/16 13:16	1
Ethene	7.0	U	7.0		ug/L			03/08/16 13:16	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	730	D	400		ug/L			03/08/16 14:34	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	8.1		0.050		mg/L		03/02/16 13:49	03/07/16 19:44	1
Manganese	0.45		0.010		mg/L		03/02/16 13:49	03/07/16 19:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	89	D	5.0		mg/L			03/11/16 12:13	5
Nitrate as N	0.050	U	0.050		mg/L			02/27/16 13:50	1
Sulfate	94	D	25		mg/L			03/09/16 13:33	5
Total Organic Carbon	1.5		1.0		mg/L			03/08/16 20:49	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	510		5.0		mg/L			03/02/16 18:49	1
Carbon Dioxide, Free	21		5.0		mg/L			03/02/16 18:49	1

MWD 3/22/16
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
 SDG: KPS165

Client Sample ID: CPA-MW-2D-F(0.2)-0216

Lab Sample ID: 680-122353-4

Date Collected: 02/26/16 14:18

Matrix: Water

Date Received: 02/27/16 09:56

Method: 6010C - Metals (ICP) - Dissolved										
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Iron, Dissolved	7.9		0.050		mg/L		03/02/16 13:49	03/07/16 19:48	1	
Manganese, Dissolved	0.45		0.010		mg/L		03/02/16 13:49	03/07/16 19:48	1	

General Chemistry - Dissolved										
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Dissolved Organic Carbon	5.9		1.0		mg/L			03/07/16 22:59	1	

MWD 3/22/16

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

Client Sample ID: CPA-MW-2D-0216-AD

Lab Sample ID: 680-122353-5

Date Collected: 02/26/16 14:18

Matrix: Water

Date Received: 02/27/16 09:56

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	250	U	250		ug/L			03/04/16 20:17	250
Chlorobenzene	34000	D	250		ug/L			03/04/16 20:17	250
1,2-Dichlorobenzene	250	U	250		ug/L			03/04/16 20:17	250
1,3-Dichlorobenzene	250	U	250		ug/L			03/04/16 20:17	250
1,4-Dichlorobenzene	1700	D	250		ug/L			03/04/16 20:17	250

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		70 - 130		03/04/16 20:17	250
1,2-Dichloroethane-d4 (Surr)	97		70 - 130		03/04/16 20:17	250
Dibromofluoromethane (Surr)	98		70 - 130		03/04/16 20:17	250
4-Bromofluorobenzene (Surr)	96		70 - 130		03/04/16 20:17	250

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		03/03/16 15:46	03/05/16 23:08	1
2-Chlorophenol	60		9.9		ug/L		03/03/16 15:46	03/05/16 23:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	61		39 - 124	03/03/16 15:46	03/05/16 23:08	1
2-Fluorobiphenyl	57		32 - 113	03/03/16 15:46	03/05/16 23:08	1
2-Fluorophenol	45		26 - 109	03/03/16 15:46	03/05/16 23:08	1
Terphenyl-d14	25		10 - 126	03/03/16 15:46	03/05/16 23:08	1
Phenol-d5	53		27 - 110	03/03/16 15:46	03/05/16 23:08	1
Nitrobenzene-d5	68		32 - 118	03/03/16 15:46	03/05/16 23:08	1

AWP
TestAmerica Savannah
3/22/16

Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

Client Sample ID: BSA-MW-1S-0216

Lab Sample ID: 680-122353-6

Date Collected: 02/26/16 15:32

Matrix: Water

Date Received: 02/27/16 09:56

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	550000	D	10000		ug/L			03/04/16 19:14	10000
Chlorobenzene	10000	U	10000		ug/L			03/04/16 19:14	10000
1,2-Dichlorobenzene	10000	U	10000		ug/L			03/04/16 19:14	10000
1,3-Dichlorobenzene	10000	U	10000		ug/L			03/04/16 19:14	10000
1,4-Dichlorobenzene	10000	U	10000		ug/L			03/04/16 19:14	10000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		70 - 130		03/04/16 19:14	10000
1,2-Dichloroethane-d4 (Surr)	104		70 - 130		03/04/16 19:14	10000
Dibromofluoromethane (Surr)	99		70 - 130		03/04/16 19:14	10000
4-Bromofluorobenzene (Surr)	96		70 - 130		03/04/16 19:14	10000

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		03/03/16 15:46	03/05/16 23:31	1
2-Chlorophenol	9.8	U	9.8		ug/L		03/03/16 15:46	03/05/16 23:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	56		39 - 124	03/03/16 15:46	03/05/16 23:31	1
2-Fluorobiphenyl	55		32 - 113	03/03/16 15:46	03/05/16 23:31	1
2-Fluorophenol	54		26 - 109	03/03/16 15:46	03/05/16 23:31	1
Terphenyl-d14	16		10 - 126	03/03/16 15:46	03/05/16 23:31	1
Phenol-d5	62		27 - 110	03/03/16 15:46	03/05/16 23:31	1
Nitrobenzene-d5	71		32 - 118	03/03/16 15:46	03/05/16 23:31	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	7.5	U	7.5		ug/L			03/08/16 13:33	1
Ethene	7.0	U	7.0		ug/L			03/08/16 13:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	9500	D	400		ug/L			03/08/16 14:52	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	13		0.050		mg/L		03/02/16 13:49	03/07/16 19:52	1
Manganese	1.0		0.010		mg/L		03/02/16 13:49	03/07/16 19:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	140	D	5.0		mg/L			03/11/16 11:59	5
Nitrate as N	0.050	U	0.050		mg/L			02/27/16 13:52	1
Sulfate	5.0	U	5.0		mg/L			03/09/16 13:11	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	1000		5.0		mg/L			03/02/16 19:04	1
Carbon Dioxide, Free	40		5.0		mg/L			03/02/16 19:04	1

General Chemistry - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	10	D	5.0		mg/L			03/08/16 21:05	5

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Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

Client Sample ID: BSA-MW-1S-F(0.2)-0216

Lab Sample ID: 680-122353-7

Date Collected: 02/26/16 15:32

Matrix: Water

Date Received: 02/27/16 09:56

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	12		0.050		mg/L		03/02/16 13:49	03/07/16 19:56	1
Manganese, Dissolved	1.1		0.010		mg/L		03/02/16 13:49	03/07/16 19:56	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	17		1.0		mg/L			03/07/16 23:13	1

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Client Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

Client Sample ID: BSA-MW-1S-0216-EB

Lab Sample ID: 680-122353-8

Date Collected: 02/26/16 16:08

Matrix: Water

Date Received: 02/27/16 09:56

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	950	B	20		ug/L			03/09/16 20:31	20
Chlorobenzene	32		20		ug/L			03/09/16 20:31	20
1,2-Dichlorobenzene	20	U	20		ug/L			03/09/16 20:31	20
1,3-Dichlorobenzene	20	U	20		ug/L			03/09/16 20:31	20
1,4-Dichlorobenzene	20	U	20		ug/L			03/09/16 20:31	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		70 - 130		03/09/16 20:31	20
1,2-Dichloroethane-d4 (Surr)	103		70 - 130		03/09/16 20:31	20
Dibromofluoromethane (Surr)	102		70 - 130		03/09/16 20:31	20
4-Bromofluorobenzene (Surr)	103		70 - 130		03/09/16 20:31	20

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		03/03/16 15:46	03/05/16 23:53	1
2-Chlorophenol	9.6	U	9.6		ug/L		03/03/16 15:46	03/05/16 23:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	53		39 - 124	03/03/16 15:46	03/05/16 23:53	1
2-Fluorobiphenyl	53		32 - 113	03/03/16 15:46	03/05/16 23:53	1
2-Fluorophenol	50		26 - 109	03/03/16 15:46	03/05/16 23:53	1
Terphenyl-d14	15		10 - 126	03/03/16 15:46	03/05/16 23:53	1
Phenol-d5	55		27 - 110	03/03/16 15:46	03/05/16 23:53	1
Nitrobenzene-d5	67		32 - 118	03/03/16 15:46	03/05/16 23:53	1


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Client Sample Results

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
 SDG: KPS165

Client Sample ID: 1Q16 LTM Trip Blank #5

Lab Sample ID: 680-122353-9

Date Collected: 02/26/16 00:00

Matrix: Water

Date Received: 02/27/16 09:56

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			03/04/16 16:03	1
Chlorobenzene	1.0	U	1.0		ug/L			03/04/16 16:03	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			03/04/16 16:03	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			03/04/16 16:03	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			03/04/16 16:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		70 - 130					03/04/16 16:03	1
1,2-Dichloroethane-d4 (Surr)	98		70 - 130					03/04/16 16:03	1
Dibromofluoromethane (Surr)	99		70 - 130					03/04/16 16:03	1
4-Bromofluorobenzene (Surr)	98		70 - 130					03/04/16 16:03	1

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Surrogate Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

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 (70-130)	12DCE (70-130)	DBFM (70-130)	BFB (70-130)
680-122353-1	CPA-MW-4D-0216	102	95	93	95
680-122353-3	CPA-MW-2D-0216	102	100	101	98
680-122353-5	CPA-MW-2D-0216-AD	102	97	98	96
680-122353-6	BSA-MW-1S-0216	103	104	99	96
680-122353-8	BSA-MW-1S-0216-EB	97	103	102	103
680-122353-9	1Q16 LTM Trip Blank #5	105	98	99	98
LCS 680-423928/5	Lab Control Sample	122	100	102	96
LCS 680-424217/3	Lab Control Sample	98	98	97	97
LCS 680-424408/4	Lab Control Sample	98	101	101	92
LCSD 680-423928/6	Lab Control Sample Dup	98	104	105	99
LCSD 680-424217/4	Lab Control Sample Dup	96	97	96	95
LCSD 680-424408/5	Lab Control Sample Dup	98	102	100	96
MB 680-423928/9	Method Blank	103	100	99	128
MB 680-424217/7	Method Blank	102	98	96	95
MB 680-424408/9	Method Blank	96	97	99	102

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)
680-122353-1	CPA-MW-4D-0216	57	41	42	40	50	54
680-122353-1 MS	CPA-MW-4D-0216	55	42	41	23	49	53
680-122353-1 MSD	CPA-MW-4D-0216	55	43	36	26	42	51
680-122353-3	CPA-MW-2D-0216	60	55	42	27	50	63
680-122353-5	CPA-MW-2D-0216-AD	61	57	45	25	53	68
680-122353-6	BSA-MW-1S-0216	56	55	54	16	62	71
680-122353-8	BSA-MW-1S-0216-EB	53	53	50	15	55	67
LCS 680-423713/10-A	Lab Control Sample	68	64	53	61	57	70
MB 680-423713/9-A	Method Blank	71	64	66	75	75	77

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: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

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

Lab Sample ID: MB 680-423928/9
Matrix: Water
Analysis Batch: 423928

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			03/04/16 15:21	1
Chlorobenzene	1.0	U	1.0		ug/L			03/04/16 15:21	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			03/04/16 15:21	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			03/04/16 15:21	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			03/04/16 15:21	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	103		70 - 130		03/04/16 15:21	1
1,2-Dichloroethane-d4 (Surr)	100		70 - 130		03/04/16 15:21	1
Dibromofluoromethane (Surr)	99		70 - 130		03/04/16 15:21	1
4-Bromofluorobenzene (Surr)	128		70 - 130		03/04/16 15:21	1

Lab Sample ID: LCS 680-423928/5
Matrix: Water
Analysis Batch: 423928

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

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Benzene	50.0	51.4		ug/L		103	73 - 131
Chlorobenzene	50.0	47.9		ug/L		96	80 - 120
1,2-Dichlorobenzene	50.0	47.9		ug/L		96	80 - 120
1,3-Dichlorobenzene	50.0	48.7		ug/L		97	80 - 120
1,4-Dichlorobenzene	50.0	47.9		ug/L		96	80 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	122		70 - 130
1,2-Dichloroethane-d4 (Surr)	100		70 - 130
Dibromofluoromethane (Surr)	102		70 - 130
4-Bromofluorobenzene (Surr)	96		70 - 130

Lab Sample ID: LCSD 680-423928/6
Matrix: Water
Analysis Batch: 423928

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

Analyte	Spike Added	LCSD LCSD		Unit	D	%Rec	%Rec. Limits	RPD	Limit
		Result	Qualifier						
Benzene	50.0	51.2		ug/L		102	73 - 131	0	30
Chlorobenzene	50.0	49.0		ug/L		98	80 - 120	2	20
1,2-Dichlorobenzene	50.0	47.0		ug/L		94	80 - 120	2	20
1,3-Dichlorobenzene	50.0	49.0		ug/L		98	80 - 120	1	20
1,4-Dichlorobenzene	50.0	47.8		ug/L		96	80 - 120	0	20

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	98		70 - 130
1,2-Dichloroethane-d4 (Surr)	104		70 - 130
Dibromofluoromethane (Surr)	105		70 - 130
4-Bromofluorobenzene (Surr)	99		70 - 130

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AWD 3/22/14

QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

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

Lab Sample ID: MB 680-424217/7
Matrix: Water
Analysis Batch: 424217

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			03/08/16 10:22	1
Chlorobenzene	1.0	U	1.0		ug/L			03/08/16 10:22	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			03/08/16 10:22	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			03/08/16 10:22	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			03/08/16 10:22	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	102		70 - 130		03/08/16 10:22	1
1,2-Dichloroethane-d4 (Surr)	98		70 - 130		03/08/16 10:22	1
Dibromofluoromethane (Surr)	96		70 - 130		03/08/16 10:22	1
4-Bromofluorobenzene (Surr)	95		70 - 130		03/08/16 10:22	1

Lab Sample ID: LCS 680-424217/3
Matrix: Water
Analysis Batch: 424217

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

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Benzene	50.0	49.6		ug/L		99	73 - 131
Chlorobenzene	50.0	47.9		ug/L		96	80 - 120
1,2-Dichlorobenzene	50.0	46.9		ug/L		94	80 - 120
1,3-Dichlorobenzene	50.0	51.8		ug/L		104	80 - 120
1,4-Dichlorobenzene	50.0	47.3		ug/L		95	80 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	98		70 - 130
1,2-Dichloroethane-d4 (Surr)	98		70 - 130
Dibromofluoromethane (Surr)	97		70 - 130
4-Bromofluorobenzene (Surr)	97		70 - 130

Lab Sample ID: LCSD 680-424217/4
Matrix: Water
Analysis Batch: 424217

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

Analyte	Spike Added	LCSD LCSD		Unit	D	%Rec	%Rec. Limits	RPD	
		Result	Qualifier					RPD	Limit
Benzene	50.0	49.1		ug/L		98	73 - 131	1	30
Chlorobenzene	50.0	46.9		ug/L		94	80 - 120	2	20
1,2-Dichlorobenzene	50.0	46.8		ug/L		94	80 - 120	0	20
1,3-Dichlorobenzene	50.0	51.4		ug/L		103	80 - 120	1	20
1,4-Dichlorobenzene	50.0	46.5		ug/L		93	80 - 120	2	20

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	96		70 - 130
1,2-Dichloroethane-d4 (Surr)	97		70 - 130
Dibromofluoromethane (Surr)	96		70 - 130
4-Bromofluorobenzene (Surr)	95		70 - 130

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

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

Lab Sample ID: MB 680-424408/9
Matrix: Water
Analysis Batch: 424408

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			03/09/16 13:28	1
Chlorobenzene	1.0	U	1.0		ug/L			03/09/16 13:28	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			03/09/16 13:28	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			03/09/16 13:28	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			03/09/16 13:28	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	96		70 - 130		03/09/16 13:28	1
1,2-Dichloroethane-d4 (Surr)	97		70 - 130		03/09/16 13:28	1
Dibromofluoromethane (Surr)	99		70 - 130		03/09/16 13:28	1
4-Bromofluorobenzene (Surr)	102		70 - 130		03/09/16 13:28	1

Lab Sample ID: LCS 680-424408/4
Matrix: Water
Analysis Batch: 424408

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chlorobenzene	50.0	48.1		ug/L		96	80 - 120
1,2-Dichlorobenzene	50.0	47.4		ug/L		95	80 - 120
1,3-Dichlorobenzene	50.0	46.7		ug/L		93	80 - 120
1,4-Dichlorobenzene	50.0	46.0		ug/L		92	80 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	98		70 - 130
1,2-Dichloroethane-d4 (Surr)	101		70 - 130
Dibromofluoromethane (Surr)	101		70 - 130
4-Bromofluorobenzene (Surr)	92		70 - 130

Lab Sample ID: LCSD 680-424408/5
Matrix: Water
Analysis Batch: 424408

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	48.1		ug/L		96	73 - 131	1	30
Chlorobenzene	50.0	48.5		ug/L		97	80 - 120	1	20
1,2-Dichlorobenzene	50.0	47.8		ug/L		96	80 - 120	1	20
1,3-Dichlorobenzene	50.0	47.6		ug/L		95	80 - 120	2	20
1,4-Dichlorobenzene	50.0	47.4		ug/L		95	80 - 120	3	20

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	98		70 - 130
1,2-Dichloroethane-d4 (Surr)	102		70 - 130
Dibromofluoromethane (Surr)	100		70 - 130
4-Bromofluorobenzene (Surr)	96		70 - 130

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

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

Lab Sample ID: MB 680-423713/9-A
Matrix: Water
Analysis Batch: 424056

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 423713

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,2,4-Trichlorobenzene	10	U	10		ug/L		03/03/16 15:46	03/05/16 20:09	1
2-Chlorophenol	10	U	10		ug/L		03/03/16 15:46	03/05/16 20:09	1
4-Chloroaniline	20	U	20		ug/L		03/03/16 15:46	03/05/16 20:09	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2,4,6-Tribromophenol	71		39 - 124	03/03/16 15:46	03/05/16 20:09	1
2-Fluorobiphenyl	64		32 - 113	03/03/16 15:46	03/05/16 20:09	1
2-Fluorophenol	66		26 - 109	03/03/16 15:46	03/05/16 20:09	1
Terphenyl-d14	75		10 - 126	03/03/16 15:46	03/05/16 20:09	1
Phenol-d5	75		27 - 110	03/03/16 15:46	03/05/16 20:09	1
Nitrobenzene-d5	77		32 - 118	03/03/16 15:46	03/05/16 20:09	1

Lab Sample ID: LCS 680-423713/10-A
Matrix: Water
Analysis Batch: 424056

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 423713

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	Limits
		Result	Qualifier				
1,2,4-Trichlorobenzene	100	51.3		ug/L		51	33 - 130
1,4-Dioxane	100	53.7		ug/L		54	22 - 130
2-Chlorophenol	100	62.1		ug/L		62	39 - 130
4-Chloroaniline	100	53.8		ug/L		54	42 - 130

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
2,4,6-Tribromophenol	68		39 - 124
2-Fluorobiphenyl	64		32 - 113
2-Fluorophenol	53		26 - 109
Terphenyl-d14	61		10 - 126
Phenol-d5	57		27 - 110
Nitrobenzene-d5	70		32 - 118

Lab Sample ID: 680-122353-1 MS
Matrix: Water
Analysis Batch: 424056

Client Sample ID: CPA-MW-4D-0216
Prep Type: Total/NA
Prep Batch: 423713

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	Limits
	Result	Qualifier		Result	Qualifier				
1,2,4-Trichlorobenzene	9.8	U F1	99.5	25.0	F1	ug/L		25	33 - 130
1,4-Dioxane	9.8	U	99.5	46.5		ug/L		47	22 - 130
2-Chlorophenol	9.8	U	99.5	51.6		ug/L		51	39 - 130
4-Chloroaniline	110	F1	99.5	54.9	F1	ug/L		-57	42 - 130

