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

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

gmrina@solutia.com

May 19, 2011

Mr. Kenneth Bardo - LU-9J
U.S. EPA Region V
Corrective Action Section
77 West Jackson Boulevard
Chicago, IL 60604-3507

VIA FEDEX

Re: Long-Term Monitoring Program
1st Quarter 2011 Data Report
Solutia Inc., W. G. Krummrich Plant, Sauget, IL

Dear Mr. Bardo:

Enclosed please find the Long-Term Monitoring Program 1st Quarter 2011 Data Report for Solutia Inc.'s W. G. Krummrich Plant, Sauget, IL.

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

Sincerely,

Gerald M. Rinaldi
Manager, Remediation Services

Enclosure

cc: Distribution List

DISTRIBUTION LIST

Long-Term Monitoring Program
1st Quarter 2011 Data Report
Solutia Inc., W. G. Krummrich Plant, Sauget, IL

USEPA

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

IEPA

James Moore
IEPA Bureau of Land, 1021 North Grand Avenue East, Springfield, IL 62706

Booz Allen Hamilton

Dan Briller
Booz Allen Hamilton, 8283 Greensboro Drive, McLean, VA 22102

Solutia

Brett Shank 500 Monsanto Avenue, Sauget, IL 62206-1198

FIRST QUARTER 2011
DATA REPORT
LONG-TERM MONITORING PROGRAM
SOLUTIA INC.
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

Prepared for:

SOLUTIA INC.
St. Louis, Missouri

Prepared by:

GEOTECHNOLOGY, INC.
St. Louis, Missouri

Geotechnology, Inc. Report No. J017210.09

May 18, 2011

J017210.09

FIRST QUARTER 2011
DATA REPORT
LONG-TERM MONITORING PROGRAM
SOLUTIA INC.
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

TABLE OF CONTENTS

TABLES

ILLUSTRATIONS

FIRST QUARTER 2011
DATA REPORT
LONG-TERM MONITORING PROGRAM
SOLUTIA INC.
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

TABLE OF CONTENTS
-continued-

APPENDICES

J017210.09

FIRST QUARTER 2011
DATA REPORT
LONG-TERM MONITORING PROGRAM
SOLUTIA INC.
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

1.0 INTRODUCTION

This report presents the results of the 1st Quarter 2011 (1Q11) sampling event performed at the Solutia Inc. (Solutia) W.G. Krummrich (WGK) Facility located in Sauget, Illinois (Site). This sampling event was conducted in accordance with the Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia 2009). The Site location is presented in Figure 1.

The LTMP was designed to evaluate the effectiveness of monitored natural attenuation (MNA), including: 1) a clear and meaningful trend of decreasing contaminant mass; 2) data that indirectly demonstrate the types and rates of natural attenuation processes active at the site; and 3) data that directly demonstrate the occurrence of biodegradation processes at the site.

Groundwater Sampling Location and Frequency. As specified in the Revised LTMP Work Plan, groundwater samples will be collected from five monitoring wells downgradient of the Former Chlorobenzene Process Area (CPA-MW-1D through CPA-MW-5D) and five monitoring wells downgradient of the Former Benzene Storage Area (BSA-MW-1S and BSA-MW-2D through BSA-MW-5D) to assess attenuation processes in the American Bottoms aquifer, as impacted groundwater from these source areas migrates toward and discharges to the Mississippi River.

Monitoring Wells BSA-MW-1S, 2D, 3D, 4D and 5D are located within the limiting flow lines downgradient of the Former Benzene Storage Area. Monitoring Wells CPA-MW-1D, 2D, 3D, 4D and 5D are located within the limiting flow lines downgradient of the Former Chlorobenzene Process Area. Source areas and monitoring well locations are presented in Figure 2.

Quarterly sampling under the Long-Term Monitoring Program commenced 3Q08 and a total of 11 quarters have been completed as of 1Q11.

Groundwater Sampling Parameters. During the 1Q11 groundwater sampling event, groundwater samples were analyzed for benzene, monochlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene using USEPA Method 8260B. Select groundwater samples were also analyzed for 4-chloroaniline, 1,2,4-trichlorobenzne, 2-chlorophenol, and 1,4 dioxane using USEPA Method 8270C.

MNA samples were collected from all ten long-term monitoring program wells. Evaluation of the types of active natural attenuation processes at the site is based on the following key geochemical parameters:

- Electron Donors: Organic Carbon (Total and Dissolved)
- Electron Acceptors: Iron (Total and Dissolved)
Manganese (Total and Dissolved)
Nitrate
Sulfate
- Biodegradation Byproducts: Carbon Dioxide
Chloride
Methane
- Biodegradation Indicators: Alkalinity

Direct demonstration of the occurrence of biodegradation processes is completed quarterly utilizing Microbial Insights (www.microbe.com) Bio-Trap® Samplers for Phospholipid Fatty Acid (PLFA) Analysis, along with Stable Isotope Probes (SIPs) for benzene or chlorobenzene in select wells.

2.0 FIELD PROCEDURES

Geotechnology, Inc. (Geotechnology) conducted the majority of 1Q11 field activities from February 21 through February 25, 2011. Activities were completed in accordance with procedures outlined in the Revised LTMP Work Plan, including the collection of appropriate quality assurance and quality control (QA/QC) samples. The following section summarizes field investigative procedures:

Groundwater Level Measurements. Geotechnology personnel used an electronic oil/water interface probe to measure depth to static groundwater levels and if present, the thickness of non-aqueous phase liquid (NAPL), to 0.01 feet. Depth to groundwater measurements were collected from accessible existing wells (i.e., GM-, K- , PSMW- and PMA-series) and piezometers clusters (installed for the Sauget Area 2 RI/FS and WGK CA-750 Environmental Indicator projects) specified in the Revised LTMP Work Plan (Figure 3). NAPL was not detected within any of the ten LTMP monitoring wells.

Well gauging information for the 1Q11 event is presented in Table 1. As the middle and deep hydrogeologic units are the primary migration pathway for constituents present in groundwater at the WGK Facility, a groundwater potentiometric surface map based on water level data from wells screened in the Middle Hydrogeologic Unit (MHU) and Deep Hydrogeologic Unit (DHU) is presented as Figure 3.

Groundwater Sampling**.** Low-flow sampling techniques were used for groundwater sample collection. At each monitoring well, disposable, low-density polyethylene tubing was attached to a submersible pump, which was then lowered into the well to the middle of the screened interval. Monitoring wells were purged at a rate of 145 to 333 mL/minute to minimize drawdown. If significant drawdown occurred, flow rates were reduced.

Drawdown was measured periodically throughout purging to ensure that it did not exceed 25% of the distance between the pump intake and the top of the screen. Once the flow rate and drawdown were stable, field measurements were collected approximately every three to ten minutes. Purging of a well was considered complete when the following water quality parameters remained stable over three consecutive flow-through cell volumes:

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

Sampling commenced upon completion of purging. Prior to sample collection, the flow-through cell was bypassed to allow for collection of uncompromised groundwater. Samples were collected at a flow rate less than or equal to the rate at which stabilization was achieved. Sample containers were filled based on laboratory analysis to be performed, in the following order:

- Volatile Organic Compounds (VOCs)
- Gas Sensitive Parameters (e.g., methane, carbon dioxide)
- Semi Volatile Organic Compounds (SVOCs)
- General Chemistry (i.e., alkalinity, chloride, total and dissolved iron, total and dissolved manganese, nitrate, sulfate, and total and dissolved organic carbon)
- Field Parameters (i.e., dissolved oxygen, and oxidation-reduction potential).

Samples collected for dissolved iron and dissolved manganese analysis were filtered in the field using in-line 0.2 micron disposable filters, represented by a notation of “F” in the sample nomenclature.

Quality assurance/quality control (QA/QC) samples consisting of analytical duplicates (AD) and equipment blanks (EB) were collected at a rate of 10% and matrix spike/matrix spike duplicates (MS/MSD) were collected at a rate of 5%. In addition, trip blanks accompanied each shipment containing samples for VOC analysis.

Each investigative or QC sample was labeled immediately following collection. Each sample identification number consisted of the following nomenclature "AAAMW#-MMYY-QAC" where:

- "AAA" denotes "Chlorobenzene Process Area (CPA)" or "Benzene Storage Area (BSA)"and "MW-#" denotes "Monitoring Well Number":
- MMYY – Month and year of sampling quarter, e.g.: First quarter (February) 2011, 0211
- "QAC" denotes QA/QC sample
  - AD – analytical duplicate
  - EB – equipment blank
  - MS or MSD – Matrix Spike or Matrix Spike Duplicate

Upon collection and labeling, sample containers were immediately placed inside an iced cooler, packed in such a way as to help prevent breakage and maintain inside temperature at approximately 4^{o}C. Field personnel recorded the project identification and number, sample description/location, required analysis, date and time of sample collection, type and matrix of sample, number of sample containers, preservative used (if applicable), analysis requested/comments, and sampler signature/date/time, with permanent ink on the chain-of-custody (COC). Prior to shipment, coolers were sealed between the lid and sides of the cooler with a custody seal, and then shipped to TestAmerica in Savannah, Georgia by means of an overnight delivery service. Field sampling data sheets are included in Appendix A, COCs are included in Appendix B.

Field personnel and equipment were decontaminated according to procedures specified in the Revised LTMP Work Plan to ensure the health and safety of those present, maintain sample integrity, and minimize movement of contamination between the work area and off-site locations. Equipment used on-site was decontaminated prior to beginning work, between sampling locations and/or uses, and prior to demobilizing from the site. Non-disposable purging and sampling equipment was decontaminated between each sample acquisition by washing with an Alconox® or equivalent detergent wash, a potable water rinse, and a distilled water rinse. Personnel and small equipment decontamination was performed at the sample locations. Disposable sampling equipment, such as gloves were collected and bagged on a daily basis and managed in accordance with Solutia procedures. Purge water was containerized and handled per Solutia procedures.

Biodegradation Evaluation Sampling**.** Bio-Trap® samplers and Stable Isotope Probes (SIPs), provided by Microbial Insights, Inc. (Rockford, TN), were utilized in the LTMP to provide information regarding biodegradation potential of the Shallow Hydrogeologic Unit (SHU), the MHU and the DHU. Bio-Trap® samplers are passive sampling tools which, over time, collect microbes across a membrane that serves as the sampling matrix. SIPs are similar passive sampling tools that are analyzed to measure the degradation of a specific contaminant (i.e., benzene and chlorobenzene).

On February 28, 2011, Geotechnology field personnel deployed Bio-Trap® samplers in each of the ten LTMP wells for PLFA analysis. A benzene SIP and a chlorobenzene SIP were placed in monitoring wells BSA-MW-2D and CPA-MW-3D, respectively. Bio-Trap® samplers and SIPs were tied to nylon line attached to the well cap and lowered to the middle of the well screen.

On March 28, 2011, the Bio-Trap® samplers and SIPs were retrieved from the wells, sealed in Ziploc® bags, labeled with the proper well identification and placed in an iced sample cooler with a signed COC. Sealed sample coolers were sent to Microbial Insights, Inc. for analysis. A copy of the Microbial Insights Data Package is included in appendix E.

3.0 LABORATORY PROCEDURES

Samples were analyzed by TestAmerica for VOCs, SVOCs and MNA parameters, using the following methodologies:

- VOCs, via USEPA SW-846 Method 8260B
- SVOCs, via USEPA SW-846 Method 8270C
- MNA parameters: alkalinity (310.1), carbon dioxide (310.1), chloride (325.2), total and dissolved iron (6010B), total and dissolved manganese (6010B), dissolved gases (RSK 175), nitrate (353.2), sulfate (375.4), and total and dissolved organic carbon (415.1).

Dichlorobenzenes were quantitated using Method 8260B because of potential volatilization losses associated with Method 8270C. Laboratory results were provided in electronic and hard copy formats.

4.0 QUALITY ASSURANCE

Analytical data were reviewed for quality and completeness, as described in the Revised Long Term Monitoring Work Plan. Data qualifiers were added, as appropriate, and are included on the data tables and the laboratory result pages. The Quality Assurance report is included as Appendix C. The laboratory report and data review sheets are included in Appendix D.

A total of 14 groundwater samples (10 investigative samples, 1 field duplicate, 1 MS/MSD pair and 1 equipment blank) were prepared and analyzed by TestAmerica for combinations of VOCs, SVOCs, dissolved gases, metals, and general chemistry. In addition, three trip blank sets were included in the coolers that contained samples for VOC analysis and were analyzed for VOCs. The results for the various analyses were submitted as sample delivery group (SDG) KPS063.

The samples contained in SDG KPS063 are listed below:

SDG KPS063

BSA-MW-1S-0211	CPA-MW-02D-0211
BSA-MW-1S-0211-F(0.2)	CPA-MW-02D-0211
BSA-MW-02D-0211	CPA-MW-02D-0211-F(0.2)
BSA-MW-02D-0211-F(0.2)	CPA-MW-02D-0211-AD
BSA-MW-03D-0211	CPA-MW-03D-0211
BSA-MW-03D-0211-F(0.2)	CPA-MW-03D-0211-F(0.2)
BSA-MW-03D-EB	CPA-MW-04D-0211
BSA-MW-04D-0211	CPA-MW-04D-0211-F(0.2)
BSA-MW-04D-F(0.2)-0211	CPA-MW-05D-0211
BSA-MW-05D-0211	CPA-MW-05D-F(0.2)-0211
BSA-MW-05D-F(0.2)0211	Trip Blank (Lab ID 680-65833-7TB)
CPA-MW-01D-0211	Trip Blank (Lab ID 680-65902-8TB)
CPA-MW-01D-0211-F(0.2)	Trip Blank (Lab ID 680-65862-10TB)

Evaluation of the groundwater analytical data followed procedures outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA 2008), USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (USEPA 2004), and the Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia 2009).

Based on the above mentioned criteria, groundwater results reported for the analyses performed were accepted for their intended use. Acceptable levels of accuracy and precision, based on matrix spike/matrix spike duplicate (MS/MSD), laboratory control sample (LCS),

surrogate and field duplicate data were achieved for these SDGs to meet the project objectives. Completeness which is defined to be the percentage of analytical results which are judged to be valid with the exception of rejected (**R**) flagged data, including estimated detect/nondetect data was 92.03 percent.

5.0 OBSERVATIONS

Groundwater analytical detections and MNA results for the 1Q11 LTMP sampling event are presented in Tables 2 and 3, respectively. Eight constituents - benzene, chlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 4-chloroaniline, 1,2,4-trichlorobenzene and 2-chlorophenol - were reported in samples collected from the ten LTMP wells during this sampling event. Each of these constituents is discussed below:

Benzene - Benzene was detected in collected samples at levels above the laboratory reporting limit in seven of the ten wells sampled in 1Q11, ranging from 8.0 µg/L (CPA-MW-3D) to 620,000 µg/L (BSA-MW-1S).

Downgradient of the Former Benzene Storage Area, benzene was detected in the DHU at concentrations of 250,000 µg/L (BSA-MW-2D), 44 µg/L (BSA-MW-3D), and 27 µg/L (BSA-MW-4D). Near the river north of the Sauget Area 2 Groundwater Migration Control System (SA2 GMCS), benzene was not detected in the DHU at monitoring well BSA-MW-5D.

Benzene was detected at the Former Chlorobenzene Process Area at a concentration of 9,400 µg/L (CPA-MW-1D). Downgradient of the Former Chlorobenzene Storage Area, benzene was detected in the DHU at concentrations of 1,500 µg/L (CPA-MW-2D) and 8.0 µg/L (CPA-MW-3D). Benzene was not detected in the DHU near the river north of SA2 GMCS at monitoring wells CPA-MW-4D and CPA-MW-5D.

Chlorobenzenes (Total) - Total chlorobenzenes (e.g., sum of chlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4, dichlorobenzene) were detected at levels above the laboratory reporting limit in eight of the ten wells sampled in 1Q11, ranging from 5.9 µg/L (BSA-MW-5D) to 45,000 µg/L (CPA-MW-1D).

Chlorobenzenes were detected at the Former Chlorobenzene Process Area at a concentration of 45,000 µg/L (CPA-MW-1D). Downgradient of the Former Chlorobenzene Storage Area, total chlorobenzenes were detected in the DHU at concentrations of 38,030/36,000 µg/L at the North Tank Farm (CPA-MW-2D and duplicate), along with concentrations of 619.5 µg/L (CPA-MW-3D) and 300 µg/L (CPA-MW-4D). Total chlorobenzenes were detected in the DHU near the river north of SA2 GMCS at concentrations of 300 µg/L (CPA-MW-4D) to 1,700 µg/L (CPA-MW-5D).

Chlorobenzenes were not detected in the SHU at the Former Benzene Storage Area BSA-MW-1S). Downgradient of the Former Benzene Storage Area, total chlorobenzenes were not detected in the DHU (BSA-MW-2D); and total chlorobenzenes were detected at concentrations of 1,409 µg/L in the DHU (BSA-MW-3D). North of the SA2 GMCS, near the river, total chlorobenzenes were detected in the DHU at concentrations of 2,837 µg/L (BSA-MW-4D) and 5.9 µg/L (BSA-MW-5D).

Figure 4 displays benzene and total chlorobenzenes results from the 1Q11 sampling event.

SVOCs - **4-chloroaniline** was detected in monitoring well CPA-MW-4D at a concentration of 320 µg/L. **1,2,4-trichlorobenzene** was detected in monitoring well CPA- MW-1D at a concentration of 860 µg/L. **2-chlorophenol** was detected in Former Benzene Storage Area monitoring well BSA-MW-4D (16 µg/L) and in Former Chlorobenzene Process Area monitoring wells CPA-MW-1D (13 µg/L), CPA-MW-2D (24 µg/L), and CPA-MW-5D (11 µg/L). **1,4-dioxane** was not detected in the submitted samples.

Monitored Natural Attenuation - The MNA results for this quarter are presented in Table 3. PLFA and SIP laboratory results are included in Appendix E.

6.0 REFERENCES

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

USEPA, 2004. Contract Laboratory Program National Functional Guidelines for Inorganic Data Review.

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

See last page of table for notes.

TABLE 1
MONITORING WELL GAUGING INFORMATION

J017210.09
May 2011

Well ID	Construction Details						February 2011		
	Ground Elevation* (feet)	Casing Elevation* (feet)	Depth to Top of Screen (feet bgs)	Depth to Bottom of Screen (feet bgs)	Top of Screen Elevation* (feet)	Bottom of Screen Elevation* (feet)	Depth to Water (feet btoc)	Depth to Bottom (feet btoc)	Water Elevation* (feet)
Shallow Hydrogeologic Unit (SHU 395-380 feet NAVD 88)									
BSA-MW-1S	409.49	412.31	19.68	24.68	389.81	384.81	18.02	27.35	394.29
Middle Hydrogeologic Unit (MHU 380-350 feet NAVD 88)									
PMA-MW-1M	410.32	410.08	54.54	59.54	355.78	350.78	14.56	59.68	395.52
PMA-MW-2M	412.26	411.93	56.87	61.87	355.39	350.39	16.26	61.60	395.67
PMA-MW-3M	412.36	412.10	57.07	62.07	355.29	350.29	16.33	61.88	395.77
PMA-MW-5M	411.27	410.97	52.17	57.17	359.10	354.10	15.77	57.05	395.20
PS-MW-1	409.37	412.59	37.78	42.78	371.59	366.59	15.77	46.11	396.82
Deep Hydrogeologic Unit (DHU 350 feet NAVD 88 - Bedrock)									
BSA-MW-2D	412.00	415.13	68.92	73.92	343.08	338.08	22.91	77.09	392.22
BSA-MW-3D	412.91	415.74	107.02	112.02	305.89	300.89	25.98	114.94	389.76
BSA-MW-4D	425.00	424.69	118.54	123.54	306.46	301.46	36.92	123.36	387.77
BSA-MW-5D	420.80	420.49	115.85	120.85	304.95	299.95	33.39	121.03	387.10
CPA-MW-1D	408.62	408.32	66.12	71.12	342.50	337.50	12.49	70.81	395.83
CPA-MW-2D	408.51	408.20	99.96	104.96	308.55	303.55	15.11	104.71	393.09
CPA-MW-3D	410.87	410.67	108.20	113.20	302.67	297.67	17.89	112.95	392.78
CPA-MW-4D	421.57	421.20	116.44	121.44	305.13	300.13	32.24	121.03	388.96
CPA-MW-5D	411.03	413.15	107.63	112.63	303.40	298.40	28.03	114.74	385.12
DNAPL-K-1	413.07	415.56	108.20	123.20	304.87	289.87	18.72	123.30	396.84
DNAPL-K-2	407.94	407.72	97.63	112.63	310.31	295.31	12.04	112.47	395.68
DNAPL-K-3	412.13	411.91	104.80	119.80	307.33	292.33	15.77	119.31	396.14
DNAPL-K-4	409.48	409.15	102.55	117.55	306.93	291.93	13.68	114.49	395.47
DNAPL-K-5	412.27	411.91	102.15	117.15	310.12	295.12	13.89	116.66	398.02
DNAPL-K-6	410.43	410.09	102.47	117.47	307.96	292.96	14.92	117.05	395.17
DNAPL-K-7	408.32	407.72	100.40	115.40	307.92	292.92	12.95	115.42	394.77
DNAPL-K-8	408.56	411.38	102.65	117.65	305.91	290.91	17.36	117.72	394.02
DNAPL-K-9	406.45	405.97	97.42	112.42	309.03	294.03	11.85	111.28	394.12
DNAPL-K-10	413.50	413.25	105.43	120.43	308.07	293.07	16.97	120.37	396.28
DNAPL-K-11	412.00	411.78	105.46	120.46	306.74	291.74	17.06	120.34	394.72
GM-9C	409.54	411.21	88.00	108.00	321.54	301.54	15.86	108.50	395.35

See last page of table for notes.

TABLE 1
MONITORING WELL GAUGING INFORMATION

J017210.09
May 2011

Well ID	Construction Details						February 2011		
	Ground Elevation* (feet)	Casing Elevation* (feet)	Depth to Top of Screen (feet bgs)	Depth to Bottom of Screen (feet bgs)	Top of Screen Elevation* (feet)	Bottom of Screen Elevation* (feet)	Depth to Water (feet btoc)	Depth to Bottom (feet btoc)	Water Elevation* (feet)
Deep Hydrogeologic Unit (DHU 350 feet NAVD - Bedrock)									
GWE-1D (PIEZ-1D)	412.80	415.60	117.00	127.00	295.80	285.80	31.12	128.51	384.48
GWE-2D (PIEZ-2D)	417.45	417.14	127.00	137.00	290.45	280.45	30.66	136.80	386.48
GWE-4D (TRA3-PZADHU)	406.05	405.74	74.00	80.00	332.05	326.05	14.55	78.81	391.19
GWE-10D (PIEZ 6D)	410.15	412.87	102.50	112.50	307.65	297.65	19.26	114.91	393.61
GWE-14D (TRA5-PZCDHU)	420.47	422.90	90.00	96.00	330.47	324.47	34.61	96.81	388.29
PMA-MW-4D	411.22	410.88	68.84	73.84	342.38	337.38	14.80	73.42	396.08
PMA-MW-6D	407.63	407.32	96.49	101.49	311.14	306.14	13.08	101.39	394.24
PSMW-6	404.11	406.63	99.80	104.80	304.31	299.31	16.56	109.95	390.07
PSMW-9	403.92	403.52	100.40	105.40	303.52	298.52	10.59	105.23	392.93
PSMW-10	409.63	412.18	101.23	106.23	308.40	303.40	24.71	111.42	387.47
PSMW-13	405.80	405.53	106.08	111.08	299.72	294.72	15.56	110.71	389.97
PSMW-17	420.22	423.26	121.25	126.25	298.97	293.97	37.82	134.14	385.44

Notes:
* - Elevation based upon North American Vertical Datum (NAVD) 88 datum
bgs - Below ground surface
btoc - Below top of casing

TABLE 2
GROUNDWATER ANALYTICAL RESULTS

		VOC (µg/L)					SVOC (µg/L)			
Sample ID	Sample Date	Benzene	Chlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	4-Chloroaniline	1,2,4-Trichlorobenzene	2-Chlorophenol	1,4-Dioxane
BENZENE STORAGE AREA										
BSA-MW-1S-0211	2/23/11	**620,000**	<5000	<5000	<5000	<5000	NA	<9.9	<9.9	NA
BSA-MW-2D-0211	2/22/11	**250,000**	<5000	<5000	<5000	<5000	NA	<9.7	<9.7	<9.7
BSA-MW-3D-0211	2/22/11	**44**	**1,000**	**19**	<10	**390**	NA	<10	<10	<10
BSA-MW-4D-0211	2/21/11	**27**	**2,800**	<20	<20	**37**	<19	<9.6	**16**	NA
BSA-MW-5D-0211	2/21/11	<1.0	**5.9**	<1.0	<1.0	<1.0	<21	<11	<11	NA
CHLOROBENZENE PROCESS AREA										
CPA-MW-1D-0211	2/23/11	**9,400**	**18,000**	**16,000**	**1,200**	**9,800**	NA	**860 E/950 D**	**13**	NA
CPA-MW-2D-0211	2/23/11	**1,500**	**25,000**	**650**	**380**	**12,000**	NA	<10	**24**	NA
CPA-MW-2D-0211-AD	2/23/11	**1,600**	**24,000**	**640**	**360**	**11,000**	NA	<9.9	**20**	NA
CPA-MW-3D-0211	2/22/11	**8.0**	**610**	<5.0	<5.0	**9.5**	<20	<10	<10	NA
CPA-MW-4D-0211	2/22/11	<10	**300**	<10	<10	<10	**320 E/340 D**	<10	<10	NA
CPA-MW-5D-0211	2/21/11	<20	**1,700**	<20	<20	<20	<21	<11	**11**	NA

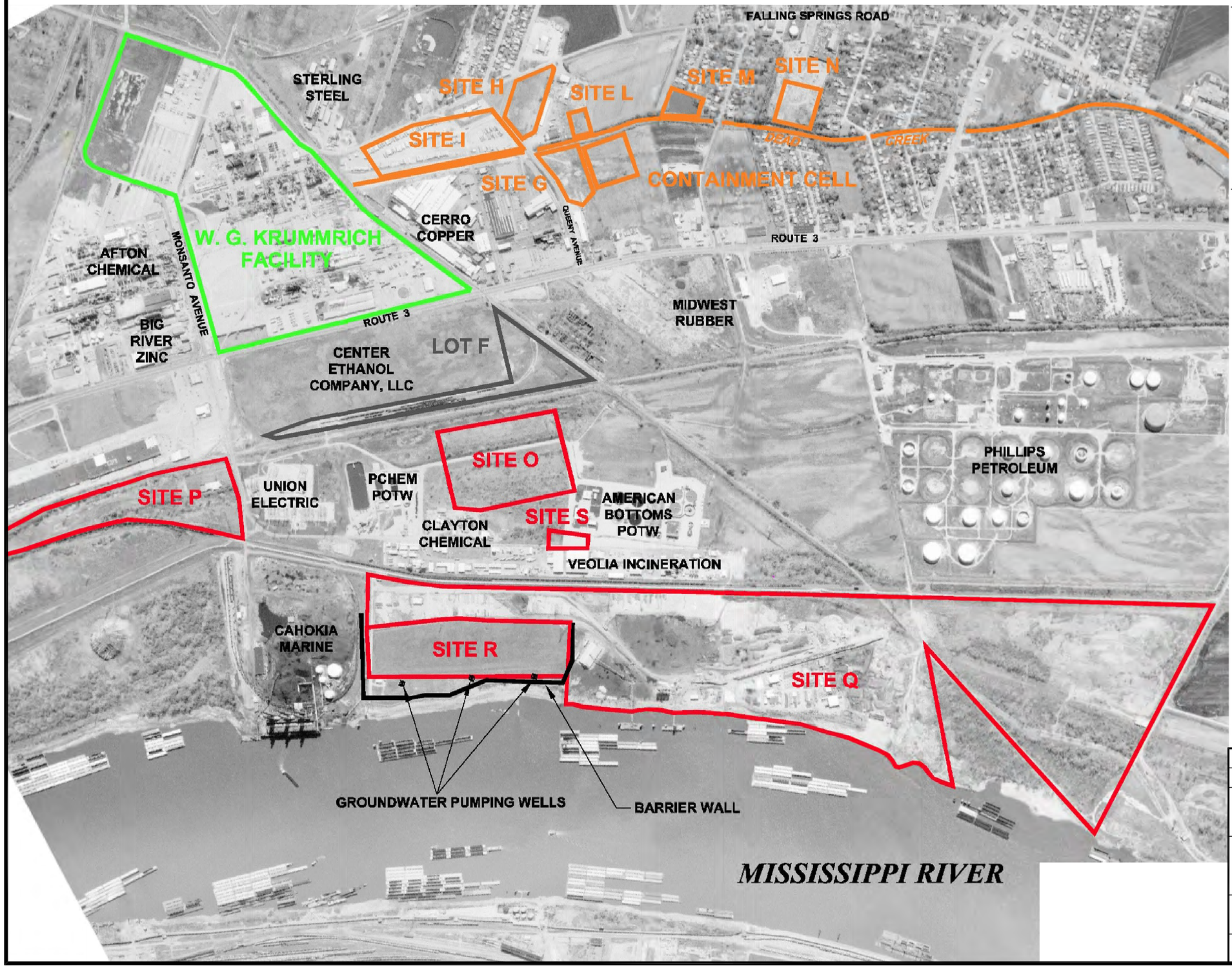
Notes:
µg/L = micrograms per liter
< = Result is non-detect, less than the reporting limit given
BOLD indicates concentration greater than the reporting limit
AD = Analytical Duplicate
D = Sample results are obtained from a dilution
E = Result exceeded calibration range
NA = Not analyzed

TABLE 3

MONITORED NATURAL ATTENUATION RESULTS SUMMARY

Sample ID	Sample Date	Alkalinity (mg/L)	Carbon Dioxide (mg/l)	Chloride (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)	Dissolved Organic Carbon (mg/L)	Total Organic Carbon (mg/L)	ORP (mV)	DO (mg/L)
BENZENE STORAGE AREA																		
BSA-MW-1S-0211	2/23/2011	700	25	230	<1.1	<1.0	2.07	3.9J		0.52		11,000	<0.050	<5.0		6.3	99.7	0.00
BSA-MW-1S-F(0.2)-0211	2/23/2011								3.9		0.55				6.1			
BSA-MW-2D-0211	2/22/2011	620	27	95	11	<1.0	2.58	3.1J		0.47		12,000	<0.050	<5.0		6.2	124	0.00
BSA-MW-2D-F(0.2)-0211	2/22/2011								2.6J		0.44				6			
BSA-MW-3D-0211	2/22/2011	410	27	120	1.4	<1.0	2.85	13J		0.57		1,600	<0.050	130		3.6	81	0.00
BSA-MW-3D-F(0.2)-0211	2/22/2011								11J		0.54				3.3			
BSA-MW-4D-0211	2/21/2011	520	34	110	3.6	<1.0	1.44	9.2		0.68		48	<0.050	130		5.7	-12.7	0.00
BSA-MW-4D-F(0.2)-0211	2/21/2011								8.5		0.66				5.4			
BSA-MW-5D-0211	2/21/2011	660	58	87	1.5	<1.0	2.58	29		1.5		8,100	<0.050	63		5.3J	-118	0.00
BSA-MW-5D-F(0.2)-0211	2/21/2011								21		0.95				6.0J			
CHLOROBENZENE PROCESS AREA																		
CPA-MW-1D-0211	2/23/2011	780	<5.0	120	28	<1.0	0.46	0.94J		0.037J		18,000	<0.050	<5.0		13	-114.3	0.00
CPA-MW-1D-F(0.2)-0211	2/23/2011								0.55		0.05J				11			
CPA-MW-2D-0211	2/23/2011	490	35	560	4.2	<1.0	2.63	8.3J		0.4		2,500	<0.050	<5.0		11J	-66.6	0.00
CPA-MW-2D-F(0.2)-0211	2/23/2011								7.7J		0.38				13J			
CPA-MW-3D-0211	2/22/2011	500	30	120	7.7	<1.0	2.53	12J		0.59		8,400	<0.050	13		11	-88	0.00
CPA-MW-3D-F(0.2)-0211	2/22/2011								10J		0.54				10			
CPA-MW-4D-0211	2/22/2011	620	31	320	16	<1.0	1.24	12J		0.29J		17,000	<0.050	<5.0		6.5	-94.6	0.00
CPA-MW-4D-F(0.2)-0211	2/22/2011								11J		0.36J				6.6			
CPA-MW-5D-0211	2/21/2011	320	88	330	2.7	<1.0	3.08	88		3.5		9.2	<0.050	1,600		4	53	0.00
CPA-MW-5D-F(0.2)-0211	2/21/2011								82		3.4				3.6			