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
2,4,6-Tribromophenol	55		39 - 124
2-Fluorobiphenyl	42		32 - 113
2-Fluorophenol	41		26 - 109
Terphenyl-d14	23		10 - 126
Phenol-d5	49		27 - 110
Nitrobenzene-d5	53		32 - 118

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AWD 5/22/16

QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

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

Lab Sample ID: 680-122353-1 MSD

Client Sample ID: CPA-MW-4D-0216

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 424056

Prep Batch: 423713

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier							
1,2,4-Trichlorobenzene	9.8	UF1	97.6	30.9	F1	ug/L		32	33 - 130	21	50	
1,4-Dioxane	9.8	U	97.6	34.9		ug/L		36	22 - 130	28	50	
2-Chlorophenol	9.8	U	97.6	42.3		ug/L		42	39 - 130	20	50	
4-Chloroaniline	110	F1	97.6	47.1	F1	ug/L		-66	42 - 130	15	50	

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
2,4,6-Tribromophenol	55		39 - 124
2-Fluorobiphenyl	43		32 - 113
2-Fluorophenol	36		26 - 109
Terphenyl-d14	26		10 - 126
Phenol-d5	42		27 - 110
Nitrobenzene-d5	51		32 - 118

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 480-290109/3

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 290109

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Methane	4.0	U	4.0		ug/L			03/08/16 11:32	1
Ethane	7.5	U	7.5		ug/L			03/08/16 11:32	1
Ethene	7.0	U	7.0		ug/L			03/08/16 11:32	1

Lab Sample ID: LCS 480-290109/4

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 290109

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	Limits	
									RPD
Methane	7.77	7.54		ug/L		97	71 - 118	7	50
Ethane	14.6	14.9		ug/L		103	79 - 120	5	50
Ethene	13.6	14.0		ug/L		103	78 - 115	3	50

Lab Sample ID: LCSD 480-290109/5

Client Sample ID: Lab Control Sample Dup

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 290109

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.	Limits	RPD	Limit
Ethane	14.6	14.2		ug/L		97	79 - 120	5	50	
Ethene	13.6	13.5		ug/L		100	78 - 115	3	50	

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AWD 3/22/16

QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-423646/1-A Matrix: Water Analysis Batch: 424231	Client Sample ID: Method Blank Prep Type: Total Recoverable Prep Batch: 423646
--	---

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.050	U	0.050		mg/L		03/02/16 13:49	03/07/16 18:20	1
Iron, Dissolved	0.050	U	0.050		mg/L		03/02/16 13:49	03/07/16 18:20	1
Manganese	0.010	U	0.010		mg/L		03/02/16 13:49	03/07/16 18:20	1
Manganese, Dissolved	0.010	U	0.010		mg/L		03/02/16 13:49	03/07/16 18:20	1

Lab Sample ID: LCS 680-423646/2-A Matrix: Water Analysis Batch: 424231	Client Sample ID: Lab Control Sample Prep Type: Total Recoverable Prep Batch: 423646
---	---

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Iron	5.00	4.91		mg/L		98	80 - 120
Iron, Dissolved	5.00	4.91		mg/L		98	80 - 120
Manganese	0.500	0.508		mg/L		102	80 - 120
Manganese, Dissolved	0.500	0.508		mg/L		102	80 - 120

Method: 310.1 - Alkalinity

Lab Sample ID: MB 680-423723/35 Matrix: Water Analysis Batch: 423723	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			03/02/16 17:48	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			03/02/16 17:48	1

Lab Sample ID: MB 680-423723/5 Matrix: Water Analysis Batch: 423723	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			03/02/16 14:04	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			03/02/16 14:04	1

Lab Sample ID: LCS 680-423723/36 Matrix: Water Analysis Batch: 423723	Client Sample ID: Lab Control Sample Prep Type: Total/NA
--	---

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Alkalinity	250	270		mg/L		108	80 - 120

Lab Sample ID: LCS 680-423723/6 Matrix: Water Analysis Batch: 423723	Client Sample ID: Lab Control Sample Prep Type: Total/NA
---	---

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Alkalinity	250	269		mg/L		108	80 - 120

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AWD 3/22/16

QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

Method: 310.1 - Alkalinity (Continued)

Lab Sample ID: LCSD 680-423723/32
Matrix: Water
Analysis Batch: 423723

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	272		mg/L		109	80 - 120	1	30

Lab Sample ID: LCSD 680-423723/61
Matrix: Water
Analysis Batch: 423723

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	272		mg/L		109	80 - 120	1	30

Method: 325.2 - Chloride

Lab Sample ID: MB 680-424791/2
Matrix: Water
Analysis Batch: 424791

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			03/11/16 11:55	1

Lab Sample ID: LCS 680-424791/1
Matrix: Water
Analysis Batch: 424791

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	26.3		mg/L		105	85 - 115

Lab Sample ID: LCSD 680-424791/9
Matrix: Water
Analysis Batch: 424791

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	26.7		mg/L		107	85 - 115	2	30

Lab Sample ID: 680-122353-3 MS
Matrix: Water
Analysis Batch: 424791

Client Sample ID: CPA-MW-2D-0216
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	89		25.0	112		mg/L		93	85 - 115

Lab Sample ID: 680-122353-3 MSD
Matrix: Water
Analysis Batch: 424791

Client Sample ID: CPA-MW-2D-0216
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	89		25.0	114		mg/L		102	85 - 115	2	30

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-423172/13
Matrix: Water
Analysis Batch: 423172

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			02/27/16 13:41	1

Lab Sample ID: LCS 680-423172/16
Matrix: Water
Analysis Batch: 423172

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	0.527		mg/L		105	75 - 125
Nitrate Nitrite as N	1.00	1.04		mg/L		104	90 - 110
Nitrite as N	0.500	0.513		mg/L		103	90 - 110

Lab Sample ID: 680-122353-1 MS
Matrix: Water
Analysis Batch: 423172

Client Sample ID: CPA-MW-4D-0216
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	0.534		mg/L		107	75 - 125
Nitrate Nitrite as N	0.050	U	1.00	1.06		mg/L		104	90 - 110
Nitrite as N	0.050	U	0.500	0.526		mg/L		105	90 - 110

Lab Sample ID: 680-122353-1 MSD
Matrix: Water
Analysis Batch: 423172

Client Sample ID: CPA-MW-4D-0216
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	0.533		mg/L		107	75 - 125	0	30
Nitrate Nitrite as N	0.050	U	1.00	1.06		mg/L		105	90 - 110	0	10
Nitrite as N	0.050	U	0.500	0.527		mg/L		105	90 - 110	0	10

Lab Sample ID: 680-122353-3 DU
Matrix: Water
Analysis Batch: 423172

Client Sample ID: CPA-MW-2D-0216
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 680-424485/2
Matrix: Water
Analysis Batch: 424485

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			03/09/16 12:14	1

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QC Sample Results

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

Method: 375.4 - Sulfate (Continued)

Lab Sample ID: LCS 680-424485/1
Matrix: Water
Analysis Batch: 424485

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	22.0		mg/L		110	75 - 125

Lab Sample ID: LCSD 680-424485/7
Matrix: Water
Analysis Batch: 424485

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	22.0		mg/L		110	75 - 125	0	30

Method: 415.1 - DOC

Lab Sample ID: MB 160-239463/4
Matrix: Water
Analysis Batch: 239463

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			03/07/16 17:18	1

Lab Sample ID: LCS 160-239463/5
Matrix: Water
Analysis Batch: 239463

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	10.0	9.76		mg/L		98	90 - 110

Lab Sample ID: 680-122353-7 MS
Matrix: Water
Analysis Batch: 239463

Client Sample ID: BSA-MW-1S-F(0.2)-0216
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	17		5.00	22.4		mg/L		108	82 - 132

Method: 415.1 - TOC

Lab Sample ID: MB 160-239751/4
Matrix: Water
Analysis Batch: 239751

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			03/08/16 15:29	1

Lab Sample ID: LCS 160-239751/5
Matrix: Water
Analysis Batch: 239751

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	10.0	9.62		mg/L		96	90 - 110

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RW 3/22/16

QC Association Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

GC/MS VOA

Analysis Batch: 423928

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122353-3	CPA-MW-2D-0216	Total/NA	Water	8260B	
680-122353-5	CPA-MW-2D-0216-AD	Total/NA	Water	8260B	
680-122353-6	BSA-MW-1S-0216	Total/NA	Water	8260B	
680-122353-9	1Q16 LTM Trip Blank #5	Total/NA	Water	8260B	
LCS 680-423928/5	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-423928/6	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-423928/9	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 424217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122353-1	CPA-MW-4D-0216	Total/NA	Water	8260B	
LCS 680-424217/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-424217/4	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-424217/7	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 424408

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122353-8	BSA-MW-1S-0216-EB	Total/NA	Water	8260B	
LCS 680-424408/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-424408/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-424408/9	Method Blank	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 423713

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122353-1	CPA-MW-4D-0216	Total/NA	Water	3520C	
680-122353-1 MS	CPA-MW-4D-0216	Total/NA	Water	3520C	
680-122353-1 MSD	CPA-MW-4D-0216	Total/NA	Water	3520C	
680-122353-3	CPA-MW-2D-0216	Total/NA	Water	3520C	
680-122353-5	CPA-MW-2D-0216-AD	Total/NA	Water	3520C	
680-122353-6	BSA-MW-1S-0216	Total/NA	Water	3520C	
680-122353-8	BSA-MW-1S-0216-EB	Total/NA	Water	3520C	
LCS 680-423713/10-A	Lab Control Sample	Total/NA	Water	3520C	
MB 680-423713/9-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 424056

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122353-1	CPA-MW-4D-0216	Total/NA	Water	8270D	423713
680-122353-1 MS	CPA-MW-4D-0216	Total/NA	Water	8270D	423713
680-122353-1 MSD	CPA-MW-4D-0216	Total/NA	Water	8270D	423713
680-122353-3	CPA-MW-2D-0216	Total/NA	Water	8270D	423713
680-122353-5	CPA-MW-2D-0216-AD	Total/NA	Water	8270D	423713
680-122353-6	BSA-MW-1S-0216	Total/NA	Water	8270D	423713
680-122353-8	BSA-MW-1S-0216-EB	Total/NA	Water	8270D	423713
LCS 680-423713/10-A	Lab Control Sample	Total/NA	Water	8270D	423713
MB 680-423713/9-A	Method Blank	Total/NA	Water	8270D	423713

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AWD 3/22/16

QC Association Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

GC VOA

Analysis Batch: 290109

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122353-1	CPA-MW-4D-0216	Total/NA	Water	RSK-175	
680-122353-1 - DL	CPA-MW-4D-0216	Total/NA	Water	RSK-175	
680-122353-3	CPA-MW-2D-0216	Total/NA	Water	RSK-175	
680-122353-3 - DL	CPA-MW-2D-0216	Total/NA	Water	RSK-175	
680-122353-6	BSA-MW-1S-0216	Total/NA	Water	RSK-175	
680-122353-6 - DL	BSA-MW-1S-0216	Total/NA	Water	RSK-175	
LCS 480-290109/4	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 480-290109/5	Lab Control Sample Dup	Total/NA	Water	RSK-175	
MB 480-290109/3	Method Blank	Total/NA	Water	RSK-175	

Metals

Prep Batch: 423646

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122353-1	CPA-MW-4D-0216	Total Recoverable	Water	3005A	
680-122353-2	CPA-MW-4D-F(0.12)-0216	Dissolved	Water	3005A	
680-122353-3	CPA-MW-2D-0216	Total Recoverable	Water	3005A	
680-122353-4	CPA-MW-2D-F(0.2)-0216	Dissolved	Water	3005A	
680-122353-6	BSA-MW-1S-0216	Total Recoverable	Water	3005A	
680-122353-7	BSA-MW-1S-F(0.2)-0216	Dissolved	Water	3005A	
LCS 680-423646/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-423646/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 424231

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122353-1	CPA-MW-4D-0216	Total Recoverable	Water	6010C	423646
680-122353-2	CPA-MW-4D-F(0.12)-0216	Dissolved	Water	6010C	423646
680-122353-3	CPA-MW-2D-0216	Total Recoverable	Water	6010C	423646
680-122353-4	CPA-MW-2D-F(0.2)-0216	Dissolved	Water	6010C	423646
680-122353-6	BSA-MW-1S-0216	Total Recoverable	Water	6010C	423646
680-122353-7	BSA-MW-1S-F(0.2)-0216	Dissolved	Water	6010C	423646
LCS 680-423646/2-A	Lab Control Sample	Total Recoverable	Water	6010C	423646
MB 680-423646/1-A	Method Blank	Total Recoverable	Water	6010C	423646

General Chemistry

Analysis Batch: 239463

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122353-2	CPA-MW-4D-F(0.12)-0216	Dissolved	Water	415.1	
680-122353-4	CPA-MW-2D-F(0.2)-0216	Dissolved	Water	415.1	
680-122353-7	BSA-MW-1S-F(0.2)-0216	Dissolved	Water	415.1	
680-122353-7 MS	BSA-MW-1S-F(0.2)-0216	Dissolved	Water	415.1	
LCS 160-239463/5	Lab Control Sample	Dissolved	Water	415.1	
MB 160-239463/4	Method Blank	Dissolved	Water	415.1	

Analysis Batch: 239751

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122353-1	CPA-MW-4D-0216	Total/NA	Water	415.1	
680-122353-3	CPA-MW-2D-0216	Total/NA	Water	415.1	
680-122353-6 - DL	BSA-MW-1S-0216	Total/NA	Water	415.1	

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MWD 3/22/16

QC Association Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

General Chemistry (Continued)

Analysis Batch: 239751 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 160-239751/5	Lab Control Sample	Total/NA	Water	415.1	
MB 160-239751/4	Method Blank	Total/NA	Water	415.1	

Analysis Batch: 423172

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122353-1	CPA-MW-4D-0216	Total/NA	Water	353.2	
680-122353-1 MS	CPA-MW-4D-0216	Total/NA	Water	353.2	
680-122353-1 MSD	CPA-MW-4D-0216	Total/NA	Water	353.2	
680-122353-3	CPA-MW-2D-0216	Total/NA	Water	353.2	
680-122353-3 DU	CPA-MW-2D-0216	Total/NA	Water	353.2	
680-122353-6	BSA-MW-1S-0216	Total/NA	Water	353.2	
LCS 680-423172/16	Lab Control Sample	Total/NA	Water	353.2	
MB 680-423172/13	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 423723

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122353-1	CPA-MW-4D-0216	Total/NA	Water	310.1	
680-122353-3	CPA-MW-2D-0216	Total/NA	Water	310.1	
680-122353-6	BSA-MW-1S-0216	Total/NA	Water	310.1	
LCS 680-423723/36	Lab Control Sample	Total/NA	Water	310.1	
LCS 680-423723/6	Lab Control Sample	Total/NA	Water	310.1	
LCSD 680-423723/32	Lab Control Sample Dup	Total/NA	Water	310.1	
LCSD 680-423723/61	Lab Control Sample Dup	Total/NA	Water	310.1	
MB 680-423723/35	Method Blank	Total/NA	Water	310.1	
MB 680-423723/5	Method Blank	Total/NA	Water	310.1	

Analysis Batch: 424485

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122353-1	CPA-MW-4D-0216	Total/NA	Water	375.4	
680-122353-3	CPA-MW-2D-0216	Total/NA	Water	375.4	
680-122353-6	BSA-MW-1S-0216	Total/NA	Water	375.4	
LCS 680-424485/1	Lab Control Sample	Total/NA	Water	375.4	
LCSD 680-424485/7	Lab Control Sample Dup	Total/NA	Water	375.4	
MB 680-424485/2	Method Blank	Total/NA	Water	375.4	

Analysis Batch: 424791

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-122353-1	CPA-MW-4D-0216	Total/NA	Water	325.2	
680-122353-3	CPA-MW-2D-0216	Total/NA	Water	325.2	
680-122353-3 MS	CPA-MW-2D-0216	Total/NA	Water	325.2	
680-122353-3 MSD	CPA-MW-2D-0216	Total/NA	Water	325.2	
680-122353-6	BSA-MW-1S-0216	Total/NA	Water	325.2	
LCS 680-424791/1	Lab Control Sample	Total/NA	Water	325.2	
LCSD 680-424791/9	Lab Control Sample Dup	Total/NA	Water	325.2	
MB 680-424791/2	Method Blank	Total/NA	Water	325.2	

TestAmerica Savannah
AWD 3/22/16

Lab Chronicle

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

Client Sample ID: CPA-MW-4D-0216

Lab Sample ID: 680-122353-1

Date Collected: 02/26/16 11:55

Matrix: Water

Date Received: 02/27/16 09:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	424217	03/08/16 11:52	CEJ	TAL SAV
Total/NA	Prep	3520C			423713	03/03/16 15:46	RBS	TAL SAV
Total/NA	Analysis	8270D		1	424056	03/05/16 22:23	SMC	TAL SAV
Total/NA	Analysis	RSK-175		1	290109	03/08/16 12:58	JMO	TAL BUF
Total/NA	Analysis	RSK-175	DL	100	290109	03/08/16 14:16	JMO	TAL BUF
Total Recoverable	Prep	3005A			423646	03/02/16 13:49	CRW	TAL SAV
Total Recoverable	Analysis	6010C		1	424231	03/07/16 19:35	BCB	TAL SAV
Total/NA	Analysis	310.1		1	423723	03/02/16 18:40	KLD	TAL SAV
Total/NA	Analysis	325.2		5	424791	03/11/16 11:59	JME	TAL SAV
Total/NA	Analysis	353.2		1	423172	02/27/16 13:46	GRX	TAL SAV
Total/NA	Analysis	375.4		1	424485	03/09/16 13:11	JME	TAL SAV
Total/NA	Analysis	415.1		1	239751	03/08/16 20:31	JCB	TAL SL

Client Sample ID: CPA-MW-4D-F(0.12)-0216

Lab Sample ID: 680-122353-2

Date Collected: 02/26/16 11:55

Matrix: Water

Date Received: 02/27/16 09:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			423646	03/02/16 13:49	CRW	TAL SAV
Dissolved	Analysis	6010C		1	424231	03/07/16 19:40	BCB	TAL SAV
Dissolved	Analysis	415.1		1	239463	03/07/16 22:45	JCB	TAL SL

Client Sample ID: CPA-MW-2D-0216

Lab Sample ID: 680-122353-3

Date Collected: 02/26/16 14:18

Matrix: Water

Date Received: 02/27/16 09:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		250	423928	03/04/16 19:56	DAS	TAL SAV
Total/NA	Prep	3520C			423713	03/03/16 15:46	RBS	TAL SAV
Total/NA	Analysis	8270D		1	424056	03/05/16 22:46	SMC	TAL SAV
Total/NA	Analysis	RSK-175		1	290109	03/08/16 13:16	JMO	TAL BUF
Total/NA	Analysis	RSK-175	DL	100	290109	03/08/16 14:34	JMO	TAL BUF
Total Recoverable	Prep	3005A			423646	03/02/16 13:49	CRW	TAL SAV
Total Recoverable	Analysis	6010C		1	424231	03/07/16 19:44	BCB	TAL SAV
Total/NA	Analysis	310.1		1	423723	03/02/16 18:49	KLD	TAL SAV
Total/NA	Analysis	325.2		5	424791	03/11/16 12:13	JME	TAL SAV
Total/NA	Analysis	353.2		1	423172	02/27/16 13:50	GRX	TAL SAV
Total/NA	Analysis	375.4		5	424485	03/09/16 13:33	JME	TAL SAV
Total/NA	Analysis	415.1		1	239751	03/08/16 20:49	JCB	TAL SL

TestAmerica Savannah

AWO 3/22/16

Lab Chronicle

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

Client Sample ID: CPA-MW-2D-F(0.2)-0216

Lab Sample ID: 680-122353-4

Date Collected: 02/26/16 14:18

Matrix: Water

Date Received: 02/27/16 09:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			423646	03/02/16 13:49	CRW	TAL SAV
Dissolved	Analysis	6010C		1	424231	03/07/16 19:48	BCB	TAL SAV
Dissolved	Analysis	415.1		1	239463	03/07/16 22:59	JCB	TAL SL

Client Sample ID: CPA-MW-2D-0216-AD

Lab Sample ID: 680-122353-5

Date Collected: 02/26/16 14:18

Matrix: Water

Date Received: 02/27/16 09:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		250	423928	03/04/16 20:17	DAS	TAL SAV
Total/NA	Prep	3520C			423713	03/03/16 15:46	RBS	TAL SAV
Total/NA	Analysis	8270D		1	424056	03/05/16 23:08	SMC	TAL SAV

Client Sample ID: BSA-MW-1S-0216

Lab Sample ID: 680-122353-6

Date Collected: 02/26/16 15:32

Matrix: Water

Date Received: 02/27/16 09:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10000	423928	03/04/16 19:14	DAS	TAL SAV
Total/NA	Prep	3520C			423713	03/03/16 15:46	RBS	TAL SAV
Total/NA	Analysis	8270D		1	424056	03/05/16 23:31	SMC	TAL SAV
Total/NA	Analysis	RSK-175		1	290109	03/08/16 13:33	JMO	TAL BUF
Total/NA	Analysis	RSK-175	DL	100	290109	03/08/16 14:52	JMO	TAL BUF
Total Recoverable	Prep	3005A			423646	03/02/16 13:49	CRW	TAL SAV
Total Recoverable	Analysis	6010C		1	424231	03/07/16 19:52	BCB	TAL SAV
Total/NA	Analysis	310.1		1	423723	03/02/16 19:04	KLD	TAL SAV
Total/NA	Analysis	325.2		5	424791	03/11/16 11:59	JME	TAL SAV
Total/NA	Analysis	353.2		1	423172	02/27/16 13:52	GRX	TAL SAV
Total/NA	Analysis	375.4		1	424485	03/09/16 13:11	JME	TAL SAV
Total/NA	Analysis	415.1	DL	5	239751	03/08/16 21:05	JCB	TAL SL

Client Sample ID: BSA-MW-1S-F(0.2)-0216

Lab Sample ID: 680-122353-7

Date Collected: 02/26/16 15:32

Matrix: Water

Date Received: 02/27/16 09:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			423646	03/02/16 13:49	CRW	TAL SAV
Dissolved	Analysis	6010C		1	424231	03/07/16 19:56	BCB	TAL SAV
Dissolved	Analysis	415.1		1	239463	03/07/16 23:13	JCB	TAL SL

TestAmerica Savannah

AWD 3/22/16

Lab Chronicle

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

Client Sample ID: BSA-MW-1S-0216-EB
Date Collected: 02/26/16 16:08
Date Received: 02/27/16 09:56

Lab Sample ID: 680-122353-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		20	424408	03/09/16 20:31	CEJ	TAL SAV
Total/NA	Prep	3520C			423713	03/03/16 15:46	RBS	TAL SAV
Total/NA	Analysis	8270D		1	424056	03/05/16 23:53	SMC	TAL SAV

Client Sample ID: 1Q16 LTM Trip Blank #5
Date Collected: 02/26/16 00:00
Date Received: 02/27/16 09:56

Lab Sample ID: 680-122353-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	423928	03/04/16 16:03	DAS	TAL SAV

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600
TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

TestAmerica Savannah

AWD 3/22/16

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: DW NPDES RCRA Other: Emily White

Client Contact Golder Associates Inc. 820 South Main Street St. Charles, MO 63301 (636) 724-9181 Phone (636) 724-9323 1016 LTM FAX Project Name: 3045 Drum Site GW Sampling-1403345 Site: Solutia WG Krummrich Facility P O # 42447936	Project Manager: Amanda Derhake Tel/Fax: 636-724-9191	Site Contact: <u>Lee Biedner</u> Lab Contact: Michele Kersey	Date: <u>02/20/16</u> Carrier: FedEx	COC No: _____ 1 of 1 COCs Sampler: <u>S. Wilson</u> For Lab Use Only: Walk-in Client: Lab Sampling: Job / SDG No.:
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Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	SVOCs by 8270	Total Fe/Mn by 6010C	Al/CO2 by 310.1	Chloride by 326.2/Sulfate by 375.4	Methane by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010C	DOC by 415.1	VOC by 8210D	Sample Specific Notes:	
																			CPA-MW-4D-0216
CPA-MW-4D-F(0.12)-0216		1155			4	Y													
CPA-MW-2D-0216		1418			16	N	2	1	1	3	2	3						3*	* Added 8260-voc
CPA-MW-2D-F(0.2)-0216		1418			4	Y													analysis to COC
CPA-MW-2D-0216-AD		1418			5	N	2											3	per E write
BSA-MW-1S-0216		1532			16	N	2	1	1	3	2	3						3*	2/29/16
BSA-MW-1S-F(0.2)-0216		1532			4	Y													col. Responder
BSA-MW-1S-0216-EB		1008			5	N	2												
1016 LTM Top Blank #5					2	N													

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.

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Non-Hazard Flammable Skin Irritant Poison B Unknown

Return to Client Disposal by Lab Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: Yes No

Custody Seal No.: 072766/072767

Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____

Relinquished by: Samantha Toland Company: Golder Date/Time: 02/20/16 1740

Relinquished by: _____ Company: _____ Date/Time: _____

Relinquished by: _____ Company: _____ Date/Time: _____

Received in Laboratory by: Sherry May Company: TASA Date/Time: 2/27/16 09:56

3.6/4.0 0.1/0.5 680-122353

1000 3/22/16

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

Chain of Custody Record



TestAmerica
 THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)		Sampler:		Lab PM:		Carrier Tracking No(s):		COC No:	
Client Contact: Shipping/Receiving		Phone:		Kersey, Michele R				680-423499.1	
Company: TestAmerica Laboratories, Inc.		E-Mail: michele.kersey@testamericainc.com						Page: Page 1 of 1	
Address: 13715 Rider Trail North		Due Date Requested: 3/11/2016		Analysis Requested		Job #: 680-122353-1		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - ph 4-5 Z - other (specify)	
City: Earth City		TAT Requested (days):							
State, Zip: MO, 63045		PO #:							
Phone: 314-298-8566(Tel) 314-298-8757(Fax)		WFO #:							
Project Name: 1Q16 LTM GW Sampling - 1403345		Project #: 68001754		Matrix (W=water, S=solid, O=water/sol, G=grab)		416.1 / 416.1 / Total Organic Carbon		Other:	
Site:		SSOW#:		416.1_DissFIELD_FLTRD 416.1_Diss / Dissolved Organic Carbon					
Sample Identification - Client ID (Lab ID)		Sample Data		Sample Time		Sample Type (C=Comp, G=grab)		Special Instructions/Note:	
CPA-MW-4D-0216 (680-122353-1)		2/26/16		11:55 Eastern		Water		X	
CPA-MW-4D-F(0.12)-0216 (680-122353-2)		2/26/16		11:55 Eastern		Water		X	
CPA-MW-2D-0216 (680-122353-3)		2/26/16		14:18 Eastern		Water		X	
CPA-MW-2D-F(0.2)-0216 (680-122353-4)		2/26/16		14:18 Eastern		Water		X	
BSA-MW-1S-0216 (680-122353-6)		2/26/16		15:32 Eastern		Water		X	
BSA-MW-1S-F(0.2)-0216 (680-122353-7)		2/26/16		15:32 Eastern		Water		X	
Possible Hazard Identification		Unconfirmed		Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:			
Relinquished by: <i>[Signature]</i>		Date/Time: 02-29-16 1431		Company: Saw		Received by: <i>[Signature]</i>		Date/Time: 3-1-16 0925 Company: TALS	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time: Company:	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time: Company:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:					

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AWD 3/22/16

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-122353-1
SDG Number: KPS165

Login Number: 122353

List Number: 1

Creator: Murray, Thomas J

List Source: TestAmerica Savannah

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.	N/A	
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	

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-122353-1
SDG Number: KPS165

Login Number: 122353

List Number: 3

Creator: Conway, Curtis R

List Source: TestAmerica Buffalo

List Creation: 03/04/16 05:05 PM

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is 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 sample IDs on the containers 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	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	False	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-122353-1
SDG Number: KPS165

Login Number: 122353
List Number: 2
Creator: Clarke, Jill C

List Source: TestAmerica St. Louis
List Creation: 03/01/16 12:36 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
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	0.3
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?	False	
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").	N/A	
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: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

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

Laboratory: TestAmerica Buffalo

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

* Certification renewal pending - certification considered valid.

AWO
TestAmerica Savannah
3/22/16

Certification Summary

Client: Solutia Inc.
Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
SDG: KPS165

Laboratory: TestAmerica Buffalo (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0686	07-06-16
California	State Program	9	1169CA	09-30-17
Connecticut	State Program	1	PH-0568	09-30-16
Florida	NELAP	4	E87672	06-30-16
Georgia	State Program	4	N/A	03-31-16 *
Georgia	State Program	4	956	03-31-16 *
Illinois	NELAP	5	200003	09-30-16
Iowa	State Program	7	374	03-01-17
Kansas	NELAP	7	E-10187	05-31-16 *
Kentucky (DW)	State Program	4	90029	12-31-16
Kentucky (UST)	State Program	4	30	03-31-16 *
Kentucky (WWW)	State Program	4	90029	12-31-16
Louisiana	NELAP	6	02031	06-30-16
Maine	State Program	1	NY00044	12-04-16
Maryland	State Program	3	294	03-31-16 *
Massachusetts	State Program	1	M-NY044	06-30-16
Michigan	State Program	5	9937	03-31-16 *
Minnesota	NELAP	5	036-999-337	12-31-16
New Hampshire	NELAP Secondary AB	1	2337	11-17-16
New Jersey	NELAP	2	NY455	06-30-16
New York	NELAP	2	10026	03-31-16 *
North Dakota	State Program	8	R-176	03-31-16 *
Oklahoma	State Program	6	9421	08-31-16
Oregon	NELAP	10	NY200003	06-09-16
Pennsylvania	NELAP	3	68-00281	07-31-16
Rhode Island	State Program	1	LAO00328	12-30-16
Tennessee	State Program	4	TN02970	03-31-16 *
Texas	NELAP	6	T104704412-15-6	07-31-16
USDA	Federal		P330-11-00386	11-26-17
Virginia	NELAP	3	460185	09-14-16
Washington	State Program	10	C784	02-10-17
West Virginia DEP	State Program	3	252	09-30-16
Wisconsin	State Program	5	998310390	08-31-16

Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-16
California	ELAP	9	2886	03-31-16 *
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-16
Illinois	NELAP	5	003757	11-30-16
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	05-31-16
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-10-16 *
Louisiana	NELAP	6	04080	06-30-16
Louisiana (DW)	NELAP	6	LA160008	12-31-16
Maryland	State Program	3	310	09-30-16

* Certification renewal pending - certification considered valid.

TestAmerica Savannah
AWD 3/22/16

Certification Summary

Client: Solutia Inc.
 Project/Site: 1Q16 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-122353-1
 SDG: KPS165

Laboratory: TestAmerica St. Louis (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Missouri	State Program	7	780	06-30-16
Nevada	State Program	9	MO000542016-1	07-31-16
New Jersey	NELAP	2	MO002	06-30-16
New York	NELAP	2	11616	03-31-16 *
North Dakota	State Program	8	R207	06-30-16
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-16
Pennsylvania	NELAP	3	68-00540	02-28-17 *
South Carolina	State Program	4	85002001	06-30-16
Texas	NELAP	6	T104704193-15-9	07-31-16
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542015-7	07-31-16
Virginia	NELAP	3	460230	06-14-16
Washington	State Program	10	C592	08-30-16
West Virginia DEP	State Program	3	381	08-31-16

* Certification renewal pending - certification considered valid.

APPENDIX E
SURFACE WATER AND SEDIMENT ANALYTICAL RESULTS
(INCLUDING DATA VALIDATION REPORTS)

SDG KRS015

Sample Results from:

**SW-R2007-1
SW-R2007-2
SW-R2007-3**



Level IV Data Validation Summary
Solutia Inc., W.G. Krummrich, Sauget, Illinois
1Q16 Long-Term Monitoring Program

Company Name: Golder Associates
Project Name: WGK-1Q16 River Sampling/Surface Water
Reviewer: A. Derhake
Laboratory: TestAmerica
SDG#: KRS015
Matrix: Water

Project Manager: A. Derhake
Project Number: 140-3345
Sample Date: February 2016

Analytical Method: VOC (8260B) and SVOC (8270D)

Sample Names: SW-R2007-1-0216, SW-R2007-2-0216, SW-R2007-3-0216, SW-R2007-1-0216-AD, SW-R2007-1-0216-EB, TB-123015

Field Information

YES NO NA

- a) Sampling dates noted? [X] [] []
b) Does the laboratory narrative indicate deficiencies? [X] [] []

Comments:

VOC: No deficiencies noted.

SVOC: No deficiencies noted.

Chain-of-Custody (COC)

YES NO NA

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

Comments: Samples were received at 1.8°C, 3.2°C and 3.2°C, some outside the 4°C +/- 2°C criteria.

General

YES NO NA

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

Comments: None

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? [X] [] []
b) Does BFB/DFTPP meet the ion abundance criteria? [X] [] []
c) Internal Standard retention times and areas met appropriate criteria? [X] [] []

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: Analytes of interest met calibration standards.**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-R2007-1-0216-EB was submitted with SDG KRS015.**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: Duplicate sample SW-R2007-1-0216-AD was submitted with SDG KRS015.**Additional Comments:** None



Qualifications:

Quality Control Issue	Compound(s)	Qualifier	Samples Affected
None	None	None	None

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: 680-121907-1

TestAmerica Sample Delivery Group: KRS015

Client Project/Site: WGK River Sampling / Surface Water

Revision: 1

For:

Solutia Inc.

575 Maryville Centre Dr.

Saint Louis, Missouri 63141

Attn: Mr. Jerry Rinaldi

Michele Kersey

Authorized for release by:

3/23/2016 10:48:50 AM

Michele Kersey, Project Manager I

(912)354-7858

michele.kersey@testamericainc.com

LINKS

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results through

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The
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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.

*AWD
3/23/16*

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AWD
3/10/16

Case Narrative

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-121907-1
SDG: KRS015

Job ID: 680-121907-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Solutia Inc.

Project: WGK River Sampling / Surface Water

Report Number: 680-121907-1

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 2/16/2016 9:58 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 1.8° C, 3.2° C and 3.2° C.

NOTE: Case Narrative revised to correct temperature of "23.2 to 3.2".

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples SW-R2007-1-0216 (680-121907-1), SW-R2007-2-0216 (680-121907-2), SW-R2007-3-0216 (680-121907-3), SW-R2007-1-0216-AD (680-121907-4), SED-R2007-1-0216-EB (680-121907-5) and TB1-123015 (680-121907-10) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 02/24/2016.

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

SEMIVOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples SW-R2007-1-0216 (680-121907-1), SW-R2007-2-0216 (680-121907-2), SW-R2007-3-0216 (680-121907-3), SW-R2007-1-0216-AD (680-121907-4) and SED-R2007-1-0216-EB (680-121907-5) were analyzed for semivolatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8270C. The samples were prepared on 02/18/2016 and analyzed on 02/20/2016.

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 / Surface Water

TestAmerica Job ID: 680-121907-1
SDG: KRS015

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-121907-1	SW-R2007-1-0216	Water	02/15/16 14:30	02/16/16 09:58
680-121907-2	SW-R2007-2-0216	Water	02/15/16 13:50	02/16/16 09:58
680-121907-3	SW-R2007-3-0216	Water	02/15/16 10:45	02/16/16 09:58
680-121907-4	SW-R2007-1-0216-AD	Water	02/15/16 14:30	02/16/16 09:58
680-121907-5	SED-R2007-1-0216-EB	Water	02/15/16 15:50	02/16/16 09:58
680-121907-10	TB1-123015	Water	02/15/16 00:00	02/16/16 09:58



AWP
3/10/16
TestAmerica Savannah

Method Summary

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-121907-1
SDG: KRS015

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV

Protocol References:

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
3/10/16
TestAmerica Savannah

Definitions/Glossary

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-121907-1
SDG: KRS015

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.

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
3/10/16
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-121907-1
SDG: KRS015

Client Sample ID: SW-R2007-1-0216

Lab Sample ID: 680-121907-1

No Detections.

Client Sample ID: SW-R2007-2-0216

Lab Sample ID: 680-121907-2

No Detections.

Client Sample ID: SW-R2007-3-0216

Lab Sample ID: 680-121907-3

No Detections.

Client Sample ID: SW-R2007-1-0216-AD

Lab Sample ID: 680-121907-4

No Detections.

Client Sample ID: SED-R2007-1-0216-EB

Lab Sample ID: 680-121907-5

No Detections.

Client Sample ID: TB1-123015

Lab Sample ID: 680-121907-10

No Detections.

This Detection Summary does not include radiochemical test results.