Notes:
DO and ORP were measured in the field using YSI 6920 equipped with a flow-thru cell. Values presented represent final measurements before sampling
Ferrous Iron readings were measured in the field using a LaMotte Colorimeter after the groundwater passed through a 0.2 µm filter
(0.2) = Sample was filtered utilizing a 0.2 µm filter during sample collection
mg/L - milligrams per liter
mV = millivolts
ug/L = micrograms per liter
< = Result is non-detect, less than the reporting limit given
A blank space indicated sample not analyzed for select analyte
J = Estimated value



NOTES:

1. Plan adapted from a drawing titled "Site Location Map" provided by URS.

LEGEND:

- W.G. Krummrich Facility
- Sauget Area #1
- Sauget Area #2

N

0 1,000 2,000

SCALE IN FEET

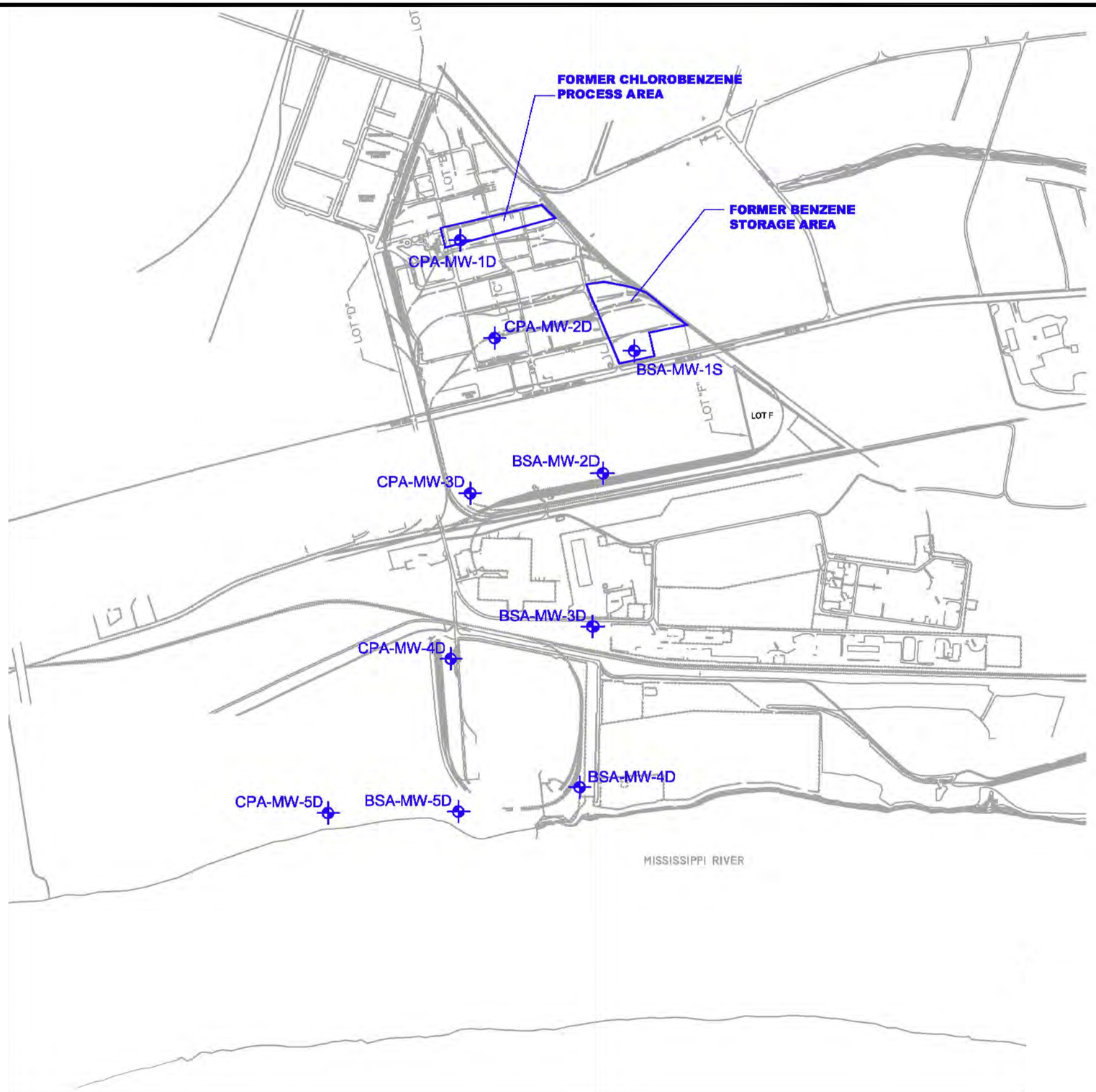
Drawn By: SLC	Ck'd By: AMS	App'vd By: DTK
Date: 04-15-11	Date: 04-15-11	Date: 04-15-11

GEOTECHNOLOGY INC
FROM THE GROUND UP

1Q 2011
Long-Term Monitoring Program
Sauget, Illinois

SITE LOCATION MAP

Project Number J017210.09	PLATE 1



NOTES:

1. Plan adapted from a drawing titled "Long-Term Monitoring Program Well Locations" provided by URS.

2. Refer to Table 1 for Monitoring Well Construction Information.

LEGEND:

Long Term Monitoring Well Location

N

0 1,000 2,000

SCALE IN FEET

Drawn By: SLC	Ck'd By: AMS	App'vd By: DTK
Date: 04-15-11	Date: 04-15-11	Date: 04-15-11

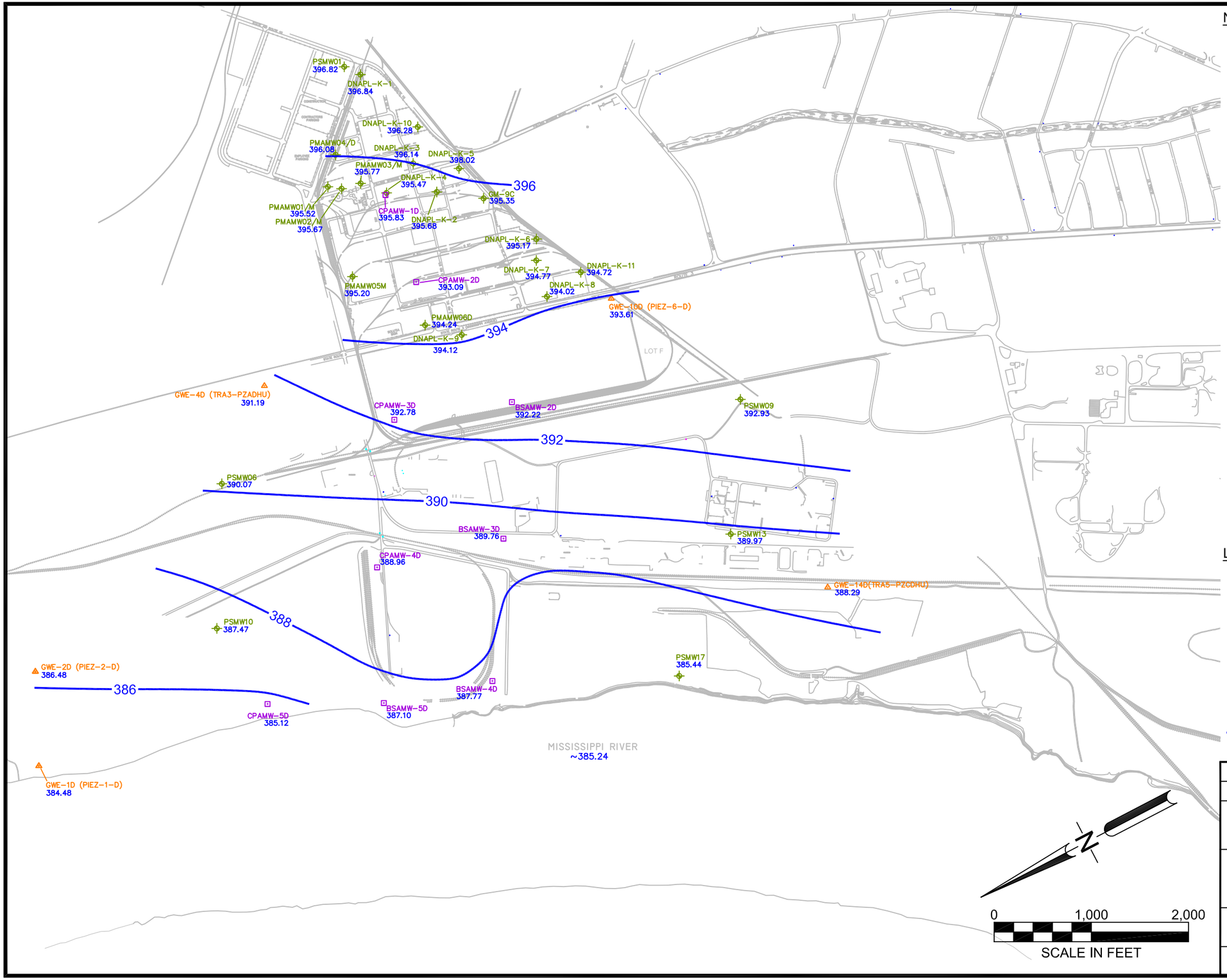
GEOTECHNOLOGY INC
FROM THE GROUND UP

1Q 2011
Long-Term Monitoring Program
Sauget, Illinois

LONG-TERM MONITORING PROGRAM WELL LOCATIONS

Project Number J017210.09

PLATE 2



NOTES:

1. Plan adapted from a drawing titled "Potentiometric Surface Map Middle/Deep Hydrogeologic Unit" provide by URS.

2. Groundwater levels were measured February 15, 2011.

3. Contours generated primarily using surfer software version 8. Some interpretation was done using professional judgment and contour lines were modified by hand.

4. The Mississippi River stage elevation presented on the figure is an average elevation for the time of the gauging event. The information was obtained from the site R Bubbler.

5. Locations with wells screened in both the MHU and DHU utilized the DHU well for development of the potentiometric surface map.

LEGEND:

- Long Term Monitoring Well used for Groundwater Contouring
- Other Monitoring Well used for Goundwater Contouring
- Piezometer Cluster used for Groundwater Contouring
- —402— Groundwater Elevation Contour (ft NAVD)

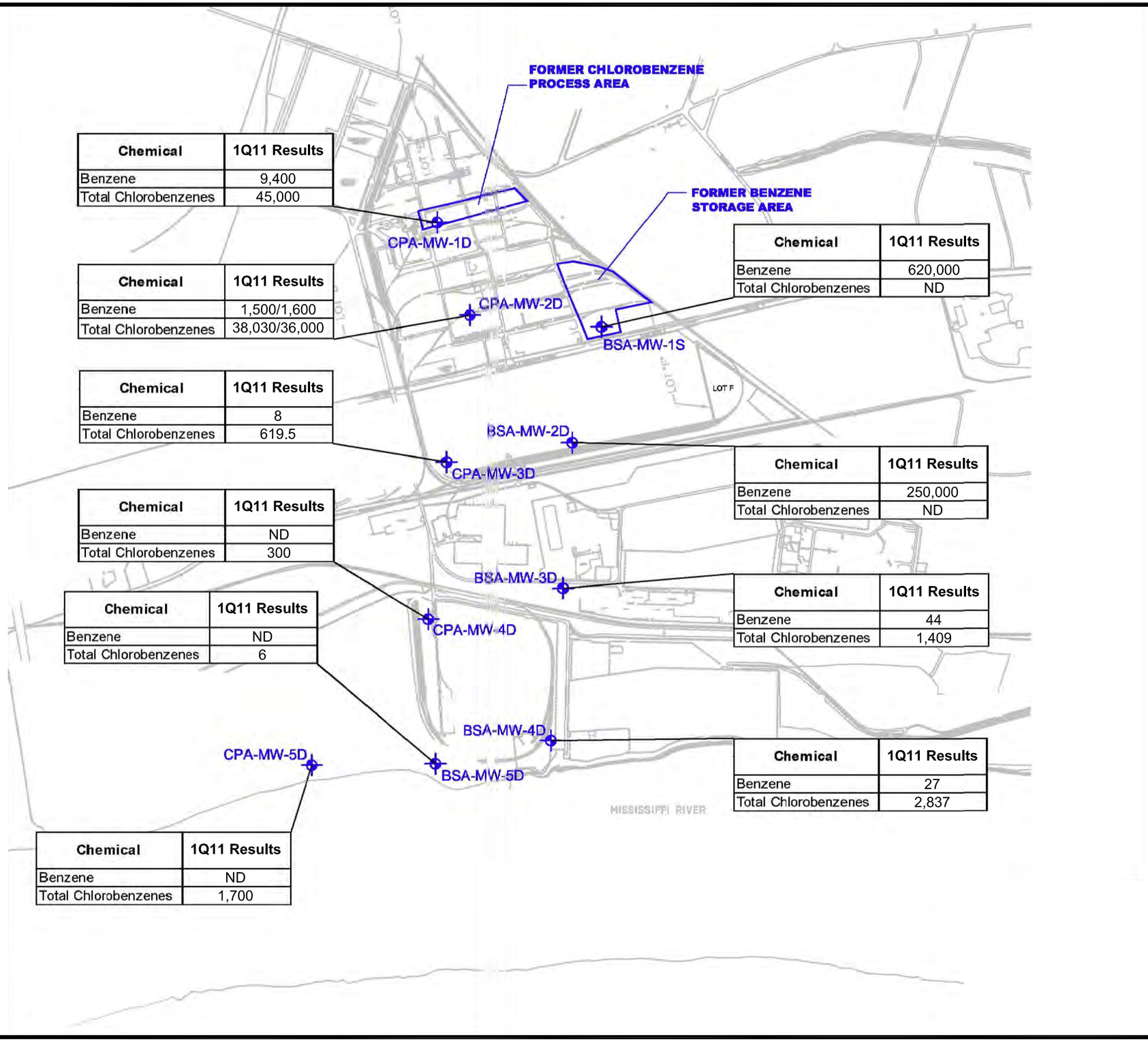
Drawn By: SLC	Ck'd By: DCW	App'vd By: DTK
Date: 04-14-11	Date: 04-14-11	Date: 04-14-11

GEOTECHNOLOGY INC
FROM THE GROUND UP

1Q 2011
Long-Term Monitoring Program
Sauget, Illinois

POTENTIOMETRIC SURFACE MAP MIDDLE/DEEP HYDROGEOLOGIC UNIT

Project Number	PLATE 3
J017210.09	



Chemical	1Q11 Results
Benzene	9,400
Total Chlorobenzenes	45,000

Chemical	1Q11 Results
Benzene	1,500/1,600
Total Chlorobenzenes	38,030/36,000

Chemical	1Q11 Results
Benzene	8
Total Chlorobenzenes	619.5

Chemical	1Q11 Results
Benzene	ND
Total Chlorobenzenes	300

Chemical	1Q11 Results
Benzene	ND
Total Chlorobenzenes	6

Chemical	1Q11 Results
Benzene	ND
Total Chlorobenzenes	1,700

Chemical	1Q11 Results
Benzene	620,000
Total Chlorobenzenes	ND

Chemical	1Q11 Results
Benzene	250,000
Total Chlorobenzenes	ND

Chemical	1Q11 Results
Benzene	44
Total Chlorobenzenes	1,409

Chemical	1Q11 Results
Benzene	27
Total Chlorobenzenes	2,837

NOTES:

1. Plan adapted from a drawing titled "Benzene and Total Chlorobenzenes Results" provided by URS.

2. Total Chlorobenzenes results include the sum of Monochlorobenzene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, and 1,4-Dichlorobenzene.

3. Results shown are in ug/L.

4. ND denotes analyte or analytes not detected.

5. Multiple sample results indicate a duplicate sample.

LEGEND:

BSA-MW-1D — Long-Term Monitoring Well Location

N

0 1,000 2,000

SCALE IN FEET

Drawn By: SLC	Ck'd By: AMS	App'vd By: DTK
Date: 04-15-11	Date: 04-15-11	Date: 04-15-11

GEOTECHNOLOGY INC
FROM THE GROUND UP

1Q 2011
Long-Term Monitoring Program
Sauget, Illinois

BENZENE AND TOTAL CHLOROBENZENES RESULTS

Project Number J017210.09

PLATE 4

APPENDIX A

GROUNDWATER PURGING AND SAMPLING FORMS

J017210.02

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: W6K LTM 1Q11 | PROJECT NUMBER: J017210.09 | FIELD PERSONNEL: KCR / DCW
DATE: 2-23-11 | WEATHER: 33°F
MONITORING WELL ID: BSA-MW-01S | SAMPLE ID: BSA-MW-01S-0211

INITIAL DATA

Well Diameter: 2 in
Measured Well Depth (btoc): 27.35 ft
Constructed Well Depth (btoc): 27.50 ft
Depth to Water (btock): 18.0 ft
Depth to LNAPL/DNAPL (btoc): - ft
Depth to Top of Screen (btoc): 22.5 ft
Screen Length: 5 ft

Water Column Height (do not include LNAPL or DNAPL): 9.33 ft
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 25.0 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are <4 ft,
Place Pump at: Total Well Depth -)9.5 X Water Column Height + DNAPL Column Height) = - ft btoc
If Screen Length and/or water column height is <4 ft, Place Pump at: Total Well Depth - 2 ft = - ft btoc
DNPL Present NO If Present, Do Not Sample

Volume of Flow Through Cell): 700 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 2100 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 463 ppm

PURGE DATA

Pump Type: QED Sample Pro

	HAVE THE STABILIZATION PARAMETERS BEEN SATISFIED? All are units unless %					
	± 0.2	Record Data Only	± 3%	Record Data Only	± 10% or ± 0.2	± 20

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. Ms/cm	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
0	0806	18.0	-	-	-	-	-	-	-	-
1000	0810	↓	clear to yellow	Sweet	7.01	12.6	0.21	26.3	8.09	187
2000	0814	↓	↓	↓	7.12	14.2	0.22	53.3	1.19	159
3000	0818	↓	↓	↓	7.18	13.54	0.22	44.2	0.19	130
4000	0822	↓	↓	↓	7.19	13.68	0.22	35.4	0.0	99
5000	0826	↓	↓	↓	7.23	13.94	0.23	24.7	0.0	62
7000	0834	↓	↓	↓	7.25	13.94	0.23	5.9	0.0	-33
9000	0842	↓	↓	↓	7.27	14.03	0.23	5.1	0.0	-78
11000	0850	↓	↓	↓	7.29	14.51	0.23	2.1	0.0	-103
13000	0858	↓	↓	↓	7.28	14.59	0.24	2.8	0.0	-118

Start Time: 0806
Stop Time: 0858
Elapsed Time: 52 min
Average Purge Rate (mL/min): 250 mL/min
Water Quality Meter ID: Horiba U-22
Date Calibrated: 2-23-11

SAMPLING DATA

Sample Date: 2-23-11
Sample Method: low flow
Sample Time: 0900
Sample Flow Rate: 250 mL/min
Analysis: VOC, metals, MNA
QA/QC Samples: none

VOA Vials, No Headspace [X] Initials: KCR

COMMENTS: MNA: Alkalinity, CO_2, chloride, Ferrous Iron, methane, Nitrate, sulfate, DOC, TOC
Ferrous Iron (Filtered 0.2 micron) = 2.07

Release H_2O in flow through cell to clean out to hope ORP stabilized out

8:55am: Called Jerry, he said to stop at 13,000 mL.

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

J017210.02

PROJECT NAME: WGK LTM 1Q11 | PROJECT NUMBER: J017210.09 | FIELD PERSONNEL: KCR / DCW
DATE: 2-22-11 | WEATHER: 30°F
MONITORING WELL ID: BSA-MW-02D | SAMPLE ID: BSA-MW-02D-0211

INITIAL DATA

Well Diameter: 2" in
Measured Well Depth (btoc): 77.09 ft
Constructed Well Depth (btoc): 77.05 ft
Depth to Water (btock): 22.55 ft
Depth to LNAPL/DNAPL (btoc): - ft
Depth to Top of Screen (btoc): 72.05 ft
Screen Length: 5 ft

Water Column Height (do not include LNAPL or DNAPL): 54.54 ft
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 74.55 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are <4 ft,
Place Pump at: Total Well Depth -)9.5 X Water Column Height + DNAPL Column Height) = - ft btoc
If Screen Length and/or water column height is <4 ft, Place Pump at: Total Well Depth - 2 ft = - ft btoc
DNPL Present NO If Present, Do Not Sample

Volume of Flow Through Cell): 700 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 2100 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA
Pump Type: QED Sample Pro

	HAVE THE STABILIZATION PARAMETERS BEEN SATISFIED? All are units unless %					
	± 0.2	Record Data Only	± 3%	Record Data Only	± 10% or ± 0.2	± 20

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. Ms/cm	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
0	1156	22.55	-	-	-	-	-	-	-	-
1000	1200	22.55	Gray	Hydrocarbon	6.87	15.29	0.18	42.8	0.0	-111
2000	1203	22.55	↓	↓	6.84	15.62	0.16	33.1	0.0	-118
3000	1206	22.55			6.83	15.68	0.17	19.5	0.0	-122
4000	1209	22.55			6.83	15.45	0.17	14.4	0.0	-125
5000	1211	22.55			6.84	15.67	0.17	19.1	0.0	-125

Start Time: 1156
Stop Time: 1211
Elapsed Time: 15 min
Average Purge Rate (mL/min): 333.3 mL/min
Water Quality Meter ID: Horiba U-22
Date Calibrated: 2-22-11

SAMPLING DATA

Sample Date: 2-22-11
Sample Method: low flow
Sample Time: 1215
Sample Flow Rate: 333.3 mL/min
Analysis: VOC, metals, MNA
QA/QC Samples: none

VOA Vials, No Headspace [X] Initials: KCR

COMMENTS: MNA: Alkalinity, CO_2, chloride, ferrous iron, methane, nitrate, sulfate, DOC, TOC
Ferrous Iron (Filtered 0.2 micron) = 2.58 mg/L

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

J017210.02

PROJECT NAME: WBK LTM 1Q11
PROJECT NUMBER: J017210.09
FIELD PERSONNEL: KCR / DCW
DATE: 2-22-11
WEATHER: 30°F
MONITORING WELL ID: BSA-MW-03D
SAMPLE ID: BSA-MW-03D-0211

INITIAL DATA

Well Diameter: 2" in
Measured Well Depth (btoc): 114.94 ft
Constructed Well Depth (btoc): 114.85 ft
Depth to Water (btock): 25.48 ft
Depth to LNAPL/DNAPL (btoc): - ft
Depth to Top of Screen (btoc): 109.85 ft
Screen Length: 5 ft

Water Column Height (do not include LNAPL or DNAPL): 88.96 ft
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 112.35 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are <4 ft,
Place Pump at: Total Well Depth -)9.5 X Water Column Height + DNAPL Column Height) = - ft btoc
If Screen Length and/or water column height is <4 ft, Place Pump at: Total Well Depth - 2 ft = - ft btoc
DNPL Present ND If Present, Do Not Sample

Volume of Flow Through Cell): 700 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 2100 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: QED Sample Pro

HAVE THE STABILIZATION PARAMETERS BEEN SATISFIED? All are units unless %

	± 0.2	Record Data Only	± 3%	Record Data Only	± 10% or ± 0.2	± 20

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. Ms/cm	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
0	0944	23.88	-	-	-	-	-	-	-	-
1000	0948	23.87	mostly clear	Hydrocarbon	6.83	13.83	0.16	9.3	5.35	2
2000	0952	23.87			6.71	14.25	0.17	15.2	4.04	-32
3000	0956	23.87			6.70	14.27	0.18	18.4	0.0	-55
4000	1001	23.87			6.69	14.44	0.19	20.00	0.0	-72
5000	1005	23.87			6.70	14.23	0.19	18.8	0.0	-82
6000	1009				6.70	14.31	0.19	14.3	0.0	-89

Start Time: 0944
Stop Time: 1009
Elapsed Time: 25 min
Average Purge Rate (mL/min): 240 mL/min
Water Quality Meter ID: Horiba U-22
Date Calibrated: 2-22-10

SAMPLING DATA

Sample Date: 2-22-11
Sample Method: low flow
Sample Time: 1015
Sample Flow Rate: 240 mL/min
Analysis: VOC's, metals, MNA's
QA/QC Samples: EB

VOA Vials, No Headspace [X] Initials: KCR

COMMENTS: MNA: Alkalinity, CO_2, chloride, ferrous iron, methane, nitrate, sulfate, TOC, DOC
Ferrous Iron (Filtered 0.2 micron) = 2.85 mg/L

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

J017210.02

PROJECT NAME: WBK LTM 1Q11
PROJECT NUMBER: J017210.09
FIELD PERSONNEL: KCR / DCW
DATE: 2-21-11
WEATHER: 50°F Rain cloudy
MONITORING WELL ID: BSA-MW-4D
SAMPLE ID: BSA-MW-04D-0211

INITIAL DATA

Well Diameter: 2 in
Measured Well Depth (btoc): 123.36 ft
Constructed Well Depth (btoc): 123.23 ft
Depth to Water (btock): 31.01 ft
Depth to LNAPL/DNAPL (btoc): - ft
Depth to Top of Screen (btoc): 118.23 ft
Screen Length: 5 ft

Water Column Height (do not include LNAPL or DNAPL): 92.35 ft
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 120.73 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are <4 ft,
Place Pump at: Total Well Depth -)9.5 X Water Column Height + DNAPL Column Height) = - ft btoc
If Screen Length and/or water column height is <4 ft, Place Pump at: Total Well Depth - 2 ft = - ft btoc
DNPL Present NO If Present, Do Not Sample

Volume of Flow Through Cell): 700 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 2100 mL
Ambient PID/FID Reading: _____ ppm
Wellbore PID/FID Reading: _____ ppm

PURGE DATA

Pump Type: QED Sample Pro

HAVE THE STABILIZATION PARAMETERS BEEN SATISFIED? All are units unless %

	± 0.2	Record Data Only	± 3%	Record Data Only	± 10% or ± 0.2	± 20

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. Ms/cm	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
0	0906	31.01	-	-	-	-	-	-	-	-
1000 mL	0915	31.01	slightly gray	hydrocarbon	6.94	13.15	0.21	17.1	0.5	-116
2000 mL	0925	31.01	clear		6.85	12.12	0.22	4.3	0.0	-114
3500 mL	0931	31.01	clear		6.79	12.37	0.20	4.4	0.0	-111
4500 mL	0937	31.01	clear	↓	6.79	13.37	0.19	3.8	0.0	-113

Start Time: 0906
Stop Time: 0937
Elapsed Time: 31 min
Average Purge Rate (mL/min): 145.16
Water Quality Meter ID: YSI Horiba U-22
Date Calibrated: 2-21-11

SAMPLING DATA

Sample Date: 2-21-11
Sample Method: low flow
Sample Time: 0940
Sample Flow Rate: 145.16
Analysis: VOC, metals, MNA
QA/QC Samples: none

VOA Vials, No Headspace [X] Initials: KCR

COMMENTS: MNA; Alkalinity, CO_2, chloride, Ferrous Iron, methane, nitrate, sulfate, TOC, DOC

Ferrous Iron (Filtered 0.2 micron) = 1.44 mg/L (1.44)

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

J017210.02

PROJECT NAME: WGK LTM 1Q11 PROJECT NUMBER: J017210.09 FIELD PERSONNEL: KcR / DcW
DATE: 2-21-11 WEATHER: 46° Rainy
MONITORING WELL ID: BSA-MW-05D SAMPLE ID: BSA-MW-05D-0211

INITIAL DATA

Well Diameter: 2" in
Measured Well Depth (btoc): 121.03 ft
Constructed Well Depth (btoc): 120.54 ft
Depth to Water (btock): 24.61 ft
Depth to LNAPL/DNAPL (btoc): - ft
Depth to Top of Screen (btoc): 115.54 ft
Screen Length: 5 ft

Water Column Height (do not include LNAPL or DNAPL): 96.42 ft
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 118.04 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are <4 ft,
Place Pump at: Total Well Depth -)9.5 X Water Column Height + DNAPL Column Height) = - ft btoc
If Screen Length and/or water column height is <4 ft, Place Pump at: Total Well Depth - 2 ft = - ft btoc
DNPL Present NO If Present, Do Not Sample

Volume of Flow Through Cell): 700 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 2100 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type:

	HAVE THE STABILIZATION PARAMETERS BEEN SATISFIED? All are units unless %					
	± 0.2	Record Data Only	± 3%	Record Data Only	± 10% or ± 0.2	± 20

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. Ms/cm	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
0	11:14	24.61	-	-	-	-	-	-	-	-
1000	11:21	24.61	mostly clear	Hydrocarbon	6.86	13.68	0.17	14.1	0.07	-85
2000	11:24	24.61	Same		6.83	14.38	0.18	9.1	0.00	-108
3000	11:27	24.61	Same		6.85	14.75	0.20	8.0	0.00	-119
4000	11:30	24.62	Same		6.85	14.71	0.20	9.1	0.0	-127

Start Time: 1114
Stop Time: 1130
Elapsed Time: 16 min
Average Purge Rate (mL/min): 250 mL/min
Water Quality Meter ID: Horiba U-22
Date Calibrated: 2-21-11

SAMPLING DATA

Sample Date: 2-21-11
Sample Method: low flow
Sample Time: 1140
Sample Flow Rate: 250 mL/min
Analysis: VOC, metals, MNA
QA/QC Samples: NA

VOA Vials, No Headspace [X] Initials: KcR

COMMENTS: MNA: Alkalinity, CO_2, chloride, ferrous iron, methane, nitrate, sulfate, DOC, TOC
Ferrous Iron (Filtered 0.2 micron) = 2.58 mg/L

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

J017210.02

PROJECT NAME: WBK LTM 1Q11 PROJECT NUMBER: J017210.09 FIELD PERSONNEL: KER / DCW
DATE: 2-23-11 WEATHER: 35°F
MONITORING WELL ID: CPA-MW-01D SAMPLE ID: CPA-MW-01D-0211

INITIAL DATA

Well Diameter: 2 in
Measured Well Depth (btoc): 70.81 ft
Constructed Well Depth (btoc): 70.82 ft
Depth to Water (btock): 12.71 ft
Depth to LNAPL/DNAPL (btoc): - ft
Depth to Top of Screen (btoc): 65.82 ft
Screen Length: 5' ft

Water Column Height (do not include LNAPL or DNAPL): 58.11 ft
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 68.32 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are <4 ft,
Place Pump at: Total Well Depth -)9.5 X Water Column Height + DNAPL Column Height) = - ft btoc
If Screen Length and/or water column height is <4 ft, Place Pump at: Total Well Depth - 2 ft = - ft btoc
DNPL Present NO If Present, Do Not Sample

Volume of Flow Through Cell): 700 mL
Minimum Purge Volume = (3 x Flow Through Cell Volume) 2100 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 47.2 ppm

PURGE DATA
Pump Type: QED Sample Pro

	HAVE THE STABILIZATION PARAMETERS BEEN SATISFIED? All are units unless %					
	± 0.2	Record Data Only	± 3%	Record Data Only	± 10% or ± 0.2	± 20
Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. Ms/cm	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
0	1102	12.71	-	-	-	-	-	-	-	-
1000	1106	12.71	Yellow	Bitter to Sweet	10.53	15.61	0.18	136	0.66	-139
2000	1109	12.71	↓	↓	9.52	15.75	0.21	148	0.00	-121
3000	1113	12.71	↓	↓	9.20	14.87	0.22	118	0.00	-122
4000	1117	12.71	↓	↓	9.19	12.87	0.22	128	0.0	-118
5000	1120	12.71	↓	↓	9.12	13.65	0.22	107	0.0	-114
6000	1124	12.71	↓	↓	9.13	13.89	0.22	114	0.0	-111

Start Time: 1103
Stop Time: 1124
Elapsed Time: 21 min
Average Purge Rate (mL/min): 285.7 mL/min
Water Quality Meter ID: Horiba U-22
Date Calibrated: 2-23-11

SAMPLING DATA

Sample Date: 2-23-11
Sample Method: Low Flow
Sample Time: 1130
Sample Flow Rate: 285.7 mL/min
Analysis: VOA, metals, MNA
QA/QC Samples: none

VOA Vials, No Headspace [X] Initials: KeR

COMMENTS: MNA: Alkalinity, CO_2, chloride, ferrous Iron, Nitrate, methane, Sulfate, TDS, DOC
Ferrous Iron (Filtered 0.2 micron) = 0.46

Samples were yellow in color

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

J017210.02

PROJECT NAME: WGK LTM 1Q11 PROJECT NUMBER: J017210.09 FIELD PERSONNEL: KCR/DCW
DATE: 2-23-11 WEATHER: 35°F
MONITORING WELL ID: CPA-MW-02D SAMPLE ID: CPA-MW-02D-0211

INITIAL DATA

Well Diameter: 2" in
Measured Well Depth (btoc): 104.71 ft
Constructed Well Depth (btoc): 104.65 ft
Depth to Water (btock): 14.77 ft
Depth to LNAPL/DNAPL (btoc): - ft
Depth to Top of Screen (btoc): 99.65 ft
Screen Length: 5 ft

Water Column Height (do not include LNAPL or DNAPL): 89.94 ft
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 102.15 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are <4 ft,
Place Pump at: Total Well Depth -)9.5 X Water Column Height + DNAPL Column Height) = - ft btoc
If Screen Length and/or water column height is <4 ft, Place Pump at: Total Well Depth - 2 ft = - ft btoc
DNPL Present NO If Present, Do Not Sample

Volume of Flow Through Cell): 700 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 2100 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA
Pump Type: QED Sample Pro

	HAVE THE STABILIZATION PARAMETERS BEEN SATISFIED? All are units unless %					
	± 0.2	Record Data Only	± 3%	Record Data Only	± 10% or ± 0.2	± 20

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. Ms/cm	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
0	0943	14.77	-	-	-	-	-	-	-	-
1000	0946	14.79	Gray-Particulates	Sweet	7.04	16.78	0.45	280	4.43	-7
2000	0950	14.79	↓	↓	6.98	16.95	0.37	195	0.04	-23
3000	0953	14.79			6.95	16.83	0.34	197	0.0	-37
4000	0956	14.79			6.94	16.72	0.33	153	0.0	-49
5000	1000	14.79			6.92	16.45	0.33	98.3	0.0	-60
6000	1003	14.79			6.93	16.51	0.34	70.3	0.0	-67
7000	1007	14.79	↓	↓	6.93	16.72	0.33	61.3	0.0	-73

Start Time: 0943
Stop Time: 1007
Elapsed Time: 24 min
Average Purge Rate (mL/min): 291.6 mL/min
Water Quality Meter ID: Horiba U-22
Date Calibrated: 2-23-11

SAMPLING DATA

Sample Date: 2-23-11
Sample Method: low flow
Sample Time: 1010
Sample Flow Rate: 291.6 mL/min
Analysis: VOC, metals, MNA
QA/QC Samples: FD

VOA Vials, No Headspace [X] Initials: KCR

COMMENTS: MNA: Alkalinity, CO_2, chloride, ferrous iron, methane, nitrate, sulfate, DOC, TOC
Ferrous Iron (Filtered 0.2 micron) = 2.63

9:47 = Pumped out silted flow through Q11

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

J017210.02

PROJECT NAME: W6K LTM 1Q11 | PROJECT NUMBER: J017210.09 | FIELD PERSONNEL: KCR / DCW
DATE: 2-22-11 | WEATHER: 30° F
MONITORING WELL ID: CPA-MW-03D | SAMPLE ID: CPA-MW-03D-0211

INITIAL DATA

Well Diameter: 2" in
Measured Well Depth (btoc): 112.95 ft
Constructed Well Depth (btoc): 113.00 ft
Depth to Water (btock): 17.89 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): 108.00 ft
Screen Length: 5 ft

Water Column Height (do not include LNAPL or DNAPL): 95.06 ft
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 110.5 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are <4 ft,
Place Pump at: Total Well Depth -)9.5 X Water Column Height + DNAPL Column Height) = — ft btoc
If Screen Length and/or water column height is <4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc
DNPL Present NO If Present, Do Not Sample

Volume of Flow Through Cell): 700 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 2100 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: QED Sample Pro

	HAVE THE STABILIZATION PARAMETERS BEEN SATISFIED? All are units unless %					
	± 0.2	Record Data Only	± 3%	Record Data Only	± 10% or ± 0.2	± 20

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. Ms/cm	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
0	1250	16.94	—	—	—	—	—	—	—	—
1000	1253	16.98	mostly clear	none	6.87	16.7	0.16	31.3	0.14	-30
2000	1256	16.96	↓	↓	6.79	16.84	0.16	19.6	0.0	-36
3000	1300	16.96	↓	↓	6.92	16.53	0.16	16.4	0.0	-78
4000	1304	16.96	↓	↓	6.76	16.34	0.17	23.0	0.0	-91
5000	1308	16.96	↓	↓	6.71	16.01	0.17	12.9	0.0	-95

Start Time: 1250
Stop Time: 1308
Elapsed Time: 18 min
Average Purge Rate (mL/min): 277.7 mL/min
Water Quality Meter ID: Horiba U-22
Date Calibrated: 2-22-11

SAMPLING DATA

Sample Date: 2-22-11
Sample Method: low flow
Sample Time: 1315
Sample Flow Rate: 277.7 mL/min
Analysis: VOC, metals, MNA
QA/QC Samples: none

VOA Vials, No Headspace [X] Initials: KCR

COMMENTS: MNA: Alkalinity CO_2, Chloride, Ferrous Iron, methane, Nitrate, Sulfate, DOC, TDS
Ferrous Iron (Filtered 0.2 micron) = 2.53

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

J017210.02

PROJECT NAME: WGK LTM 1Q11 PROJECT NUMBER: J017210.09 FIELD PERSONNEL: KCR / DCW
DATE: 2-22-11 WEATHER: Sunny 30°F
MONITORING WELL ID: CPA-MW-04D SAMPLE ID: CPA-MW-04D-0211

INITIAL DATA

Well Diameter: 2" in
Measured Well Depth (btoc): 121.03 ft
Constructed Well Depth (btoc): 121.07 ft
Depth to Water (btock): 28.72 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): 116.07 ft
Screen Length: 5' ft

Water Column Height (do not include LNAPL or DNAPL): 92.31 ft
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 118.57 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are <4 ft,
Place Pump at: Total Well Depth -)9.5 X Water Column Height + DNAPL Column Height) = — ft btoc
If Screen Length and/or water column height is <4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc
DNPL Present NO If Present, Do Not Sample

Volume of Flow Through Cell): 700 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 2100 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: QED Sample Pro

					HAVE THE STABILIZATION PARAMETERS BEEN SATISFIED? All are units unless %					
					± 0.2	Record Data Only	± 3%	Record Data Only	± 10% or ± 0.2	± 20
Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. Ms/cm	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
0	0821	28.72	—	—	—	—	—	—	—	—
1000	0825	28.70	Clear with fine particles	none	6.46	14.24	0.27	56.1	0.0	84
2000	0829	28.70	↓	↓	6.59	14.71	0.27	52.0	0.0	-14
3000	0833	28.70	↓	↓	6.65	14.62	0.27	49.2	0.0	-65
4000	0836	28.70	↓	↓	6.68	14.87	0.28	19.0	0.0	-85
5000	0839	28.70	↓	↓	6.71	14.75	0.28	19.7	0.0	-96
6000	0842	28.70	↓	↓	6.72	14.49	0.28	23.4	0.0	-103

Start Time: 0821
Stop Time: 0842
Elapsed Time: 21 min
Average Purge Rate (mL/min): 285.7 mL/min
Water Quality Meter ID: Horiba U-22
Date Calibrated: 2-22-11

SAMPLING DATA

Sample Date: 2-22-11
Sample Method: low flow
Sample Time: 0840
Sample Flow Rate: 285.7 mL/min
Analysis: VOC's, metals, MNA
QA/QC Samples:

VOA Vials, No Headspace ☒ Initials: KCR

COMMENTS: MNA: Alkalinity, CO_2, chloride, Ferrous Iron, methane, Nitrate, Sulfate, TIC, DOC
Ferrous Iron (Filtered 0.2 micron) = 1.24 mg/L

J017210.02

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: WBK LTM 1211 PROJECT NUMBER: J017210.09 FIELD PERSONNEL: KCR / DCW
DATE: 2-21-11 WEATHER: Rainy 45°F
MONITORING WELL ID: CPA-MW-05D SAMPLE ID: CPA-MW-05D-0211

INITIAL DATA

Well Diameter: 2" in
Measured Well Depth (btoc): 114.74 ft
Constructed Well Depth (btoc): 114.75 ft
Depth to Water (btock): 25.36 ft
Depth to LNAPL/DNAPL (btoc): - ft
Depth to Top of Screen (btoc): 109.75 ft
Screen Length: 5 ft

Water Column Height (do not include LNAPL or DNAPL): 89.38 ft
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 112.25 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are <4 ft,
Place Pump at: Total Well Depth -)9.5 X Water Column Height + DNAPL Column Height) = - ft btoc
If Screen Length and/or water column height is <4 ft, Place Pump at: Total Well Depth - 2 ft = - ft btoc
DNPL Present NO If Present, Do Not Sample

Volume of Flow Through Cell): 700 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 2100 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: QED Sample Pro

	HAVE THE STABILIZATION PARAMETERS BEEN SATISFIED? All are units unless %					
	± 0.2	Record Data Only	± 3%	Record Data Only	± 10% or ± 0.2	± 20

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. Ms/cm	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
0	1420	25.36	-	-	-	-	-	-	-	-
1000	1425	25.33	Black	None	6.57	13.56	0.35	83.1	0.92	-35
2000	1429	25.34	Same		6.50	13.99	0.39	60.5	0.0	-47
3000	1432	25.34	Same		6.50	14.18	0.40	46.1	0.0	-54
4000	1435	25.34	Same		6.51	13.63	0.410	48	0.0	-58

Start Time: 1420
Stop Time: 1435
Elapsed Time: 15 min
Average Purge Rate (mL/min): 266.67 mL/min
Water Quality Meter ID: Horiba-U22
Date Calibrated: 2-21-11

SAMPLING DATA

Sample Date: 2-21-11
Sample Method: low flow
Sample Time: 1440
Sample Flow Rate: 266.67 mL/min
Analysis: VOC, methane MNA
QA/QC Samples: MS, MSD

VOA Vials, No Headspace [X] Initials: KCR

COMMENTS: MNA: Alkalinity, CO_2, chloride, ferrous Iron, methane, nitrate, sulfate, DOC, TOC; Ferrous Iron (Filtered 0.2 micron) = 3.08

Silty up to pump out water in flow cell after filled up first time, restart time

APPENDIX B

CHAINS-OF-CUSTODY

Serial Number 038169

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

1Q11 LTM GW samples

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)	PAGE	OF
WGK- LTM 1Q11		FL	1	1
TAL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.		
6m RINALDI				
CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX		
6m RINALDI	314-674-3312	314-674-8808		
CLIENT NAME	CLIENT E-MAIL			
SOLUTIA, INC	gmrina@solutia.com			
CLIENT ADDRESS				
575 MARYVILLE CENTER DR, St. Louis, MO 63141				
COMPANY CONTRACTING THIS WORK (if applicable)				

STANDARD REPORT DELIVERY ⊘

DATE DUE

EXPEDITED REPORT DELIVERY (SURCHARGE) ○

DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	MATRIX TYPE: AQUEOUS (WATER)	MATRIX TYPE: SOLID OR SEMISOLID	MATRIX TYPE: AIR	MATRIX TYPE: NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	REQUIRED ANALYSIS: VOC 8260	SVOC 8270C	Total Fe/Mn 6010B	Alkalinity/CO2 310.1	Chloride 325.2 Sulfate 375.4	Methane Ethane Ethene RSK 175	Nitrate 353.2	TOC 415.1	Diss Fe/Mn 6010B	DOC 415.1	REMARKS
		PRESERVATIVE						HCl	None	HNO_3	None	None	None	None	HCl	HNO_3	HCl	
		NUMBER OF CONTAINERS SUBMITTED																
2-22-11	0840	CPA-MW-4D-0211	6	A				3	2	1	1	1	3	2	1			
	0840	CPA-MW-4D-0211-(F.0.2)	6	A												1	1	Filtered
	1015	BSA-MW-3D-0211	6	A				3	2	1	1	1	3	2	1			
	1015	BSA-MW-3D-0211-F(0.2)	6	A												1	1	Filtered
	1015	BSA-MW-3D-EB	6	A				3	2									
	1215	BSA-MW-2D-0211	6	A				3	2	1	1	1	3	2	1			
	1215	BSA-MW-2D-0211-F(0.2)	6	A												1	1	Filtered
	1315	CPA-MW-[redacted]3D-0211	6	A				3	2	1	1	1	3	2	1			
	1315	CPA-MW-3D-0211-F(0.2)	6	A												1	1	Filtered
		TRIP BLANK	6	A				2										

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
	2-22-11	4:00pm						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
Both 2D multiple	02/23/11	0904	YES ○ NO ○		16580	Temp 3.2/3.4

TAL 9240.680 (1)

Serial Number 033661

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

1Q11 LTM GW Samples

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

COPY

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
WKL LTM 1Q11		IL
TAL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
GM RINALDI		
CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
GM RINALDI	314-674-3312	314-674-8808
CLIENT NAME	CLIENT E-MAIL	
Solutia, Inc	gmrina@solutia.com	
CLIENT ADDRESS		
575 Maryville Centre Dr, St. Louis, MO 63141		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE 1 OF

STANDARD REPORT DELIVERY ☒

DATE DUE

EXPEDITED REPORT DELIVERY (SURCHARGE) ○

DATE DUE

NUMBER OF COOLERS SUE PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX: COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	REQUIRED ANALYSIS: VOC 8260	Total Fe/Mn 6010B	AIKA/CO2 310.1	Chloride 325.2 Sulfate 375.4	methane RSK 175 ethane ethene	Nitrate 353.2	Toc 415.1	Diss Fe/Mn 6010B	Doc 415.1	SVOC 8270C	REMARKS
								HCL	HNO3	None	None	None	H2SO4	H2SO4	HNO3	HCl	None	
								NUMBER OF CONTAINERS SUBMITTED										
2-21-11	0940	BSA-MW-04D-0211	6	A				3	1	1	1	3	2	1	1	1	2	Filtered
	0940	BSA-MW-04D-F(0.2)-0211	6	A				3	1	1	1	3	2	1	1	1	2	Filtered
	1140	BSA-MW-05D-0211	6	A				3	1	1	1	3	2	1	1	1	2	Filtered
	1140	BSA-MW-05D-F(0.2)-0211	6	A				3	1	1	1	3	2	1	1	1	2	Filtered
	1440	CPA-MW-05D-[redacted]-0211	6	A				3									2	
	1440	CPA-MW-05D-F(0.2)-0211	6	A				3									2	
	1440	CPA-MW-05D-0211-MS	6	A				3									2	
	1440	CPA-MW-05D-0211-MSD	6	A				2										
		Trip Blank																

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
[signature]	2-21-10	5:15pm						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
Frances Swafford	02/22/11	09:19	YES ○ NO ○		680-65833	4.6, 3.2

TAL-8240-68

Serial Number 033003

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

1Q11 LTM Samples

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location
Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
W.G. Krummrich	LTM Long term monitoring	IL
TAL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
6m Rinaldi		
CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
6m Rinaldi	314-674-3312	314-674-8803
CLIENT NAME	CLIENT E-MAIL	
Solutia, Inc	gmring@solutia.com	
CLIENT ADDRESS		
575 Maryville Centre Dr, St. Louis, MO 63141		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE 1 OF 1

STANDARD REPORT DELIVERY ⊗
DATE DUE
EXPEDITED REPORT DELIVERY (SURCHARGE) ○
DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	MATRIX: AQUEOUS (WATER)	MATRIX: SOLID OR SEMISOLID	MATRIX: AIR	MATRIX: NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	VOC 8260 HCl	SVOC 8270C none	Total Fe/Mn 6010B HNO3	AlkA/CO2 310.1 none	chloride 325.2 sulfate 375.4 none	methane RSK 175 ethene ethane none	Nitrate 353.2 H2SO4	TOC 415.1 HCl	Diss Fe/Mn 6010B HNO3	DOC 415.1 HCl	REMARKS
			NUMBER OF CONTAINERS SUBMITTED															
2-23-11	0900	BSA-MW-15-0211	6	X				3	2	1	1	1	3	2	1			
	0900	BSA-MW-15-0211-F(0.2)	6	X												1	1	Filtered
	1010	CPA-MW-2D-0211	6	X				3	2	1	1	1	3	2	1			
	1010	CPA-MW-2D-0211-F(0.2)	6	X												1	1	Filtered
	1010	CPA-MW-2D-0211-AD	6	X				3	2									
	1130	CPA-MW-1D-0211	6	X				3	2	1	1	1	3	2	1			
	1130	CPA-MW-1D-0211-F(0.2)	6	X												1	1	Filtered
		Trip Blank		X				2										

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
	2-23-11	1630						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
	2/24/11	0923	YES ○ NO ○		580-65902	3.6/4.0/1.2/2.2

TAL-8210-680 (1008)

APPENDIX C

QUALITY ASSURANCE REPORT

FIRST QUARTER 2011
LONG-TERM MONITORING PROGRAM
QUALITY ASSURANCE REPORT
SOLUTIA INC.
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

Prepared for:

SOLUTIA INC.
St. Louis, Missouri

Prepared by:

GEOTECHNOLOGY, INC.
St. Louis, Missouri

Geotechnology, Inc. Report No. J017210.09

May 18, 2011

FIRST QUARTER 2011
LONG-TERM MONITORING PROGRAM
QUALITY ASSURANCE REPORT
SOLUTIA INC.
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

TABLE OF CONTENTS

J017210.09

FIRST QUARTER 2011
LONG-TERM MONITORING PROGRAM
QUALITY ASSURANCE REPORT
SOLUTIA INC.
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

1.0 INTRODUCTION

This Quality Assurance Report presents the findings of a review of analytical data for groundwater samples collected in February of 2011 at the Solutia W.G. Krummrich plant as part of the 1st Quarter 2011 Long-Term Monitoring Program. The samples were collected by Geotechnology, Inc. (Geotechnology) personnel and analyzed by TestAmerica Laboratories located in Savannah, Georgia using USEPA methodologies. Groundwater samples were analyzed for volatile organic compounds (VOCs), semi volatile organic compounds (SVOCs), metals, dissolved gases, and general chemistry parameters.

Geotechnology subcontracted with the M.J.W. Corporation to conduct third party Level III and Level IV data validation. One hundred percent of the data was subjected to a data quality review (Level III validation.) M.J.W. Corporation selected eight random groundwater samples for Level IV data validation (BSA-MW-4D-0211, BSA-MW-4D-0211-F(0.2), BSA-MW-5D-0211, BSA-MW-5D-0211-F(0.2), CPA-MW-5D-0211, CPA-MW-5D-0211-F(0.2), CPA-MW-4D-0211, CPA-MW-4D-0211-F(0.2)) The Level III and Level IV reviews were performed in order to confirm that the analytical data provided by TestAmerica were acceptable in quality for their intended use.

A total of 14 samples (ten investigative groundwater samples, one field duplicate, one matrix spike and matrix spike duplicate (MS/MSD) pair, and one equipment blank) were analyzed by TestAmerica. In addition, three trip blank samples were included in the cooler shipments that contained groundwater samples for VOC analyses and were analyzed for VOCs. These samples were analyzed as part of Sample Delivery Group (SDG) KPS063 utilizing the following USEPA SW-846 Methods:

- Method 8260B for VOCs (Benzene, Chlorobenzene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene and 1,4-Dichlorobenzene)
- Method 8270C for SVOCs on select samples (4-chloroaniline, 1,2,4-trichlorobenzene, 2-chlorophenol and 1,4-dioxane)
- Method 6010 for total and dissolved iron and manganese

Samples were also analyzed for dissolved gases and general chemistry parameters by the following methods:

- Method RSK-175 for dissolved gases (Ethane, Ethylene and Methane)
- Method 325.2 for Chloride
- Method 353.2 for Nitrogen, Nitrate
- Method 375.4 for Sulfate
- Method 415.1 for Total and Dissolved Organic Carbon
- Method 310.1 for Alkalinity and Carbon Dioxide

Samples were reviewed following procedures outlined in the USEPA National Functional Guidelines for Superfund Organic Methods Data Review (USEPA 2008) and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, October 2004, and the Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia 2009).

The above guidelines provided the criteria to review the data. Additional quantitative criteria are given in the analytical methods. Data was qualified based on the data quality review. Qualifiers assigned indicate data that did not meet acceptance criteria and for which corrective actions were not successful or not performed. The various qualifiers are explained in Tables 1 and 2 below:

Table 1 – Laboratory Data Qualifiers

Lab Qualifier	Definition
U	Indicates the analyte was analyzed for but not detected.
E	Results exceeded calibration range
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution may be flagged with a D.
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration: therefore, control limits are not applicable.
F	MS or MSD exceeds the control limits. RPD of the MS and MSD exceeds the control limits.
X	Surrogate is outside control limits.

Table 2 – Geotechnology (MJW Corporation) Data Qualifiers

MJW Corp. Qualifier	Definition
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

Based on the criteria outlined, it is recommended that the results reported for these analyses are accepted for their intended use. Acceptable levels of accuracy, precision, and representativeness (based on MS/MSD, LCS, surrogate compounds and field duplicate results) were achieved for this data set, except where noted in this report. In addition, analytical completeness, defined to be the percentage of analytical results which are judged to be valid with the exception of rejected **(R)** flagged data, including estimated detect/nondetect **(J/UJ)** values was 92.03 percent, which does not meet the completeness of goal of 95 percent.

The data review included evaluation of the following criteria:

Organics

- Receipt condition and sample holding times
- Laboratory method blanks, and field equipment blank samples
- Surrogate spike recoveries
- Laboratory control sample (LCS) recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) sample recoveries and relative percent difference (RPD)
- Field duplicate results
- Results reported from dilutions
- Internal standard responses
- Mass spectrometer tuning
- Calibration
- Compound identification
- Other problems/documentation

Inorganics

- Receipt condition and sample holding times
- Laboratory method blank
- LCS recoveries
- MS/MSD sample recoveries and matrix duplicate RPD values
- Field duplicate and laboratory duplicate results
- Results reported from dilutions

2.0 RECEIPT CONDITION AND SAMPLE HOLDING TIMES

Sample holding time requirements for the analyses performed are presented in the methods and/or in the data review guidelines. Review of the sample collection, extraction and analysis dates involved comparing the chain-of-custody and the laboratory data summary forms for accuracy, consistency, and holding time compliance.

Extractions and/or analyses were completed within the recommended holding time requirements.

The cooler receipt form indicated that the coolers were received by the laboratory at temperatures within the 4°C $\pm$ 2°C criteria. One, 1-liter container was received broken, otherwise samples received were in good condition; therefore, no qualification of data was required.

KPS063-Two of three VOA vials for sample CPA-MW-1D-0211 were received with headspace in them.

3.0 LABORATORY METHOD AND EQUIPMENT BLANK SAMPLES

Laboratory method blank samples evaluate the existence and magnitude of contamination problems resulting from laboratory activities. All laboratory method blank samples were analyzed at the method prescribed frequencies. No analytes were detected in the method blank; therefore, no qualification of date was required.

Equipment blank samples are used to assess the effectiveness of equipment decontamination procedures. No analytes were detected in the equipment blank sample.

4.0 SURROGATE SPIKE RECOVERIES

Surrogate compounds are used to evaluate overall laboratory performance for sample preparation efficiency on a per sample basis. All samples analyzed for VOCs were spiked with surrogate compounds during sample preparation. USEPA National Functional Guidelines for Superfund Organic Methods Data Review state how data is qualified, if surrogate spike recoveries do not meet evaluation criteria. The SVOC matrix spike surrogate recovery for laboratory sample 680-65862-8 MS was outside acceptance limits. The MS/MSD sample was qualified and reported.

5.0 LABORATORY CONTROL SAMPLE RECOVERIES

Laboratory control samples (LCS) are analyzed with each analytical batch to assess the accuracy of the analytical process. All LCS recoveries were within evaluation criteria. No qualification of data was required.

6.0 MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) SAMPLES

MS/MSD samples are analyzed to assess the accuracy and precision of the analytical process on an analytical sample in a particular matrix. MS/MSD samples were required to be collected at a frequency of one per 20 investigative samples in accordance with the work plan (one per 20 investigative samples or 5%). Geotechnology submitted one MS/MSD sample set for ten investigative samples and, therefore, met the work plan frequency requirement.

No qualifications were made to the data if the MS/MSD percent recoveries were zero due to dilutions or if the Relative Percent Difference (RPD) was the only factor outside of criteria. Also, USEPA National Functional Guidelines for Superfund Organic Methods Data Review (2008) states that organic data does not need qualification based on MS/MSD criteria alone. Therefore, if recoveries were outside evaluation criteria due to matrix interference or abundance of analytes, no qualifiers were assigned unless these analytes had other quality control criteria outside evaluation criteria.

7.0 FIELD DUPLICATE RESULTS

Field duplicate results are used to evaluate precision of the entire data collection activity, including sampling, analysis and site heterogeneity. When results for both duplicate and sample values are greater than five times the practical quantitation limit (PQL), satisfactory precision is indicated by an RPD less than or equal to 25 percent for aqueous samples. Where one or both of the results of a field duplicate pair are reported at less than five times the PQL, satisfactory precision is indicated if the field duplicate results agree within 2 times the quantitation limit. Field duplicate results that do not meet these criteria may indicate unsatisfactory precision of the results.

One field duplicate sample was collected for the ten investigative samples. This satisfies the requirement in the work plan (one per 10 investigative samples or 10 percent). Field duplicate results were within evaluation criteria. No qualifications of data were required.

8.0 INTERNAL STANDARD RESPONSES

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during each analytical run. For the VOCs, the IS areas must be within -50 percent to +100 percent of the preceding calibration verification (CV) IS value. Also, the IS retention times must be within 30 seconds of the preceding IS CV retention time.

The internal standards area responses for VOCs were verified for the data reviews. IS responses met the criteria as described above. No qualifications of data were required.

9.0 RESULTS REPORTED FROM DILUTIONS

The analytical testing results for 1,2,4-Trichlorobenzene for sample CPA-MW-1D-0211 and 4-Chloroanaline for sample CPA-MW-4D-0211 were initially reported as exceeding the calibration range, which was qualified with an E. The laboratory subsequently diluted and re-analyzed the samples, and those results were qualified with a D.

10. MASS SPECTROMETER TUNING

Instrument performance was determined to be satisfactory. No qualifications of data were required.

11.0 CALIBRATION

Percent Relative Standard Deviation (%RSD) is used to indicate the stability of a specific compound response factor over increasing concentration. Percent D (%D) is a measure of the instrument's daily performance. Percent RSD must be <30% and Percent D must be <25%. No qualifications of data were required.

12.0 COMPOUND IDENTIFICATION

Compound identification was determined to be satisfactory. No qualifications of data were required.

13.0 OTHER PROBLEMS/DOCUMENTATION

The analytical testing results for Total Organic Carbon (TOC) and Dissolved Organic Carbon (DOC) were estimated for samples BSA-MW-5D-0211 and CPA-MW-2D-0211 because the dissolved result was greater than the total result by at least 10%. Samples CPA-MW-4D-0211, CPA-MW-4D-0211-F(0.2), CPA-MW-1D-0211 and CPA-MW-1D-0211-F(0.2) were estimated for manganese because the dissolved result is greater than the total result by at least 10%. In addition, several samples were estimated for iron due to out of control limits for Matrix Spike Recovery. The sample results qualified as estimated by MJW Corporation are summarized in the table below.

Sample ID	Parameter	Analyte	Qualification
BSA-MW-5D-0211-F(0.2)	Inorganics	DOC	J
BSA-MW-5D-0211	Inorganics	TOC	J
CPA-MW-2D-0211-F(0.2)	Inorganics	DOC	J
CPA-MW-2D-0211	Inorganics	TOC	J
CPA-MW-4D-0211	Inorganics	Manganese	J
CPA-MW-4D-0211-F(0.2)	Inorganics	Manganese	J
CPA-MW-1D-0211	Inorganics	Manganese	J
CPA-MW-1D-0211-F(0.2)	Inorganics	Manganese	J
CPA-MW-4D-0211	Inorganics	Iron	J
CPA-MW-4D-0211-F(0.2)	Inorganics	Iron	J
BSA-MW-3D-0211	Inorganics	Iron	J
BSA-MW-3D-0211-F(0.2)	Inorganics	Iron	J
BSA-MW-2D-0211	Inorganics	Iron	J
BSA-MW-2D-0211-F(0.2)	Inorganics	Iron	J
CPA-MW-3D-0211	Inorganics	Iron	J
CPA-MW-3D-0211-F(0.2)	Inorganics	Iron	J
BSA-MW-1S-0211	Inorganics	Iron	J
CPA-MW-2D-0211	Inorganics	Iron	J
CPA-MW-2D-0211-F(0.2)	Inorganics	Iron	J
CPA-MW-1D-0211	Inorganics	Iron	J

APPENDIX D

GROUNDWATER ANALYTICAL RESULTS
(WITH DATA REVIEW SHEETS)

SDG KPS063

Results of Samples from Monitoring Wells:

BSA-MW-1S
BSA-MW-2D
CPA-MW-1D
CPA-MW-2D
CPA-MW-3D
BSA-MW-3D
BSA-MW-4D
BSA-MW-5D
CPA-MW-4D
CPA-MW-5D

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

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

TestAmerica Job ID: 680-65833-1
TestAmerica Sample Delivery Group: KPS063
Client Project/Site: WGK LTM GW 1Q11 - FEB 2011

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

Attn: Jerry Rinaldi

Lidya Gulizia

Authorized for release by:
03/24/2011 02:41:55 PM

Lidya Gulizia
Project Manager II
lidya.gulizia@testamericainc.com

cc: Duane Kreuger

AG 4/11/11

Table of Contents

Ale
4/1/14

Job ID: 680-65833-1

Laboratory: TestAmerica Savannah

Narrative

Job Narrative
680-65833-1 / SDG KPS063

Receipt
The following sample(s) was received with headspace in two of the three the sample vials: CPA-MW-1D-0211 (680-65902-6).

All other samples were received in good condition within temperature requirements.

GC/MS VOA
No analytical or quality issues were noted.

GC/MS Semi VOA
Method(s) 8270C: The following sample(s) was diluted due to the abundance of target analytes: CPA-MW-4D-0211 (680-65862-1). Elevated reporting limits (RLs) are provided.

Method(s) 8270C: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 195096 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) 8270C: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 195211 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) 8270C: Surrogate recovery was outside acceptance limits for the following matrix spike (MS) sample(s): (680-65862-8 MS). The parent sample's surrogate recovery was within limits. The MS/MSD sample has been qualified and reported.

No other analytical or quality issues were noted.

GC VOA
Method(s) RSK-175: Due to the high concentration of Methane, the matrix spike / matrix spike duplicate (MS/MSD) for batch 195395 could not be evaluated for accuracy and precision for that analyte. The associated laboratory control sample (LCS) met acceptance criteria.

No other analytical or quality issues were noted.

Metals
No analytical or quality issues were noted.

General Chemistry
Method(s) 325.2, 9251, SM 4500 Cl- E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 196550 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) 375.4: The matrix spike (MS) recovery for batch 197076 was outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

No other analytical or quality issues were noted.

Comments
No additional comments.