AWP
3/10/16
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-121907-1
SDG: KRS015

Client Sample ID: SW-R2007-1-0216

Lab Sample ID: 680-121907-1

Date Collected: 02/15/16 14:30

Matrix: Water

Date Received: 02/16/16 09:58

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			02/24/16 16:50	1
Chlorobenzene	1.0	U	1.0	0.26	ug/L			02/24/16 16:50	1
1,2-Dichlorobenzene	1.0	U	1.0	0.37	ug/L			02/24/16 16:50	1
1,3-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			02/24/16 16:50	1
1,4-Dichlorobenzene	1.0	U	1.0	0.46	ug/L			02/24/16 16:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		70 - 130		02/24/16 16:50	1
Dibromofluoromethane (Surr)	106		70 - 130		02/24/16 16:50	1
1,2-Dichloroethane-d4 (Surr)	118		70 - 130		02/24/16 16:50	1
4-Bromofluorobenzene (Surr)	104		70 - 130		02/24/16 16:50	1

Method: 8270C - 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		02/18/16 14:13	02/20/16 19:49	1
2-Chlorophenol	9.9	U	9.9	0.86	ug/L		02/18/16 14:13	02/20/16 19:49	1
1,4-Dioxane	9.9	U	9.9	3.4	ug/L		02/18/16 14:13	02/20/16 19:49	1
1,2,4-Trichlorobenzene	9.9	U	9.9	0.55	ug/L		02/18/16 14:13	02/20/16 19:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	54		32 - 113	02/18/16 14:13	02/20/16 19:49	1
2-Fluorophenol	51		26 - 109	02/18/16 14:13	02/20/16 19:49	1
Nitrobenzene-d5	68		32 - 118	02/18/16 14:13	02/20/16 19:49	1
Phenol-d5	57		27 - 110	02/18/16 14:13	02/20/16 19:49	1
Terphenyl-d14	26		10 - 126	02/18/16 14:13	02/20/16 19:49	1
2,4,6-Tribromophenol	53		39 - 124	02/18/16 14:13	02/20/16 19:49	1


 TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-121907-1
SDG: KRS015

Client Sample ID: SW-R2007-2-0216

Lab Sample ID: 680-121907-2

Date Collected: 02/15/16 13:50

Matrix: Water

Date Received: 02/16/16 09:58

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			02/24/16 17:13	1
Chlorobenzene	1.0	U	1.0	0.26	ug/L			02/24/16 17:13	1
1,2-Dichlorobenzene	1.0	U	1.0	0.37	ug/L			02/24/16 17:13	1
1,3-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			02/24/16 17:13	1
1,4-Dichlorobenzene	1.0	U	1.0	0.46	ug/L			02/24/16 17:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		70 - 130		02/24/16 17:13	1
Dibromofluoromethane (Surr)	104		70 - 130		02/24/16 17:13	1
1,2-Dichloroethane-d4 (Surr)	117		70 - 130		02/24/16 17:13	1
4-Bromofluorobenzene (Surr)	100		70 - 130		02/24/16 17:13	1

Method: 8270C - 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		02/18/16 14:13	02/20/16 20:11	1
2-Chlorophenol	9.8	U	9.8	0.85	ug/L		02/18/16 14:13	02/20/16 20:11	1
1,4-Dioxane	9.8	U	9.8	3.3	ug/L		02/18/16 14:13	02/20/16 20:11	1
1,2,4-Trichlorobenzene	9.8	U	9.8	0.55	ug/L		02/18/16 14:13	02/20/16 20:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	56		32 - 113	02/18/16 14:13	02/20/16 20:11	1
2-Fluorophenol	51		26 - 109	02/18/16 14:13	02/20/16 20:11	1
Nitrobenzene-d5	67		32 - 118	02/18/16 14:13	02/20/16 20:11	1
Phenol-d5	59		27 - 110	02/18/16 14:13	02/20/16 20:11	1
Terphenyl-d14	26		10 - 126	02/18/16 14:13	02/20/16 20:11	1
2,4,6-Tribromophenol	58		39 - 124	02/18/16 14:13	02/20/16 20:11	1


 TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-121907-1
SDG: KRS015

Client Sample ID: SW-R2007-3-0216

Lab Sample ID: 680-121907-3

Date Collected: 02/15/16 10:45

Matrix: Water

Date Received: 02/16/16 09:58

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			02/24/16 17:36	1
Chlorobenzene	1.0	U	1.0	0.26	ug/L			02/24/16 17:36	1
1,2-Dichlorobenzene	1.0	U	1.0	0.37	ug/L			02/24/16 17:36	1
1,3-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			02/24/16 17:36	1
1,4-Dichlorobenzene	1.0	U	1.0	0.46	ug/L			02/24/16 17:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		70 - 130		02/24/16 17:36	1
Dibromofluoromethane (Surr)	105		70 - 130		02/24/16 17:36	1
1,2-Dichloroethane-d4 (Surr)	122		70 - 130		02/24/16 17:36	1
4-Bromofluorobenzene (Surr)	101		70 - 130		02/24/16 17:36	1

Method: 8270C - 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		02/18/16 14:13	02/20/16 20:33	1
2-Chlorophenol	9.9	U	9.9	0.86	ug/L		02/18/16 14:13	02/20/16 20:33	1
1,4-Dioxane	9.9	U	9.9	3.4	ug/L		02/18/16 14:13	02/20/16 20:33	1
1,2,4-Trichlorobenzene	9.9	U	9.9	0.56	ug/L		02/18/16 14:13	02/20/16 20:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	54		32 - 113	02/18/16 14:13	02/20/16 20:33	1
2-Fluorophenol	49		26 - 109	02/18/16 14:13	02/20/16 20:33	1
Nitrobenzene-d5	63		32 - 118	02/18/16 14:13	02/20/16 20:33	1
Phenol-d5	56		27 - 110	02/18/16 14:13	02/20/16 20:33	1
Terphenyl-d14	27		10 - 126	02/18/16 14:13	02/20/16 20:33	1
2,4,6-Tribromophenol	56		39 - 124	02/18/16 14:13	02/20/16 20:33	1

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TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-121907-1
SDG: KRS015

Client Sample ID: SW-R2007-1-0216-AD

Lab Sample ID: 680-121907-4

Date Collected: 02/15/16 14:30

Matrix: Water

Date Received: 02/16/16 09:58

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			02/24/16 17:58	1
Chlorobenzene	1.0	U	1.0	0.26	ug/L			02/24/16 17:58	1
1,2-Dichlorobenzene	1.0	U	1.0	0.37	ug/L			02/24/16 17:58	1
1,3-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			02/24/16 17:58	1
1,4-Dichlorobenzene	1.0	U	1.0	0.46	ug/L			02/24/16 17:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		70 - 130		02/24/16 17:58	1
Dibromofluoromethane (Surr)	106		70 - 130		02/24/16 17:58	1
1,2-Dichloroethane-d4 (Surr)	117		70 - 130		02/24/16 17:58	1
4-Bromofluorobenzene (Surr)	101		70 - 130		02/24/16 17:58	1

Method: 8270C - 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		02/18/16 14:13	02/20/16 20:56	1
2-Chlorophenol	9.9	U	9.9	0.87	ug/L		02/18/16 14:13	02/20/16 20:56	1
1,4-Dioxane	9.9	U	9.9	3.4	ug/L		02/18/16 14:13	02/20/16 20:56	1
1,2,4-Trichlorobenzene	9.9	U	9.9	0.56	ug/L		02/18/16 14:13	02/20/16 20:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	59		32 - 113	02/18/16 14:13	02/20/16 20:56	1
2-Fluorophenol	54		26 - 109	02/18/16 14:13	02/20/16 20:56	1
Nitrobenzene-d5	69		32 - 118	02/18/16 14:13	02/20/16 20:56	1
Phenol-d5	62		27 - 110	02/18/16 14:13	02/20/16 20:56	1
Terphenyl-d14	27		10 - 126	02/18/16 14:13	02/20/16 20:56	1
2,4,6-Tribromophenol	60		39 - 124	02/18/16 14:13	02/20/16 20:56	1


 TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-121907-1
SDG: KRS015

Client Sample ID: SED-R2007-1-0216-EB

Lab Sample ID: 680-121907-5

Date Collected: 02/15/16 15:50

Matrix: Water

Date Received: 02/16/16 09:58

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			02/24/16 16:28	1
Chlorobenzene	1.0	U	1.0	0.26	ug/L			02/24/16 16:28	1
1,2-Dichlorobenzene	1.0	U	1.0	0.37	ug/L			02/24/16 16:28	1
1,3-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			02/24/16 16:28	1
1,4-Dichlorobenzene	1.0	U	1.0	0.46	ug/L			02/24/16 16:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		70 - 130		02/24/16 16:28	1
Dibromofluoromethane (Surr)	108		70 - 130		02/24/16 16:28	1
1,2-Dichloroethane-d4 (Surr)	119		70 - 130		02/24/16 16:28	1
4-Bromofluorobenzene (Surr)	105		70 - 130		02/24/16 16:28	1

Method: 8270C - 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		02/18/16 14:13	02/20/16 21:18	1
2-Chlorophenol	9.6	U	9.6	0.83	ug/L		02/18/16 14:13	02/20/16 21:18	1
1,4-Dioxane	9.6	U	9.6	3.3	ug/L		02/18/16 14:13	02/20/16 21:18	1
1,2,4-Trichlorobenzene	9.6	U	9.6	0.54	ug/L		02/18/16 14:13	02/20/16 21:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	53		32 - 113	02/18/16 14:13	02/20/16 21:18	1
2-Fluorophenol	47		26 - 109	02/18/16 14:13	02/20/16 21:18	1
Nitrobenzene-d5	63		32 - 118	02/18/16 14:13	02/20/16 21:18	1
Phenol-d5	54		27 - 110	02/18/16 14:13	02/20/16 21:18	1
Terphenyl-d14	58		10 - 126	02/18/16 14:13	02/20/16 21:18	1
2,4,6-Tribromophenol	52		39 - 124	02/18/16 14:13	02/20/16 21:18	1

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TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
 Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-121907-1
 SDG: KRS015

Client Sample ID: TB1-123015

Lab Sample ID: 680-121907-10

Date Collected: 02/15/16 00:00

Matrix: Water

Date Received: 02/16/16 09:58

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			02/24/16 16:05	1
Chlorobenzene	1.0	U	1.0	0.26	ug/L			02/24/16 16:05	1
1,2-Dichlorobenzene	1.0	U	1.0	0.37	ug/L			02/24/16 16:05	1
1,3-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			02/24/16 16:05	1
1,4-Dichlorobenzene	1.0	U	1.0	0.46	ug/L			02/24/16 16:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		70 - 130		02/24/16 16:05	1
Dibromofluoromethane (Surr)	108		70 - 130		02/24/16 16:05	1
1,2-Dichloroethane-d4 (Surr)	120		70 - 130		02/24/16 16:05	1
4-Bromofluorobenzene (Surr)	99		70 - 130		02/24/16 16:05	1



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TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-121907-1
SDG: KRS015

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

Lab Sample ID: MB 680-422585/11
Matrix: Water
Analysis Batch: 422585

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	0.43	ug/L			02/24/16 11:10	1
Chlorobenzene	1.0	U	1.0	0.26	ug/L			02/24/16 11:10	1
1,2-Dichlorobenzene	1.0	U	1.0	0.37	ug/L			02/24/16 11:10	1
1,3-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			02/24/16 11:10	1
1,4-Dichlorobenzene	1.0	U	1.0	0.46	ug/L			02/24/16 11:10	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	100		70 - 130		02/24/16 11:10	1
Dibromofluoromethane (Surr)	105		70 - 130		02/24/16 11:10	1
1,2-Dichloroethane-d4 (Surr)	102		70 - 130		02/24/16 11:10	1
4-Bromofluorobenzene (Surr)	102		70 - 130		02/24/16 11:10	1

Lab Sample ID: LCS 680-422585/4
Matrix: Water
Analysis Batch: 422585

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chlorobenzene	50.0	51.0		ug/L		102	80 - 120
1,2-Dichlorobenzene	50.0	51.9		ug/L		104	80 - 120
1,3-Dichlorobenzene	50.0	50.4		ug/L		101	80 - 120
1,4-Dichlorobenzene	50.0	50.6		ug/L		101	80 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	100		70 - 130
Dibromofluoromethane (Surr)	106		70 - 130
1,2-Dichloroethane-d4 (Surr)	106		70 - 130
4-Bromofluorobenzene (Surr)	100		70 - 130

Lab Sample ID: LCSD 680-422585/8
Matrix: Water
Analysis Batch: 422585

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
Chlorobenzene	50.0	50.1		ug/L		100	80 - 120	2	20
1,2-Dichlorobenzene	50.0	49.6		ug/L		99	80 - 120	5	20
1,3-Dichlorobenzene	50.0	49.9		ug/L		100	80 - 120	1	20
1,4-Dichlorobenzene	50.0	49.1		ug/L		98	80 - 120	3	20

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	100		70 - 130
Dibromofluoromethane (Surr)	103		70 - 130
1,2-Dichloroethane-d4 (Surr)	101		70 - 130
4-Bromofluorobenzene (Surr)	103		70 - 130

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QC Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-121907-1
SDG: KRS015

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

Lab Sample ID: 680-121907-3 MS
Matrix: Water
Analysis Batch: 422585

Client Sample ID: SW-R2007-3-0216
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	50.0		ug/L		100	73 - 131
Chlorobenzene	1.0	U	50.0	47.9		ug/L		96	80 - 120
1,2-Dichlorobenzene	1.0	U	50.0	49.2		ug/L		98	80 - 120
1,3-Dichlorobenzene	1.0	U	50.0	49.3		ug/L		99	80 - 120
1,4-Dichlorobenzene	1.0	U	50.0	49.3		ug/L		99	80 - 120

Surrogate	MS %Recovery	MS Qualifier	MS Limits
Toluene-d8 (Surr)	97		70 - 130
Dibromofluoromethane (Surr)	109		70 - 130
1,2-Dichloroethane-d4 (Surr)	119		70 - 130
4-Bromofluorobenzene (Surr)	102		70 - 130

Lab Sample ID: 680-121907-3 MSD
Matrix: Water
Analysis Batch: 422585

Client Sample ID: SW-R2007-3-0216
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	50.8		ug/L		102	73 - 131	2	30
Chlorobenzene	1.0	U	50.0	48.1		ug/L		96	80 - 120	0	20
1,2-Dichlorobenzene	1.0	U	50.0	52.1		ug/L		104	80 - 120	6	20
1,3-Dichlorobenzene	1.0	U	50.0	51.5		ug/L		103	80 - 120	4	20
1,4-Dichlorobenzene	1.0	U	50.0	50.9		ug/L		102	80 - 120	3	20

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
Toluene-d8 (Surr)	98		70 - 130
Dibromofluoromethane (Surr)	111		70 - 130
1,2-Dichloroethane-d4 (Surr)	116		70 - 130
4-Bromofluorobenzene (Surr)	103		70 - 130

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

Lab Sample ID: MB 680-421918/7-A
Matrix: Water
Analysis Batch: 422212

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 421918

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	20	U	20	2.2	ug/L		02/18/16 14:13	02/20/16 16:28	1
2-Chlorophenol	10	U	10	0.87	ug/L		02/18/16 14:13	02/20/16 16:28	1
1,4-Dioxane	10	U	10	3.4	ug/L		02/18/16 14:13	02/20/16 16:28	1
1,2,4-Trichlorobenzene	10	U	10	0.56	ug/L		02/18/16 14:13	02/20/16 16:28	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	75		32 - 113	02/18/16 14:13	02/20/16 16:28	1
2-Fluorophenol	75		26 - 109	02/18/16 14:13	02/20/16 16:28	1
Nitrobenzene-d5	80		32 - 118	02/18/16 14:13	02/20/16 16:28	1
Phenol-d5	82		27 - 110	02/18/16 14:13	02/20/16 16:28	1
Terphenyl-d14	92		10 - 126	02/18/16 14:13	02/20/16 16:28	1

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QC Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-121907-1
SDG: KRS015

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

Lab Sample ID: MB 680-421918/7-A
Matrix: Water
Analysis Batch: 422212

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 421918

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2,4,6-Tribromophenol	76		39 - 124	02/18/16 14:13	02/20/16 16:28	1

Lab Sample ID: LCS 680-421918/8-A
Matrix: Water
Analysis Batch: 422212

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 421918
%Rec.

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
4-Chloroaniline	100	67.8		ug/L		68	42 - 130
2-Chlorophenol	100	67.8		ug/L		68	39 - 130
1,4-Dioxane	100	59.4		ug/L		59	22 - 130
1,2,4-Trichlorobenzene	100	63.7		ug/L		64	33 - 130

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
2-Fluorobiphenyl	66		32 - 113
2-Fluorophenol	56		26 - 109
Nitrobenzene-d5	74		32 - 118
Phenol-d5	64		27 - 110
Terphenyl-d14	47		10 - 126
2,4,6-Tribromophenol	66		39 - 124

Lab Sample ID: 680-121907-3 MS
Matrix: Water
Analysis Batch: 422212

Client Sample ID: SW-R2007-3-0216
Prep Type: Total/NA
Prep Batch: 421918
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	Limits
				Result	Qualifier				
4-Chloroaniline	20	U	99.0	48.9		ug/L		49	42 - 130
2-Chlorophenol	9.9	U	99.0	63.3		ug/L		64	39 - 130
1,4-Dioxane	9.9	U	99.0	54.6		ug/L		55	22 - 130
1,2,4-Trichlorobenzene	9.9	U	99.0	52.8		ug/L		53	33 - 130

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
2-Fluorobiphenyl	59		32 - 113
2-Fluorophenol	52		26 - 109
Nitrobenzene-d5	70		32 - 118
Phenol-d5	62		27 - 110
Terphenyl-d14	28		10 - 126
2,4,6-Tribromophenol	60		39 - 124

Lab Sample ID: 680-121907-3 MSD
Matrix: Water
Analysis Batch: 422212

Client Sample ID: SW-R2007-3-0216
Prep Type: Total/NA
Prep Batch: 421918
%Rec. RPD

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	Limits	RPD	Limit
				Result	Qualifier						
4-Chloroaniline	20	U	98.7	55.9		ug/L		57	42 - 130	13	50
2-Chlorophenol	9.9	U	98.7	60.6		ug/L		61	39 - 130	4	50
1,4-Dioxane	9.9	U	98.7	53.0		ug/L		54	22 - 130	3	50
1,2,4-Trichlorobenzene	9.9	U	98.7	48.5		ug/L		49	33 - 130	9	50

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QC Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-121907-1
SDG: KRS015

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

Lab Sample ID: 680-121907-3 MSD
Matrix: Water
Analysis Batch: 422212

Client Sample ID: SW-R2007-3-0216
Prep Type: Total/NA
Prep Batch: 421918

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
2-Fluorobiphenyl	56		32 - 113
2-Fluorophenol	50		26 - 109
Nitrobenzene-d5	67		32 - 118
Phenol-d5	61		27 - 110
Terphenyl-d14	25		10 - 126
2,4,6-Tribromophenol	61		39 - 124



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AWD 3/10/16

QC Association Summary

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-121907-1
SDG: KRS015

GC/MS VOA

Analysis Batch: 422585

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-121907-1	SW-R2007-1-0216	Total/NA	Water	8260B	
680-121907-2	SW-R2007-2-0216	Total/NA	Water	8260B	
680-121907-3	SW-R2007-3-0216	Total/NA	Water	8260B	
680-121907-3 MS	SW-R2007-3-0216	Total/NA	Water	8260B	
680-121907-3 MSD	SW-R2007-3-0216	Total/NA	Water	8260B	
680-121907-4	SW-R2007-1-0216-AD	Total/NA	Water	8260B	
680-121907-5	SED-R2007-1-0216-EB	Total/NA	Water	8260B	
680-121907-10	TB1-123015	Total/NA	Water	8260B	
LCS 680-422585/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-422585/8	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-422585/11	Method Blank	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 421918

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-121907-1	SW-R2007-1-0216	Total/NA	Water	3520C	
680-121907-2	SW-R2007-2-0216	Total/NA	Water	3520C	
680-121907-3	SW-R2007-3-0216	Total/NA	Water	3520C	
680-121907-3 MS	SW-R2007-3-0216	Total/NA	Water	3520C	
680-121907-3 MSD	SW-R2007-3-0216	Total/NA	Water	3520C	
680-121907-4	SW-R2007-1-0216-AD	Total/NA	Water	3520C	
680-121907-5	SED-R2007-1-0216-EB	Total/NA	Water	3520C	
LCS 680-421918/8-A	Lab Control Sample	Total/NA	Water	3520C	
MB 680-421918/7-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 422212

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-121907-1	SW-R2007-1-0216	Total/NA	Water	8270C	421918
680-121907-2	SW-R2007-2-0216	Total/NA	Water	8270C	421918
680-121907-3	SW-R2007-3-0216	Total/NA	Water	8270C	421918
680-121907-3 MS	SW-R2007-3-0216	Total/NA	Water	8270C	421918
680-121907-3 MSD	SW-R2007-3-0216	Total/NA	Water	8270C	421918
680-121907-4	SW-R2007-1-0216-AD	Total/NA	Water	8270C	421918
680-121907-5	SED-R2007-1-0216-EB	Total/NA	Water	8270C	421918
LCS 680-421918/8-A	Lab Control Sample	Total/NA	Water	8270C	421918
MB 680-421918/7-A	Method Blank	Total/NA	Water	8270C	421918

Lab Chronicle

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-121907-1
SDG: KRS015

Client Sample ID: SW-R2007-1-0216

Lab Sample ID: 680-121907-1

Date Collected: 02/15/16 14:30

Matrix: Water

Date Received: 02/16/16 09:58

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	422585	02/24/16 16:50	JLK	TAL SAV
Total/NA	Prep	3520C			1011.7 mL	1 mL	421918	02/18/16 14:13	RBS	TAL SAV
Total/NA	Analysis	8270C		1	1011.7 mL	1 mL	422212	02/20/16 19:49	KMB	TAL SAV