Sample Summary

Client: Solutia Inc.
Project/Site: WGK LTM GW 1Q11 - FEB 2011

TestAmerica Job ID: 680-65833-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-65833-1	BSA-MW-04D-0211	Water	02/21/11 09:40	02/22/11 09:19
680-65833-2	BSA-MW-04D-F(0.2)-0211	Water	02/21/11 09:40	02/22/11 09:19
680-65833-3	BSA-MW-05D-0211	Water	02/21/11 11:40	02/22/11 09:19
680-65833-4	BSA-MW-05D-F(0.2)0211	Water	02/21/11 11:40	02/22/11 09:19
680-65833-5	CPA-MW-05D-0211	Water	02/21/11 14:40	02/22/11 09:19
680-65833-6	CPA-MW-05D-F(0.2)-0211	Water	02/21/11 14:00	02/22/11 09:19
680-65833-7	Trip Blank	Water	02/21/11 00:00	02/22/11 09:19
680-65862-1	CPA-MW-4D-0211	Water	02/22/11 08:40	02/23/11 09:04
680-65862-2	CPA-MW-4D-0211-F(0.2)	Water	02/22/11 08:40	02/23/11 09:04
680-65862-3	BSA-MW-3D-0211	Water	02/22/11 10:15	02/23/11 09:04
680-65862-4	BSA-MW-3D-0211-F(0.2)	Water	02/22/11 10:15	02/23/11 09:04
680-65862-5	BSA-MW-3D-EB	Water	02/22/11 10:15	02/23/11 09:04
680-65862-6	BSA-MW-2D-0211	Water	02/22/11 12:15	02/23/11 09:04
680-65862-7	BSA-MW-2D-0211-F(0.2)	Water	02/22/11 12:15	02/23/11 09:04
680-65862-8	CPA-MW-3D-0211	Water	02/22/11 13:15	02/23/11 09:04
680-65862-9	CPA-MW-3D-0211-F(0.2)	Water	02/22/11 13:15	02/23/11 09:04
680-65862-10	Trip Blank	Water	02/22/11 00:00	02/23/11 09:04
680-65902-1	BSA-MW-1S-0211	Water	02/23/11 09:00	02/24/11 10:58
680-65902-2	BSA-MW-1S-0211-F(0.2)	Water	02/23/11 09:00	02/24/11 10:58
680-65902-3	CPA-MW-2D-0211	Water	02/23/11 10:10	02/24/11 10:58
680-65902-4	CPA-MW-2D-0211-F(0-.2)	Water	02/23/11 10:10	02/24/11 10:58
680-65902-5	CPA-MW-2D-0211-AD	Water	02/23/11 10:10	02/24/11 10:58
680-65902-6	CPA-MW-1D-0211	Water	02/23/11 11:30	02/24/11 10:58
680-65902-7	CPA-MW-1D-0211-F(0.2)	Water	02/23/11 11:30	02/24/11 10:58
680-65902-8	Trip Blank	Water	02/23/11 00:00	02/24/11 10:58

AG
4/11/11

Method Summary

Client: Solutia Inc.
Project/Site: WGK LTM GW 1Q11 - FEB 2011

TestAmerica Job ID: 680-65833-1
SDG: KPS063

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

Protocol References:

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

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

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

Laboratory References:

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

TestAmerica Savannah

4/11/11

Qualifier Definition/Glossary

Client: Solutia Inc.
Project/Site: WGK LTM GW 1Q11 - FEB 2011

TestAmerica Job ID: 680-65833-1
SDG: KPS063

Qualifiers

GC/MS VOA

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

GC/MS Semi VOA

Qualifier	Qualifier Description
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution may be flagged with a D.
E	Result exceeded calibration range.
F	MS or MSD exceeds the control limits
F	RPD of the MS and MSD exceeds the control limits
U	Indicates the analyte was analyzed for but not detected.
X	Surrogate is outside control limits

GC VOA

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

Metals

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

General Chemistry

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
F	MS or MSD exceeds the control limits
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.
EPA	United States Environmental Protection Agency
ND	Not Detected above the reporting level.
MDL	Method Detection Limit
RL	Reporting Limit
RE, RE1 (etc.)	Indicates a Re-extraction or Reanalysis of the sample.
%R	Percent Recovery
RPD	Relative Percent Difference, a measure of the relative difference between two points.

TestAmerica Savannah
AG
4/11/11

Detection Summary

Client: Solutia Inc.
Project/Site: WGK LTM GW 1Q11 - FEB 2011

TestAmerica Job ID: 680-65833-1
SDG: KPS063

Client Sample ID: BSA-MW-04D-0211 — Lab Sample ID: 680-65833-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	27		20		ug/L	20		8260B	Total/NA
Chlorobenzene	2800		20		ug/L	20		8260B	Total/NA
1,4-Dichlorobenzene	37		20		ug/L	20		8260B	Total/NA
2-Chlorophenol	16		9.6		ug/L	1		8270C	Total/NA
Ethane	3.6		1.1		ug/L	1		RSK-175	Total/NA
Methane	48		0.58		ug/L	1		RSK-175	Total/NA
Iron	9.2		0.050		mg/L	1		6010B	Total Recovera
Manganese	0.68		0.010		mg/L	1		6010B	Total Recovera
Chloride	110		2.0		mg/L	2		325.2	Total/NA
Sulfate	130		50		mg/L	10		375.4	Total/NA
Total Organic Carbon	5.7		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	520		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	34		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: BSA-MW-04D-F(0.2)-0211 — Lab Sample ID: 680-65833-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	8.5		0.050		mg/L	1		6010B	Dissolved
Manganese, Dissolved	0.66		0.010		mg/L	1		6010B	Dissolved
Dissolved Organic Carbon	5.4		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: BSA-MW-05D-0211 — Lab Sample ID: 680-65833-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	5.9		1.0		ug/L	1		8260B	Total/NA
Ethane	1.5		1.1		ug/L	1		RSK-175	Total/NA
Methane	8100		0.58		ug/L	1		RSK-175	Total/NA
Iron	29		0.050		mg/L	1		6010B	Total Recovera
Manganese	1.5		0.010		mg/L	1		6010B	Total Recovera
Chloride	87		1.0		mg/L	1		325.2	Total/NA
Sulfate	63		25		mg/L	5		375.4	Total/NA
Total Organic Carbon	5.3		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	660		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	58		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: BSA-MW-05D-F(0.2)0211 — Lab Sample ID: 680-65833-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	21		0.050		mg/L	1		6010B	Dissolved
Manganese, Dissolved	0.95		0.010		mg/L	1		6010B	Dissolved
Dissolved Organic Carbon	6.0		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: CPA-MW-05D-0211 — Lab Sample ID: 680-65833-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	1700		20		ug/L	20		8260B	Total/NA
2-Chlorophenol	11		11		ug/L	1		8270C	Total/NA
Ethane	2.7		1.1		ug/L	1		RSK-175	Total/NA
Methane	9.2		0.58		ug/L	1		RSK-175	Total/NA
Iron	88		0.050		mg/L	1		6010B	Total Recovera
Manganese	3.5		0.010		mg/L	1		6010B	Total Recovera

Client Sample ID: CPA-MW-05D-0211 (Continued) — Lab Sample ID: 680-65833-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	330		5.0		mg/L	5		325.2	Total/NA
Sulfate	1600		500		mg/L	100		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	320		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	88		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: CPA-MW-05D-F(0.2)-0211 — Lab Sample ID: 680-65833-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	82		0.050		mg/L	1		6010B	Dissolved
Manganese, Dissolved	3.4		0.010		mg/L	1		6010B	Dissolved
Dissolved Organic Carbon	3.6		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: Trip Blank — Lab Sample ID: 680-65833-7

No Detections.

Client Sample ID: CPA-MW-4D-0211 — Lab Sample ID: 680-65862-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	300		10		ug/L	10		8260B	Total/NA
4-Chloroaniline	320	E	20		ug/L	1		8270C	Total/NA
4-Chloroaniline - DL	340	D	41		ug/L	2		8270C	Total/NA
Ethane	16		1.1		ug/L	1		RSK-175	Total/NA
Methane	17000		0.58		ug/L	1		RSK-175	Total/NA
Iron	12		0.050		mg/L	1		6010B	Total Recovera
Manganese	0.29		0.010		mg/L	1		6010B	Total Recovera
Chloride	320		5.0		mg/L	5		325.2	Total/NA
Total Organic Carbon	6.5		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	31		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: CPA-MW-4D-0211-F(0.2) — Lab Sample ID: 680-65862-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	11		0.050		mg/L	1		6010B	Dissolved
Manganese, Dissolved	0.36		0.010		mg/L	1		6010B	Dissolved
Dissolved Organic Carbon	6.6		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: BSA-MW-3D-0211 — Lab Sample ID: 680-65862-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	44		10		ug/L	10		8260B	Total/NA
Chlorobenzene	1000		10		ug/L	10		8260B	Total/NA
1,2-Dichlorobenzene	19		10		ug/L	10		8260B	Total/NA
1,4-Dichlorobenzene	390		10		ug/L	10		8260B	Total/NA
Ethane	1.4		1.1		ug/L	1		RSK-175	Total/NA
Methane	1600		0.58		ug/L	1		RSK-175	Total/NA
Iron	13		0.050		mg/L	1		6010B	Total Recovera
Manganese	0.57		0.010		mg/L	1		6010B	Total Recovera
Chloride	120		2.0		mg/L	2		325.2	Total/NA

Client Sample ID: BSA-MW-3D-0211 (Continued) — Lab Sample ID: 680-65862-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	130		25		mg/L	5		375.4	Total/NA
Total Organic Carbon	3.6		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	410		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: BSA-MW-3D-0211-F(0.2) — Lab Sample ID: 680-65862-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	11		0.050		mg/L	1		6010B	Dissolved
Manganese, Dissolved	0.54		0.010		mg/L	1		6010B	Dissolved
Dissolved Organic Carbon	3.3		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: BSA-MW-3D-EB — Lab Sample ID: 680-65862-5

No Detections.

Client Sample ID: BSA-MW-2D-0211 — Lab Sample ID: 680-65862-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	250000		5000		ug/L	5000		8260B	Total/NA
Ethane	11		1.1		ug/L	1		RSK-175	Total/NA
Methane	12000		0.58		ug/L	1		RSK-175	Total/NA
Iron	3.1		0.050		mg/L	1		6010B	Total Recovera
Manganese	0.47		0.010		mg/L	1		6010B	Total Recovera
Chloride	95		1.0		mg/L	1		325.2	Total/NA
Total Organic Carbon	6.2		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	27		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: BSA-MW-2D-0211-F(0.2) — Lab Sample ID: 680-65862-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	2.6		0.050		mg/L	1		6010B	Dissolved
Manganese, Dissolved	0.44		0.010		mg/L	1		6010B	Dissolved
Dissolved Organic Carbon	6.0		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: CPA-MW-3D-0211 — Lab Sample ID: 680-65862-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	8.0		5.0		ug/L	5		8260B	Total/NA
Chlorobenzene	610		5.0		ug/L	5		8260B	Total/NA
1,4-Dichlorobenzene	9.5		5.0		ug/L	5		8260B	Total/NA
Ethane	7.7		1.1		ug/L	1		RSK-175	Total/NA
Methane	8400		0.58		ug/L	1		RSK-175	Total/NA
Iron	12		0.050		mg/L	1		6010B	Total Recovera
Manganese	0.59		0.010		mg/L	1		6010B	Total Recovera
Chloride	120		2.0		mg/L	2		325.2	Total/NA
Sulfate	13		5.0		mg/L	1		375.4	Total/NA
Total Organic Carbon	11		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

Client Sample ID: CPA-MW-3D-0211 (Continued) — Lab Sample ID: 680-65862-8

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Carbon Dioxide, Free	30		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: CPA-MW-3D-0211-F(0.2) — Lab Sample ID: 680-65862-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	10		0.050		mg/L	1		6010B	Dissolved
Manganese, Dissolved	0.54		0.010		mg/L	1		6010B	Dissolved
Dissolved Organic Carbon	10		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: Trip Blank — Lab Sample ID: 680-65862-10

No Detections.

Client Sample ID: BSA-MW-1S-0211 — Lab Sample ID: 680-65902-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	620000		5000		ug/L	5000		8260B	Total/NA
Methane	11000		0.58		ug/L	1		RSK-175	Total/NA
Iron	3.9		0.050		mg/L	1		6010B	Total Recovera
Manganese	0.52		0.010		mg/L	1		6010B	Total Recovera
Chloride	230		5.0		mg/L	5		325.2	Total/NA
Total Organic Carbon	6.3		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	700		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	25		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: BSA-MW-1S-0211-F(0.2) — Lab Sample ID: 680-65902-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	3.9		0.050		mg/L	1		6010B	Dissolved
Manganese, Dissolved	0.55		0.010		mg/L	1		6010B	Dissolved
Dissolved Organic Carbon	6.1		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: CPA-MW-2D-0211 — Lab Sample ID: 680-65902-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1500		200		ug/L	200		8260B	Total/NA
Chlorobenzene	25000		200		ug/L	200		8260B	Total/NA
1,2-Dichlorobenzene	650		200		ug/L	200		8260B	Total/NA
1,3-Dichlorobenzene	380		200		ug/L	200		8260B	Total/NA
1,4-Dichlorobenzene	12000		200		ug/L	200		8260B	Total/NA
2-Chlorophenol	24		10		ug/L	1		8270C	Total/NA
Ethane	4.2		1.1		ug/L	1		RSK-175	Total/NA
Methane	2500		0.58		ug/L	1		RSK-175	Total/NA
Iron	8.3		0.050		mg/L	1		6010B	Total Recovera
Manganese	0.40		0.010		mg/L	1		6010B	Total Recovera
Chloride	560		10		mg/L	10		325.2	Total/NA
Total Organic Carbon	11		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	490		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-2D-0211-F(0-.2) — Lab Sample ID: 680-65902-4

Client Sample ID: CPA-MW-2D-0211-F(0-.2) (Continued) — Lab Sample ID: 680-65902-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	7.7		0.050		mg/L	1		6010B	Dissolved
Manganese, Dissolved	0.38		0.010		mg/L	1		6010B	Dissolved
Dissolved Organic Carbon	13		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: CPA-MW-2D-0211-AD — Lab Sample ID: 680-65902-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1600		200		ug/L	200		8260B	Total/NA
Chlorobenzene	24000		200		ug/L	200		8260B	Total/NA
1,2-Dichlorobenzene	640		200		ug/L	200		8260B	Total/NA
1,3-Dichlorobenzene	360		200		ug/L	200		8260B	Total/NA
1,4-Dichlorobenzene	11000		200		ug/L	200		8260B	Total/NA
2-Chlorophenol	20		9.9		ug/L	1		8270C	Total/NA

Client Sample ID: CPA-MW-1D-0211 — Lab Sample ID: 680-65902-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	9400		200		ug/L	200		8260B	Total/NA
Chlorobenzene	18000		200		ug/L	200		8260B	Total/NA
1,2-Dichlorobenzene	16000		200		ug/L	200		8260B	Total/NA
1,3-Dichlorobenzene	1200		200		ug/L	200		8260B	Total/NA
1,4-Dichlorobenzene	9800		200		ug/L	200		8260B	Total/NA
2-Chlorophenol	13		9.8		ug/L	1		8270C	Total/NA
1,2,4-Trichlorobenzene	860	E	9.8		ug/L	1		8270C	Total/NA
1,2,4-Trichlorobenzene - DL	950	D	49		ug/L	5		8270C	Total/NA
Ethane	28		1.1		ug/L	1		RSK-175	Total/NA
Methane	18000		0.58		ug/L	1		RSK-175	Total/NA
Iron	0.94		0.050		mg/L	1		6010B	Total Recovera
Manganese	0.037		0.010		mg/L	1		6010B	Total Recovera
Chloride	120		2.0		mg/L	2		325.2	Total/NA
Total Organic Carbon	13		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	780		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: CPA-MW-1D-0211-F(0.2) — Lab Sample ID: 680-65902-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	0.55		0.050		mg/L	1		6010B	Dissolved
Manganese, Dissolved	0.050		0.010		mg/L	1		6010B	Dissolved
Dissolved Organic Carbon	11		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: Trip Blank — Lab Sample ID: 680-65902-8

No Detections.

Client Sample ID: BSA-MW-04D-0211

Date Collected: 02/21/11 09:40
Date Received: 02/22/11 09:19

Lab Sample ID: 680-65833-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**27**		20		ug/L			02/28/11 22:23	20
Chlorobenzene	**2800**		20		ug/L			02/28/11 22:23	20
1,2-Dichlorobenzene	20	U	20		ug/L			02/28/11 22:23	20
1,3-Dichlorobenzene	20	U	20		ug/L			02/28/11 22:23	20
1,4-Dichlorobenzene	**37**		20		ug/L			02/28/11 22:23	20

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*104*		*70 - 130*		*02/28/11 22:23*	*20*
Dibromofluoromethane	*103*		*70 - 130*		*02/28/11 22:23*	*20*
Toluene-d8 (Surr)	*101*		*70 - 130*		*02/28/11 22:23*	*20*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	19	U	19		ug/L		02/23/11 14:15	03/09/11 12:30	1
1,2,4-Trichlorobenzene	9.6	U	9.6		ug/L		02/23/11 14:15	03/09/11 12:30	1
2-Chlorophenol	**16**		9.6		ug/L		02/23/11 14:15	03/09/11 12:30	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d5	*49*		*25 - 130*	*02/23/11 14:15*	*03/09/11 12:30*	*1*
2,4,6-Tribromophenol	*89*		*31 - 141*	*02/23/11 14:15*	*03/09/11 12:30*	*1*
2-Fluorobiphenyl	*68*		*38 - 130*	*02/23/11 14:15*	*03/09/11 12:30*	*1*
2-Fluorophenol	*48*		*25 - 130*	*02/23/11 14:15*	*03/09/11 12:30*	*1*
Nitrobenzene-d5	*56*		*39 - 130*	*02/23/11 14:15*	*03/09/11 12:30*	*1*
Terphenyl-d14	*48*		*10 - 143*	*02/23/11 14:15*	*03/09/11 12:30*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	**3.6**		1.1		ug/L			02/24/11 16:23	1
Ethylene	1.0	U	1.0		ug/L			02/24/11 16:23	1
Methane	**48**		0.58		ug/L			02/24/11 16:23	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**9.2**		0.050		mg/L		02/24/11 10:39	03/01/11 02:03	1
Manganese	**0.68**		0.010		mg/L		02/24/11 10:39	03/01/11 02:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**110**		2.0		mg/L			03/09/11 13:51	2
Nitrate as N	0.050	U	0.050		mg/L			02/22/11 15:46	1
Sulfate	**130**		50		mg/L			03/11/11 14:44	10
Total Organic Carbon	**5.7**		1.0		mg/L			03/11/11 02:25	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**520**		5.0		mg/L			02/22/11 18:31	1
Carbon Dioxide, Free	**34**		5.0		mg/L			02/22/11 18:31	1

AG
4/11/11

Client: Solutia Inc.
Project/Site: WGK LTM GW 1Q11 - FEB 2011

TestAmerica Job ID: 680-65833-1
SDG: KPS063

Client Sample ID: BSA-MW-04D-F(0.2)-0211
Date Collected: 02/21/11 09:40
Date Received: 02/22/11 09:19

Lab Sample ID: 680-65833-2
Matrix: Water

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	8.5		0.050		mg/L		02/24/11 10:39	03/01/11 02:29	1
Manganese, Dissolved	0.66		0.010		mg/L		02/24/11 10:39	03/01/11 02:29	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	5.4		1.0		mg/L			03/13/11 16:13	1

8

TestAmerica Savannah

4/11/11

Client Sample ID: BSA-MW-05D-0211
Date Collected: 02/21/11 11:40
Date Received: 02/22/11 09:19

Lab Sample ID: 680-65833-3
Matrix: Water

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			02/28/11 22:51	1
Chlorobenzene	**5.9**		1.0		ug/L			02/28/11 22:51	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/28/11 22:51	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/28/11 22:51	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/28/11 22:51	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*107*		*70 - 130*		*02/28/11 22:51*	*1*
Dibromofluoromethane	*107*		*70 - 130*		*02/28/11 22:51*	*1*
Toluene-d8 (Surr)	*95*		*70 - 130*		*02/28/11 22:51*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	21	U	21		ug/L		02/23/11 14:15	03/09/11 12:58	1
1,2,4-Trichlorobenzene	11	U	11		ug/L		02/23/11 14:15	03/09/11 12:58	1
2-Chlorophenol	11	U	11		ug/L		02/23/11 14:15	03/09/11 12:58	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d5	*50*		*25 - 130*	*02/23/11 14:15*	*03/09/11 12:58*	*1*
2,4,6-Tribromophenol	*88*		*31 - 141*	*02/23/11 14:15*	*03/09/11 12:58*	*1*
2-Fluorobiphenyl	*67*		*38 - 130*	*02/23/11 14:15*	*03/09/11 12:58*	*1*
2-Fluorophenol	*54*		*25 - 130*	*02/23/11 14:15*	*03/09/11 12:58*	*1*
Nitrobenzene-d5	*52*		*39 - 130*	*02/23/11 14:15*	*03/09/11 12:58*	*1*
Terphenyl-d14	*61*		*10 - 143*	*02/23/11 14:15*	*03/09/11 12:58*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	**1.5**		1.1		ug/L			02/24/11 16:36	1
Ethylene	1.0	U	1.0		ug/L			02/24/11 16:36	1
Methane	**8100**		0.58		ug/L			02/24/11 16:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**29**		0.050		mg/L		02/24/11 10:39	03/01/11 02:44	1
Manganese	**1.5**		0.010		mg/L		02/24/11 10:39	03/01/11 02:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**87**		1.0		mg/L			03/09/11 13:53	1
Nitrate as N	0.050	U	0.050		mg/L			02/22/11 15:49	1
Sulfate	**63**		25		mg/L			03/11/11 15:36	5
Total Organic Carbon	**5.3**	"J"	1.0		mg/L			03/11/11 02:41	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**660**		5.0		mg/L			02/22/11 18:43	1
Carbon Dioxide, Free	**58**		5.0		mg/L			02/22/11 18:43	1

4/11/11

Client: Solutia Inc.
Project/Site: WGK LTM GW 1Q11 - FEB 2011

TestAmerica Job ID: 680-65833-1
SDG: KPS063

Client Sample ID: BSA-MW-05D-F(0.2)0211
Date Collected: 02/21/11 11:40
Date Received: 02/22/11 09:19

Lab Sample ID: 680-65833-4
Matrix: Water

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	21		0.050		mg/L		02/24/11 10:39	03/01/11 02:49	1
Manganese, Dissolved	0.95		0.010		mg/L		02/24/11 10:39	03/01/11 02:49	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	6.0	"J"	1.0		mg/L			03/13/11 16:13	1

TestAmerica Savannah
AG
4/11/11

Client: Solutia Inc.
Project/Site: WGK LTM GW 1Q11 - FEB 2011

TestAmerica Job ID: 680-65833-1
SDG: KPS063

Client Sample ID: CPA-MW-05D-0211

Date Collected: 02/21/11 14:40
Date Received: 02/22/11 09:19

Lab Sample ID: 680-65833-5

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	20	U	20		ug/L			02/28/11 20:18	20
Chlorobenzene	**1700**		20		ug/L			02/28/11 20:18	20
1,2-Dichlorobenzene	20	U	20		ug/L			02/28/11 20:18	20
1,3-Dichlorobenzene	20	U	20		ug/L			02/28/11 20:18	20
1,4-Dichlorobenzene	20	U	20		ug/L			02/28/11 20:18	20

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*104*		*70 - 130*		*02/28/11 20:18*	*20*
Dibromofluoromethane	*108*		*70 - 130*		*02/28/11 20:18*	*20*
Toluene-d8 (Surr)	*97*		*70 - 130*		*02/28/11 20:18*	*20*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	21	U	21		ug/L		02/23/11 14:15	03/09/11 13:27	1
2-Chlorophenol	**11**		11		ug/L		02/23/11 14:15	03/09/11 13:27	1
1,2,4-Trichlorobenzene	11	U	11		ug/L		02/23/11 14:15	03/09/11 13:27	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d5	*39*		*25 - 130*	*02/23/11 14:15*	*03/09/11 13:27*	*1*
2-Fluorophenol	*41*		*25 - 130*	*02/23/11 14:15*	*03/09/11 13:27*	*1*
2,4,6-Tribromophenol	*76*		*31 - 141*	*02/23/11 14:15*	*03/09/11 13:27*	*1*
Nitrobenzene-d5	*41*		*39 - 130*	*02/23/11 14:15*	*03/09/11 13:27*	*1*
2-Fluorobiphenyl	*49*		*38 - 130*	*02/23/11 14:15*	*03/09/11 13:27*	*1*
Terphenyl-d14	*85*		*10 - 143*	*02/23/11 14:15*	*03/09/11 13:27*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	**2.7**		1.1		ug/L			02/24/11 16:49	1
Ethylene	1.0	U	1.0		ug/L			02/24/11 16:49	1
Methane	**9.2**		0.58		ug/L			02/24/11 16:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**88**		0.050		mg/L		02/24/11 10:39	03/01/11 02:55	1
Manganese	**3.5**		0.010		mg/L		02/24/11 10:39	03/01/11 02:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**330**		5.0		mg/L			02/28/11 17:02	5
Nitrate as N	0.050	U	0.050		mg/L			02/22/11 15:50	1
Sulfate	**1600**		500		mg/L			03/11/11 15:38	100
Total Organic Carbon	**4.0**		1.0		mg/L			03/11/11 02:58	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**320**		5.0		mg/L			02/22/11 18:50	1
Carbon Dioxide, Free	**88**		5.0		mg/L			02/22/11 18:50	1

4/11/11

Client: Solutia Inc.
Project/Site: WGK LTM GW 1Q11 - FEB 2011

TestAmerica Job ID: 680-65833-1
SDG: KPS063

Client Sample ID: CPA-MW-05D-F(0.2)-0211
Date Collected: 02/21/11 14:00
Date Received: 02/22/11 09:19

Lab Sample ID: 680-65833-6
Matrix: Water

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	82		0.050		mg/L		02/24/11 10:39	03/01/11 03:00	1
Manganese, Dissolved	3.4		0.010		mg/L		02/24/11 10:39	03/01/11 03:00	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	3.6		1.0		mg/L			03/13/11 16:13	1

TestAmerica Savannah

AL
4/11/11

Client: Solutia Inc.
Project/Site: WGK LTM GW 1Q11 - FEB 2011

TestAmerica Job ID: 680-65833-1
SDG: KPS063

Client Sample ID: Trip Blank

Date Collected: 02/21/11 00:00
Date Received: 02/22/11 09:19

Lab Sample ID: 680-65833-7

Matrix: Water

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			02/28/11 18:27	1
Chlorobenzene	1.0	U	1.0		ug/L			02/28/11 18:27	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/28/11 18:27	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/28/11 18:27	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/28/11 18:27	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*104*		*70 - 130*		*02/28/11 18:27*	*1*
Dibromofluoromethane	*112*		*70 - 130*		*02/28/11 18:27*	*1*
Toluene-d8 (Surr)	*96*		*70 - 130*		*02/28/11 18:27*	*1*

TestAmerica Savannah

4/11/11

Client Sample ID: CPA-MW-4D-0211
Date Collected: 02/22/11 08:40
Date Received: 02/23/11 09:04

Lab Sample ID: 680-65862-1
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	10	U	10		ug/L			03/04/11 11:48	10
Chlorobenzene	**300**		10		ug/L			03/04/11 11:48	10
1,2-Dichlorobenzene	10	U	10		ug/L			03/04/11 11:48	10
1,3-Dichlorobenzene	10	U	10		ug/L			03/04/11 11:48	10
1,4-Dichlorobenzene	10	U	10		ug/L			03/04/11 11:48	10

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*103*		*70 - 130*		*03/04/11 11:48*	*10*
Dibromofluoromethane	*96*		*70 - 130*		*03/04/11 11:48*	*10*
Toluene-d8 (Surr)	*101*		*70 - 130*		*03/04/11 11:48*	*10*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	**320**	**E**	20		ug/L		02/24/11 15:14	03/04/11 14:42	1
2-Chlorophenol	10	U	10		ug/L		02/24/11 15:14	03/04/11 14:42	1
1,2,4-Trichlorobenzene	10	U	10		ug/L		02/24/11 15:14	03/04/11 14:42	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d5	*55*		*25 - 130*	*02/24/11 15:14*	*03/04/11 14:42*	*1*
2-Fluorophenol	*56*		*25 - 130*	*02/24/11 15:14*	*03/04/11 14:42*	*1*
2,4,6-Tribromophenol	*90*		*31 - 141*	*02/24/11 15:14*	*03/04/11 14:42*	*1*
Nitrobenzene-d5	*64*		*39 - 130*	*02/24/11 15:14*	*03/04/11 14:42*	*1*
2-Fluorobiphenyl	*71*		*38 - 130*	*02/24/11 15:14*	*03/04/11 14:42*	*1*
Terphenyl-d14	*35*		*10 - 143*	*02/24/11 15:14*	*03/04/11 14:42*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	**340**	**D**	41		ug/L		02/24/11 15:14	03/08/11 16:33	2
2-Chlorophenol	20	U	20		ug/L		02/24/11 15:14	03/08/11 16:33	2
1,2,4-Trichlorobenzene	20	U	20		ug/L		02/24/11 15:14	03/08/11 16:33	2

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d5	*53*		*25 - 130*	*02/24/11 15:14*	*03/08/11 16:33*	*2*
2-Fluorophenol	*57*		*25 - 130*	*02/24/11 15:14*	*03/08/11 16:33*	*2*
2,4,6-Tribromophenol	*98*		*31 - 141*	*02/24/11 15:14*	*03/08/11 16:33*	*2*
Nitrobenzene-d5	*65*		*39 - 130*	*02/24/11 15:14*	*03/08/11 16:33*	*2*
2-Fluorobiphenyl	*72*		*38 - 130*	*02/24/11 15:14*	*03/08/11 16:33*	*2*
Terphenyl-d14	*34*		*10 - 143*	*02/24/11 15:14*	*03/08/11 16:33*	*2*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	**16**		1.1		ug/L			02/25/11 16:11	1
Ethylene	1.0	U	1.0		ug/L			02/25/11 16:11	1
Methane	**17000**		0.58		ug/L			02/25/11 16:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**12**	"J"	0.050		mg/L		03/02/11 12:50	03/07/11 20:09	1
Manganese	**0.29**	"J"	0.010		mg/L		03/02/11 12:50	03/07/11 20:09	1

4/11/11

Client: Solutia Inc.
Project/Site: WGK LTM GW 1Q11 - FEB 2011

TestAmerica Job ID: 680-65833-1
SDG: KPS063

Client Sample ID: CPA-MW-4D-0211
Date Collected: 02/22/11 08:40
Date Received: 02/23/11 09:04

Lab Sample ID: 680-65862-1
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**320**		5.0		mg/L			02/28/11 17:03	5
Nitrate as N	0.050	U	0.050		mg/L			02/23/11 17:03	1
Sulfate	5.0	U	5.0		mg/L			03/11/11 13:37	1
Total Organic Carbon	**6.5**		1.0		mg/L			03/11/11 03:12	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**620**		5.0		mg/L			02/23/11 20:21	1
Carbon Dioxide, Free	**31**		5.0		mg/L			02/23/11 20:21	1

TestAmerica Savannah
4/11/11

Analytical Data

Client: Solutia Inc.
Project/Site: WGK LTM GW 1Q11 - FEB 2011

TestAmerica Job ID: 680-65833-1
SDG: KPS063

Client Sample ID: CPA-MW-4D-0211-F(0.2)

Date Collected: 02/22/11 08:40
Date Received: 02/23/11 09:04

Lab Sample ID: 680-65862-2

Matrix: Water

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	11	J	0.050		mg/L		03/02/11 12:50	03/07/11 20:13	1
Manganese, Dissolved	0.36	J	0.010		mg/L		03/02/11 12:50	03/07/11 20:13	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	6.6		1.0		mg/L			03/13/11 16:13	1

4/11/11

Client Sample ID: BSA-MW-3D-0211

Date Collected: 02/22/11 10:15
Date Received: 02/23/11 09:04

Lab Sample ID: 680-65862-3

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**44**		10		ug/L			03/03/11 17:25	10
Chlorobenzene	**1000**		10		ug/L			03/03/11 17:25	10
1,2-Dichlorobenzene	**19**		10		ug/L			03/03/11 17:25	10
1,3-Dichlorobenzene	10	U	10		ug/L			03/03/11 17:25	10
1,4-Dichlorobenzene	**390**		10		ug/L			03/03/11 17:25	10

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*103*		*70 - 130*		*03/03/11 17:25*	*10*
Dibromofluoromethane	*97*		*70 - 130*		*03/03/11 17:25*	*10*
Toluene-d8 (Surr)	*102*		*70 - 130*		*03/03/11 17:25*	*10*

Method: 8270C - 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		02/24/11 15:14	03/04/11 15:10	1
1,4-Dioxane	10	U	10		ug/L		02/24/11 15:14	03/04/11 15:10	1
2-Chlorophenol	10	U	10		ug/L		02/24/11 15:14	03/04/11 15:10	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d5	*38*		*25 - 130*	*02/24/11 15:14*	*03/04/11 15:10*	*1*
2,4,6-Tribromophenol	*69*		*31 - 141*	*02/24/11 15:14*	*03/04/11 15:10*	*1*
2-Fluorobiphenyl	*50*		*38 - 130*	*02/24/11 15:14*	*03/04/11 15:10*	*1*
2-Fluorophenol	*36*		*25 - 130*	*02/24/11 15:14*	*03/04/11 15:10*	*1*
Nitrobenzene-d5	*46*		*39 - 130*	*02/24/11 15:14*	*03/04/11 15:10*	*1*
Terphenyl-d14	*43*		*10 - 143*	*02/24/11 15:14*	*03/04/11 15:10*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	**1.4**		1.1		ug/L			02/25/11 16:24	1
Ethylene	1.0	U	1.0		ug/L			02/25/11 16:24	1
Methane	**1600**		0.58		ug/L			02/25/11 16:24	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**13**		0.050		mg/L		03/02/11 12:50	03/07/11 20:17	1
Manganese	**0.57**		0.010		mg/L		03/02/11 12:50	03/07/11 20:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**120**		2.0		mg/L			02/28/11 17:03	2
Nitrate as N	0.050	U	0.050		mg/L			02/23/11 17:05	1
Sulfate	**130**		25		mg/L			03/11/11 15:08	5
Total Organic Carbon	**3.6**		1.0		mg/L			03/11/11 03:56	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**410**		5.0		mg/L			02/23/11 20:29	1
Carbon Dioxide, Free	**27**		5.0		mg/L			02/23/11 20:29	1

4/11/11

Client: Solutia Inc.
Project/Site: WGK LTM GW 1Q11 - FEB 2011

TestAmerica Job ID: 680-65833-1
SDG: KPS063

Client Sample ID: BSA-MW-3D-0211-F(0.2)
Date Collected: 02/22/11 10:15
Date Received: 02/23/11 09:04

Lab Sample ID: 680-65862-4
Matrix: Water

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	11	J	0.050		mg/L		03/02/11 12:50	03/07/11 20:21	1
Manganese, Dissolved	0.54		0.010		mg/L		03/02/11 12:50	03/07/11 20:21	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	3.3		1.0		mg/L			03/13/11 16:13	1

AG
4/4/11

Client Sample ID: BSA-MW-3D-EB

Date Collected: 02/22/11 10:15
Date Received: 02/23/11 09:04

Lab Sample ID: 680-65862-5

Matrix: Water

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			03/03/11 15:28	1
Chlorobenzene	1.0	U	1.0		ug/L			03/03/11 15:28	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			03/03/11 15:28	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			03/03/11 15:28	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			03/03/11 15:28	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*100*		*70 - 130*		*03/03/11 15:28*	*1*
Dibromofluoromethane	*100*		*70 - 130*		*03/03/11 15:28*	*1*
Toluene-d8 (Surr)	*100*		*70 - 130*		*03/03/11 15:28*	*1*

Method: 8270C - 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		02/24/11 15:14	03/04/11 15:38	1
1,4-Dioxane	10	U	10		ug/L		02/24/11 15:14	03/04/11 15:38	1
2-Chlorophenol	10	U	10		ug/L		02/24/11 15:14	03/04/11 15:38	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d5	*49*		*25 - 130*	*02/24/11 15:14*	*03/04/11 15:38*	*1*
2,4,6-Tribromophenol	*71*		*31 - 141*	*02/24/11 15:14*	*03/04/11 15:38*	*1*
2-Fluorobiphenyl	*69*		*38 - 130*	*02/24/11 15:14*	*03/04/11 15:38*	*1*
2-Fluorophenol	*47*		*25 - 130*	*02/24/11 15:14*	*03/04/11 15:38*	*1*
Nitrobenzene-d5	*64*		*39 - 130*	*02/24/11 15:14*	*03/04/11 15:38*	*1*
Terphenyl-d14	*81*		*10 - 143*	*02/24/11 15:14*	*03/04/11 15:38*	*1*

Client Sample ID: BSA-MW-2D-0211

Date Collected: 02/22/11 12:15
Date Received: 02/23/11 09:04

Lab Sample ID: 680-65862-6

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**250000**		5000		ug/L			03/03/11 18:24	5000
Chlorobenzene	5000	U	5000		ug/L			03/03/11 18:24	5000
1,2-Dichlorobenzene	5000	U	5000		ug/L			03/03/11 18:24	5000
1,3-Dichlorobenzene	5000	U	5000		ug/L			03/03/11 18:24	5000
1,4-Dichlorobenzene	5000	U	5000		ug/L			03/03/11 18:24	5000

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*101*		*70 - 130*		*03/03/11 18:24*	*5000*
Dibromofluoromethane	*96*		*70 - 130*		*03/03/11 18:24*	*5000*
Toluene-d8 (Surr)	*103*		*70 - 130*		*03/03/11 18:24*	*5000*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	9.7	U	9.7		ug/L		02/24/11 15:14	03/04/11 16:06	1
1,4-Dioxane	9.7	U	9.7		ug/L		02/24/11 15:14	03/04/11 16:06	1
2-Chlorophenol	9.7	U	9.7		ug/L		02/24/11 15:14	03/04/11 16:06	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d5	*49*		*25 - 130*	*02/24/11 15:14*	*03/04/11 16:06*	*1*
2,4,6-Tribromophenol	*83*		*31 - 141*	*02/24/11 15:14*	*03/04/11 16:06*	*1*
2-Fluorobiphenyl	*58*		*38 - 130*	*02/24/11 15:14*	*03/04/11 16:06*	*1*
2-Fluorophenol	*48*		*25 - 130*	*02/24/11 15:14*	*03/04/11 16:06*	*1*
Nitrobenzene-d5	*56*		*39 - 130*	*02/24/11 15:14*	*03/04/11 16:06*	*1*
Terphenyl-d14	*28*		*10 - 143*	*02/24/11 15:14*	*03/04/11 16:06*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	**11**		1.1		ug/L			02/25/11 16:37	1
Ethylene	1.0	U	1.0		ug/L			02/25/11 16:37	1
Methane	**12000**		0.58		ug/L			02/25/11 16:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**3.1**	"J"	0.050		mg/L		03/02/11 12:50	03/07/11 20:25	1
Manganese	**0.47**		0.010		mg/L		03/02/11 12:50	03/07/11 20:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**95**		1.0		mg/L			03/09/11 13:53	1
Nitrate as N	0.050	U	0.050		mg/L			02/23/11 17:08	1
Sulfate	5.0	U	5.0		mg/L			03/11/11 13:37	1
Total Organic Carbon	**6.2**		1.0		mg/L			03/11/11 04:10	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**620**		5.0		mg/L			02/23/11 20:40	1
Carbon Dioxide, Free	**27**		5.0		mg/L			02/23/11 20:40	1

Ale
4/11/11

Analytical Data

Client: Solutia Inc.
Project/Site: WGK LTM GW 1Q11 - FEB 2011

TestAmerica Job ID: 680-65833-1
SDG: KPS063

Client Sample ID: BSA-MW-2D-0211-F(0.2)

Date Collected: 02/22/11 12:15
Date Received: 02/23/11 09:04

Lab Sample ID: 680-65862-7

Matrix: Water

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	2.6	"J"	0.050		mg/L		03/02/11 12:50	03/07/11 20:29	1
Manganese, Dissolved	0.44		0.010		mg/L		03/02/11 12:50	03/07/11 20:29	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	6.0		1.0		mg/L			03/13/11 16:13	1

TestAmerica Savannah

4/11/11

Client Sample ID: CPA-MW-3D-0211

Date Collected: 02/22/11 13:15
Date Received: 02/23/11 09:04

Lab Sample ID: 680-65862-8

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**8.0**		5.0		ug/L			03/03/11 17:55	5
Chlorobenzene	**610**		5.0		ug/L			03/03/11 17:55	5
1,2-Dichlorobenzene	5.0	U	5.0		ug/L			03/03/11 17:55	5
1,3-Dichlorobenzene	5.0	U	5.0		ug/L			03/03/11 17:55	5
1,4-Dichlorobenzene	**9.5**		5.0		ug/L			03/03/11 17:55	5

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*101*		*70 - 130*		*03/03/11 17:55*	*5*
Dibromofluoromethane	*98*		*70 - 130*		*03/03/11 17:55*	*5*
Toluene-d8 (Surr)	*91*		*70 - 130*		*03/03/11 17:55*	*5*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	20	U	20		ug/L		02/24/11 15:14	03/04/11 16:34	1
2-Chlorophenol	10	U	10		ug/L		02/24/11 15:14	03/04/11 16:34	1
1,2,4-Trichlorobenzene	10	U	10		ug/L		02/24/11 15:14	03/04/11 16:34	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d5	*58*		*25 - 130*	*02/24/11 15:14*	*03/04/11 16:34*	*1*
2-Fluorophenol	*57*		*25 - 130*	*02/24/11 15:14*	*03/04/11 16:34*	*1*
2,4,6-Tribromophenol	*88*		*31 - 141*	*02/24/11 15:14*	*03/04/11 16:34*	*1*
Nitrobenzene-d5	*63*		*39 - 130*	*02/24/11 15:14*	*03/04/11 16:34*	*1*
2-Fluorobiphenyl	*68*		*38 - 130*	*02/24/11 15:14*	*03/04/11 16:34*	*1*
Terphenyl-d14	*52*		*10 - 143*	*02/24/11 15:14*	*03/04/11 16:34*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	**7.7**		1.1		ug/L			02/25/11 16:49	1
Ethylene	1.0	U	1.0		ug/L			02/25/11 16:49	1
Methane	**8400**		0.58		ug/L			02/25/11 16:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**12**	"J"	0.050		mg/L		03/02/11 12:50	03/07/11 20:33	1
Manganese	**0.59**		0.010		mg/L		03/02/11 12:50	03/07/11 20:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**120**		2.0		mg/L			02/28/11 17:03	2
Nitrate as N	0.050	U	0.050		mg/L			02/23/11 17:10	1
Sulfate	**13**		5.0		mg/L			03/11/11 13:37	1
Total Organic Carbon	**11**		1.0		mg/L			03/11/11 04:24	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**500**		5.0		mg/L			02/23/11 20:49	1
Carbon Dioxide, Free	**30**		5.0		mg/L			02/23/11 20:49	1

4/11/11

Client: Solutia Inc.
Project/Site: WGK LTM GW 1Q11 - FEB 2011

TestAmerica Job ID: 680-65833-1
SDG: KPS063

Client Sample ID: CPA-MW-3D-0211-F(0.2)

Lab Sample ID: 680-65862-9

Date Collected: 02/22/11 13:15
Date Received: 02/23/11 09:04

Matrix: Water

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	10	"3"	0.050		mg/L		03/02/11 12:50	03/07/11 20:37	1
Manganese, Dissolved	0.54		0.010		mg/L		03/02/11 12:50	03/07/11 20:37	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	10		1.0		mg/L			03/13/11 16:13	1

TestAmerica Savannah

4/11/11

Client: Solutia Inc.
Project/Site: WGK LTM GW 1Q11 - FEB 2011

TestAmerica Job ID: 680-65833-1
SDG: KPS063

Client Sample ID: Trip Blank
Date Collected: 02/22/11 00:00
Date Received: 02/23/11 09:04

Lab Sample ID: 680-65862-10
Matrix: Water

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			03/03/11 11:35	1
Chlorobenzene	1.0	U	1.0		ug/L			03/03/11 11:35	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			03/03/11 11:35	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			03/03/11 11:35	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			03/03/11 11:35	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*100*		*70 - 130*		*03/03/11 11:35*	*1*
Dibromofluoromethane	*99*		*70 - 130*		*03/03/11 11:35*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*03/03/11 11:35*	*1*

TestAmerica Savannah
AC
4/11/11

Client Sample ID: BSA-MW-1S-0211

Date Collected: 02/23/11 09:00
Date Received: 02/24/11 10:58

Lab Sample ID: 680-65902-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**620000**		5000		ug/L			03/04/11 13:45	5000
Chlorobenzene	5000	U	5000		ug/L			03/04/11 13:45	5000
1,2-Dichlorobenzene	5000	U	5000		ug/L			03/04/11 13:45	5000
1,3-Dichlorobenzene	5000	U	5000		ug/L			03/04/11 13:45	5000
1,4-Dichlorobenzene	5000	U	5000		ug/L			03/04/11 13:45	5000

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*101*		*70 - 130*		*03/04/11 13:45*	*5000*
Dibromofluoromethane	*105*		*70 - 130*		*03/04/11 13:45*	*5000*
Toluene-d8 (Surr)	*100*		*70 - 130*		*03/04/11 13:45*	*5000*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorophenol	9.9	U	9.9		ug/L		02/28/11 14:49	03/03/11 20:22	1
1,2,4-Trichlorobenzene	9.9	U	9.9		ug/L		02/28/11 14:49	03/03/11 20:22	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d5	*54*		*25 - 130*	*02/28/11 14:49*	*03/03/11 20:22*	*1*
2-Fluorophenol	*53*		*25 - 130*	*02/28/11 14:49*	*03/03/11 20:22*	*1*
2,4,6-Tribromophenol	*97*		*31 - 141*	*02/28/11 14:49*	*03/03/11 20:22*	*1*
Nitrobenzene-d5	*55*		*39 - 130*	*02/28/11 14:49*	*03/03/11 20:22*	*1*
2-Fluorobiphenyl	*64*		*38 - 130*	*02/28/11 14:49*	*03/03/11 20:22*	*1*
Terphenyl-d14	*46*		*10 - 143*	*02/28/11 14:49*	*03/03/11 20:22*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			03/02/11 17:59	1
Ethylene	1.0	U	1.0		ug/L			03/02/11 17:59	1
Methane	**11000**		0.58		ug/L			03/02/11 17:59	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**3.9**	"J"	0.050		mg/L		03/02/11 12:50	03/07/11 21:00	1
Manganese	**0.52**		0.010		mg/L		03/02/11 12:50	03/07/11 21:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**230**		5.0		mg/L			02/28/11 17:20	5
Nitrate as N	0.050	U	0.050		mg/L			02/24/11 16:52	1
Sulfate	5.0	U	5.0		mg/L			03/11/11 13:39	1
Total Organic Carbon	**6.3**		1.0		mg/L			03/11/11 04:39	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**700**		5.0		mg/L			02/27/11 13:11	1
Carbon Dioxide, Free	**25**		5.0		mg/L			02/27/11 13:11	1

4/11/11

Client: Solutia Inc.
Project/Site: WGK LTM GW 1Q11 - FEB 2011

TestAmerica Job ID: 680-65833-1
SDG: KPS063

Client Sample ID: BSA-MW-1S-0211-F(0.2)
Date Collected: 02/23/11 09:00
Date Received: 02/24/11 10:58

Lab Sample ID: 680-65902-2
Matrix: Water

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	3.9		0.050		mg/L		03/07/11 11:12	03/09/11 19:34	1
Manganese, Dissolved	0.55		0.010		mg/L		03/07/11 11:12	03/09/11 19:34	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	6.1		1.0		mg/L			03/13/11 16:13	1

4/11/11

Client Sample ID: CPA-MW-2D-0211

Date Collected: 02/23/11 10:10
Date Received: 02/24/11 10:58

Lab Sample ID: 680-65902-3

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**1500**		200		ug/L			03/04/11 12:18	200
Chlorobenzene	**25000**		200		ug/L			03/04/11 12:18	200
1,2-Dichlorobenzene	**650**		200		ug/L			03/04/11 12:18	200
1,3-Dichlorobenzene	**380**		200		ug/L			03/04/11 12:18	200
1,4-Dichlorobenzene	**12000**		200		ug/L			03/04/11 12:18	200

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*102*		*70 - 130*		*03/04/11 12:18*	*200*
Dibromofluoromethane	*95*		*70 - 130*		*03/04/11 12:18*	*200*
Toluene-d8 (Surr)	*100*		*70 - 130*		*03/04/11 12:18*	*200*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorophenol	**24**		10		ug/L		02/28/11 14:49	03/03/11 20:50	1
1,2,4-Trichlorobenzene	10	U	10		ug/L		02/28/11 14:49	03/03/11 20:50	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d5	*45*		*25 - 130*	*02/28/11 14:49*	*03/03/11 20:50*	*1*
2-Fluorophenol	*44*		*25 - 130*	*02/28/11 14:49*	*03/03/11 20:50*	*1*
2,4,6-Tribromophenol	*92*		*31 - 141*	*02/28/11 14:49*	*03/03/11 20:50*	*1*
Nitrobenzene-d5	*60*		*39 - 130*	*02/28/11 14:49*	*03/03/11 20:50*	*1*
2-Fluorobiphenyl	*67*		*38 - 130*	*02/28/11 14:49*	*03/03/11 20:50*	*1*
Terphenyl-d14	*53*		*10 - 143*	*02/28/11 14:49*	*03/03/11 20:50*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	**4.2**		1.1		ug/L			03/02/11 18:12	1
Ethylene	1.0	U	1.0		ug/L			03/02/11 18:12	1
Methane	**2500**		0.58		ug/L			03/02/11 18:12	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**8.3**	"5"	0.050		mg/L		03/02/11 12:50	03/07/11 21:04	1
Manganese	**0.40**		0.010		mg/L		03/02/11 12:50	03/07/11 21:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**560**		10		mg/L			02/28/11 17:34	10
Nitrate as N	0.050	U	0.050		mg/L			02/24/11 16:53	1
Sulfate	5.0	U	5.0		mg/L			03/11/11 13:39	1
Total Organic Carbon	**11**	"5"	1.0		mg/L			03/11/11 04:53	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**490**		5.0		mg/L			02/27/11 13:20	1
Carbon Dioxide, Free	**35**		5.0		mg/L			02/27/11 13:20	1

AC
4/11/11

Client: Solutia Inc.
Project/Site: WGK LTM GW 1Q11 - FEB 2011

TestAmerica Job ID: 680-65833-1
SDG: KPS063

Client Sample ID: CPA-MW-2D-0211-F(0-.2)
Date Collected: 02/23/11 10:10
Date Received: 02/24/11 10:58

Lab Sample ID: 680-65902-4
Matrix: Water

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	7.7	"J"	0.050		mg/L		03/02/11 12:50	03/07/11 21:08	1
Manganese, Dissolved	0.38		0.010		mg/L		03/02/11 12:50	03/07/11 21:08	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	13	"J"	1.0		mg/L			03/13/11 16:13	1

TestAmerica Savannah
AC
4/11/11

Client Sample ID: CPA-MW-2D-0211-AD
Date Collected: 02/23/11 10:10
Date Received: 02/24/11 10:58

Lab Sample ID: 680-65902-5
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**1600**		200		ug/L			03/04/11 12:47	200
Chlorobenzene	**24000**		200		ug/L			03/04/11 12:47	200
1,2-Dichlorobenzene	**640**		200		ug/L			03/04/11 12:47	200
1,3-Dichlorobenzene	**360**		200		ug/L			03/04/11 12:47	200
1,4-Dichlorobenzene	**11000**		200		ug/L			03/04/11 12:47	200

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*101*		*70 - 130*		*03/04/11 12:47*	*200*
Dibromofluoromethane	*97*		*70 - 130*		*03/04/11 12:47*	*200*
Toluene-d8 (Surr)	*100*		*70 - 130*		*03/04/11 12:47*	*200*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorophenol	**20**		9.9		ug/L		02/28/11 14:49	03/03/11 21:18	1
1,2,4-Trichlorobenzene	9.9	U	9.9		ug/L		02/28/11 14:49	03/03/11 21:18	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d5	*37*		*25 - 130*	*02/28/11 14:49*	*03/03/11 21:18*	*1*
2-Fluorophenol	*34*		*25 - 130*	*02/28/11 14:49*	*03/03/11 21:18*	*1*
2,4,6-Tribromophenol	*79*		*31 - 141*	*02/28/11 14:49*	*03/03/11 21:18*	*1*
Nitrobenzene-d5	*51*		*39 - 130*	*02/28/11 14:49*	*03/03/11 21:18*	*1*
2-Fluorobiphenyl	*57*		*38 - 130*	*02/28/11 14:49*	*03/03/11 21:18*	*1*
Terphenyl-d14	*45*		*10 - 143*	*02/28/11 14:49*	*03/03/11 21:18*	*1*

Client: Solutia Inc.
Project/Site: WGK LTM GW 1Q11 - FEB 2011

TestAmerica Job ID: 680-65833-1
SDG: KPS063

Client Sample ID: CPA-MW-1D-0211
Date Collected: 02/23/11 11:30
Date Received: 02/24/11 10:58

Lab Sample ID: 680-65902-6
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**9400**		200		ug/L			03/04/11 13:16	200
Chlorobenzene	**18000**		200		ug/L			03/04/11 13:16	200
1,2-Dichlorobenzene	**16000**		200		ug/L			03/04/11 13:16	200
1,3-Dichlorobenzene	**1200**		200		ug/L			03/04/11 13:16	200
1,4-Dichlorobenzene	**9800**		200		ug/L			03/04/11 13:16	200

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*103*		*70 - 130*		*03/04/11 13:16*	*200*
Dibromofluoromethane	*102*		*70 - 130*		*03/04/11 13:16*	*200*
Toluene-d8 (Surr)	*101*		*70 - 130*		*03/04/11 13:16*	*200*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorophenol	**13**		9.8		ug/L		02/28/11 14:49	03/09/11 10:09	1
1,2,4-Trichlorobenzene	**860**	E	9.8		ug/L		02/28/11 14:49	03/09/11 10:09	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d5	*33*		*25 - 130*	*02/28/11 14:49*	*03/09/11 10:09*	*1*
2-Fluorophenol	*38*		*25 - 130*	*02/28/11 14:49*	*03/09/11 10:09*	*1*
2,4,6-Tribromophenol	*84*		*31 - 141*	*02/28/11 14:49*	*03/09/11 10:09*	*1*
Nitrobenzene-d5	*59*		*39 - 130*	*02/28/11 14:49*	*03/09/11 10:09*	*1*
2-Fluorobiphenyl	*60*		*38 - 130*	*02/28/11 14:49*	*03/09/11 10:09*	*1*
Terphenyl-d14	*16*		*10 - 143*	*02/28/11 14:49*	*03/09/11 10:09*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorophenol	49	U	49		ug/L		02/28/11 14:49	03/08/11 17:01	5
1,2,4-Trichlorobenzene	**950**	D	49		ug/L		02/28/11 14:49	03/08/11 17:01	5

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d5	*42*		*25 - 130*	*02/28/11 14:49*	*03/08/11 17:01*	*5*
2-Fluorophenol	*44*		*25 - 130*	*02/28/11 14:49*	*03/08/11 17:01*	*5*
2,4,6-Tribromophenol	*85*		*31 - 141*	*02/28/11 14:49*	*03/08/11 17:01*	*5*
Nitrobenzene-d5	*57*		*39 - 130*	*02/28/11 14:49*	*03/08/11 17:01*	*5*
2-Fluorobiphenyl	*60*		*38 - 130*	*02/28/11 14:49*	*03/08/11 17:01*	*5*
Terphenyl-d14	*18*		*10 - 143*	*02/28/11 14:49*	*03/08/11 17:01*	*5*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	**28**		1.1		ug/L			03/02/11 18:25	1
Ethylene	1.0	U	1.0		ug/L			03/02/11 18:25	1
Methane	**18000**		0.58		ug/L			03/02/11 18:25	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**0.94**		0.050		mg/L		03/02/11 12:50	03/07/11 21:12	1
Manganese	**0.037**		0.010		mg/L		03/02/11 12:50	03/07/11 21:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**120**		2.0		mg/L			02/28/11 17:20	2
Nitrate as N	0.050	U	0.050		mg/L			02/24/11 16:56	1

4/11/11

Client: Solutia Inc.
Project/Site: WGK LTM GW 1Q11 - FEB 2011

TestAmerica Job ID: 680-65833-1
SDG: KPS063

Client Sample ID: CPA-MW-1D-0211
Date Collected: 02/23/11 11:30
Date Received: 02/24/11 10:58

Lab Sample ID: 680-65902-6
Matrix: Water

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	5.0	U	5.0		mg/L			03/11/11 13:39	1
Total Organic Carbon	**13**		1.0		mg/L			03/11/11 05:08	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**780**		5.0		mg/L			02/27/11 13:32	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			02/27/11 13:32	1

4/11/11

Client: Solutia Inc.
Project/Site: WGK LTM GW 1Q11 - FEB 2011

TestAmerica Job ID: 680-65833-1
SDG: KPS063

Client Sample ID: CPA-MW-1D-0211-F(0.2)
Date Collected: 02/23/11 11:30
Date Received: 02/24/11 10:58

Lab Sample ID: 680-65902-7
Matrix: Water

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	0.55		0.050		mg/L		03/07/11 11:12	03/09/11 19:38	1
Manganese, Dissolved	0.050	J1	0.010		mg/L		03/07/11 11:12	03/09/11 19:38	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	11		1.0		mg/L			03/13/11 16:13	1

8

TestAmerica Savannah

4/11/11

Client: Solutia Inc.
Project/Site: WGK LTM GW 1Q11 - FEB 2011

TestAmerica Job ID: 680-65833-1
SDG: KPS063

Client Sample ID: Trip Blank
Date Collected: 02/23/11 00:00
Date Received: 02/24/11 10:58

Lab Sample ID: 680-65902-8
Matrix: Water

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			03/02/11 15:54	1
Chlorobenzene	1.0	U	1.0		ug/L			03/02/11 15:54	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			03/02/11 15:54	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			03/02/11 15:54	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			03/02/11 15:54	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*92*		*70 - 130*		*03/02/11 15:54*	*1*
Dibromofluoromethane	*103*		*70 - 130*		*03/02/11 15:54*	*1*
Toluene-d8 (Surr)	*101*		*70 - 130*		*03/02/11 15:54*	*1*

TestAmerica Savannah
4/11/11

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

Lab Sample ID: MB 680-195578/8
Matrix: Water
Analysis Batch: 195578

Client Sample ID: MB 680-195578/8
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			02/28/11 16:45	1
Chlorobenzene	1.0	U	1.0		ug/L			02/28/11 16:45	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/28/11 16:45	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/28/11 16:45	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/28/11 16:45	1

Surrogate	*MB % Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*105*		*70 - 130*		*02/28/11 16:45*	*1*
Dibromofluoromethane	*113*		*70 - 130*		*02/28/11 16:45*	*1*
Toluene-d8 (Surr)	*95*		*70 - 130*		*02/28/11 16:45*	*1*

Lab Sample ID: LCS 680-195578/5
Matrix: Water
Analysis Batch: 195578

Client Sample ID: LCS 680-195578/5
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Benzene	50.0	52.3		ug/L		105	70 - 130
Chlorobenzene	50.0	54.4		ug/L		109	70 - 130
1,2-Dichlorobenzene	50.0	54.4		ug/L		109	70 - 130
1,3-Dichlorobenzene	50.0	55.2		ug/L		110	70 - 130
1,4-Dichlorobenzene	50.0	55.3		ug/L		111	70 - 130

Surrogate	*LCS % Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*106*		*70 - 130*
Dibromofluoromethane	*108*		*70 - 130*
Toluene-d8 (Surr)	*101*		*70 - 130*

Lab Sample ID: LCSD 680-195578/6
Matrix: Water
Analysis Batch: 195578

Client Sample ID: LCSD 680-195578/6
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Benzene	50.0	50.7		ug/L		101	70 - 130	3	30
Chlorobenzene	50.0	53.9		ug/L		108	70 - 130	1	30
1,2-Dichlorobenzene	50.0	54.3		ug/L		109	70 - 130	0	30
1,3-Dichlorobenzene	50.0	55.8		ug/L		112	70 - 130	1	30
1,4-Dichlorobenzene	50.0	55.5		ug/L		111	70 - 130	0	30

Surrogate	*LCSD % Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*106*		*70 - 130*
Dibromofluoromethane	*107*		*70 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*

Lab Sample ID: MB 680-195696/10
Matrix: Water
Analysis Batch: 195696

Client Sample ID: MB 680-195696/10
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			03/01/11 17:24	1

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

Lab Sample ID: MB 680-195696/10
Matrix: Water
Analysis Batch: 195696

Client Sample ID: MB 680-195696/10
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	1.0	U	1.0		ug/L			03/01/11 17:24	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			03/01/11 17:24	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			03/01/11 17:24	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			03/01/11 17:24	1

Surrogate	*MB % Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*105*		*70 - 130*		*03/01/11 17:24*	*1*
Dibromofluoromethane	*92*		*70 - 130*		*03/01/11 17:24*	*1*
Toluene-d8 (Surr)	*96*		*70 - 130*		*03/01/11 17:24*	*1*

Lab Sample ID: LCS 680-195696/7
Matrix: Water
Analysis Batch: 195696

Client Sample ID: LCS 680-195696/7
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Benzene	50.0	50.3		ug/L		101	70 - 130
Chlorobenzene	50.0	54.8		ug/L		110	70 - 130
1,2-Dichlorobenzene	50.0	56.1		ug/L		112	70 - 130
1,3-Dichlorobenzene	50.0	56.5		ug/L		113	70 - 130
1,4-Dichlorobenzene	50.0	56.0		ug/L		112	70 - 130

Surrogate	*LCS % Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*106*		*70 - 130*
Dibromofluoromethane	*110*		*70 - 130*
Toluene-d8 (Surr)	*97*		*70 - 130*

Lab Sample ID: LCSD 680-195696/8
Matrix: Water
Analysis Batch: 195696

Client Sample ID: LCSD 680-195696/8
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Benzene	50.0	50.6		ug/L		101	70 - 130	0	30
Chlorobenzene	50.0	55.5		ug/L		111	70 - 130	1	30
1,2-Dichlorobenzene	50.0	54.7		ug/L		109	70 - 130	2	30
1,3-Dichlorobenzene	50.0	56.8		ug/L		114	70 - 130	0	30
1,4-Dichlorobenzene	50.0	56.3		ug/L		113	70 - 130	1	30

Surrogate	*LCSD % Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*111*		*70 - 130*
Dibromofluoromethane	*105*		*70 - 130*
Toluene-d8 (Surr)	*98*		*70 - 130*

Lab Sample ID: 680-65833-5 MS
Matrix: Water
Analysis Batch: 195696

Client Sample ID: CPA-MW-05D-0211
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	% Rec	% Rec. Limits
Benzene	20	U	1000	952		ug/L		95	70 - 130
Chlorobenzene	1700		1000	2890		ug/L		123	70 - 130

4/11/11

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

Lab Sample ID: 680-65833-5 MS
Matrix: Water
Analysis Batch: 195696

Client Sample ID: CPA-MW-05D-0211
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	% Rec	% Rec. Limits
1,2-Dichlorobenzene	20	U	1000	1150		ug/L		115	70 - 130
1,3-Dichlorobenzene	20	U	1000	1140		ug/L		114	70 - 130
1,4-Dichlorobenzene	20	U	1000	1170		ug/L		117	70 - 130

Surrogate	*MS % Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene	*107*		*70 - 130*
Dibromofluoromethane	*105*		*70 - 130*
Toluene-d8 (Surr)	*96*		*70 - 130*

Lab Sample ID: 680-65833-5 MSD
Matrix: Water
Analysis Batch: 195696

Client Sample ID: CPA-MW-05D-0211
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Benzene	20	U	1000	962		ug/L		96	70 - 130	1	30
Chlorobenzene	1700		1000	2800		ug/L		114	70 - 130	3	30
1,2-Dichlorobenzene	20	U	1000	1180		ug/L		118	70 - 130	3	30
1,3-Dichlorobenzene	20	U	1000	1200		ug/L		120	70 - 130	5	30
1,4-Dichlorobenzene	20	U	1000	1210		ug/L		121	70 - 130	4	30

Surrogate	*MSD % Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene	*111*		*70 - 130*
Dibromofluoromethane	*109*		*70 - 130*
Toluene-d8 (Surr)	*95*		*70 - 130*

Lab Sample ID: MB 680-195845/20
Matrix: Water
Analysis Batch: 195845

Client Sample ID: MB 680-195845/20
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			03/02/11 14:14	1
Chlorobenzene	1.0	U	1.0		ug/L			03/02/11 14:14	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			03/02/11 14:14	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			03/02/11 14:14	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			03/02/11 14:14	1

Surrogate	*MB % Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*96*		*70 - 130*		*03/02/11 14:14*	*1*
Dibromofluoromethane	*104*		*70 - 130*		*03/02/11 14:14*	*1*
Toluene-d8 (Surr)	*101*		*70 - 130*		*03/02/11 14:14*	*1*