Client Sample ID: SW-R2007-2-0216

Lab Sample ID: 680-121907-2

Date Collected: 02/15/16 13:50

Matrix: Water

Date Received: 02/16/16 09:58

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	422585	02/24/16 17:13	JLK	TAL SAV
Total/NA	Prep	3520C			1023.2 mL	1 mL	421918	02/18/16 14:13	RBS	TAL SAV
Total/NA	Analysis	8270C		1	1023.2 mL	1 mL	422212	02/20/16 20:11	KMB	TAL SAV

Client Sample ID: SW-R2007-3-0216

Lab Sample ID: 680-121907-3

Date Collected: 02/15/16 10:45

Matrix: Water

Date Received: 02/16/16 09:58

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	422585	02/24/16 17:36	JLK	TAL SAV
Total/NA	Prep	3520C			1006.3 mL	1 mL	421918	02/18/16 14:13	RBS	TAL SAV
Total/NA	Analysis	8270C		1	1006.3 mL	1 mL	422212	02/20/16 20:33	KMB	TAL SAV

Client Sample ID: SW-R2007-1-0216-AD

Lab Sample ID: 680-121907-4

Date Collected: 02/15/16 14:30

Matrix: Water

Date Received: 02/16/16 09:58

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	422585	02/24/16 17:58	JLK	TAL SAV
Total/NA	Prep	3520C			1005.5 mL	1 mL	421918	02/18/16 14:13	RBS	TAL SAV
Total/NA	Analysis	8270C		1	1005.5 mL	1 mL	422212	02/20/16 20:56	KMB	TAL SAV

Client Sample ID: SED-R2007-1-0216-EB

Lab Sample ID: 680-121907-5

Date Collected: 02/15/16 15:50

Matrix: Water

Date Received: 02/16/16 09:58

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	422585	02/24/16 16:28	JLK	TAL SAV
Total/NA	Prep	3520C			1043.2 mL	1 mL	421918	02/18/16 14:13	RBS	TAL SAV
Total/NA	Analysis	8270C		1	1043.2 mL	1 mL	422212	02/20/16 21:18	KMB	TAL SAV

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Lab Chronicle

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-121907-1
SDG: KRS015

Client Sample ID: TB1-123015

Lab Sample ID: 680-121907-10

Date Collected: 02/15/16 00:00

Matrix: Water

Date Received: 02/16/16 09:58

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	422585	02/24/16 16:05	JLK	TAL SAV

Laboratory References:

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

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Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-121907-1

SDG Number: KRS015

Login Number: 121907

List Number: 1

Creator: Banda, Christy S

List Source: TestAmerica Savannah

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.	N/A	
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: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-121907-1
SDG: KRS015

Laboratory: TestAmerica Savannah

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	200022	11-30-16

The following analytes are included in this report, but are not certified under this certification:

Analysis Method	Prep Method	Matrix	Analyte
8270C	3520C	Water	1,4-Dioxane



TestAmerica Savannah
AND 3/10/16

SDG KRS016

Sample Results from:

**SED-R2007-1
SED-R2007-2
SED-R2007-3**



Level IV Data Validation Summary
Solutia Inc., W.G. Krummrich, Sauget, Illinois
1Q16 Long-Term Monitoring Program

Company Name: Golder Associates
Project Name: WGK-1Q16 River Sampling/Surface Water
Reviewer: A. Derhake
Laboratory: TestAmerica
SDG#: KRS016
Matrix: Sediment

Project Manager: A. Derhake
Project Number: 140-3345
Sample Date: February 2016

Analytical Method: VOC (8260B) and SVOC (8270D)

Sample Names: SED-R2007-1-0216, SED-R2007-2-0216, SED-R2007-3-0216, SED-R2007-1-0216-AD

Table with 4 columns: Field Information, YES, NO, NA. Rows include 'a) Sampling dates noted?' and 'b) Does the laboratory narrative indicate deficiencies?'.

Comments:

VOC: No deficiencies noted.

SVOC: 4-chloroaniline failed recovery low criteria for the MS and MSD of sample SED-R2007-3-0216 associated in batch 422212.

Table with 4 columns: Chain-of-Custody (COC), YES, NO, NA. Rows include 'a) Was the COC signed by both field and laboratory personnel?' and 'b) Were samples received in good condition?'.

Comments: Samples were received at 1.8°C, 3.2°C and 3.2°C, some outside the 4°C +/- 2°C criteria.

Table with 4 columns: General, YES, NO, NA. Rows include 'a) Were hold times met for sample analysis?', 'b) Were the correct preservatives used?', 'c) Was the correct method used?', and 'd) Any sample dilutions noted?'.

Comments: None

Table with 4 columns: GC/MS Instrument Performance Check (IPC) and Internal Standards (IS), YES, NO, NA. Rows include 'a) IPC analyzed at the appropriate frequency and met the appropriate standards?', 'b) Does BFB/DFTPP meet the ion abundance criteria?', and '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: Analytes of interest met calibration standards.**Blanks****YES NO NA**

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

Comments: Equipment blanks were not submitted with SDG KRS016.**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 failed recovery low criteria for the MS and MSD of sample SED-R2007-3-0216 associated in batch 422212. 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 sample SED-R2007-1-0216-AD was submitted with SDG KRS016.**Additional Comments:** None



Qualifications:

Quality Control Issue	Compound(s)	Qualifier	Samples Affected
None	None	None	None

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: 680-121907-2

TestAmerica Sample Delivery Group: KRS016

Client Project/Site: WGK River Sampling / Sediment

Revision: 1

For:

Solutia Inc.

575 Maryville Centre Dr.

Saint Louis, Missouri 63141

Attn: Mr. Jerry Rinaldi

Michele Kersey

Authorized for release by:

3/23/2016 10:59:36 AM

Michele Kersey, Project Manager I

(912)354-7858

michele.kersey@testamericainc.com

LINKS

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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.

*mjk
3/23/16*

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3/10/16

Case Narrative

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-121907-2
SDG: KRS016

Job ID: 680-121907-2

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Solutia Inc.

Project: WGK River Sampling / Sediment

Report Number: 680-121907-2

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 2/16/2016 9:58 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 1.8° C, 3.2° C and 3.2° C.

NOTE: Case Narrative revised to correct temperature of "23.2 to 3.2".

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples SED-R2007-1-0216 (680-121907-6), SED-R2007-2-0216 (680-121907-7), SED-R2007-3-0216 (680-121907-8) and SED-R2007-1-0216-AD (680-121907-9) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were prepared on 02/16/2016 and analyzed on 02/18/2016.

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-R2007-1-0216 (680-121907-6), SED-R2007-2-0216 (680-121907-7), SED-R2007-3-0216 (680-121907-8) and SED-R2007-1-0216-AD (680-121907-9) were analyzed for semivolatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8270C. The samples were prepared on 02/18/2016 and analyzed on 02/20/2016.

4-Chloroaniline failed the recovery criteria low for the MS and MSD of sample SED-R2007-3-0216 (680-121907-8) in batch 680-422212.

No additional 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 / Sediment

TestAmerica Job ID: 680-121907-2
SDG: KRS016

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-121907-6	SED-R2007-1-0216	Solid	02/15/16 15:30	02/16/16 09:58
680-121907-7	SED-R2007-2-0216	Solid	02/15/16 14:15	02/16/16 09:58
680-121907-8	SED-R2007-3-0216	Solid	02/15/16 11:30	02/16/16 09:58
680-121907-9	SED-R2007-1-0216-AD	Solid	02/15/16 15:30	02/16/16 09:58



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3/10/16

TestAmerica Savannah

Method Summary

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-121907-2
SDG: KRS016

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8270C	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



MWD
3/10/16

TestAmerica Savannah

Definitions/Glossary

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-121907-2
SDG: KRS016

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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)

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3/10/16

TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-121907-2
SDG: KRS016

Client Sample ID: SED-R2007-1-0216

Lab Sample ID: 680-121907-6

No Detections.

Client Sample ID: SED-R2007-2-0216

Lab Sample ID: 680-121907-7

Analyte	Result	Qualifier	RL	MDL	Unit	DII	Fac	D	Method	Prep Type
Benzene	1.2	J	4.1	0.60	ug/Kg	1			8260B	Total/NA

Client Sample ID: SED-R2007-3-0216

Lab Sample ID: 680-121907-8

No Detections.

Client Sample ID: SED-R2007-1-0216-AD

Lab Sample ID: 680-121907-9

No Detections.

This Detection Summary does not include radiochemical test results.

AWP
3/10/16
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-121907-2
SDG: KRS016

Client Sample ID: SED-R2007-1-0216

Lab Sample ID: 680-121907-6

Date Collected: 02/15/16 15:30

Matrix: Solid

Date Received: 02/16/16 09:58

Percent Solids: 72.7

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	8.8	U	8.8	1.3	ug/Kg	☐	02/16/16 14:40	02/18/16 17:46	1
Chlorobenzene	8.8	U	8.8	1.7	ug/Kg	☐	02/16/16 14:40	02/18/16 17:46	1
1,2-Dichlorobenzene	8.8	U	8.8	2.3	ug/Kg	☐	02/16/16 14:40	02/18/16 17:46	1
1,3-Dichlorobenzene	8.8	U	8.8	2.8	ug/Kg	☐	02/16/16 14:40	02/18/16 17:46	1
1,4-Dichlorobenzene	8.8	U	8.8	1.3	ug/Kg	☐	02/16/16 14:40	02/18/16 17:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	93		70 - 130	02/16/16 14:40	02/18/16 17:46	1
Dibromofluoromethane (Surr)	97		70 - 130	02/16/16 14:40	02/18/16 17:46	1
1,2-Dichloroethane-d4 (Surr)	103		70 - 130	02/16/16 14:40	02/18/16 17:46	1
4-Bromofluorobenzene (Surr)	91		70 - 130	02/16/16 14:40	02/18/16 17:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	900	U	900	71	ug/Kg	☐	02/18/16 12:18	02/20/16 22:03	1
2-Chlorophenol	450	U	450	54	ug/Kg	☐	02/18/16 12:18	02/20/16 22:03	1
1,4-Dioxane	450	U	450	160	ug/Kg	☐	02/18/16 12:18	02/20/16 22:03	1
1,2,4-Trichlorobenzene	450	U	450	42	ug/Kg	☐	02/18/16 12:18	02/20/16 22:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	64		41 - 116	02/18/16 12:18	02/20/16 22:03	1
2-Fluorophenol	61		39 - 114	02/18/16 12:18	02/20/16 22:03	1
Nitrobenzene-d5	71		37 - 115	02/18/16 12:18	02/20/16 22:03	1
Phenol-d5	67		38 - 122	02/18/16 12:18	02/20/16 22:03	1
Terphenyl-d14	73		46 - 126	02/18/16 12:18	02/20/16 22:03	1
2,4,6-Tribromophenol	60		45 - 129	02/18/16 12:18	02/20/16 22:03	1

AWP
3/10/16

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-121907-2
SDG: KRS016

Client Sample ID: SED-R2007-2-0216

Lab Sample ID: 680-121907-7

Date Collected: 02/15/16 14:15

Matrix: Solid

Date Received: 02/16/16 09:58

Percent Solids: 84.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.2	J	4.1	0.60	ug/Kg	☐	02/16/16 14:40	02/18/16 18:11	1
Chlorobenzene	4.1	U	4.1	0.80	ug/Kg	☐	02/16/16 14:40	02/18/16 18:11	1
1,2-Dichlorobenzene	4.1	U	4.1	1.1	ug/Kg	☐	02/16/16 14:40	02/18/16 18:11	1
1,3-Dichlorobenzene	4.1	U	4.1	1.3	ug/Kg	☐	02/16/16 14:40	02/18/16 18:11	1
1,4-Dichlorobenzene	4.1	U	4.1	0.61	ug/Kg	☐	02/16/16 14:40	02/18/16 18:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	91		70 - 130	02/16/16 14:40	02/18/16 18:11	1
Dibromofluoromethane (Surr)	95		70 - 130	02/16/16 14:40	02/18/16 18:11	1
1,2-Dichloroethane-d4 (Surr)	91		70 - 130	02/16/16 14:40	02/18/16 18:11	1
4-Bromofluorobenzene (Surr)	92		70 - 130	02/16/16 14:40	02/18/16 18:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	770	U	770	61	ug/Kg	☐	02/18/16 12:18	02/20/16 22:25	1
2-Chlorophenol	390	U	390	47	ug/Kg	☐	02/18/16 12:18	02/20/16 22:25	1
1,4-Dioxane	390	U	390	140	ug/Kg	☐	02/18/16 12:18	02/20/16 22:25	1
1,2,4-Trichlorobenzene	390	U	390	36	ug/Kg	☐	02/18/16 12:18	02/20/16 22:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	67		41 - 116	02/18/16 12:18	02/20/16 22:25	1
2-Fluorophenol	66		39 - 114	02/18/16 12:18	02/20/16 22:25	1
Nitrobenzene-d5	73		37 - 115	02/18/16 12:18	02/20/16 22:25	1
Phenol-d5	73		38 - 122	02/18/16 12:18	02/20/16 22:25	1
Terphenyl-d14	82		46 - 126	02/18/16 12:18	02/20/16 22:25	1
2,4,6-Tribromophenol	66		45 - 129	02/18/16 12:18	02/20/16 22:25	1

AWD
3/10/16
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-121907-2
SDG: KRS016

Client Sample ID: SED-R2007-3-0216

Lab Sample ID: 680-121907-8

Date Collected: 02/15/16 11:30

Matrix: Solid

Date Received: 02/16/16 09:58

Percent Solids: 79.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	7.6	U	7.6	1.1	ug/Kg	☐	02/16/16 14:40	02/18/16 18:35	1
Chlorobenzene	7.6	U	7.6	1.5	ug/Kg	☐	02/16/16 14:40	02/18/16 18:35	1
1,2-Dichlorobenzene	7.6	U	7.6	2.0	ug/Kg	☐	02/16/16 14:40	02/18/16 18:35	1
1,3-Dichlorobenzene	7.6	U	7.6	2.4	ug/Kg	☐	02/16/16 14:40	02/18/16 18:35	1
1,4-Dichlorobenzene	7.6	U	7.6	1.1	ug/Kg	☐	02/16/16 14:40	02/18/16 18:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	93		70 - 130	02/16/16 14:40	02/18/16 18:35	1
Dibromofluoromethane (Surr)	99		70 - 130	02/16/16 14:40	02/18/16 18:35	1
1,2-Dichloroethane-d4 (Surr)	101		70 - 130	02/16/16 14:40	02/18/16 18:35	1
4-Bromofluorobenzene (Surr)	93		70 - 130	02/16/16 14:40	02/18/16 18:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	820	U F1	820	65	ug/Kg	☐	02/18/16 12:18	02/20/16 22:47	1
2-Chlorophenol	410	U	410	50	ug/Kg	☐	02/18/16 12:18	02/20/16 22:47	1
1,4-Dioxane	410	U	410	150	ug/Kg	☐	02/18/16 12:18	02/20/16 22:47	1
1,2,4-Trichlorobenzene	410	U	410	39	ug/Kg	☐	02/18/16 12:18	02/20/16 22:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	57		41 - 116	02/18/16 12:18	02/20/16 22:47	1
2-Fluorophenol	56		39 - 114	02/18/16 12:18	02/20/16 22:47	1
Nitrobenzene-d5	63		37 - 115	02/18/16 12:18	02/20/16 22:47	1
Phenol-d5	63		38 - 122	02/18/16 12:18	02/20/16 22:47	1
Terphenyl-d14	75		46 - 126	02/18/16 12:18	02/20/16 22:47	1
2,4,6-Tribromophenol	61		45 - 129	02/18/16 12:18	02/20/16 22:47	1

AWD
3/10/16

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-121907-2
SDG: KRS016

Client Sample ID: SED-R2007-1-0216-AD

Lab Sample ID: 680-121907-9

Date Collected: 02/15/16 15:30

Matrix: Solid

Date Received: 02/16/16 09:58

Percent Solids: 76.8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	8.0	U	8.0	1.2	ug/Kg	☐	02/16/16 14:40	02/18/16 19:00	1
Chlorobenzene	8.0	U	8.0	1.5	ug/Kg	☐	02/16/16 14:40	02/18/16 19:00	1
1,2-Dichlorobenzene	8.0	U	8.0	2.1	ug/Kg	☐	02/16/16 14:40	02/18/16 19:00	1
1,3-Dichlorobenzene	8.0	U	8.0	2.5	ug/Kg	☐	02/16/16 14:40	02/18/16 19:00	1
1,4-Dichlorobenzene	8.0	U	8.0	1.2	ug/Kg	☐	02/16/16 14:40	02/18/16 19:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	91		70 - 130	02/16/16 14:40	02/18/16 19:00	1
Dibromofluoromethane (Surr)	96		70 - 130	02/16/16 14:40	02/18/16 19:00	1
1,2-Dichloroethane-d4 (Surr)	99		70 - 130	02/16/16 14:40	02/18/16 19:00	1
4-Bromofluorobenzene (Surr)	92		70 - 130	02/16/16 14:40	02/18/16 19:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	850	U	850	67	ug/Kg	☐	02/18/16 12:18	02/20/16 23:10	1
2-Chlorophenol	420	U	420	51	ug/Kg	☐	02/18/16 12:18	02/20/16 23:10	1
1,4-Dioxane	420	U	420	150	ug/Kg	☐	02/18/16 12:18	02/20/16 23:10	1
1,2,4-Trichlorobenzene	420	U	420	40	ug/Kg	☐	02/18/16 12:18	02/20/16 23:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	78		41 - 116	02/18/16 12:18	02/20/16 23:10	1
2-Fluorophenol	77		39 - 114	02/18/16 12:18	02/20/16 23:10	1
Nitrobenzene-d5	83		37 - 115	02/18/16 12:18	02/20/16 23:10	1
Phenol-d5	84		38 - 122	02/18/16 12:18	02/20/16 23:10	1
Terphenyl-d14	95		46 - 126	02/18/16 12:18	02/20/16 23:10	1
2,4,6-Tribromophenol	73		45 - 129	02/18/16 12:18	02/20/16 23:10	1


 TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-121907-2
SDG: KRS016

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

Lab Sample ID: 680-121907-8 MS
Matrix: Solid
Analysis Batch: 421944

Client Sample ID: SED-R2007-3-0216
Prep Type: Total/NA
Prep Batch: 421607
%Rec.

Analyte	Sample	Sample	Spike	MS MS		Unit	D	%Rec	Limits
	Result	Qualifier		Result	Qualifier				
Benzene	7.6	U	47.4	51.5		ug/Kg	☐	109	70 - 130
Chlorobenzene	7.6	U	47.4	51.7		ug/Kg	☐	109	70 - 130
1,2-Dichlorobenzene	7.6	U	47.4	51.9		ug/Kg	☐	110	70 - 130
1,3-Dichlorobenzene	7.6	U	47.4	50.9		ug/Kg	☐	108	70 - 130
1,4-Dichlorobenzene	7.6	U	47.4	52.3		ug/Kg	☐	110	70 - 130
MS MS									
Surrogate	%Recovery		Qualifier	Limits					
Toluene-d8 (Surr)	106			70 - 130					
Dibromofluoromethane (Surr)	107			70 - 130					
1,2-Dichloroethane-d4 (Surr)	109			70 - 130					
4-Bromofluorobenzene (Surr)	112			70 - 130					

Lab Sample ID: 680-121907-8 MSD
Matrix: Solid
Analysis Batch: 421944

Client Sample ID: SED-R2007-3-0216
Prep Type: Total/NA
Prep Batch: 421607
%Rec. RPD

Analyte	Sample	Sample	Spike	MSD MSD		Unit	D	%Rec	Limits	RPD	Limit
	Result	Qualifier		Result	Qualifier						
Benzene	7.6	U	47.1	45.6		ug/Kg	☐	97	70 - 130	12	30
Chlorobenzene	7.6	U	47.1	46.5		ug/Kg	☐	99	70 - 130	11	30
1,2-Dichlorobenzene	7.6	U	47.1	50.6		ug/Kg	☐	107	70 - 130	3	30
1,3-Dichlorobenzene	7.6	U	47.1	47.3		ug/Kg	☐	100	70 - 130	7	30
1,4-Dichlorobenzene	7.6	U	47.1	50.0		ug/Kg	☐	106	70 - 130	4	30
MSD MSD											
Surrogate	%Recovery		Qualifier	Limits							
Toluene-d8 (Surr)	95			70 - 130							
Dibromofluoromethane (Surr)	98			70 - 130							
1,2-Dichloroethane-d4 (Surr)	100			70 - 130							
4-Bromofluorobenzene (Surr)	102			70 - 130							

Lab Sample ID: MB 680-421944/8
Matrix: Solid
Analysis Batch: 421944

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	4.9	U	4.9	0.71	ug/Kg			02/18/16 14:53	1
Chlorobenzene	4.9	U	4.9	0.93	ug/Kg			02/18/16 14:53	1
1,2-Dichlorobenzene	4.9	U	4.9	1.3	ug/Kg			02/18/16 14:53	1
1,3-Dichlorobenzene	4.9	U	4.9	1.6	ug/Kg			02/18/16 14:53	1
1,4-Dichlorobenzene	4.9	U	4.9	0.72	ug/Kg			02/18/16 14:53	1
MB MB									
Surrogate	%Recovery		Qualifier	Limits		Prepared	Analyzed	Dil Fac	
Toluene-d8 (Surr)	91			70 - 130			02/18/16 14:53	1	
Dibromofluoromethane (Surr)	93			70 - 130			02/18/16 14:53	1	
1,2-Dichloroethane-d4 (Surr)	94			70 - 130			02/18/16 14:53	1	
4-Bromofluorobenzene (Surr)	92			70 - 130			02/18/16 14:53	1	

AWP
3/10/16
TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-121907-2
SDG: KRS016

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

Lab Sample ID: LCS 680-421944/4
Matrix: Solid
Analysis Batch: 421944

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	49.0	47.7		ug/Kg		97	70 - 130
Chlorobenzene	49.0	49.5		ug/Kg		101	70 - 130
1,2-Dichlorobenzene	49.0	50.4		ug/Kg		103	70 - 130
1,3-Dichlorobenzene	49.0	49.1		ug/Kg		100	70 - 130
1,4-Dichlorobenzene	49.0	50.5		ug/Kg		103	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	96		70 - 130
Dibromofluoromethane (Surr)	97		70 - 130
1,2-Dichloroethane-d4 (Surr)	100		70 - 130
4-Bromofluorobenzene (Surr)	101		70 - 130

Lab Sample ID: LCSD 680-421944/5
Matrix: Solid
Analysis Batch: 421944

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	49.7	53.7		ug/Kg		108	70 - 130	12	20
Chlorobenzene	49.7	54.0		ug/Kg		109	70 - 130	9	20
1,2-Dichlorobenzene	49.7	53.7		ug/Kg		108	70 - 130	6	20
1,3-Dichlorobenzene	49.7	53.2		ug/Kg		107	70 - 130	8	20
1,4-Dichlorobenzene	49.7	54.4		ug/Kg		109	70 - 130	7	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	107		70 - 130
Dibromofluoromethane (Surr)	108		70 - 130
1,2-Dichloroethane-d4 (Surr)	110		70 - 130
4-Bromofluorobenzene (Surr)	109		70 - 130

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

Lab Sample ID: MB 680-421935/5-A
Matrix: Solid
Analysis Batch: 422212

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 421935

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	650	U	650	52	ug/Kg		02/18/16 12:18	02/20/16 16:51	1
2-Chlorophenol	330	U	330	40	ug/Kg		02/18/16 12:18	02/20/16 16:51	1
1,4-Dioxane	330	U	330	120	ug/Kg		02/18/16 12:18	02/20/16 16:51	1
1,2,4-Trichlorobenzene	330	U	330	31	ug/Kg		02/18/16 12:18	02/20/16 16:51	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	62		41 - 116	02/18/16 12:18	02/20/16 16:51	1
2-Fluorophenol	58		39 - 114	02/18/16 12:18	02/20/16 16:51	1
Nitrobenzene-d5	73		37 - 115	02/18/16 12:18	02/20/16 16:51	1
Phenol-d5	65		38 - 122	02/18/16 12:18	02/20/16 16:51	1
Terphenyl-d14	65		46 - 126	02/18/16 12:18	02/20/16 16:51	1

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RMB 2/20/16

QC Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-121907-2
SDG: KRS016

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

Lab Sample ID: MB 680-421935/5-A
Matrix: Solid
Analysis Batch: 422212

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 421935

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2,4,6-Tribromophenol	60		45 - 129	02/18/16 12:18	02/20/16 16:51	1

Lab Sample ID: LCS 680-421935/6-A
Matrix: Solid
Analysis Batch: 422212

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 421935

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
4-Chloroaniline	3290	314	J	ug/Kg		10	10 - 130	
2-Chlorophenol	3290	2500		ug/Kg		76	47 - 130	
1,4-Dioxane	3290	1500		ug/Kg		46	14 - 130	
1,2,4-Trichlorobenzene	3290	2280		ug/Kg		69	47 - 130	

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
2-Fluorobiphenyl	72		41 - 116
2-Fluorophenol	67		39 - 114
Nitrobenzene-d5	72		37 - 115
Phenol-d5	77		38 - 122
Terphenyl-d14	82		46 - 126
2,4,6-Tribromophenol	67		45 - 129

Lab Sample ID: 680-121907-8 MS
Matrix: Solid
Analysis Batch: 422212

Client Sample ID: SED-R2007-3-0216
Prep Type: Total/NA
Prep Batch: 421935

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	
4-Chloroaniline	820	U F1	4120	877	F1	ug/Kg	☐	21	36 - 130	
2-Chlorophenol	410	U	4120	3400		ug/Kg	☐	83	51 - 130	
1,4-Dioxane	410	U	4120	1800		ug/Kg	☐	44	10 - 130	
1,2,4-Trichlorobenzene	410	U	4120	3150		ug/Kg	☐	76	51 - 130	

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
2-Fluorobiphenyl	78		41 - 116
2-Fluorophenol	74		39 - 114
Nitrobenzene-d5	82		37 - 115
Phenol-d5	87		38 - 122
Terphenyl-d14	90		46 - 126
2,4,6-Tribromophenol	76		45 - 129

Lab Sample ID: 680-121907-8 MSD
Matrix: Solid
Analysis Batch: 422212

Client Sample ID: SED-R2007-3-0216
Prep Type: Total/NA
Prep Batch: 421935

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits		RPD Limit	
4-Chloroaniline	820	U F1	4190	1400	F1	ug/Kg	☐	33	36 - 130	46	50	
2-Chlorophenol	410	U	4190	2910		ug/Kg	☐	70	51 - 130	15	50	
1,4-Dioxane	410	U	4190	1480		ug/Kg	☐	35	10 - 130	20	50	
1,2,4-Trichlorobenzene	410	U	4190	2660		ug/Kg	☐	64	51 - 130	17	50	

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QC Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-121907-2
SDG: KRS016

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

Lab Sample ID: 680-121907-8 MSD
Matrix: Solid
Analysis Batch: 422212

Client Sample ID: SED-R2007-3-0216
Prep Type: Total/NA
Prep Batch: 421935

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
2-Fluorobiphenyl	65		41 - 116
2-Fluorophenol	60		39 - 114
Nitrobenzene-d5	70		37 - 115
Phenol-d5	71		38 - 122
Terphenyl-d14	77		46 - 126
2,4,6-Tribromophenol	63		45 - 129



AWD
3/10/16
TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-121907-2
SDG: KRS016

GC/MS VOA

Prep Batch: 421607

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-121907-6	SED-R2007-1-0216	Total/NA	Solid	5035	
680-121907-7	SED-R2007-2-0216	Total/NA	Solid	5035	
680-121907-8	SED-R2007-3-0216	Total/NA	Solid	5035	
680-121907-8 MS	SED-R2007-3-0216	Total/NA	Solid	5035	
680-121907-8 MSD	SED-R2007-3-0216	Total/NA	Solid	5035	
680-121907-9	SED-R2007-1-0216-AD	Total/NA	Solid	5035	

Analysis Batch: 421944

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-121907-6	SED-R2007-1-0216	Total/NA	Solid	8260B	421607
680-121907-7	SED-R2007-2-0216	Total/NA	Solid	8260B	421607
680-121907-8	SED-R2007-3-0216	Total/NA	Solid	8260B	421607
680-121907-8 MS	SED-R2007-3-0216	Total/NA	Solid	8260B	421607
680-121907-8 MSD	SED-R2007-3-0216	Total/NA	Solid	8260B	421607
680-121907-9	SED-R2007-1-0216-AD	Total/NA	Solid	8260B	421607
LCS 680-421944/4	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 680-421944/5	Lab Control Sample Dup	Total/NA	Solid	8260B	
MB 680-421944/8	Method Blank	Total/NA	Solid	8260B	

GC/MS Semi VOA

Prep Batch: 421935

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-121907-6	SED-R2007-1-0216	Total/NA	Solid	3546	
680-121907-7	SED-R2007-2-0216	Total/NA	Solid	3546	
680-121907-8	SED-R2007-3-0216	Total/NA	Solid	3546	
680-121907-8 MS	SED-R2007-3-0216	Total/NA	Solid	3546	
680-121907-8 MSD	SED-R2007-3-0216	Total/NA	Solid	3546	
680-121907-9	SED-R2007-1-0216-AD	Total/NA	Solid	3546	
LCS 680-421935/6-A	Lab Control Sample	Total/NA	Solid	3546	
MB 680-421935/5-A	Method Blank	Total/NA	Solid	3546	

Analysis Batch: 422212

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-121907-6	SED-R2007-1-0216	Total/NA	Solid	8270C	421935
680-121907-7	SED-R2007-2-0216	Total/NA	Solid	8270C	421935
680-121907-8	SED-R2007-3-0216	Total/NA	Solid	8270C	421935
680-121907-8 MS	SED-R2007-3-0216	Total/NA	Solid	8270C	421935
680-121907-8 MSD	SED-R2007-3-0216	Total/NA	Solid	8270C	421935
680-121907-9	SED-R2007-1-0216-AD	Total/NA	Solid	8270C	421935
LCS 680-421935/6-A	Lab Control Sample	Total/NA	Solid	8270C	421935
MB 680-421935/5-A	Method Blank	Total/NA	Solid	8270C	421935

General Chemistry

Analysis Batch: 421605

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-121907-6	SED-R2007-1-0216	Total/NA	Solid	Moisture	
680-121907-7	SED-R2007-2-0216	Total/NA	Solid	Moisture	
680-121907-8	SED-R2007-3-0216	Total/NA	Solid	Moisture	

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3/10/16
TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-121907-2
SDG: KRS016

General Chemistry (Continued)

Analysis Batch: 421605 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-121907-8 MS	SED-R2007-3-0216	Total/NA	Solid	Moisture	
680-121907-8 MSD	SED-R2007-3-0216	Total/NA	Solid	Moisture	
680-121907-9	SED-R2007-1-0216-AD	Total/NA	Solid	Moisture	

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

AWD 3/10/16
TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-121907-2
SDG: KRS016

Client Sample ID: SED-R2007-1-0216

Lab Sample ID: 680-121907-6

Date Collected: 02/15/16 15:30

Matrix: Solid

Date Received: 02/16/16 09:58

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			421605	02/16/16 15:00	RAB	TAL SAV

Client Sample ID: SED-R2007-1-0216

Lab Sample ID: 680-121907-6

Date Collected: 02/15/16 15:30

Matrix: Solid

Date Received: 02/16/16 09:58

Percent Solids: 72.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			3.893 g	5 mL	421607	02/16/16 14:40	FES	TAL SAV
Total/NA	Analysis	8260B		1	3.893 g	5 mL	421944	02/18/16 17:46	DJK	TAL SAV
Total/NA	Prep	3546			30.41 g	1 mL	421935	02/18/16 12:18	JMV	TAL SAV
Total/NA	Analysis	8270C		1	30.41 g	1 mL	422212	02/20/16 22:03	KMB	TAL SAV

Client Sample ID: SED-R2007-2-0216

Lab Sample ID: 680-121907-7

Date Collected: 02/15/16 14:15

Matrix: Solid

Date Received: 02/16/16 09:58

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			421605	02/16/16 15:00	RAB	TAL SAV

Client Sample ID: SED-R2007-2-0216

Lab Sample ID: 680-121907-7

Date Collected: 02/15/16 14:15

Matrix: Solid

Date Received: 02/16/16 09:58

Percent Solids: 84.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			7.171 g	5 mL	421607	02/16/16 14:40	FES	TAL SAV
Total/NA	Analysis	8260B		1	7.171 g	5 mL	421944	02/18/16 18:11	DJK	TAL SAV
Total/NA	Prep	3546			30.46 g	1 mL	421935	02/18/16 12:18	JMV	TAL SAV
Total/NA	Analysis	8270C		1	30.46 g	1 mL	422212	02/20/16 22:25	KMB	TAL SAV

Client Sample ID: SED-R2007-3-0216

Lab Sample ID: 680-121907-8

Date Collected: 02/15/16 11:30

Matrix: Solid

Date Received: 02/16/16 09:58

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			421605	02/16/16 15:00	RAB	TAL SAV

Client Sample ID: SED-R2007-3-0216

Lab Sample ID: 680-121907-8

Date Collected: 02/15/16 11:30

Matrix: Solid

Date Received: 02/16/16 09:58

Percent Solids: 79.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.139 g	5 mL	421607	02/16/16 14:40	FES	TAL SAV

TestAmerica Savannah
MWO 3/10/16

Lab Chronicle

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-121907-2
SDG: KRS016

Client Sample ID: SED-R2007-3-0216

Lab Sample ID: 680-121907-8

Date Collected: 02/15/16 11:30

Matrix: Solid

Date Received: 02/16/16 09:58

Percent Solids: 79.5

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	4.139 g	5 mL	421944	02/18/16 18:35	DJK	TAL SAV
Total/NA	Prep	3546			30.22 g	1 mL	421935	02/18/16 12:18	JMV	TAL SAV
Total/NA	Analysis	8270C		1	30.22 g	1 mL	422212	02/20/16 22:47	KMB	TAL SAV

Client Sample ID: SED-R2007-1-0216-AD

Lab Sample ID: 680-121907-9

Date Collected: 02/15/16 15:30

Matrix: Solid

Date Received: 02/16/16 09:58

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			421605	02/16/16 15:00	RAB	TAL SAV

Client Sample ID: SED-R2007-1-0216-AD

Lab Sample ID: 680-121907-9

Date Collected: 02/15/16 15:30

Matrix: Solid

Date Received: 02/16/16 09:58

Percent Solids: 76.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.094 g	5 mL	421607	02/16/16 14:40	FES	TAL SAV
Total/NA	Analysis	8260B		1	4.094 g	5 mL	421944	02/18/16 19:00	DJK	TAL SAV
Total/NA	Prep	3546			30.44 g	1 mL	421935	02/18/16 12:18	JMV	TAL SAV
Total/NA	Analysis	8270C		1	30.44 g	1 mL	422212	02/20/16 23:10	KMB	TAL SAV

Laboratory References:

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

AWD 3/10/16
TestAmerica Savannah

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-121907-2

SDG Number: KRS016

Login Number: 121907

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.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



AWD
3/10/16

Certification Summary

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-121907-2
SDG: KRS016

Laboratory: TestAmerica Savannah

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	200022	11-30-16

The following analytes are included in this report, but are not certified under this certification:

Analysis Method	Prep Method	Matrix	Analyte
8270C	3546	Solid	1,4-Dioxane

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
Moisture		Solid	Percent Moisture



TestAmerica Savannah
Handwritten signature

APPENDIX F
MICROBIAL INSIGHTS DATA PACKAGE



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: 036NB

Date Rec: 02/16/2016

Report Date: 03/29/2016

Client Project #: 1403345

Client Project Name: WG Krummrich

Purchase Order #:

Analysis Requested: PLFA, Stable Isotope Probing, Standard Bio-Trap

Reviewed By:

Kate Clark

NOTICE: This report is intended only for the addressee shown above and may contain confidential or privileged information. If the recipient of this material is not the intended recipient or if you have received this in error, please notify Microbial Insights, Inc. immediately. The data and other information in this report represent only the sample(s) analyzed and are rendered upon condition that it is not to be reproduced without approval from Microbial Insights, Inc. Thank you for your cooperation.

MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
 Tel. (865) 573-8188 Fax. (865) 573-8133

PLFA

Client: Golder Associates Inc.
Project: WG Krummrich

MI Project Number: 036NB
Date Received: 02/16/2016

Sample Information

Sample Name:	BSA-MW-1S-02	BSA-MW-2D-02	BSA-MW-3D	BSA-MW-4D-0	BSA-MW-5D-02
	16	16	-0216	216	16
Sample Date:	02/16/2016	02/16/2016	02/16/2016	02/15/2016	02/15/2016
Sample Matrix:	Std. Bio-Trap	Adv. Bio-Trap	Std. Bio-Trap	Std. Bio-Trap	Std. Bio-Trap
Analyst:	KH	KH	KH	KH	KH

Biomass Concentrations

Total Biomass (cells/bead)	1.48E+06	8.52E+05	6.72E+05	5.65E+05	3.87E+05
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Community Structure (% total PLFA)

Firmicutes (TerBrSats)	11.83	20.35	14.83	15.15	15.53
Proteobacteria (Monos)	59.81	52.65	43.81	51.70	51.91
Anaerobic metal reducers (BrMonos)	2.10	1.06	3.25	4.06	3.31
SRB/Actinomycetes (MidBrSats)	5.57	3.96	16.37	9.76	7.90
General (Nsats)	17.52	16.50	16.87	12.53	15.20
Eukaryotes (polyenoics)	3.16	5.49	4.87	6.80	6.15

Physiological Status (Proteobacteria only)

Slowed Growth	0.20	0.07	0.48	0.44	0.30
Decreased Permeability	0.76	0.36	0.40	0.44	0.31

Legend:

NA = Not Analyzed NS = Not Sampled

Client: **Golder Associates Inc.**
 Project: **WG Krummrich**

MI Project Number: **036NB**
 Date Received: **02/16/2016**

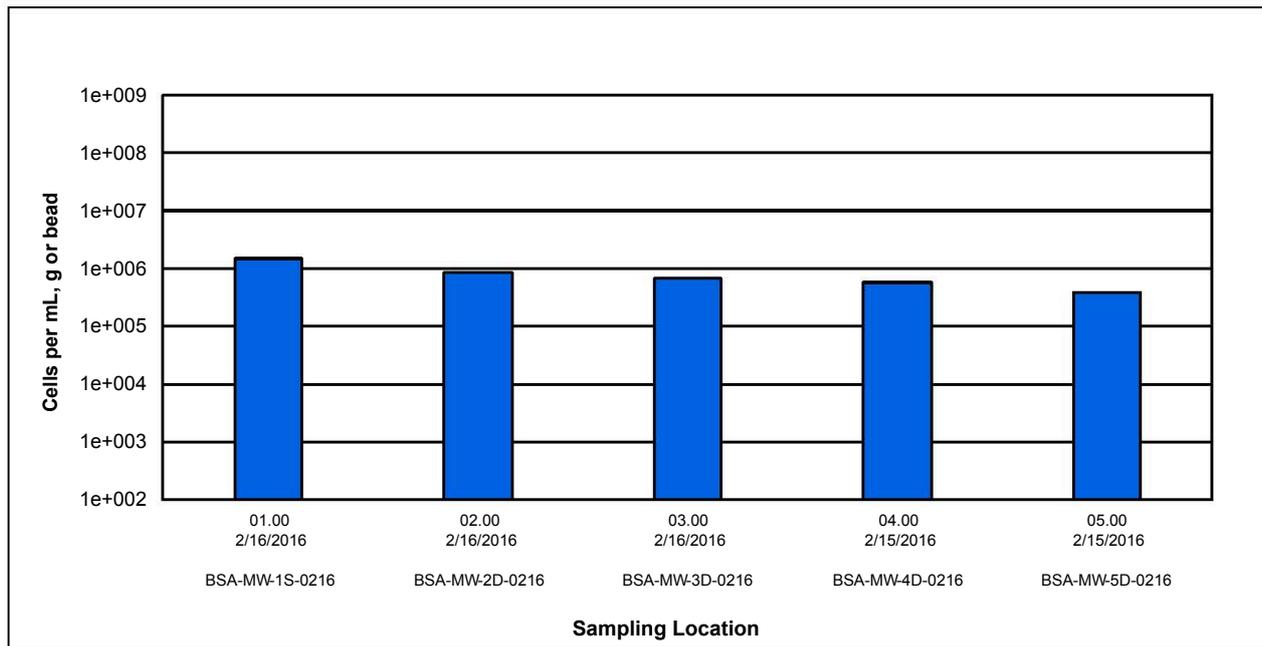


Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass

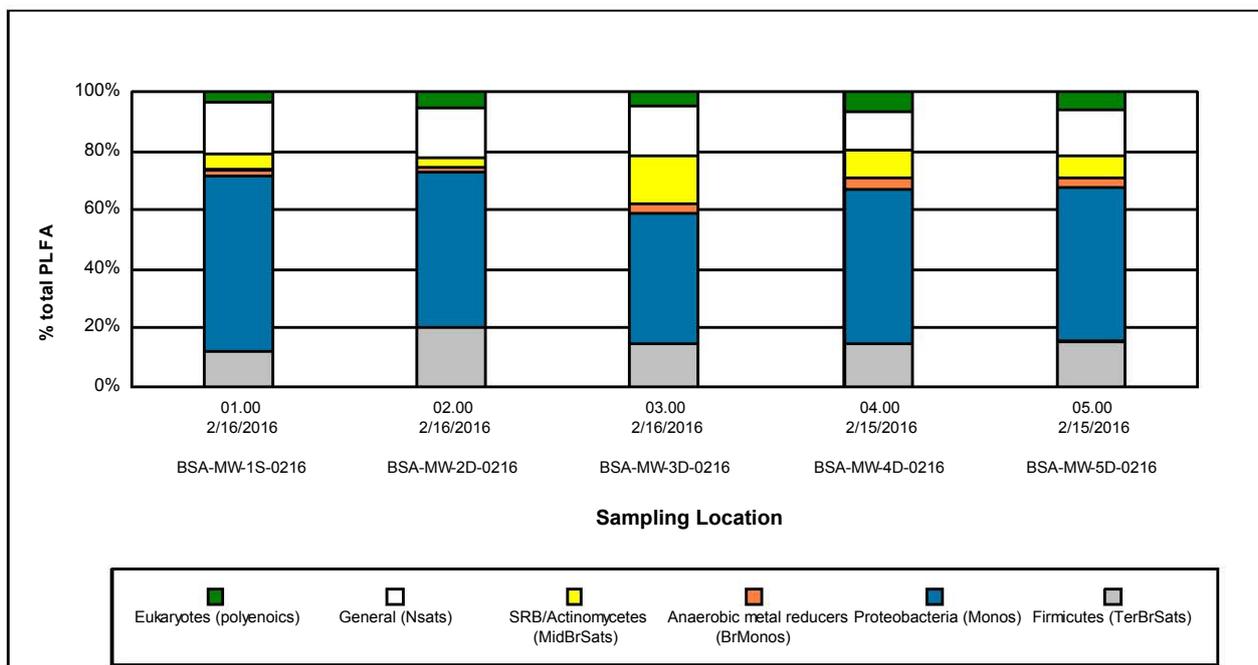


Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis.

MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
 Tel. (865) 573-8188 Fax. (865) 573-8133

PLFA

Client: Golder Associates Inc.
Project: WG Krummrich

MI Project Number: 036NB
Date Received: 02/16/2016

Sample Information

Sample Name:	CPA-MW-1D-02 16	CPA-MW-2D-02 16	CPA-MW-3D -0216	CPA-MW-4D-0 216
Sample Date:	02/16/2016	02/16/2016	02/16/2016	02/16/2016
Sample Matrix:	Std. Bio-Trap	Std. Bio-Trap	Adv. Bio-Trap	Std. Bio-Trap
Analyst:	KH	KH	KH	KH

Biomass Concentrations

Total Biomass (cells/bead)	9.17E+05	8.10E+05	1.38E+06	7.01E+05
----------------------------	----------	----------	----------	----------

Community Structure (% total PLFA)

	14.36	19.20	39.21	15.28
Firmicutes (TerBrSats)	47.66	46.73	38.64	43.67
Proteobacteria (Monos)	3.09	3.23	0.00	2.74
Anaerobic metal reducers (BrMonos)	15.79	8.50	0.38	14.21
SRB/Actinomycetes (MidBrSats)	13.66	17.16	15.93	18.35
General (Nsats)	5.44	5.19	5.83	5.77
Eukaryotes (polyenoics)				

Physiological Status (Proteobacteria only)

	0.37	0.47	0.59	0.55
Slowed Growth	0.57	0.28	0.03	0.48
Decreased Permeability				

Legend:

NA = Not Analyzed NS = Not Sampled

Client: **Golder Associates Inc.**
 Project: **WG Krummrich**

MI Project Number: **036NB**
 Date Received: **02/16/2016**

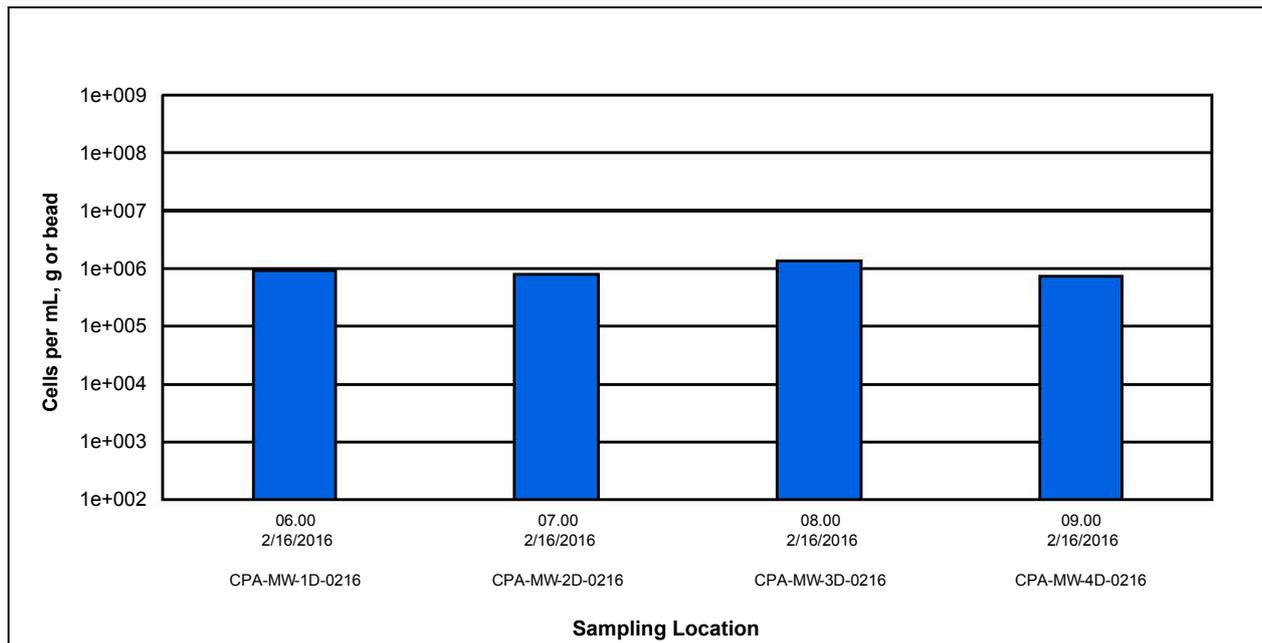


Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass

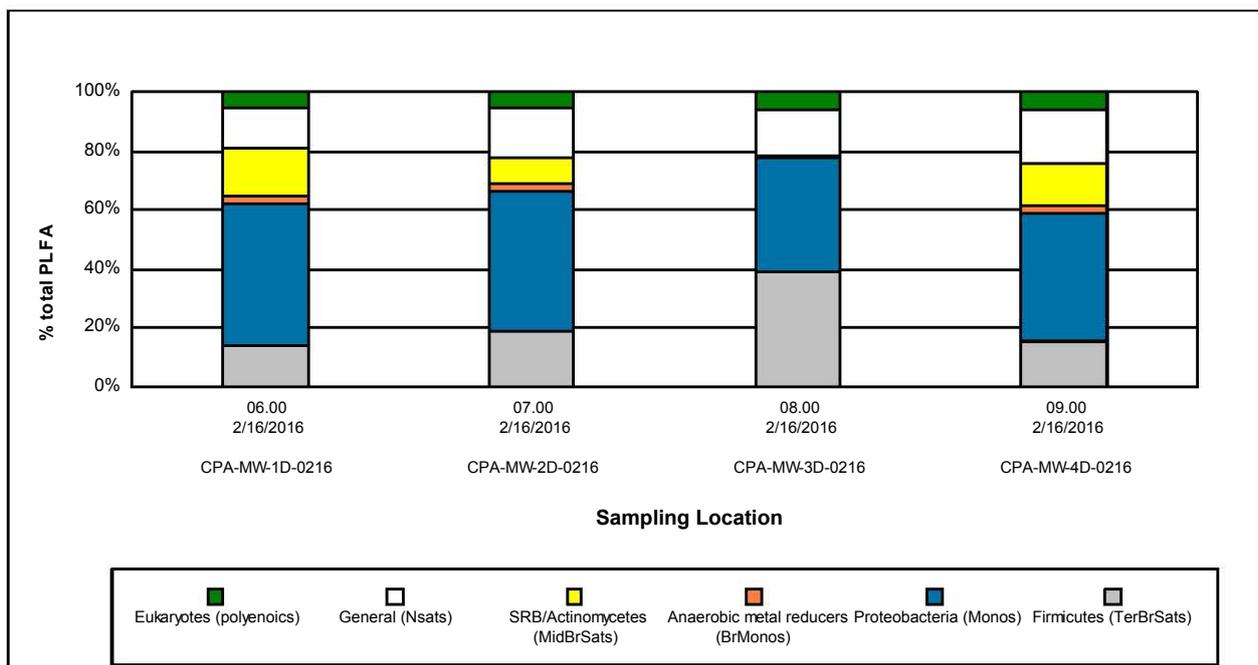


Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis.

Quality Assurance/Quality Control Data

Samples Received 2/16/2016

Component	Date Prepared	Date Analyzed	Arrival Temperature	Positive Control	Extraction Blank	Negative Control
PLFA	02/16/2016	02/27/2016	2 °C	100%	non-detect	non-detect

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.

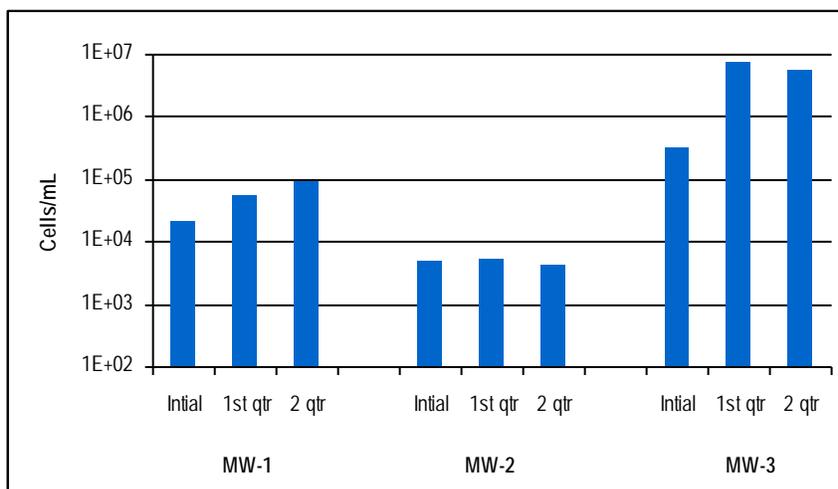


Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass (associated with higher organisms).

Conclusions from graph above:

- MW-1 showed a trend of biomass levels increasing steadily over time, although cell concentrations were $\sim 10^4$ 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 $\sim 10^5$ to $\sim 10^6$ 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:

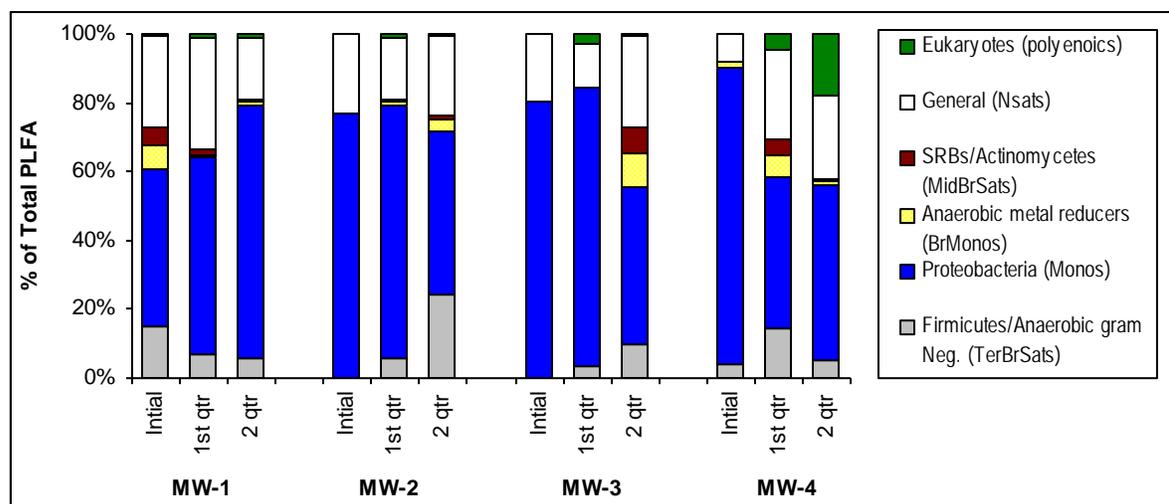


Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis. See Table 1 for detailed descriptions of structural groups.

- **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 aerobic 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 H₂, 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

Contact: Amanda Derhake
Address: Golder Associates
820 S. Main Street, Suite 100
St. Charles, MO 63301

Phone: (636) 724-9191

Email: Amanda_Derhake@golder.com

MI Identifier: 036NB

Report Date: March 29, 2016

Project: WG Krummrich, 1403345

Comments:

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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 ¹³C labeled benzene and ¹³C labeled chlorobenzene were deployed in monitoring wells BSA-MW-2D-0216 and CPA-MW-3D-0216, respectively. Following deployment, the Bio-Traps were recovered to quantify ¹³C 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 ¹³C-enriched biomass and DIC confirmed that benzene biodegradation had occurred at BSA-MW-2D-0216 during the deployment period.
 - Total PLFA biomass for well BSA-MW-2D-0216 (8.52E+05 cells/bead) was in the moderate range.
 - The average PLFA δ¹³C value was 1,398‰, indicating a high incorporation of ¹³C-labeled benzene into microbial biomass.
 - The average DIC δ¹³C value was 81‰, indicating the benzene had been mineralized during the deployment period.
 - The PLFA community structure was primarily composed of monoenoics (52.65%). Firmicutes (20.35%) and normal saturates (16.50%) were the next most abundant groups. Indicators of eukaryotes, actinomycetes, and anaerobic metal reducers were also detected.
- Quantification of ¹³C-enriched biomass and DIC demonstrated that indigenous microorganisms had degraded the ¹³C-labeled chlorobenzene in CPA-MW-3D-0216 during the deployment period.
 - The total PLFA biomass concentration, 1.38E+06 cells/bead was in the moderate range.
 - The average PLFA δ¹³C value was 549‰, indicating a moderate incorporation of ¹³C-labeled chlorobenzene into microbial biomass.
 - The average DIC δ¹³C value, -3‰, was near background levels and indicated little to no chlorobenzene was mineralized during the deployment period.
 - The PLFA community structure in CPA-MW-3D-0216 was composed of a large portion of firmicutes (39.21%) and monoenoics (38.64%) followed by normal saturates (15.93%). Indicators of eukaryotes and actinomycetes were also present.

PLFA Analysis - Standard Bio-Traps

- Total biomass concentrations in the standard BSA bio-traps fell within the moderate range (10⁵ to 10⁶ cells/bead).
 - The community structures in the standard BSA bio-traps indicated that monoenoics, normal saturates, and firmicutes were the most abundant groups.
- In the CPA wells, total PLFA biomass concentrations fell within the moderate range (10⁵ to 10⁶ cells/bead).
 - The microbial community structures in the CPA wells were primarily composed of monoenoics, normal saturates, firmicutes, and actinomycetes.

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-0216	CPA-MW-3D-0216
¹³C Contaminant Loss		
¹³ C Benzene Pre-deployment (µg/bead)	157 ± 18	---
¹³ C Benzene Post-deployment (µg/bead)	94 ± 8	---
¹³ C Chlorobenzene Pre-deployment (µg/bead)	---	132 ± 11
¹³ C Chlorobenzene Post-deployment (µg/bead)	---	54 ± 4
Biomass & ¹³C Incorporation		
Total Biomass (Cells/bead)	8.52E+05	1.38E+06
¹³ C Enriched Biomass (Cells/bead)	2.14E+04	7.66E+03
Average PLFA Del (‰)	1398	549
Maximum PLFA Del (‰)	5700	2068
¹³C Mineralization		
DIC Del (‰)	81	-3
% ¹³ C	1.19	1.10
Community Structure (% total PLFA)		
Firmicutes (TerBrSats)	20.35	39.21
Proteobacteria (Monos)	52.65	38.64
Anaerobic metal reducers (BrMonos)	1.06	0.00
Actinomycetes (MidBrSats)	3.96	0.38
General (Nsats)	16.50	15.93
Eukaryotes (Polyenoics)	5.49	5.83
Physiological Status (Proteobacteria only)		
Slowed Growth	0.07	0.59
Decreased Permeability	0.36	0.03

Legend: ND= Non Detect J = Estimated value between detection limit and reporting limit

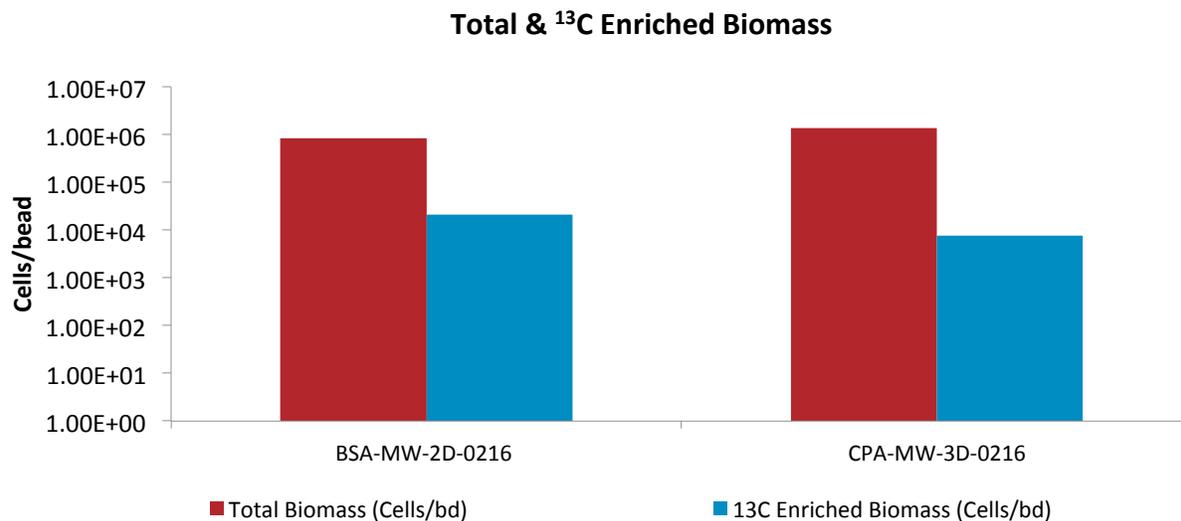


Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass (associated with higher organisms).