Lab Sample ID: LCS 680-195845/17
Matrix: Water
Analysis Batch: 195845

Client Sample ID: LCS 680-195845/17
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Benzene	50.0	48.5		ug/L		97	70 - 130
Chlorobenzene	50.0	50.5		ug/L		101	70 - 130
1,2-Dichlorobenzene	50.0	53.5		ug/L		107	70 - 130

4/11/11

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

Lab Sample ID: LCS 680-195845/17
Matrix: Water
Analysis Batch: 195845

Client Sample ID: LCS 680-195845/17
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
1,3-Dichlorobenzene	50.0	52.9		ug/L		106	70 - 130
1,4-Dichlorobenzene	50.0	53.1		ug/L		106	70 - 130

Surrogate	*LCS % Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*100*		*70 - 130*
Dibromofluoromethane	*105*		*70 - 130*
Toluene-d8 (Surr)	*100*		*70 - 130*

Lab Sample ID: LCSD 680-195845/18
Matrix: Water
Analysis Batch: 195845

Client Sample ID: LCSD 680-195845/18
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Benzene	50.0	49.4		ug/L		99	70 - 130	2	30
Chlorobenzene	50.0	48.9		ug/L		98	70 - 130	3	30
1,2-Dichlorobenzene	50.0	52.1		ug/L		104	70 - 130	3	30
1,3-Dichlorobenzene	50.0	51.1		ug/L		102	70 - 130	3	30
1,4-Dichlorobenzene	50.0	51.5		ug/L		103	70 - 130	3	30

Surrogate	*LCSD % Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*99*		*70 - 130*
Dibromofluoromethane	*105*		*70 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*

Lab Sample ID: MB 680-195909/7
Matrix: Water
Analysis Batch: 195909

Client Sample ID: MB 680-195909/7
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			03/03/11 10:52	1
Chlorobenzene	1.0	U	1.0		ug/L			03/03/11 10:52	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			03/03/11 10:52	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			03/03/11 10:52	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			03/03/11 10:52	1

Surrogate	*MB % Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*70 - 130*		*03/03/11 10:52*	*1*
Dibromofluoromethane	*101*		*70 - 130*		*03/03/11 10:52*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*03/03/11 10:52*	*1*

Lab Sample ID: LCS 680-195909/5
Matrix: Water
Analysis Batch: 195909

Client Sample ID: LCS 680-195909/5
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Benzene	50.0	50.6		ug/L		101	70 - 130
Chlorobenzene	50.0	49.8		ug/L		100	70 - 130
1,2-Dichlorobenzene	50.0	55.4		ug/L		111	70 - 130
1,3-Dichlorobenzene	50.0	54.9		ug/L		110	70 - 130

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

Lab Sample ID: LCS 680-195909/5
Matrix: Water
Analysis Batch: 195909

Client Sample ID: LCS 680-195909/5
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
1,4-Dichlorobenzene	50.0	55.5		ug/L		111	70 - 130

Surrogate	*LCS % Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*105*		*70 - 130*
Dibromofluoromethane	*105*		*70 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*

Lab Sample ID: LCSD 680-195909/20
Matrix: Water
Analysis Batch: 195909

Client Sample ID: LCSD 680-195909/20
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Benzene	50.0	53.1		ug/L		106	70 - 130	5	30
Chlorobenzene	50.0	49.9		ug/L		100	70 - 130	0	30
1,2-Dichlorobenzene	50.0	56.0		ug/L		112	70 - 130	1	30
1,3-Dichlorobenzene	50.0	54.7		ug/L		109	70 - 130	0	30
1,4-Dichlorobenzene	50.0	55.8		ug/L		112	70 - 130	1	30

Surrogate	*LCSD % Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*105*		*70 - 130*
Dibromofluoromethane	*103*		*70 - 130*
Toluene-d8 (Surr)	*104*		*70 - 130*

Lab Sample ID: MB 680-196086/9
Matrix: Water
Analysis Batch: 196086

Client Sample ID: MB 680-196086/9
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			03/04/11 11:04	1
Chlorobenzene	1.0	U	1.0		ug/L			03/04/11 11:04	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			03/04/11 11:04	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			03/04/11 11:04	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			03/04/11 11:04	1

Surrogate	*MB % Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*102*		*70 - 130*		*03/04/11 11:04*	*1*
Dibromofluoromethane	*102*		*70 - 130*		*03/04/11 11:04*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*03/04/11 11:04*	*1*

Lab Sample ID: LCS 680-196086/6
Matrix: Water
Analysis Batch: 196086

Client Sample ID: LCS 680-196086/6
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Benzene	50.0	50.8		ug/L		102	70 - 130
Chlorobenzene	50.0	50.2		ug/L		100	70 - 130
1,2-Dichlorobenzene	50.0	55.9		ug/L		112	70 - 130
1,3-Dichlorobenzene	50.0	55.3		ug/L		111	70 - 130
1,4-Dichlorobenzene	50.0	56.2		ug/L		112	70 - 130

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

Lab Sample ID: LCS 680-196086/6
Matrix: Water
Analysis Batch: 196086

Client Sample ID: LCS 680-196086/6
Prep Type: Total/NA

Surrogate	*LCS % Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*106*		*70 - 130*
Dibromofluoromethane	*108*		*70 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*

Lab Sample ID: LCSD 680-196086/7
Matrix: Water
Analysis Batch: 196086

Client Sample ID: LCSD 680-196086/7
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Benzene	50.0	51.4		ug/L		103	70 - 130	1	30
Chlorobenzene	50.0	50.3		ug/L		101	70 - 130	0	30
1,2-Dichlorobenzene	50.0	56.6		ug/L		113	70 - 130	1	30
1,3-Dichlorobenzene	50.0	55.0		ug/L		110	70 - 130	1	30
1,4-Dichlorobenzene	50.0	57.2		ug/L		114	70 - 130	2	30

Surrogate	*LCSD % Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*106*		*70 - 130*
Dibromofluoromethane	*108*		*70 - 130*
Toluene-d8 (Surr)	*98*		*70 - 130*

Lab Sample ID: MB 680-197370/20
Matrix: Water
Analysis Batch: 197370

Client Sample ID: MB 680-197370/20
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			02/28/11 16:59	1
Chlorobenzene	1.0	U	1.0		ug/L			02/28/11 16:59	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/28/11 16:59	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/28/11 16:59	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/28/11 16:59	1

Surrogate	*MB % Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*105*		*70 - 130*		*02/28/11 16:59*	*1*
Dibromofluoromethane	*107*		*70 - 130*		*02/28/11 16:59*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*02/28/11 16:59*	*1*

Lab Sample ID: LCS 680-197370/17
Matrix: Water
Analysis Batch: 197370

Client Sample ID: LCS 680-197370/17
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Benzene	50.0	51.5		ug/L		103	70 - 130
Chlorobenzene	50.0	57.1		ug/L		114	70 - 130
1,2-Dichlorobenzene	50.0	58.3		ug/L		117	70 - 130
1,3-Dichlorobenzene	50.0	59.7		ug/L		119	70 - 130
1,4-Dichlorobenzene	50.0	61.4		ug/L		123	70 - 130

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

Lab Sample ID: LCS 680-197370/17
Matrix: Water
Analysis Batch: 197370

Client Sample ID: LCS 680-197370/17
Prep Type: Total/NA

Surrogate	*LCS % Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*118*		*70 - 130*
Dibromofluoromethane	*103*		*70 - 130*
Toluene-d8 (Surr)	*104*		*70 - 130*

Lab Sample ID: LCSD 680-197370/18
Matrix: Water
Analysis Batch: 197370

Client Sample ID: LCSD 680-197370/18
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Benzene	50.0	45.4		ug/L		91	70 - 130	13	30
Chlorobenzene	50.0	54.6		ug/L		109	70 - 130	4	30
1,2-Dichlorobenzene	50.0	56.7		ug/L		113	70 - 130	3	30
1,3-Dichlorobenzene	50.0	56.4		ug/L		113	70 - 130	6	30
1,4-Dichlorobenzene	50.0	56.8		ug/L		114	70 - 130	8	30

Surrogate	*LCSD % Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*114*		*70 - 130*
Dibromofluoromethane	*106*		*70 - 130*
Toluene-d8 (Surr)	*103*		*70 - 130*

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

Lab Sample ID: MB 680-195096/6-A
Matrix: Water
Analysis Batch: 196216

Client Sample ID: MB 680-195096/6-A
Prep Type: Total/NA
Prep Batch: 195096

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	20	U	20		ug/L		02/23/11 14:15	03/07/11 14:39	1
1,2,4-Trichlorobenzene	10	U	10		ug/L		02/23/11 14:15	03/07/11 14:39	1
1,4-Dioxane	10	U	10		ug/L		02/23/11 14:15	03/07/11 14:39	1
2-Chlorophenol	10	U	10		ug/L		02/23/11 14:15	03/07/11 14:39	1

Surrogate	*MB % Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d5	*77*		*25 - 130*	*02/23/11 14:15*	*03/07/11 14:39*	*1*
2,4,6-Tribromophenol	*85*		*31 - 141*	*02/23/11 14:15*	*03/07/11 14:39*	*1*
2-Fluorophenol	*74*		*25 - 130*	*02/23/11 14:15*	*03/07/11 14:39*	*1*
2-Fluorobiphenyl	*86*		*38 - 130*	*02/23/11 14:15*	*03/07/11 14:39*	*1*
Nitrobenzene-d5	*87*		*39 - 130*	*02/23/11 14:15*	*03/07/11 14:39*	*1*
Terphenyl-d14	*96*		*10 - 143*	*02/23/11 14:15*	*03/07/11 14:39*	*1*

Lab Sample ID: LCS 680-195096/7-A
Matrix: Water
Analysis Batch: 196216

Client Sample ID: LCS 680-195096/7-A
Prep Type: Total/NA
Prep Batch: 195096

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
4-Chloroaniline	100	60.3		ug/L		60	42 - 130
1,2,4-Trichlorobenzene	100	71.6		ug/L		72	42 - 130
1,4-Dioxane	100	53.4		ug/L		53	35 - 130
2-Chlorophenol	100	75.7		ug/L		76	57 - 130

4/14/11

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

Lab Sample ID: LCS 680-195096/7-A
Matrix: Water
Analysis Batch: 196216

Client Sample ID: LCS 680-195096/7-A
Prep Type: Total/NA
Prep Batch: 195096

Surrogate	LCS % Recovery	LCS Qualifier	Limits
Phenol-d5	76		25 - 130
2,4,6-Tribromophenol	82		31 - 141
2-Fluorophenol	73		25 - 130
2-Fluorobiphenyl	82		38 - 130
Nitrobenzene-d5	85		39 - 130
Terphenyl-d14	85		10 - 143

Lab Sample ID: 680-65833-5 MS
Matrix: Water
Analysis Batch: 196473

Client Sample ID: CPA-MW-05D-0211
Prep Type: Total/NA
Prep Batch: 195096

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	% Rec	% Rec. Limits
4-Chloroaniline	21	U	101	20	U F	ug/L		12	42 - 130
2-Chlorophenol	11		101	76.4		ug/L		65	57 - 130
1,4-Dioxane	11		101	32.7	F	ug/L		32	35 - 130
1,2,4-Trichlorobenzene	11	U	101	65.2		ug/L		64	42 - 130

Surrogate	MS % Recovery	MS Qualifier	Limits
Phenol-d5	48		25 - 130
2-Fluorophenol	47		25 - 130
2,4,6-Tribromophenol	91		31 - 141
Nitrobenzene-d5	57		39 - 130
2-Fluorobiphenyl	68		38 - 130
Terphenyl-d14	78		10 - 143

Lab Sample ID: 680-65833-5 MSD
Matrix: Water
Analysis Batch: 196473

Client Sample ID: CPA-MW-05D-0211
Prep Type: Total/NA
Prep Batch: 195096

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
4-Chloroaniline	21	U	100	27.8	F	ug/L		28	42 - 130	78	50
2-Chlorophenol	11		100	66.4	F	ug/L		56	57 - 130	14	50
1,4-Dioxane	11		100	27.5	F	ug/L		28	35 - 130	17	50
1,2,4-Trichlorobenzene	11	U	100	57.7		ug/L		58	42 - 130	12	50

Surrogate	MSD % Recovery	MSD Qualifier	Limits
Phenol-d5	45		25 - 130
2-Fluorophenol	43		25 - 130
2,4,6-Tribromophenol	98		31 - 141
Nitrobenzene-d5	49		39 - 130
2-Fluorobiphenyl	58		38 - 130
Terphenyl-d14	85		10 - 143

Lab Sample ID: MB 680-195211/6-A
Matrix: Water
Analysis Batch: 196157

Client Sample ID: MB 680-195211/6-A
Prep Type: Total/NA
Prep Batch: 195211

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	20	U	20		ug/L		02/24/11 15:14	03/04/11 14:15	1

4/11/11

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

Lab Sample ID: MB 680-195211/6-A
Matrix: Water
Analysis Batch: 196157

Client Sample ID: MB 680-195211/6-A
Prep Type: Total/NA
Prep Batch: 195211

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	10	U	10		ug/L		02/24/11 15:14	03/04/11 14:15	1
1,4-Dioxane	10	U	10		ug/L		02/24/11 15:14	03/04/11 14:15	1
2-Chlorophenol	10	U	10		ug/L		02/24/11 15:14	03/04/11 14:15	1

Surrogate	*MB % Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d5	*63*		*25 - 130*	*02/24/11 15:14*	*03/04/11 14:15*	*1*
2,4,6-Tribromophenol	*91*		*31 - 141*	*02/24/11 15:14*	*03/04/11 14:15*	*1*
2-Fluorophenol	*64*		*25 - 130*	*02/24/11 15:14*	*03/04/11 14:15*	*1*
2-Fluorobiphenyl	*77*		*38 - 130*	*02/24/11 15:14*	*03/04/11 14:15*	*1*
Nitrobenzene-d5	*72*		*39 - 130*	*02/24/11 15:14*	*03/04/11 14:15*	*1*
Terphenyl-d14	*92*		*10 - 143*	*02/24/11 15:14*	*03/04/11 14:15*	*1*

Lab Sample ID: LCS 680-195211/7-A
Matrix: Water
Analysis Batch: 196157

Client Sample ID: LCS 680-195211/7-A
Prep Type: Total/NA
Prep Batch: 195211

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
4-Chloroaniline	100	59.1		ug/L		59	42 - 130
1,2,4-Trichlorobenzene	100	68.4		ug/L		68	42 - 130
1,4-Dioxane	100	40.1		ug/L		40	35 - 130
2-Chlorophenol	100	70.7		ug/L		71	57 - 130

Surrogate	*LCS % Recovery*	*LCS Qualifier*	*Limits*
Phenol-d5	*65*		*25 - 130*
2,4,6-Tribromophenol	*96*		*31 - 141*
2-Fluorophenol	*64*		*25 - 130*
2-Fluorobiphenyl	*74*		*38 - 130*
Nitrobenzene-d5	*67*		*39 - 130*
Terphenyl-d14	*87*		*10 - 143*

Lab Sample ID: 680-65862-8 MS
Matrix: Water
Analysis Batch: 196157

Client Sample ID: CPA-MW-3D-0211
Prep Type: Total/NA
Prep Batch: 195211

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	% Rec	% Rec. Limits
4-Chloroaniline	20	U	100	20	U F	ug/L		-5	42 - 130
1,2,4-Trichlorobenzene	10	U	100	26.0	F	ug/L		26	42 - 130
1,4-Dioxane	10		100	15.1	F	ug/L		15	35 - 130
2-Chlorophenol	10	U	100	29.5	F	ug/L		24	57 - 130

Surrogate	*MS % Recovery*	*MS Qualifier*	*Limits*
Phenol-d5	*24*	*X*	*25 - 130*
2,4,6-Tribromophenol	*43*		*31 - 141*
2-Fluorophenol	*23*	*X*	*25 - 130*
2-Fluorobiphenyl	*30*	*X*	*38 - 130*
Nitrobenzene-d5	*26*	*X*	*39 - 130*
Terphenyl-d14	*34*		*10 - 143*

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

Lab Sample ID: 680-65862-8 MSD
Matrix: Water
Analysis Batch: 196157

Client Sample ID: CPA-MW-3D-0211
Prep Type: Total/NA
Prep Batch: 195211

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
4-Chloroaniline	20	U	100	26.4	F	ug/L		15	42 - 130	117	50
1,2,4-Trichlorobenzene	10	U	100	54.5	F	ug/L		55	42 - 130	71	50
1,4-Dioxane	10		100	32.3	F	ug/L		32	35 - 130	73	50
2-Chlorophenol	10	U	100	62.3	F	ug/L		57	57 - 130	72	50

Surrogate	*MSD % Recovery*	*MSD Qualifier*	*Limits*
Phenol-d5	*53*		*25 - 130*
2,4,6-Tribromophenol	*90*		*31 - 141*
2-Fluorophenol	*51*		*25 - 130*
2-Fluorobiphenyl	*65*		*38 - 130*
Nitrobenzene-d5	*58*		*39 - 130*
Terphenyl-d14	*78*		*10 - 143*

Lab Sample ID: MB 680-195498/11-A
Matrix: Water
Analysis Batch: 195748

Client Sample ID: MB 680-195498/11-A
Prep Type: Total/NA
Prep Batch: 195498

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	10	U	10		ug/L		02/28/11 14:49	03/02/11 14:40	1
2-Chlorophenol	10	U	10		ug/L		02/28/11 14:49	03/02/11 14:40	1

Surrogate	*MB % Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d5	*63*		*25 - 130*	*02/28/11 14:49*	*03/02/11 14:40*	*1*
2,4,6-Tribromophenol	*87*		*31 - 141*	*02/28/11 14:49*	*03/02/11 14:40*	*1*
2-Fluorophenol	*66*		*25 - 130*	*02/28/11 14:49*	*03/02/11 14:40*	*1*
2-Fluorobiphenyl	*71*		*38 - 130*	*02/28/11 14:49*	*03/02/11 14:40*	*1*
Nitrobenzene-d5	*62*		*39 - 130*	*02/28/11 14:49*	*03/02/11 14:40*	*1*
Terphenyl-d14	*89*		*10 - 143*	*02/28/11 14:49*	*03/02/11 14:40*	*1*

Lab Sample ID: LCS 680-195498/12-A
Matrix: Water
Analysis Batch: 195748

Client Sample ID: LCS 680-195498/12-A
Prep Type: Total/NA
Prep Batch: 195498

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
1,2,4-Trichlorobenzene	100	78.1		ug/L		78	42 - 130
2-Chlorophenol	100	73.5		ug/L		74	57 - 130

Surrogate	*LCS % Recovery*	*LCS Qualifier*	*Limits*
Phenol-d5	*63*		*25 - 130*
2,4,6-Tribromophenol	*93*		*31 - 141*
2-Fluorophenol	*66*		*25 - 130*
2-Fluorobiphenyl	*79*		*38 - 130*
Nitrobenzene-d5	*68*		*39 - 130*
Terphenyl-d14	*64*		*10 - 143*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-195395/5
Matrix: Water
Analysis Batch: 195395

Client Sample ID: MB 680-195395/5
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			02/25/11 11:22	1
Ethylene	1.0	U	1.0		ug/L			02/25/11 11:22	1
Methane	0.58	U	0.58		ug/L			02/25/11 11:22	1

Lab Sample ID: LCS 680-195395/3
Matrix: Water
Analysis Batch: 195395

Client Sample ID: LCS 680-195395/3
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Ethane	282	289		ug/L		102	75 - 125
Ethylene	271	268		ug/L		99	75 - 125
Methane	153	151		ug/L		99	75 - 125

Lab Sample ID: LCSD 680-195395/4
Matrix: Water
Analysis Batch: 195395

Client Sample ID: LCSD 680-195395/4
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Ethane	282	267		ug/L		94	75 - 125	8	30
Ethylene	271	250		ug/L		92	75 - 125	7	30
Methane	153	139		ug/L		91	75 - 125	8	30

Lab Sample ID: MB 680-195399/5
Matrix: Water
Analysis Batch: 195399

Client Sample ID: MB 680-195399/5
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	0.58	U	0.58		ug/L			02/25/11 11:22	1

Lab Sample ID: LCS 680-195399/3
Matrix: Water
Analysis Batch: 195399

Client Sample ID: LCS 680-195399/3
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Methane	1910	1780		ug/L		93	75 - 125

Lab Sample ID: LCSD 680-195399/4
Matrix: Water
Analysis Batch: 195399

Client Sample ID: LCSD 680-195399/4
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Methane	1910	1980		ug/L		104	75 - 125	11	30

Lab Sample ID: MB 680-195409/9
Matrix: Water
Analysis Batch: 195409

Client Sample ID: MB 680-195409/9
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	0.58	U	0.58		ug/L			02/24/11 13:38	1

4/11/11

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

Lab Sample ID: LCS 680-195409/7
Matrix: Water
Analysis Batch: 195409

Client Sample ID: LCS 680-195409/7
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Methane	1910	1720		ug/L		90	75 - 125

Lab Sample ID: LCSD 680-195409/8
Matrix: Water
Analysis Batch: 195409

Client Sample ID: LCSD 680-195409/8
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Methane	1910	1800		ug/L		94	75 - 125	4	30

Lab Sample ID: MB 680-195410/20
Matrix: Water
Analysis Batch: 195410

Client Sample ID: MB 680-195410/20
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			02/24/11 13:38	1
Ethylene	1.0	U	1.0		ug/L			02/24/11 13:38	1
Methane	0.58	U	0.58		ug/L			02/24/11 13:38	1

Lab Sample ID: LCS 680-195410/18
Matrix: Water
Analysis Batch: 195410

Client Sample ID: LCS 680-195410/18
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Ethane	282	274		ug/L		97	75 - 125
Ethylene	271	256		ug/L		95	75 - 125
Methane	153	143		ug/L		94	75 - 125

Lab Sample ID: LCSD 680-195410/19
Matrix: Water
Analysis Batch: 195410

Client Sample ID: LCSD 680-195410/19
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Ethane	282	270		ug/L		96	75 - 125	2	30
Ethylene	271	252		ug/L		93	75 - 125	2	30
Methane	153	142		ug/L		93	75 - 125	1	30

Lab Sample ID: MB 680-195877/24
Matrix: Water
Analysis Batch: 195877

Client Sample ID: MB 680-195877/24
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			03/02/11 12:42	1
Ethylene	1.0	U	1.0		ug/L			03/02/11 12:42	1
Methane	0.58	U	0.58		ug/L			03/02/11 12:42	1

Lab Sample ID: LCS 680-195877/22
Matrix: Water
Analysis Batch: 195877

Client Sample ID: LCS 680-195877/22
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Ethane	282	255		ug/L		90	75 - 125

4/11/11

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

Lab Sample ID: LCS 680-195877/22
Matrix: Water
Analysis Batch: 195877

Client Sample ID: LCS 680-195877/22
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Ethylene	271	240		ug/L		89	75 - 125
Methane	153	133		ug/L		87	75 - 125

Lab Sample ID: LCSD 680-195877/23
Matrix: Water
Analysis Batch: 195877

Client Sample ID: LCSD 680-195877/23
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Ethane	282	284		ug/L		101	75 - 125	11	30
Ethylene	271	266		ug/L		98	75 - 125	10	30
Methane	153	149		ug/L		97	75 - 125	11	30

Lab Sample ID: MB 680-195878/18
Matrix: Water
Analysis Batch: 195878

Client Sample ID: MB 680-195878/18
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	0.58	U	0.58		ug/L			03/02/11 12:42	1

Lab Sample ID: LCS 680-195878/16
Matrix: Water
Analysis Batch: 195878

Client Sample ID: LCS 680-195878/16
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Methane	1910	1690		ug/L		88	75 - 125

Lab Sample ID: LCSD 680-195878/17
Matrix: Water
Analysis Batch: 195878

Client Sample ID: LCSD 680-195878/17
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Methane	1910	1860		ug/L		98	75 - 125	10	30

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 680-195235/13-A
Matrix: Water
Analysis Batch: 195623

Client Sample ID: MB 680-195235/13-A
Prep Type: Total Recoverable
Prep Batch: 195235

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.050	U	0.050		mg/L		02/24/11 10:39	03/01/11 01:52	1
Iron, Dissolved	0.050	U	0.050		mg/L		02/24/11 10:39	03/01/11 01:52	1
Manganese	0.010	U	0.010		mg/L		02/24/11 10:39	03/01/11 01:52	1
Manganese, Dissolved	0.010	U	0.010		mg/L		02/24/11 10:39	03/01/11 01:52	1

Lab Sample ID: LCS 680-195235/12-A
Matrix: Water
Analysis Batch: 195623

Client Sample ID: LCS 680-195235/12-A
Prep Type: Total Recoverable
Prep Batch: 195235

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Iron	1.00	1.08		mg/L		108	75 - 125

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCS 680-195235/12-A
Matrix: Water
Analysis Batch: 195623

Client Sample ID: LCS 680-195235/12-A
Prep Type: Total Recoverable
Prep Batch: 195235

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Iron, Dissolved	1.00	1.08		mg/L		108	75 - 125
Manganese	0.500	0.534		mg/L		107	75 - 125
Manganese, Dissolved	0.500	0.534		mg/L		107	75 - 125

Lab Sample ID: 680-65833-1 MS
Matrix: Water
Analysis Batch: 195623

Client Sample ID: BSA-MW-04D-0211
Prep Type: Total Recoverable
Prep Batch: 195235

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	% Rec	% Rec. Limits
Iron	9.2		1.00	10.1	4	mg/L		91	75 - 125
Iron, Dissolved	9.2		1.00	10.1	4	mg/L		91	75 - 125
Manganese	0.68		0.500	1.21		mg/L		107	75 - 125
Manganese, Dissolved	0.68		0.500	1.21		mg/L		107	75 - 125

Lab Sample ID: 680-65833-1 MSD
Matrix: Water
Analysis Batch: 195623

Client Sample ID: BSA-MW-04D-0211
Prep Type: Total Recoverable
Prep Batch: 195235

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Iron	9.2		1.00	9.79	4	mg/L		64	75 - 125	3	20
Iron, Dissolved	9.2		1.00	9.79	4	mg/L		64	75 - 125	3	20
Manganese	0.68		0.500	1.20		mg/L		104	75 - 125	1	20
Manganese, Dissolved	0.68		0.500	1.20		mg/L		104	75 - 125	1	20

Lab Sample ID: MB 680-195759/24-A
Matrix: Water
Analysis Batch: 196312

Client Sample ID: MB 680-195759/24-A
Prep Type: Total Recoverable
Prep Batch: 195759

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.050	U	0.050		mg/L		03/02/11 12:50	03/07/11 19:17	1
Iron, Dissolved	0.050	U	0.050		mg/L		03/02/11 12:50	03/07/11 19:17	1
Manganese	0.010	U	0.010		mg/L		03/02/11 12:50	03/07/11 19:17	1
Manganese, Dissolved	0.010	U	0.010		mg/L		03/02/11 12:50	03/07/11 19:17	1

Lab Sample ID: LCS 680-195759/23-A
Matrix: Water
Analysis Batch: 196312

Client Sample ID: LCS 680-195759/23-A
Prep Type: Total Recoverable
Prep Batch: 195759

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Iron	1.00	1.01		mg/L		101	75 - 125
Iron, Dissolved	1.00	1.01		mg/L		101	75 - 125
Manganese	0.500	0.493		mg/L		99	75 - 125
Manganese, Dissolved	0.500	0.493		mg/L		99	75 - 125

Lab Sample ID: MB 680-196175/1-A
Matrix: Water
Analysis Batch: 196679

Client Sample ID: MB 680-196175/1-A
Prep Type: Total Recoverable
Prep Batch: 196175

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	0.050	U	0.050		mg/L		03/07/11 11:12	03/09/11 19:02	1
Manganese, Dissolved	0.010	U	0.010		mg/L		03/07/11 11:12	03/09/11 19:02	1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCS 680-196175/2-A
Matrix: Water
Analysis Batch: 196679

Client Sample ID: LCS 680-196175/2-A
Prep Type: Total Recoverable
Prep Batch: 196175

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Iron, Dissolved	1.00	1.04		mg/L		104	75 - 125
Manganese, Dissolved	0.500	0.520		mg/L		104	75 - 125

Method: 310.1 - Alkalinity

Lab Sample ID: MB 680-195045/2
Matrix: Water
Analysis Batch: 195045

Client Sample ID: MB 680-195045/2
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0		mg/L			02/22/11 17:10	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			02/22/11 17:10	1

Lab Sample ID: LCS 680-195045/3
Matrix: Water
Analysis Batch: 195045

Client Sample ID: LCS 680-195045/3
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Alkalinity	352	333		mg/L		95	80 - 120

Lab Sample ID: LCSD 680-195045/17
Matrix: Water
Analysis Batch: 195045

Client Sample ID: LCSD 680-195045/17
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Alkalinity	352	325		mg/L		92	80 - 120	3	30

Lab Sample ID: MB 680-195440/3
Matrix: Water
Analysis Batch: 195440

Client Sample ID: MB 680-195440/3
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0		mg/L			02/23/11 18:44	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			02/23/11 18:44	1

Lab Sample ID: LCS 680-195440/4
Matrix: Water
Analysis Batch: 195440

Client Sample ID: LCS 680-195440/4
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Alkalinity	352	327		mg/L		93	80 - 120

Lab Sample ID: LCSD 680-195440/24
Matrix: Water
Analysis Batch: 195440

Client Sample ID: LCSD 680-195440/24
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Alkalinity	352	294		mg/L		83	80 - 120	11	30

Method: 310.1 - Alkalinity (Continued)

Lab Sample ID: 680-65862-8 DU
Matrix: Water
Analysis Batch: 195440

Client Sample ID: CPA-MW-3D-0211
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	500		482		mg/L		3	30
Carbon Dioxide, Free	30		25.8		mg/L		15	30

Method: 325.2 - Chloride

Lab Sample ID: MB 680-195597/1
Matrix: Water
Analysis Batch: 195597

Client Sample ID: MB 680-195597/1
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0		mg/L			02/28/11 16:36	1

Lab Sample ID: LCS 680-195597/2
Matrix: Water
Analysis Batch: 195597

Client Sample ID: LCS 680-195597/2
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Chloride	50.0	50.5		mg/L		101	85 - 115

Lab Sample ID: 680-65862-8 DU
Matrix: Water
Analysis Batch: 195597

Client Sample ID: CPA-MW-3D-0211
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	120		121		mg/L		1	30

Lab Sample ID: MB 680-196550/2
Matrix: Water
Analysis Batch: 196550

Client Sample ID: MB 680-196550/2
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			03/09/11 13:33	1

Lab Sample ID: LCS 680-196550/1
Matrix: Water
Analysis Batch: 196550

Client Sample ID: LCS 680-196550/1
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Chloride	50.0	50.6		mg/L		101	85 - 115

Lab Sample ID: 680-65833-1 MS
Matrix: Water
Analysis Batch: 196550

Client Sample ID: BSA-MW-04D-0211
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	% Rec	% Rec. Limits
Chloride	110		50.0	152	F	mg/L		76	85 - 115

Method: 325.2 - Chloride (Continued)

Lab Sample ID: 680-65833-1 MSD
Matrix: Water
Analysis Batch: 196550

Client Sample ID: BSA-MW-04D-0211
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Chloride	110		50.0	153	F	mg/L		79	85 - 115	1	30

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-195156/1
Matrix: Water
Analysis Batch: 195156

Client Sample ID: MB 680-195156/1
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			02/22/11 15:43	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			02/22/11 15:43	1
Nitrite as N	0.050	U	0.050		mg/L			02/22/11 15:43	1

Lab Sample ID: LCS 680-195156/2
Matrix: Water
Analysis Batch: 195156

Client Sample ID: LCS 680-195156/2
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Nitrate as N	0.500	0.513		mg/L		103	
Nitrate Nitrite as N	1.00	1.00		mg/L		100	90 - 110
Nitrite as N	0.500	0.491		mg/L		98	90 - 110

Lab Sample ID: 680-65833-1 MS
Matrix: Water
Analysis Batch: 195156

Client Sample ID: BSA-MW-04D-0211
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	0.507		mg/L		101	
Nitrate Nitrite as N	0.050		1.00	1.01		mg/L		101	90 - 110
Nitrite as N	0.050		0.500	0.498		mg/L		100	90 - 110

Lab Sample ID: 680-65833-1 MSD
Matrix: Water
Analysis Batch: 195156

Client Sample ID: BSA-MW-04D-0211
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	0.503		mg/L		101		1	
Nitrate Nitrite as N	0.050		1.00	1.00		mg/L		100	90 - 110	0	10
Nitrite as N	0.050		0.500	0.499		mg/L		100	90 - 110	0	10

Lab Sample ID: MB 680-195182/1
Matrix: Water
Analysis Batch: 195182

Client Sample ID: MB 680-195182/1
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			02/23/11 16:39	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			02/23/11 16:39	1
Nitrite as N	0.050	U	0.050		mg/L			02/23/11 16:39	1

Ale
4/11/11

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

Lab Sample ID: LCS 680-195182/2
Matrix: Water
Analysis Batch: 195182

Client Sample ID: LCS 680-195182/2
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Nitrate as N	0.500	0.508		mg/L		102	
Nitrate Nitrite as N	1.00	1.00		mg/L		100	90 - 110
Nitrite as N	0.500	0.493		mg/L		99	90 - 110

Lab Sample ID: MB 680-195454/1
Matrix: Water
Analysis Batch: 195454

Client Sample ID: MB 680-195454/1
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			02/24/11 16:26	1
Nitrate Nitrite as N	0.050	U	0.050		mg/L			02/24/11 16:26	1
Nitrite as N	0.050	U	0.050		mg/L			02/24/11 16:26	1

Lab Sample ID: LCS 680-195454/2
Matrix: Water
Analysis Batch: 195454

Client Sample ID: LCS 680-195454/2
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Nitrate as N	0.500	0.511		mg/L		102	
Nitrate Nitrite as N	1.00	0.997		mg/L		100	90 - 110
Nitrite as N	0.500	0.487		mg/L		97	90 - 110

Method: 375.4 - Sulfate

Lab Sample ID: MB 680-197076/1
Matrix: Water
Analysis Batch: 197076

Client Sample ID: MB 680-197076/1
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			03/11/11 13:14	1

Lab Sample ID: LCS 680-197076/2
Matrix: Water
Analysis Batch: 197076

Client Sample ID: LCS 680-197076/2
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Sulfate	20.0	18.6		mg/L		93	75 - 125

Lab Sample ID: 680-65833-1 MS
Matrix: Water
Analysis Batch: 197076

Client Sample ID: BSA-MW-04D-0211
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	% Rec	% Rec. Limits
Sulfate	130		20.0	139	4	mg/L		64	75 - 125

Lab Sample ID: 680-65833-1 MSD
Matrix: Water
Analysis Batch: 197076

Client Sample ID: BSA-MW-04D-0211
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Sulfate	130		20.0	149	4	mg/L		110	75 - 125	6	30

4/14/11

Method: 375.4 - Sulfate (Continued)

Lab Sample ID: 680-65862-6 DU
Matrix: Water
Analysis Batch: 197076

Client Sample ID: BSA-MW-2D-0211
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sulfate	5.0	U	5.0	U	mg/L		NC	30

Method: 415.1 - TOC

Lab Sample ID: MB 680-196992/28
Matrix: Water
Analysis Batch: 196992

Client Sample ID: MB 680-196992/28
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			03/11/11 00:20	1

Lab Sample ID: LCS 680-196992/31
Matrix: Water
Analysis Batch: 196992

Client Sample ID: LCS 680-196992/31
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Total Organic Carbon	20.0	20.5		mg/L		102	80 - 120

Lab Sample ID: MB 680-197065/1
Matrix: Water
Analysis Batch: 197065

Client Sample ID: MB 680-197065/1
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			03/13/11 16:13	1

Lab Sample ID: LCS 680-197065/2
Matrix: Water
Analysis Batch: 197065

Client Sample ID: LCS 680-197065/2
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Dissolved Organic Carbon	20.0	20.2		mg/L		101	80 - 120

4/11/11

GC/MS VOA

Analysis Batch: 195578

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-65833-7	Trip Blank	Total/NA	Water	8260B	
680-65833-5	CPA-MW-05D-0211	Total/NA	Water	8260B	
LCS 680-195578/5	LCS 680-195578/5	Total/NA	Water	8260B	
LCSD 680-195578/6	LCSD 680-195578/6	Total/NA	Water	8260B	
MB 680-195578/8	MB 680-195578/8	Total/NA	Water	8260B	

Analysis Batch: 195696

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-195696/10	MB 680-195696/10	Total/NA	Water	8260B	
680-65833-5 MSD	CPA-MW-05D-0211	Total/NA	Water	8260B	
680-65833-5 MS	CPA-MW-05D-0211	Total/NA	Water	8260B	
LCS 680-195696/7	LCS 680-195696/7	Total/NA	Water	8260B	
LCSD 680-195696/8	LCSD 680-195696/8	Total/NA	Water	8260B	

Analysis Batch: 195845

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-195845/17	LCS 680-195845/17	Total/NA	Water	8260B	
LCSD 680-195845/18	LCSD 680-195845/18	Total/NA	Water	8260B	
MB 680-195845/20	MB 680-195845/20	Total/NA	Water	8260B	
680-65902-8	Trip Blank	Total/NA	Water	8260B	

Analysis Batch: 195909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-65862-5	BSA-MW-3D-EB	Total/NA	Water	8260B	
680-65862-3	BSA-MW-3D-0211	Total/NA	Water	8260B	
680-65862-8	CPA-MW-3D-0211	Total/NA	Water	8260B	
680-65862-6	BSA-MW-2D-0211	Total/NA	Water	8260B	
LCSD 680-195909/20	LCSD 680-195909/20	Total/NA	Water	8260B	
LCS 680-195909/5	LCS 680-195909/5	Total/NA	Water	8260B	
MB 680-195909/7	MB 680-195909/7	Total/NA	Water	8260B	
680-65862-10	Trip Blank	Total/NA	Water	8260B	

Analysis Batch: 196086

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-65862-1	CPA-MW-4D-0211	Total/NA	Water	8260B	
680-65902-3	CPA-MW-2D-0211	Total/NA	Water	8260B	
680-65902-5	CPA-MW-2D-0211-AD	Total/NA	Water	8260B	
680-65902-6	CPA-MW-1D-0211	Total/NA	Water	8260B	
680-65902-1	BSA-MW-1S-0211	Total/NA	Water	8260B	
LCS 680-196086/6	LCS 680-196086/6	Total/NA	Water	8260B	
LCSD 680-196086/7	LCSD 680-196086/7	Total/NA	Water	8260B	
MB 680-196086/9	MB 680-196086/9	Total/NA	Water	8260B	

Analysis Batch: 197370

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-197370/17	LCS 680-197370/17	Total/NA	Water	8260B	
LCSD 680-197370/18	LCSD 680-197370/18	Total/NA	Water	8260B	
MB 680-197370/20	MB 680-197370/20	Total/NA	Water	8260B	
680-65833-1	BSA-MW-04D-0211	Total/NA	Water	8260B	
680-65833-3	BSA-MW-05D-0211	Total/NA	Water	8260B	

4/11/11

GC/MS Semi VOA

Prep Batch: 195096

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-65833-1	BSA-MW-04D-0211	Total/NA	Water	3520C	
680-65833-5 MSD	CPA-MW-05D-0211	Total/NA	Water	3520C	
680-65833-5	CPA-MW-05D-0211	Total/NA	Water	3520C	
680-65833-3	BSA-MW-05D-0211	Total/NA	Water	3520C	
MB 680-195096/6-A	MB 680-195096/6-A	Total/NA	Water	3520C	
LCS 680-195096/7-A	LCS 680-195096/7-A	Total/NA	Water	3520C	
680-65833-5 MS	CPA-MW-05D-0211	Total/NA	Water	3520C	

Prep Batch: 195211

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-65862-1	CPA-MW-4D-0211	Total/NA	Water	3520C	
680-65862-1 - DL	CPA-MW-4D-0211	Total/NA	Water	3520C	
680-65862-3	BSA-MW-3D-0211	Total/NA	Water	3520C	
680-65862-5	BSA-MW-3D-EB	Total/NA	Water	3520C	
680-65862-6	BSA-MW-2D-0211	Total/NA	Water	3520C	
680-65862-8	CPA-MW-3D-0211	Total/NA	Water	3520C	
MB 680-195211/6-A	MB 680-195211/6-A	Total/NA	Water	3520C	
LCS 680-195211/7-A	LCS 680-195211/7-A	Total/NA	Water	3520C	
680-65862-8 MS	CPA-MW-3D-0211	Total/NA	Water	3520C	
680-65862-8 MSD	CPA-MW-3D-0211	Total/NA	Water	3520C	

Prep Batch: 195498

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-65902-1	BSA-MW-1S-0211	Total/NA	Water	3520C	
MB 680-195498/11-A	MB 680-195498/11-A	Total/NA	Water	3520C	
LCS 680-195498/12-A	LCS 680-195498/12-A	Total/NA	Water	3520C	
680-65902-3	CPA-MW-2D-0211	Total/NA	Water	3520C	
680-65902-5	CPA-MW-2D-0211-AD	Total/NA	Water	3520C	
680-65902-6 - DL	CPA-MW-1D-0211	Total/NA	Water	3520C	
680-65902-6	CPA-MW-1D-0211	Total/NA	Water	3520C	

Analysis Batch: 195748

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-195498/11-A	MB 680-195498/11-A	Total/NA	Water	8270C	195498
LCS 680-195498/12-A	LCS 680-195498/12-A	Total/NA	Water	8270C	195498

Analysis Batch: 196003

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-65902-1	BSA-MW-1S-0211	Total/NA	Water	8270C	195498
680-65902-3	CPA-MW-2D-0211	Total/NA	Water	8270C	195498
680-65902-5	CPA-MW-2D-0211-AD	Total/NA	Water	8270C	195498

Analysis Batch: 196157

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-65862-8	CPA-MW-3D-0211	Total/NA	Water	8270C	195211
LCS 680-195211/7-A	LCS 680-195211/7-A	Total/NA	Water	8270C	195211
680-65862-8 MS	CPA-MW-3D-0211	Total/NA	Water	8270C	195211
680-65862-8 MSD	CPA-MW-3D-0211	Total/NA	Water	8270C	195211
MB 680-195211/6-A	MB 680-195211/6-A	Total/NA	Water	8270C	195211
680-65862-1	CPA-MW-4D-0211	Total/NA	Water	8270C	195211
680-65862-3	BSA-MW-3D-0211	Total/NA	Water	8270C	195211
680-65862-5	BSA-MW-3D-EB	Total/NA	Water	8270C	195211

AG
4/11/11

GC/MS Semi VOA (Continued)

Analysis Batch: 196157 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-65862-6	BSA-MW-2D-0211	Total/NA	Water	8270C	195211

Analysis Batch: 196216

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-195096/7-A	LCS 680-195096/7-A	Total/NA	Water	8270C	195096
MB 680-195096/6-A	MB 680-195096/6-A	Total/NA	Water	8270C	195096

Analysis Batch: 196360

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-65862-1 - DL	CPA-MW-4D-0211	Total/NA	Water	8270C	195211
680-65902-6 - DL	CPA-MW-1D-0211	Total/NA	Water	8270C	195498

Analysis Batch: 196473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-65902-6	CPA-MW-1D-0211	Total/NA	Water	8270C	195498
680-65833-3	BSA-MW-05D-0211	Total/NA	Water	8270C	195096
680-65833-5	CPA-MW-05D-0211	Total/NA	Water	8270C	195096
680-65833-5 MS	CPA-MW-05D-0211	Total/NA	Water	8270C	195096
680-65833-5 MSD	CPA-MW-05D-0211	Total/NA	Water	8270C	195096
680-65833-1	BSA-MW-04D-0211	Total/NA	Water	8270C	195096

GC VOA

Analysis Batch: 195395

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-65862-1	CPA-MW-4D-0211	Total/NA	Water	RSK-175	
680-65862-3	BSA-MW-3D-0211	Total/NA	Water	RSK-175	
680-65862-6	BSA-MW-2D-0211	Total/NA	Water	RSK-175	
680-65862-8	CPA-MW-3D-0211	Total/NA	Water	RSK-175	
LCS 680-195395/3	LCS 680-195395/3	Total/NA	Water	RSK-175	
LCSD 680-195395/4	LCSD 680-195395/4	Total/NA	Water	RSK-175	
MB 680-195395/5	MB 680-195395/5	Total/NA	Water	RSK-175	

Analysis Batch: 195399

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-65862-8	CPA-MW-3D-0211	Total/NA	Water	RSK-175	
LCS 680-195399/3	LCS 680-195399/3	Total/NA	Water	RSK-175	
LCSD 680-195399/4	LCSD 680-195399/4	Total/NA	Water	RSK-175	
MB 680-195399/5	MB 680-195399/5	Total/NA	Water	RSK-175	
680-65862-1	CPA-MW-4D-0211	Total/NA	Water	RSK-175	
680-65862-3	BSA-MW-3D-0211	Total/NA	Water	RSK-175	
680-65862-6	BSA-MW-2D-0211	Total/NA	Water	RSK-175	

Analysis Batch: 195409

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-65833-3	BSA-MW-05D-0211	Total/NA	Water	RSK-175	
LCS 680-195409/7	LCS 680-195409/7	Total/NA	Water	RSK-175	
LCSD 680-195409/8	LCSD 680-195409/8	Total/NA	Water	RSK-175	
MB 680-195409/9	MB 680-195409/9	Total/NA	Water	RSK-175	

4/11/11

GC VOA (Continued)

Analysis Batch: 195410

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-65833-1	BSA-MW-04D-0211	Total/NA	Water	RSK-175	
680-65833-3	BSA-MW-05D-0211	Total/NA	Water	RSK-175	
680-65833-5	CPA-MW-05D-0211	Total/NA	Water	RSK-175	
LCS 680-195410/18	LCS 680-195410/18	Total/NA	Water	RSK-175	
LCSD 680-195410/19	LCSD 680-195410/19	Total/NA	Water	RSK-175	
MB 680-195410/20	MB 680-195410/20	Total/NA	Water	RSK-175	

Analysis Batch: 195877

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-65902-1	BSA-MW-1S-0211	Total/NA	Water	RSK-175	
680-65902-3	CPA-MW-2D-0211	Total/NA	Water	RSK-175	
680-65902-6	CPA-MW-1D-0211	Total/NA	Water	RSK-175	
LCS 680-195877/22	LCS 680-195877/22	Total/NA	Water	RSK-175	
LCSD 680-195877/23	LCSD 680-195877/23	Total/NA	Water	RSK-175	
MB 680-195877/24	MB 680-195877/24	Total/NA	Water	RSK-175	

Analysis Batch: 195878

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-65902-1	BSA-MW-1S-0211	Total/NA	Water	RSK-175	
680-65902-3	CPA-MW-2D-0211	Total/NA	Water	RSK-175	
680-65902-6	CPA-MW-1D-0211	Total/NA	Water	RSK-175	
LCS 680-195878/16	LCS 680-195878/16	Total/NA	Water	RSK-175	
LCSD 680-195878/17	LCSD 680-195878/17	Total/NA	Water	RSK-175	
MB 680-195878/18	MB 680-195878/18	Total/NA	Water	RSK-175	

Metals

Prep Batch: 195235

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-65833-1 MS	BSA-MW-04D-0211	Total Recoverable	Water	3005A	
680-65833-1 MSD	BSA-MW-04D-0211	Total Recoverable	Water	3005A	
LCS 680-195235/12-A	LCS 680-195235/12-A	Total Recoverable	Water	3005A	
MB 680-195235/13-A	MB 680-195235/13-A	Total Recoverable	Water	3005A	
680-65833-1	BSA-MW-04D-0211	Total Recoverable	Water	3005A	
680-65833-2	BSA-MW-04D-F(0.2)-0211	Dissolved	Water	3005A	
680-65833-3	BSA-MW-05D-0211	Total Recoverable	Water	3005A	
680-65833-4	BSA-MW-05D-F(0.2)0211	Dissolved	Water	3005A	
680-65833-5	CPA-MW-05D-0211	Total Recoverable	Water	3005A	
680-65833-6	CPA-MW-05D-F(0.2)-0211	Dissolved	Water	3005A	

Analysis Batch: 195623

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-195235/13-A	MB 680-195235/13-A	Total Recoverable	Water	6010B	195235
LCS 680-195235/12-A	LCS 680-195235/12-A	Total Recoverable	Water	6010B	195235
680-65833-1	BSA-MW-04D-0211	Total Recoverable	Water	6010B	195235
680-65833-1 MS	BSA-MW-04D-0211	Total Recoverable	Water	6010B	195235
680-65833-1 MSD	BSA-MW-04D-0211	Total Recoverable	Water	6010B	195235
680-65833-2	BSA-MW-04D-F(0.2)-0211	Dissolved	Water	6010B	195235
680-65833-3	BSA-MW-05D-0211	Total Recoverable	Water	6010B	195235
680-65833-4	BSA-MW-05D-F(0.2)0211	Dissolved	Water	6010B	195235
680-65833-5	CPA-MW-05D-0211	Total Recoverable	Water	6010B	195235
680-65833-6	CPA-MW-05D-F(0.2)-0211	Dissolved	Water	6010B	195235

AG
4/11/11

Metals (Continued)

Prep Batch: 195759

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-65862-6	BSA-MW-2D-0211	Total Recoverable	Water	3005A	
680-65862-7	BSA-MW-2D-0211-F(0.2)	Dissolved	Water	3005A	
680-65862-8	CPA-MW-3D-0211	Total Recoverable	Water	3005A	
680-65862-9	CPA-MW-3D-0211-F(0.2)	Dissolved	Water	3005A	
680-65902-1	BSA-MW-1S-0211	Total Recoverable	Water	3005A	
680-65902-3	CPA-MW-2D-0211	Total Recoverable	Water	3005A	
680-65902-4	CPA-MW-2D-0211-F(0-.2)	Dissolved	Water	3005A	
680-65902-6	CPA-MW-1D-0211	Total Recoverable	Water	3005A	
LCS 680-195759/23-A	LCS 680-195759/23-A	Total Recoverable	Water	3005A	
MB 680-195759/24-A	MB 680-195759/24-A	Total Recoverable	Water	3005A	
680-65862-1	CPA-MW-4D-0211	Total Recoverable	Water	3005A	
680-65862-2	CPA-MW-4D-0211-F(0.2)	Dissolved	Water	3005A	
680-65862-3	BSA-MW-3D-0211	Total Recoverable	Water	3005A	
680-65862-4	BSA-MW-3D-0211-F(0.2)	Dissolved	Water	3005A	

Prep Batch: 196175

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-196175/1-A	MB 680-196175/1-A	Total Recoverable	Water	3005A	
LCS 680-196175/2-A	LCS 680-196175/2-A	Total Recoverable	Water	3005A	
680-65902-2	BSA-MW-1S-0211-F(0.2)	Dissolved	Water	3005A	
680-65902-7	CPA-MW-1D-0211-F(0.2)	Dissolved	Water	3005A	

Analysis Batch: 196312

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-195759/24-A	MB 680-195759/24-A	Total Recoverable	Water	6010B	195759
LCS 680-195759/23-A	LCS 680-195759/23-A	Total Recoverable	Water	6010B	195759
680-65862-1	CPA-MW-4D-0211	Total Recoverable	Water	6010B	195759
680-65862-2	CPA-MW-4D-0211-F(0.2)	Dissolved	Water	6010B	195759
680-65862-3	BSA-MW-3D-0211	Total Recoverable	Water	6010B	195759
680-65862-4	BSA-MW-3D-0211-F(0.2)	Dissolved	Water	6010B	195759
680-65862-6	BSA-MW-2D-0211	Total Recoverable	Water	6010B	195759
680-65862-7	BSA-MW-2D-0211-F(0.2)	Dissolved	Water	6010B	195759
680-65862-8	CPA-MW-3D-0211	Total Recoverable	Water	6010B	195759
680-65862-9	CPA-MW-3D-0211-F(0.2)	Dissolved	Water	6010B	195759
680-65902-1	BSA-MW-1S-0211	Total Recoverable	Water	6010B	195759
680-65902-3	CPA-MW-2D-0211	Total Recoverable	Water	6010B	195759
680-65902-4	CPA-MW-2D-0211-F(0-.2)	Dissolved	Water	6010B	195759
680-65902-6	CPA-MW-1D-0211	Total Recoverable	Water	6010B	195759

Analysis Batch: 196679

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-196175/1-A	MB 680-196175/1-A	Total Recoverable	Water	6010B	196175
LCS 680-196175/2-A	LCS 680-196175/2-A	Total Recoverable	Water	6010B	196175
680-65902-2	BSA-MW-1S-0211-F(0.2)	Dissolved	Water	6010B	196175
680-65902-7	CPA-MW-1D-0211-F(0.2)	Dissolved	Water	6010B	196175

General Chemistry

Analysis Batch: 195045

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-65833-1	BSA-MW-04D-0211	Total/NA	Water	310.1	
680-65833-3	BSA-MW-05D-0211	Total/NA	Water	310.1	

4/11/11

General Chemistry (Continued)

Analysis Batch: 195045 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-65833-5	CPA-MW-05D-0211	Total/NA	Water	310.1	
LCSD 680-195045/17	LCSD 680-195045/17	Total/NA	Water	310.1	
MB 680-195045/2	MB 680-195045/2	Total/NA	Water	310.1	
LCS 680-195045/3	LCS 680-195045/3	Total/NA	Water	310.1	

Analysis Batch: 195156

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-195156/1	MB 680-195156/1	Total/NA	Water	353.2	
LCS 680-195156/2	LCS 680-195156/2	Total/NA	Water	353.2	
680-65833-1	BSA-MW-04D-0211	Total/NA	Water	353.2	
680-65833-1 MS	BSA-MW-04D-0211	Total/NA	Water	353.2	
680-65833-1 MSD	BSA-MW-04D-0211	Total/NA	Water	353.2	
680-65833-3	BSA-MW-05D-0211	Total/NA	Water	353.2	
680-65833-5	CPA-MW-05D-0211	Total/NA	Water	353.2	

Analysis Batch: 195182

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-195182/1	MB 680-195182/1	Total/NA	Water	353.2	
680-65862-1	CPA-MW-4D-0211	Total/NA	Water	353.2	
LCS 680-195182/2	LCS 680-195182/2	Total/NA	Water	353.2	
680-65862-3	BSA-MW-3D-0211	Total/NA	Water	353.2	
680-65862-6	BSA-MW-2D-0211	Total/NA	Water	353.2	
680-65862-8	CPA-MW-3D-0211	Total/NA	Water	353.2	

Analysis Batch: 195440

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-65862-1	CPA-MW-4D-0211	Total/NA	Water	310.1	
680-65862-3	BSA-MW-3D-0211	Total/NA	Water	310.1	
680-65862-6	BSA-MW-2D-0211	Total/NA	Water	310.1	
680-65862-8	CPA-MW-3D-0211	Total/NA	Water	310.1	
680-65862-8 DU	CPA-MW-3D-0211	Total/NA	Water	310.1	
LCSD 680-195440/24	LCSD 680-195440/24	Total/NA	Water	310.1	
MB 680-195440/3	MB 680-195440/3	Total/NA	Water	310.1	
LCS 680-195440/4	LCS 680-195440/4	Total/NA	Water	310.1	

Analysis Batch: 195451

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-65902-1	BSA-MW-1S-0211	Total/NA	Water	310.1	
680-65902-3	CPA-MW-2D-0211	Total/NA	Water	310.1	
680-65902-6	CPA-MW-1D-0211	Total/NA	Water	310.1	

Analysis Batch: 195454

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-195454/1	MB 680-195454/1	Total/NA	Water	353.2	
680-65902-1	BSA-MW-1S-0211	Total/NA	Water	353.2	
LCS 680-195454/2	LCS 680-195454/2	Total/NA	Water	353.2	
680-65902-3	CPA-MW-2D-0211	Total/NA	Water	353.2	
680-65902-6	CPA-MW-1D-0211	Total/NA	Water	353.2	

Analysis Batch: 195597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-195597/1	MB 680-195597/1	Total/NA	Water	325.2	

AG
4/11/11

General Chemistry (Continued)

Analysis Batch: 195597 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-65862-3	BSA-MW-3D-0211	Total/NA	Water	325.2	
680-65862-8	CPA-MW-3D-0211	Total/NA	Water	325.2	
680-65862-8 DU	CPA-MW-3D-0211	Total/NA	Water	325.2	
680-65902-1	BSA-MW-1S-0211	Total/NA	Water	325.2	
680-65902-6	CPA-MW-1D-0211	Total/NA	Water	325.2	
680-65902-3	CPA-MW-2D-0211	Total/NA	Water	325.2	
LCS 680-195597/2	LCS 680-195597/2	Total/NA	Water	325.2	
680-65833-5	CPA-MW-05D-0211	Total/NA	Water	325.2	
680-65862-1	CPA-MW-4D-0211	Total/NA	Water	325.2	

Analysis Batch: 196550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-196550/1	LCS 680-196550/1	Total/NA	Water	325.2	
680-65833-1	BSA-MW-04D-0211	Total/NA	Water	325.2	
680-65833-3	BSA-MW-05D-0211	Total/NA	Water	325.2	
680-65862-6	BSA-MW-2D-0211	Total/NA	Water	325.2	
MB 680-196550/2	MB 680-196550/2	Total/NA	Water	325.2	
680-65833-1 MS	BSA-MW-04D-0211	Total/NA	Water	325.2	
680-65833-1 MSD	BSA-MW-04D-0211	Total/NA	Water	325.2	

Analysis Batch: 196992

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-196992/28	MB 680-196992/28	Total/NA	Water	415.1	
LCS 680-196992/31	LCS 680-196992/31	Total/NA	Water	415.1	
680-65833-1	BSA-MW-04D-0211	Total/NA	Water	415.1	
680-65833-3	BSA-MW-05D-0211	Total/NA	Water	415.1	
680-65833-5	CPA-MW-05D-0211	Total/NA	Water	415.1	
680-65862-1	CPA-MW-4D-0211	Total/NA	Water	415.1	
680-65862-3	BSA-MW-3D-0211	Total/NA	Water	415.1	
680-65862-6	BSA-MW-2D-0211	Total/NA	Water	415.1	
680-65862-8	CPA-MW-3D-0211	Total/NA	Water	415.1	
680-65902-1	BSA-MW-1S-0211	Total/NA	Water	415.1	
680-65902-3	CPA-MW-2D-0211	Total/NA	Water	415.1	
680-65902-6	CPA-MW-1D-0211	Total/NA	Water	415.1	

Analysis Batch: 197065

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-197065/1	MB 680-197065/1	Dissolved	Water	415.1	
680-65902-2	BSA-MW-1S-0211-F(0.2)	Dissolved	Water	415.1	
680-65902-4	CPA-MW-2D-0211-F(0-.2)	Dissolved	Water	415.1	
680-65902-7	CPA-MW-1D-0211-F(0.2)	Dissolved	Water	415.1	
LCS 680-197065/2	LCS 680-197065/2	Dissolved	Water	415.1	
680-65833-2	BSA-MW-04D-F(0.2)-0211	Dissolved	Water	415.1	
680-65833-4	BSA-MW-05D-F(0.2)0211	Dissolved	Water	415.1	
680-65833-6	CPA-MW-05D-F(0.2)-0211	Dissolved	Water	415.1	
680-65862-2	CPA-MW-4D-0211-F(0.2)	Dissolved	Water	415.1	
680-65862-4	BSA-MW-3D-0211-F(0.2)	Dissolved	Water	415.1	
680-65862-7	BSA-MW-2D-0211-F(0.2)	Dissolved	Water	415.1	
680-65862-9	CPA-MW-3D-0211-F(0.2)	Dissolved	Water	415.1	

AL
4/11/11

General Chemistry (Continued)

Analysis Batch: 197076

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-197076/1	MB 680-197076/1	Total/NA	Water	375.4	
680-65833-1	BSA-MW-04D-0211	Total/NA	Water	375.4	
680-65833-1 MS	BSA-MW-04D-0211	Total/NA	Water	375.4	
680-65833-1 MSD	BSA-MW-04D-0211	Total/NA	Water	375.4	
680-65862-3	BSA-MW-3D-0211	Total/NA	Water	375.4	
LCS 680-197076/2	LCS 680-197076/2	Total/NA	Water	375.4	
680-65833-3	BSA-MW-05D-0211	Total/NA	Water	375.4	
680-65833-5	CPA-MW-05D-0211	Total/NA	Water	375.4	
680-65862-1	CPA-MW-4D-0211	Total/NA	Water	375.4	
680-65862-6	BSA-MW-2D-0211	Total/NA	Water	375.4	
680-65862-6 DU	BSA-MW-2D-0211	Total/NA	Water	375.4	
680-65862-8	CPA-MW-3D-0211	Total/NA	Water	375.4	
680-65902-1	BSA-MW-1S-0211	Total/NA	Water	375.4	
680-65902-3	CPA-MW-2D-0211	Total/NA	Water	375.4	
680-65902-6	CPA-MW-1D-0211	Total/NA	Water	375.4	

AC
4/11/11

Client Sample ID: BSA-MW-04D-0211

Date Collected: 02/21/11 09:40
Date Received: 02/22/11 09:19

Lab Sample ID: 680-65833-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		20	197370	02/28/11 22:23	WJC	TestAmerica Savannah
Total/NA	Prep	3520C			195096	02/23/11 14:15	RBS	TestAmerica Savannah
Total/NA	Analysis	8270C		1	196473	03/09/11 12:30	CRH	TestAmerica Savannah
Total/NA	Analysis	RSK-175		1	195410	02/24/11 16:23	AJM	TestAmerica Savannah
Total Recoverable	Prep	3005A			195235	02/24/11 10:39	JPH	TestAmerica Savannah
Total Recoverable	Analysis	6010B		1	195623	03/01/11 02:03	BCB	TestAmerica Savannah
Total/NA	Analysis	310.1		1	195045	02/22/11 18:31	TR	TestAmerica Savannah
Total/NA	Analysis	353.2		1	195156	02/22/11 15:46	JR	TestAmerica Savannah
Total/NA	Analysis	325.2		2	196550	03/09/11 13:51	JR	TestAmerica Savannah
Total/NA	Analysis	415.1		1	196992	03/11/11 02:25	KB	TestAmerica Savannah
Total/NA	Analysis	375.4		10	197076	03/11/11 14:44	JR	TestAmerica Savannah

Client Sample ID: BSA-MW-04D-F(0.2)-0211

Date Collected: 02/21/11 09:40
Date Received: 02/22/11 09:19

Lab Sample ID: 680-65833-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			195235	02/24/11 10:39	JPH	TestAmerica Savannah
Dissolved	Analysis	6010B		1	195623	03/01/11 02:29	BCB	TestAmerica Savannah
Dissolved	Analysis	415.1		1	197065	03/13/11 16:13	KB	TestAmerica Savannah

Client Sample ID: BSA-MW-05D-0211

Date Collected: 02/21/11 11:40
Date Received: 02/22/11 09:19

Lab Sample ID: 680-65833-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	197370	02/28/11 22:51	WJC	TestAmerica Savannah
Total/NA	Prep	3520C			195096	02/23/11 14:15	RBS	TestAmerica Savannah
Total/NA	Analysis	8270C		1	196473	03/09/11 12:58	CRH	TestAmerica Savannah
Total/NA	Analysis	RSK-175		1	195409	02/24/11 16:36	AJM	TestAmerica Savannah
Total/NA	Analysis	RSK-175		1	195410	02/24/11 16:36	AJM	TestAmerica Savannah
Total Recoverable	Prep	3005A			195235	02/24/11 10:39	JPH	TestAmerica Savannah
Total Recoverable	Analysis	6010B		1	195623	03/01/11 02:44	BCB	TestAmerica Savannah
Total/NA	Analysis	310.1		1	195045	02/22/11 18:43	TR	TestAmerica Savannah
Total/NA	Analysis	353.2		1	195156	02/22/11 15:49	JR	TestAmerica Savannah
Total/NA	Analysis	325.2		1	196550	03/09/11 13:53	JR	TestAmerica Savannah
Total/NA	Analysis	415.1		1	196992	03/11/11 02:41	KB	TestAmerica Savannah
Total/NA	Analysis	375.4		5	197076	03/11/11 15:36	JR	TestAmerica Savannah

4/11/11

Client Sample ID: BSA-MW-05D-F(0.2)0211

Lab Sample ID: 680-65833-4

Date Collected: 02/21/11 11:40
Matrix: Water
Date Received: 02/22/11 09:19

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			195235	02/24/11 10:39	JPH	TestAmerica Savannah
Dissolved	Analysis	6010B		1	195623	03/01/11 02:49	BCB	TestAmerica Savannah
Dissolved	Analysis	415.1		1	197065	03/13/11 16:13	KB	TestAmerica Savannah