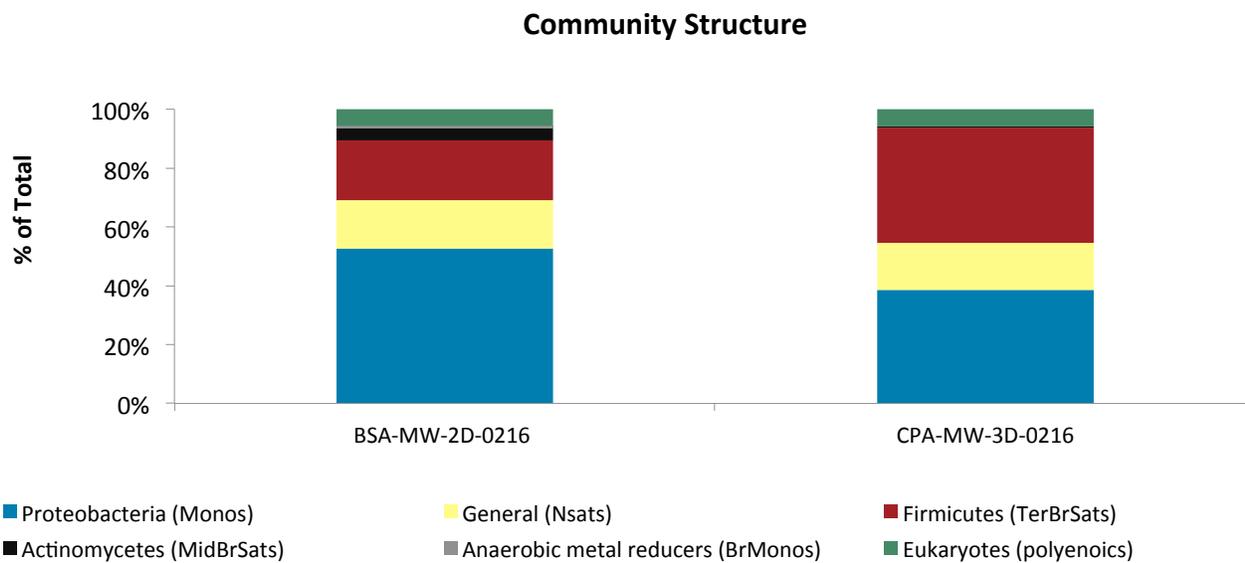


Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis. See the table in the interpretation section for detailed descriptions of the structural groups.

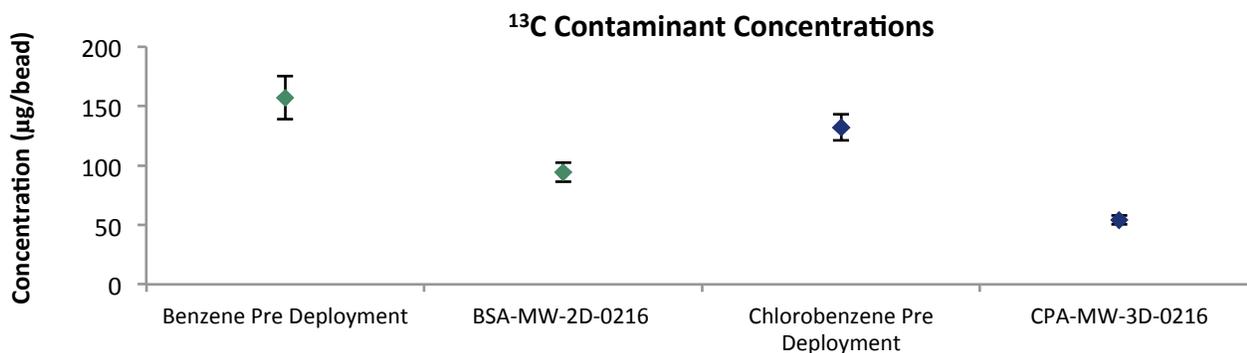


Figure 3. Comparison of Pre-deployment concentrations loaded on Bio-Sep beads to the concentrations detected after incubation.

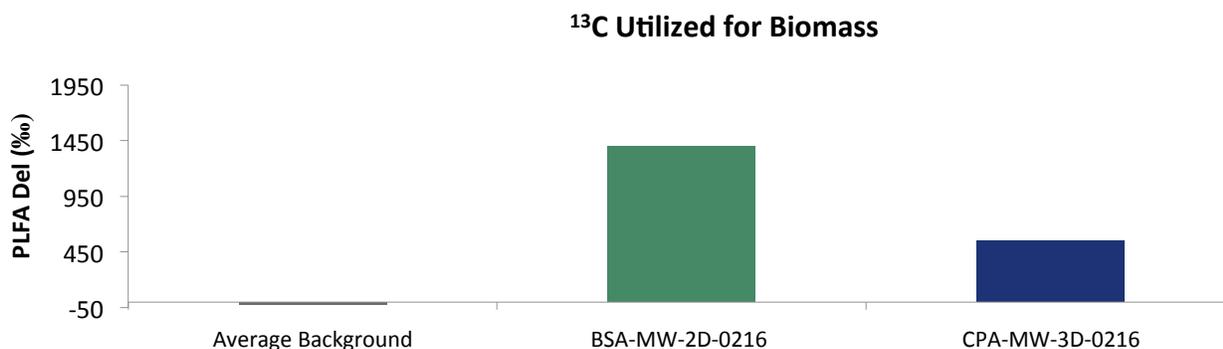


Figure 4. Comparison of the average Del value obtained from PLFA biomarkers from each Bio-Trap[®] unit to the average background Del observed in samples not exposed to ¹³C enriched compounds.

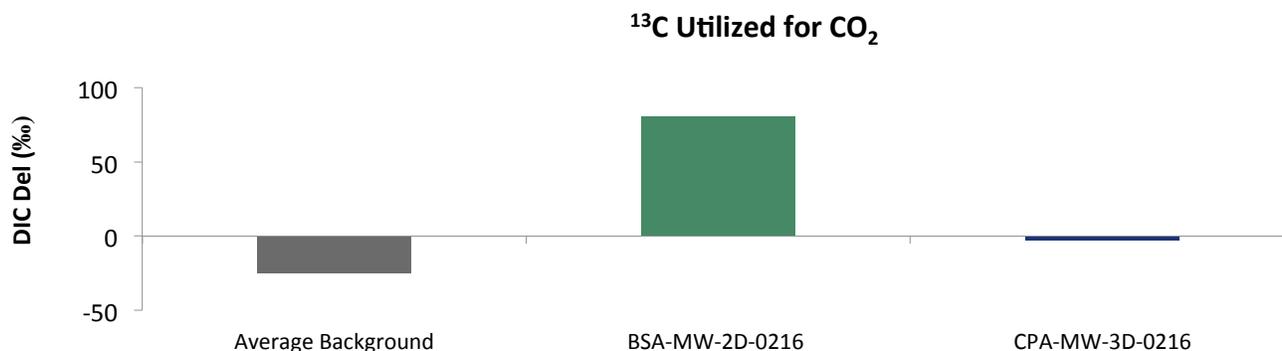


Figure 5. Comparison of the Del value obtained from DIC from each Bio-Trap[®] unit to the average background Del observed in samples not exposed to ¹³C enriched compounds.

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
Biomass Concentration					
Total Biomass (Cells/bead)	1.48E+06	8.52E+05	6.72E+05	5.65E+05	3.87E+05
Community Structure (% total PLFA)					
Firmicutes (TerBrSats)	11.83	20.35	14.83	15.15	15.53
Proteobacteria (Monos)	59.81	52.65	43.81	51.70	51.91
Anaerobic metal reducers (BrMonos)	2.10	1.06	3.25	4.06	3.31
Actinomycetes (MidBrSats)	5.57	3.96	16.37	9.76	7.90
General (Nsats)	17.52	16.50	16.87	12.53	15.20
Eukaryotes (Polyenoics)	3.16	5.49	4.87	6.80	6.15
Physiological Status (Proteobacteria only)					
Slowed Growth	0.20	0.07	0.48	0.44	0.30
Decreased Permeability	0.76	0.36	0.40	0.44	0.31

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
Biomass Concentration				
Total Biomass (Cells/bead)	9.17E+05	8.10E+05	1.38E+06	7.01E+05
Community Structure (% total PLFA)				
Firmicutes (TerBrSats)	14.36	19.20	39.21	15.28
Proteobacteria (Monos)	47.66	46.73	38.64	43.67
Anaerobic metal reducers (BrMonos)	3.09	3.23	0.00	2.74
Actinomycetes (MidBrSats)	15.79	8.50	0.38	14.21
General (Nsats)	13.66	17.16	15.93	18.35
Eukaryotes (Polyenoics)	5.44	5.19	5.83	5.77
Physiological Status (Proteobacteria only)				
Slowed Growth	0.37	0.47	0.59	0.55
Decreased Permeability	0.57	0.28	0.03	0.48

Legend: ND= Non Detect J = Estimated value between detection limit and reporting limit

Biomass Concentration - BSA Wells (0216)

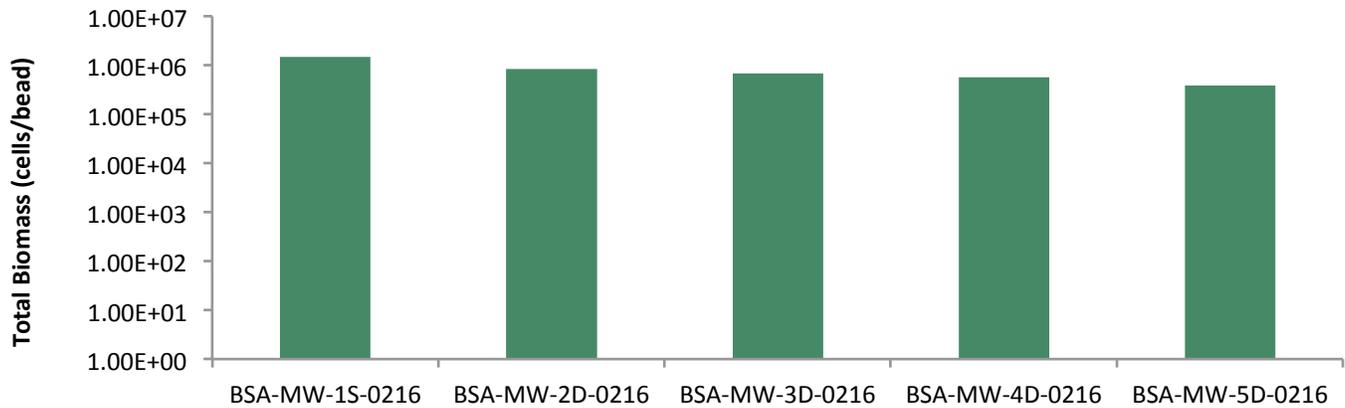


Figure 6. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass (associated with higher organisms).

Community Structure - BSA Wells (0216)

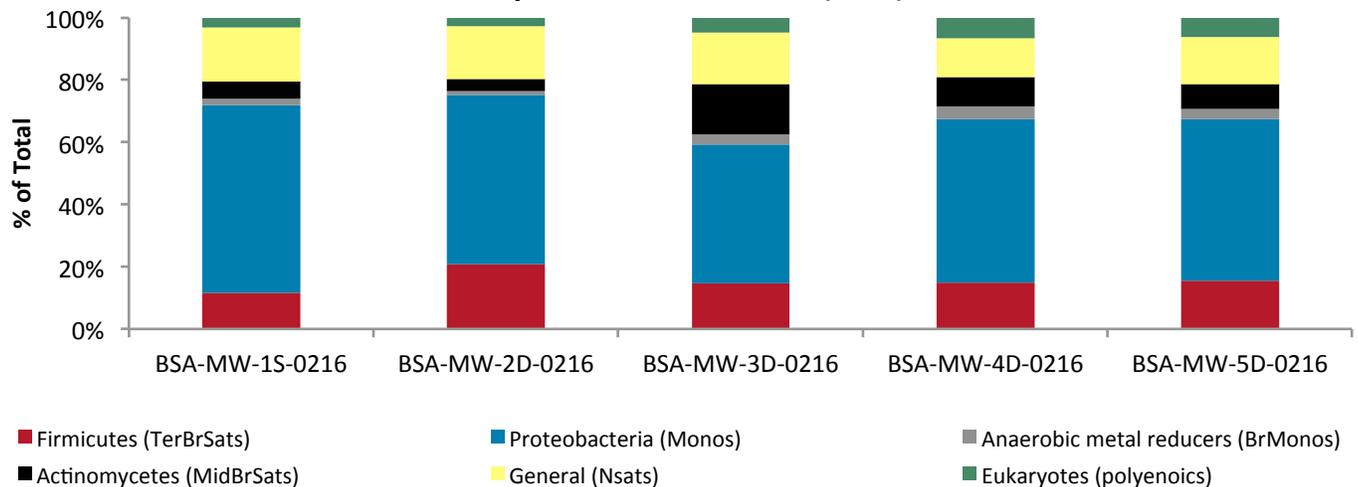


Figure 7. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis. See the table in the interpretation section for detailed descriptions of the structural groups.

Biomass Concentration - CPA Wells (0216)

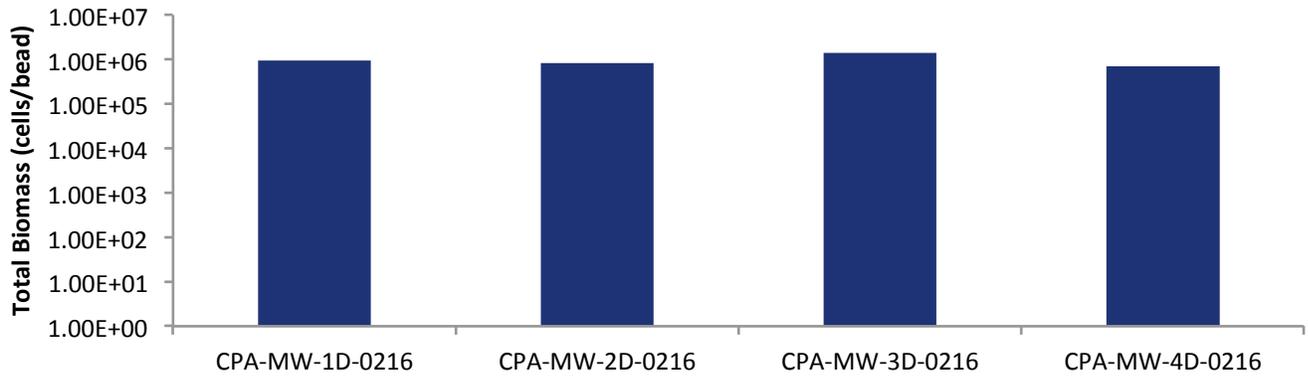


Figure 8. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass (associated with higher organisms).

Community Structure - CPA Wells (0216)

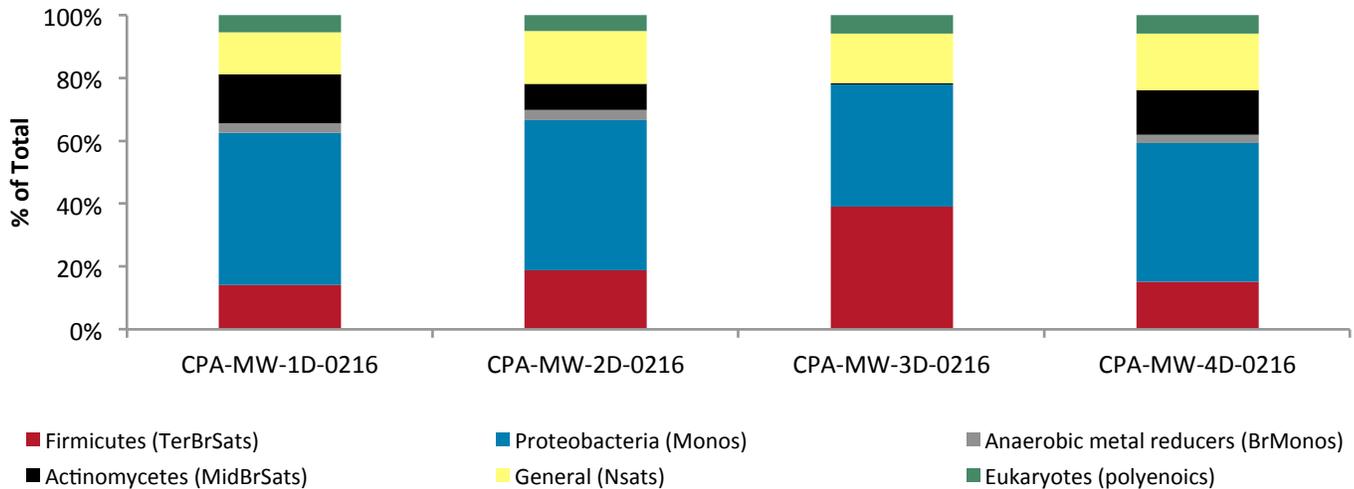


Figure 9. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis. See the table in the interpretation section for detailed descriptions of the structural groups.

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 ¹³C 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 ¹³C 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 ¹³C enriched PLFA is also determined to conclusively demonstrate contaminant biodegradation and quantify incorporation into biomass as a result of the ¹³C being used for cellular growth. The % ¹³C incorporation (¹³C 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 % ¹³C incorporation value could be low despite significant ¹³C labeled biomass and loss of the compound. The % ¹³C incorporation should be viewed in light of total biomass, percent loss, and dissolved inorganic carbon (DIC) results.

¹³C enrichment data is often reported as a del value. The del value is the difference between the isotopic ratio (¹³C/¹²C) 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 ¹³C). 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 ¹³C labeled compound into PLFA results in a larger ¹³C/¹²C 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 ¹³C labeled compound as both a carbon and energy source. The ¹³C portion used as a carbon source for growth can be incorporated into PLFA as discussed above, while the ¹³C used for energy is oxidized to ¹³CO₂ (mineralized).

¹³C enriched CO₂ data is often reported as a del value as described above for PLFA. Under natural conditions, the R_x of CO₂ is approximately the same as R_{std} (0.01118 or about 1.1% ¹³C). For an SIP Bio-Trap® study, mineralization of the ¹³C labeled contaminant of concern would lead to a greater value of R_x (increased ¹³CO₂ 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 %¹³C 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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Africa	+ 27 11 254 4800
Asia	+ 852 2562 3658
Australasia	+ 61 3 8862 3500
Europe	+ 356 21 42 30 20
North America	+ 1 800 275 3281
South America	+ 55 21 3095 9500

solutions@golder.com
www.golder.com

Golder Associates Inc.
820 S. Main Street, Suite 100
St. Charles, MO 63301 USA
Tel: (636) 724-9191
Fax: (636) 724-9323