Client Sample ID: CPA-MW-05D-0211

Lab Sample ID: 680-65833-5

Date Collected: 02/21/11 14:40
Matrix: Water
Date Received: 02/22/11 09:19

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		20	195578	02/28/11 20:18	WJC	TestAmerica Savannah
Total/NA	Prep	3520C			195096	02/23/11 14:15	RBS	TestAmerica Savannah
Total/NA	Analysis	8270C		1	196473	03/09/11 13:27	CRH	TestAmerica Savannah
Total/NA	Analysis	RSK-175		1	195410	02/24/11 16:49	AJM	TestAmerica Savannah
Total Recoverable	Prep	3005A			195235	02/24/11 10:39	JPH	TestAmerica Savannah
Total Recoverable	Analysis	6010B		1	195623	03/01/11 02:55	BCB	TestAmerica Savannah
Total/NA	Analysis	310.1		1	195045	02/22/11 18:50	TR	TestAmerica Savannah
Total/NA	Analysis	353.2		1	195156	02/22/11 15:50	JR	TestAmerica Savannah
Total/NA	Analysis	325.2		5	195597	02/28/11 17:02	JR	TestAmerica Savannah
Total/NA	Analysis	415.1		1	196992	03/11/11 02:58	KB	TestAmerica Savannah
Total/NA	Analysis	375.4		100	197076	03/11/11 15:38	JR	TestAmerica Savannah

Client Sample ID: CPA-MW-05D-F(0.2)-0211

Lab Sample ID: 680-65833-6

Date Collected: 02/21/11 14:00
Matrix: Water
Date Received: 02/22/11 09:19

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			195235	02/24/11 10:39	JPH	TestAmerica Savannah
Dissolved	Analysis	6010B		1	195623	03/01/11 03:00	BCB	TestAmerica Savannah
Dissolved	Analysis	415.1		1	197065	03/13/11 16:13	KB	TestAmerica Savannah

Client Sample ID: Trip Blank

Lab Sample ID: 680-65833-7

Date Collected: 02/21/11 00:00
Matrix: Water
Date Received: 02/22/11 09:19

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	195578	02/28/11 18:27	WJC	TestAmerica Savannah

Client Sample ID: CPA-MW-4D-0211

Lab Sample ID: 680-65862-1

Date Collected: 02/22/11 08:40
Matrix: Water
Date Received: 02/23/11 09:04

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10	196086	03/04/11 11:48	AJM	TestAmerica Savannah
Total/NA	Prep	3520C			195211	02/24/11 15:14	RBS	TestAmerica Savannah

AC
4/11/11

Lab Chronicle

Client: Solutia Inc.
Project/Site: WGK LTM GW 1Q11 - FEB 2011

TestAmerica Job ID: 680-65833-1
SDG: KPS063

Client Sample ID: CPA-MW-4D-0211

Date Collected: 02/22/11 08:40
Date Received: 02/23/11 09:04

Lab Sample ID: 680-65862-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8270C		1	196157	03/04/11 14:42	LH	TestAmerica Savannah
Total/NA	Prep	3520C	DL		195211	02/24/11 15:14	RBS	TestAmerica Savannah
Total/NA	Analysis	8270C	DL	2	196360	03/08/11 16:33	CRH	TestAmerica Savannah
Total/NA	Analysis	RSK-175		1	195395	02/25/11 16:11	AJM	TestAmerica Savannah
Total/NA	Analysis	RSK-175		1	195399	02/25/11 16:11	JW	TestAmerica Savannah
Total Recoverable	Prep	3005A			195759	03/02/11 12:50	JPH	TestAmerica Savannah
Total Recoverable	Analysis	6010B		1	196312	03/07/11 20:09	BCB	TestAmerica Savannah
Total/NA	Analysis	353.2		1	195182	02/23/11 17:03	JR	TestAmerica Savannah
Total/NA	Analysis	310.1		1	195440	02/23/11 20:21	TR	TestAmerica Savannah
Total/NA	Analysis	325.2		5	195597	02/28/11 17:03	JR	TestAmerica Savannah
Total/NA	Analysis	415.1		1	196992	03/11/11 03:12	KB	TestAmerica Savannah
Total/NA	Analysis	375.4		1	197076	03/11/11 13:37	JR	TestAmerica Savannah

Client Sample ID: CPA-MW-4D-0211-F(0.2)

Date Collected: 02/22/11 08:40
Date Received: 02/23/11 09:04

Lab Sample ID: 680-65862-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			195759	03/02/11 12:50	JPH	TestAmerica Savannah
Dissolved	Analysis	6010B		1	196312	03/07/11 20:13	BCB	TestAmerica Savannah
Dissolved	Analysis	415.1		1	197065	03/13/11 16:13	KB	TestAmerica Savannah

Client Sample ID: BSA-MW-3D-0211

Date Collected: 02/22/11 10:15
Date Received: 02/23/11 09:04

Lab Sample ID: 680-65862-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10	195909	03/03/11 17:25	AJM	TestAmerica Savannah
Total/NA	Prep	3520C			195211	02/24/11 15:14	RBS	TestAmerica Savannah
Total/NA	Analysis	8270C		1	196157	03/04/11 15:10	LH	TestAmerica Savannah
Total/NA	Analysis	RSK-175		1	195395	02/25/11 16:24	AJM	TestAmerica Savannah
Total/NA	Analysis	RSK-175		1	195399	02/25/11 16:24	JW	TestAmerica Savannah
Total Recoverable	Prep	3005A			195759	03/02/11 12:50	JPH	TestAmerica Savannah
Total Recoverable	Analysis	6010B		1	196312	03/07/11 20:17	BCB	TestAmerica Savannah
Total/NA	Analysis	353.2		1	195182	02/23/11 17:05	JR	TestAmerica Savannah
Total/NA	Analysis	310.1		1	195440	02/23/11 20:29	TR	TestAmerica Savannah
Total/NA	Analysis	325.2		2	195597	02/28/11 17:03	JR	TestAmerica Savannah
Total/NA	Analysis	415.1		1	196992	03/11/11 03:56	KB	TestAmerica Savannah
Total/NA	Analysis	375.4		5	197076	03/11/11 15:08	JR	TestAmerica Savannah

AG
4/11/11

Client Sample ID: BSA-MW-3D-0211-F(0.2)

Lab Sample ID: 680-65862-4

Date Collected: 02/22/11 10:15
Matrix: Water
Date Received: 02/23/11 09:04

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			195759	03/02/11 12:50	JPH	TestAmerica Savannah
Dissolved	Analysis	6010B		1	196312	03/07/11 20:21	BCB	TestAmerica Savannah
Dissolved	Analysis	415.1		1	197065	03/13/11 16:13	KB	TestAmerica Savannah

Client Sample ID: BSA-MW-3D-EB

Lab Sample ID: 680-65862-5

Date Collected: 02/22/11 10:15
Matrix: Water
Date Received: 02/23/11 09:04

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	195909	03/03/11 15:28	AJM	TestAmerica Savannah
Total/NA	Prep	3520C			195211	02/24/11 15:14	RBS	TestAmerica Savannah
Total/NA	Analysis	8270C		1	196157	03/04/11 15:38	LH	TestAmerica Savannah

Client Sample ID: BSA-MW-2D-0211

Lab Sample ID: 680-65862-6

Date Collected: 02/22/11 12:15
Matrix: Water
Date Received: 02/23/11 09:04

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5000	195909	03/03/11 18:24	AJM	TestAmerica Savannah
Total/NA	Prep	3520C			195211	02/24/11 15:14	RBS	TestAmerica Savannah
Total/NA	Analysis	8270C		1	196157	03/04/11 16:06	LH	TestAmerica Savannah
Total/NA	Analysis	RSK-175		1	195395	02/25/11 16:37	AJM	TestAmerica Savannah
Total/NA	Analysis	RSK-175		1	195399	02/25/11 16:37	JW	TestAmerica Savannah
Total Recoverable	Prep	3005A			195759	03/02/11 12:50	JPH	TestAmerica Savannah
Total Recoverable	Analysis	6010B		1	196312	03/07/11 20:25	BCB	TestAmerica Savannah
Total/NA	Analysis	353.2		1	195182	02/23/11 17:08	JR	TestAmerica Savannah
Total/NA	Analysis	310.1		1	195440	02/23/11 20:40	TR	TestAmerica Savannah
Total/NA	Analysis	325.2		1	196550	03/09/11 13:53	JR	TestAmerica Savannah
Total/NA	Analysis	415.1		1	196992	03/11/11 04:10	KB	TestAmerica Savannah
Total/NA	Analysis	375.4		1	197076	03/11/11 13:37	JR	TestAmerica Savannah

Client Sample ID: BSA-MW-2D-0211-F(0.2)

Lab Sample ID: 680-65862-7

Date Collected: 02/22/11 12:15
Matrix: Water
Date Received: 02/23/11 09:04

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			195759	03/02/11 12:50	JPH	TestAmerica Savannah
Dissolved	Analysis	6010B		1	196312	03/07/11 20:29	BCB	TestAmerica Savannah
Dissolved	Analysis	415.1		1	197065	03/13/11 16:13	KB	TestAmerica Savannah

AC
4/11/11

Client Sample ID: CPA-MW-3D-0211

Date Collected: 02/22/11 13:15
Date Received: 02/23/11 09:04

Lab Sample ID: 680-65862-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	195909	03/03/11 17:55	AJM	TestAmerica Savannah
Total/NA	Prep	3520C			195211	02/24/11 15:14	RBS	TestAmerica Savannah
Total/NA	Analysis	8270C		1	196157	03/04/11 16:34	LH	TestAmerica Savannah
Total/NA	Analysis	RSK-175		1	195395	02/25/11 16:49	AJM	TestAmerica Savannah
Total/NA	Analysis	RSK-175		1	195399	02/25/11 16:49	JW	TestAmerica Savannah
Total Recoverable	Prep	3005A			195759	03/02/11 12:50	JPH	TestAmerica Savannah
Total Recoverable	Analysis	6010B		1	196312	03/07/11 20:33	BCB	TestAmerica Savannah
Total/NA	Analysis	353.2		1	195182	02/23/11 17:10	JR	TestAmerica Savannah
Total/NA	Analysis	310.1		1	195440	02/23/11 20:49	TR	TestAmerica Savannah
Total/NA	Analysis	325.2		2	195597	02/28/11 17:03	JR	TestAmerica Savannah
Total/NA	Analysis	415.1		1	196992	03/11/11 04:24	KB	TestAmerica Savannah
Total/NA	Analysis	375.4		1	197076	03/11/11 13:37	JR	TestAmerica Savannah

Client Sample ID: CPA-MW-3D-0211-F(0.2)

Date Collected: 02/22/11 13:15
Date Received: 02/23/11 09:04

Lab Sample ID: 680-65862-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			195759	03/02/11 12:50	JPH	TestAmerica Savannah
Dissolved	Analysis	6010B		1	196312	03/07/11 20:37	BCB	TestAmerica Savannah
Dissolved	Analysis	415.1		1	197065	03/13/11 16:13	KB	TestAmerica Savannah

Client Sample ID: Trip Blank

Date Collected: 02/22/11 00:00
Date Received: 02/23/11 09:04

Lab Sample ID: 680-65862-10
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	195909	03/03/11 11:35	AJM	TestAmerica Savannah

Client Sample ID: BSA-MW-1S-0211

Date Collected: 02/23/11 09:00
Date Received: 02/24/11 10:58

Lab Sample ID: 680-65902-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5000	196086	03/04/11 13:45	AJM	TestAmerica Savannah
Total/NA	Prep	3520C			195498	02/28/11 14:49	RBS	TestAmerica Savannah
Total/NA	Analysis	8270C		1	196003	03/03/11 20:22	LH	TestAmerica Savannah
Total/NA	Analysis	RSK-175		1	195877	03/02/11 17:59	AJM	TestAmerica Savannah
Total/NA	Analysis	RSK-175		1	195878	03/02/11 17:59	AJM	TestAmerica Savannah
Total Recoverable	Prep	3005A			195759	03/02/11 12:50	JPH	TestAmerica Savannah
Total Recoverable	Analysis	6010B		1	196312	03/07/11 21:00	BCB	TestAmerica Savannah
Total/NA	Analysis	310.1		1	195451	02/27/11 13:11	TR	TestAmerica Savannah
Total/NA	Analysis	353.2		1	195454	02/24/11 16:52	JR	TestAmerica Savannah
Total/NA	Analysis	325.2		5	195597	02/28/11 17:20	JR	TestAmerica Savannah

4/11/11

Lab Chronicle

Client: Solutia Inc.
Project/Site: WGK LTM GW 1Q11 - FEB 2011

TestAmerica Job ID: 680-65833-1
SDG: KPS063

Client Sample ID: BSA-MW-1S-0211

Date Collected: 02/23/11 09:00
Date Received: 02/24/11 10:58

Lab Sample ID: 680-65902-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	415.1		1	196992	03/11/11 04:39	KB	TestAmerica Savannah
Total/NA	Analysis	375.4		1	197076	03/11/11 13:39	JR	TestAmerica Savannah

Client Sample ID: BSA-MW-1S-0211-F(0.2)

Date Collected: 02/23/11 09:00
Date Received: 02/24/11 10:58

Lab Sample ID: 680-65902-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			196175	03/07/11 11:12	JPH	TestAmerica Savannah
Dissolved	Analysis	6010B		1	196679	03/09/11 19:34	BCB	TestAmerica Savannah
Dissolved	Analysis	415.1		1	197065	03/13/11 16:13	KB	TestAmerica Savannah

Client Sample ID: CPA-MW-2D-0211

Date Collected: 02/23/11 10:10
Date Received: 02/24/11 10:58

Lab Sample ID: 680-65902-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		200	196086	03/04/11 12:18	AJM	TestAmerica Savannah
Total/NA	Prep	3520C			195498	02/28/11 14:49	RBS	TestAmerica Savannah
Total/NA	Analysis	8270C		1	196003	03/03/11 20:50	LH	TestAmerica Savannah
Total/NA	Analysis	RSK-175		1	195877	03/02/11 18:12	AJM	TestAmerica Savannah
Total/NA	Analysis	RSK-175		1	195878	03/02/11 18:12	AJM	TestAmerica Savannah
Total Recoverable	Prep	3005A			195759	03/02/11 12:50	JPH	TestAmerica Savannah
Total Recoverable	Analysis	6010B		1	196312	03/07/11 21:04	BCB	TestAmerica Savannah
Total/NA	Analysis	310.1		1	195451	02/27/11 13:20	TR	TestAmerica Savannah
Total/NA	Analysis	353.2		1	195454	02/24/11 16:53	JR	TestAmerica Savannah
Total/NA	Analysis	325.2		10	195597	02/28/11 17:34	JR	TestAmerica Savannah
Total/NA	Analysis	415.1		1	196992	03/11/11 04:53	KB	TestAmerica Savannah
Total/NA	Analysis	375.4		1	197076	03/11/11 13:39	JR	TestAmerica Savannah

Client Sample ID: CPA-MW-2D-0211-F(0-.2)

Date Collected: 02/23/11 10:10
Date Received: 02/24/11 10:58

Lab Sample ID: 680-65902-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			195759	03/02/11 12:50	JPH	TestAmerica Savannah
Dissolved	Analysis	6010B		1	196312	03/07/11 21:08	BCB	TestAmerica Savannah
Dissolved	Analysis	415.1		1	197065	03/13/11 16:13	KB	TestAmerica Savannah

TestAmerica Savannah

4/11/11

Lab Chronicle

Client: Solutia Inc.
Project/Site: WGK LTM GW 1Q11 - FEB 2011

TestAmerica Job ID: 680-65833-1
SDG: KPS063

Client Sample ID: CPA-MW-2D-0211-AD

Date Collected: 02/23/11 10:10
Date Received: 02/24/11 10:58

Lab Sample ID: 680-65902-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		200	196086	03/04/11 12:47	AJM	TestAmerica Savannah
Total/NA	Prep	3520C			195498	02/28/11 14:49	RBS	TestAmerica Savannah
Total/NA	Analysis	8270C		1	196003	03/03/11 21:18	LH	TestAmerica Savannah

Client Sample ID: CPA-MW-1D-0211

Date Collected: 02/23/11 11:30
Date Received: 02/24/11 10:58

Lab Sample ID: 680-65902-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		200	196086	03/04/11 13:16	AJM	TestAmerica Savannah
Total/NA	Prep	3520C	DL		195498	02/28/11 14:49	RBS	TestAmerica Savannah
Total/NA	Analysis	8270C	DL	5	196360	03/08/11 17:01	CRH	TestAmerica Savannah
Total/NA	Prep	3520C			195498	02/28/11 14:49	RBS	TestAmerica Savannah
Total/NA	Analysis	8270C		1	196473	03/09/11 10:09	CRH	TestAmerica Savannah
Total/NA	Analysis	RSK-175		1	195877	03/02/11 18:25	AJM	TestAmerica Savannah
Total/NA	Analysis	RSK-175		1	195878	03/02/11 18:25	AJM	TestAmerica Savannah
Total Recoverable	Prep	3005A			195759	03/02/11 12:50	JPH	TestAmerica Savannah
Total Recoverable	Analysis	6010B		1	196312	03/07/11 21:12	BCB	TestAmerica Savannah
Total/NA	Analysis	310.1		1	195451	02/27/11 13:32	TR	TestAmerica Savannah
Total/NA	Analysis	353.2		1	195454	02/24/11 16:56	JR	TestAmerica Savannah
Total/NA	Analysis	325.2		2	195597	02/28/11 17:20	JR	TestAmerica Savannah
Total/NA	Analysis	415.1		1	196992	03/11/11 05:08	KB	TestAmerica Savannah
Total/NA	Analysis	375.4		1	197076	03/11/11 13:39	JR	TestAmerica Savannah

Client Sample ID: CPA-MW-1D-0211-F(0.2)

Date Collected: 02/23/11 11:30
Date Received: 02/24/11 10:58

Lab Sample ID: 680-65902-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			196175	03/07/11 11:12	JPH	TestAmerica Savannah
Dissolved	Analysis	6010B		1	196679	03/09/11 19:38	BCB	TestAmerica Savannah
Dissolved	Analysis	415.1		1	197065	03/13/11 16:13	KB	TestAmerica Savannah

Client Sample ID: Trip Blank

Date Collected: 02/23/11 00:00
Date Received: 02/24/11 10:58

Lab Sample ID: 680-65902-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	195845	03/02/11 15:54	AJM	TestAmerica Savannah

TestAmerica Savannah

4/11/11

Serial Number 033661

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

1Q11 LTM GW Samples

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

COPY

Alternate Laboratory Name/Location
Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
WKL LTM 1Q11		IL
TAL (LAB) PROJECT MANAGER: 6m RINALDI	P.O. NUMBER	CONTRACT NO.
CLIENT (SITE) PM: 6m RINALDI	CLIENT PHONE: 314-674-3312	CLIENT FAX: 314-674-8808
CLIENT NAME: Solutia, Inc	CLIENT E-MAIL: gmrina@solutia.com	
CLIENT ADDRESS: 575 Maryville Center Dr St. Louis, MO 63141		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE 1 OF

STANDARD REPORT DELIVERY

DATE DUE

EXPEDITED REPORT DELIVERY (SURCHARGE)

DATE DUE

NUMBER OF COOLERS SUE PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX: COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	REQUIRED ANALYSIS: VOC 8260 HCL	Total Fe/mn 6010B HNO3	AIKA /CO2 310.1 None	Chlor.ide 325.2 Sulfate 375.4 None	RSK 175 methane ethane ethene None	Nitrate 353.2 H2SO4	Toc 415.1 Hcl	Diss Fe/mn 6010B Hno3	Doc 415.1 Hcl	Svoc 8270C None	REMARKS
			NUMBER OF CONTAINERS SUBMITTED															
2-21-11	0940	BSA-MW-04D-0211	6	A				3	1	1	1	3	2	1			2	
	0940	BSA-MW-04D-F(0.2)-0211	6	A											1	1		Filtered
	1140	BSA-MW-05D-0211	6	A				3	1	1	1	3	2	1			2	
	1140	BSA-MW-05D-F(0.2)-0211	6	A											1	1		Filtered
	1440	CPA-MW-05D-[redacted]-0211	6	A				3	1	1	1	3	2	1			2	
	1440	CPA-MW-05D-F(0.2)-0211	6	A											1	1		Filtered
	1440	CPA-MW-05D-0211-MS	6	A				3									2	
	1440	CPA-MW-05D-0211-MSD	6	A				3									2	
		Trip Blank	6	A				2										

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
[signature]	2-21-10	5:15pm						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
Frances Swafford	02/22/11	09:19	YES ○ NO ○		680-65833	4.6, 3.2

TAL-8240-68

Page 73 of 79

CMS

4/11/11

Serial Number 038169

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

1Q11 LTM GW samples

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location
Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
WGK-LTM 1Q11		IL
TAL (LAB) PROJECT MANAGER: 6m RINALDI	P.O. NUMBER	CONTRACT NO.
CLIENT (SITE) PM: 6m RINALDI	CLIENT PHONE: 314-674-3312	CLIENT FAX: 314-674-8808
CLIENT NAME: SOLUTIA, INC	CLIENT E-MAIL: gmrina@solutia.com	
CLIENT ADDRESS: 575 MARYVILLE CENTER DR, St. Louis, MO 63141		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE 1 OF 1

STANDARD REPORT DELIVERY ⊗
DATE DUE
EXPEDITED REPORT DELIVERY (SURCHARGE) ○
DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	MATRIX: AQUEOUS (WATER)	MATRIX: SOLID OR SEMISOLID	MATRIX: AIR	MATRIX: NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	REQUIRED ANALYSIS: NUMBER OF CONTAINERS SUBMITTED										REMARKS
								VOC 8260	SVOC 8270C	Total Fe/Mn 6010B	Alka/CO_2 310.1	Chloride Sulfate 325.2 375.4	Methane Ethane Ethene RSK 175	Nitrate 353.2	TOC 415.1	Diss Fe/Mn 6010B	DOC 415.1	
								HCl	None	HNO_3	None	None	None	H_2SO_4	HCl	HNO_3	HCl	PRESERVATIVE
2-22-11	0840	CPA-MW-4D-0211	6	A				3	2	1	1	1	3	2	1			
	0840	CPA-MW-4D-0211-(F.0.2)	6	A												1	1	Filtered
	1015	BSA-MW-3D-0211	6	A				3	2	1	1	1	3	2	1			
	1015	BSA-MW-3D-0211-F(0.2)	6	A												1	1	Filtered
	1015	BSA-MW-3D-EB	6	A				3	2									
	1215	BSA-MW-2D-0211	6	A				3	2	1	1	1	3	2	1			
	1215	BSA-MW-2D-0211-F(0.2)	6	A												1	1	Filtered
	1315	CPA-MW-3D-0211	6	A				3	2	1	1	1	3	2	1			
	1315	CPA-MW-3D-0211-F(0.2)	6	A												1	1	Filtered
		TRIP BLANK	6	A				2										

Page 74 of 79

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
	2-22-11	4:00pm						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES ○ NO ○	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
Both ND overnight	02/23/11	0904			6058603	Temp 3.2/3.4

11/11/11

TAL 8240-680 (2)

Serial Number 033669

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

1011 LTM Samples

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location
Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
W. G Krummrich	LTM Long term monitoring	IL
TAL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Gm Rinaldi		
CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Gm Rinaldi	314-674-3312	314-674-8508
CLIENT NAME	CLIENT E-MAIL	
Solutia, Inc	gmring@solutia.com	
CLIENT ADDRESS		
575 Maryville Center Dr, St. Louis, MO 63141		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE 1 OF 1

STANDARD REPORT DELIVERY ☒
DATE DUE
EXPEDITED REPORT DELIVERY (SURCHARGE) ○
DATE DUE

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	MATRIX TYPE: AQUEOUS (WATER)	MATRIX TYPE: SOLID OR SEMISOLID	MATRIX TYPE: AIR	MATRIX TYPE: NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	REQUIRED ANALYSIS: VOC 8260	Sucr 8270C	Total Fe/Mn 6010B	Alk/CO2 310.1	Chloride 325.2 Sulfate 375.4	methane Ethene Ethane RSK 175	Nitrate 353.2	TOC 415.1	Diss Fe/Mn 6010B	Doc 415.1	REMARKS
								HCl	none	H2SO4	none	none	none	H2SO4	HCl	HNO3	HCl	NUMBER OF CONTAINERS SUBMITTED
2-23-11	0900	BSA-MW-15-0211	6	X				3	2	1	1	1	3	2	1			
	0900	BSA-MW-15-0211-F(0.2)	6	X												1	1	Filtered
	1010	CPA-MW-2D-0211	6	X				3	2	1	1	1	3	2	1			
	1010	CPA-MW-2D-0211-F(0.2)	6	X												1	1	Filtered
	1010	CPA-MW-2D-0211-AD	6	X				3	2									
	1130	CPA-MW-1D-0211	6	X				3	2	1	1	1	3	2	1			
	1130	CPA-MW-1D-0211-F(0.2)	6	X												1	1	Filtered
		Trip Blank		X				2										

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
	2-23-11	1630						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
	2/24/11	0923	YES ○ NO ○		680-65902	3.6/4.0/12/2.2

TAL-8210-680 (1008)

Page 75 of 79

11/11/11

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-65833-1
SDG Number: KPS063

Login Number: 65833
List Number: 1
Creator: Swafford, Frances

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
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	2/22 Rcpt 4.6 and 3.2; 2/23 Rcpt @ 3.6C
COC is present.	True	2/22 Rec'd via e-mail.
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 sample IDs on the containers and the COC.	True	2/22: Missing samples & COC (cooler in transit)
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	False	1 liter -5ms rec'd broken
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.	N/A	
Samples do not require splitting or compositing.	N/A	

4/11/11

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-65833-1
SDG Number: KPS063

Login Number: 65862
List Number: 1
Creator: Daughtry, Beth

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
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	3.2 and 3.4 C
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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	MS/MSD rec'd for SDG in previous receipt.
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.	N/A	
Samples do not require splitting or compositing.	N/A	

AL
4/11/11

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-65833-1
SDG Number: KPS063

Login Number: 65902
List Number: 1
Creator: Conner, Keaton

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
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	4 coolers rec'd on ice
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.6, 4.0, 1.2, 2.2 C
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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	Ms/MSD received in previous receipt for SDG
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.	N/A	
Samples do not require splitting or compositing.	N/A	

AC
4/11/11

Certification Summary

Client: Solutia Inc.
Project/Site: WGK LTM GW 1Q11 - FEB 2011

TestAmerica Job ID: 680-65833-1
SDG: KPS063

Laboratory	Authority	Program	EPA Region	Certification ID	* Expiration Date
TestAmerica Savannah		USDA		SAV 3-04	10/29/10
TestAmerica Savannah	A2LA	DoD ELAP	0	0399-01	03/31/11
TestAmerica Savannah	A2LA	ISO/IEC 17025	0	399.01	03/31/11
TestAmerica Savannah	Alabama	State Program	4	41450	06/30/11
TestAmerica Savannah	Arkansas	Arkansas DOH	6	N/A	06/30/10
TestAmerica Savannah	Arkansas	State Program	6	88-0692	02/01/12
TestAmerica Savannah	California	NELAC	9	3217CA	07/31/11
TestAmerica Savannah	Colorado	State Program	8	N/A	12/31/11
TestAmerica Savannah	Connecticut	State Program	1	PH-0161	03/31/11
TestAmerica Savannah	Delaware	State Program	3	N/A	06/30/11
TestAmerica Savannah	Florida	NELAC	4	E87052	06/30/11
TestAmerica Savannah	Georgia	Georgia EPD	4	N/A	06/30/11
TestAmerica Savannah	Georgia	State Program	4	803	06/30/11
TestAmerica Savannah	Guam	State Program	9	09-005r	04/17/11
TestAmerica Savannah	Hawaii	State Program	9	N/A	06/30/11
TestAmerica Savannah	Illinois	NELAC	5	200022	11/30/11
TestAmerica Savannah	Indiana	State Program	5	N/A	06/30/11
TestAmerica Savannah	Iowa	State Program	7	353	07/01/11
TestAmerica Savannah	Kansas	NELAC	7	E-10322	10/31/11
TestAmerica Savannah	Kentucky	Kentucky UST	4	18	11/17/11
TestAmerica Savannah	Kentucky	State Program	4	90084	12/31/11
TestAmerica Savannah	Louisiana	NELAC	6	30690	06/30/11
TestAmerica Savannah	Louisiana	NELAC	6	LA100015	12/31/11
TestAmerica Savannah	Maine	State Program	1	GA00006	08/16/12
TestAmerica Savannah	Maryland	State Program	3	250	12/31/11
TestAmerica Savannah	Massachusetts	State Program	1	M-GA006	06/30/11
TestAmerica Savannah	Michigan	State Program	5	9925	06/30/11
TestAmerica Savannah	Mississippi	State Program	4	N/A	06/30/10
TestAmerica Savannah	Montana	State Program	8	CERT0081	01/01/11
TestAmerica Savannah	Nebraska	State Program	7	TestAmerica-Savannah	06/30/11
TestAmerica Savannah	Nevada	State Program	9	GA6	07/31/11
TestAmerica Savannah	New Jersey	NELAC	2	GA769	06/30/11
TestAmerica Savannah	New Mexico	State Program	6	N/A	06/30/10
TestAmerica Savannah	New York	NELAC	2	10842	04/01/11
TestAmerica Savannah	North Carolina	North Carolina DENR	4	269	12/31/11
TestAmerica Savannah	North Carolina	North Carolina PHL	4	13701	07/31/11
TestAmerica Savannah	Oklahoma	State Program	6	9984	08/31/11
TestAmerica Savannah	Pennsylvania	NELAC	3	68-00474	06/30/11
TestAmerica Savannah	Puerto Rico	State Program	2	GA00006	01/01/12
TestAmerica Savannah	Rhode Island	State Program	1	LAO00244	12/30/11
TestAmerica Savannah	South Carolina	State Program	4	98001	06/30/11
TestAmerica Savannah	Tennessee	State Program	4	TN02961	12/31/11
TestAmerica Savannah	Texas	NELAC	6	T104704185-08-TX	11/30/11
TestAmerica Savannah	Vermont	State Program	1	87052	11/16/11
TestAmerica Savannah	Virginia	State Program	3	302	06/30/11
TestAmerica Savannah	Washington	State Program	10	C1794	06/10/11
TestAmerica Savannah	West Virginia	West Virginia DEP	3	94	06/30/11
TestAmerica Savannah	West Virginia	West Virginia DHHR (DW)	3	9950C	12/31/10
TestAmerica Savannah	Wisconsin	State Program	5	999819810	08/31/11
TestAmerica Savannah	Wyoming	State Program	8	8TMS-Q	06/30/11

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.
* Any expired certifications in this list are currently pending renewal and are considered valid.

4/11/11

MJW CORPORATION
Radiation Consulting Professionals

April 21, 2011

Mr. Duane T. Kreuger
Geotechnology, Inc.
11816 Lackland Road Suite 150
St. Louis, MO63146

Dear Mr. Kreuger:

The data reported by Test America Laboratories under SDG KPS063 has been reviewed for quality assurance validation. Data was reported for Volatiles, Semi-Volatiles, Volatiles (dissolved gases), ICP Metals (total and dissolved), Chloride, Nitrate, Sulfate, Organic Carbon (total and dissolved), Alkalinity, and Carbon Dioxide for 27 samples as requested by Geotechnology, Inc. The 27 samples listed below were validated by MJW. The samples in **bold type** have been validated for level IV validation. The data in this report has either been approved for use or approved with qualification.

- **BSA-MW-4D-0211 (Lab ID: 680-65833-1)**
- **BSA-MW-4D-0211-F(0.2) (Lab ID: 680-65833-2)**
- **BSA-MW-5D-0211 (Lab ID: 680-65833-3)**
- **BSA-MW-5D-0211-F(0.2) (Lab ID: 680-65833-4)**
- **CPA-MW-5D-0211 (Lab ID: 680-65833-5)**
- CPA-MW-5D-0211-MS (Lab ID: 680-65833-5MS)
- CPA-MW-5D-0211-MSD (Lab ID: 680-65833-5 MSD)
- **CPA-MW-5D-0211-F(0.2) (Lab ID: 680-65833-6)**
- Trip Blank (Lab ID: 680-65833-7TB)
- **CPA-MW-4D-0211 (Lab ID: 680-65862-1)**
- **CPA-MW-4D-0211-F(0.2) (Lab ID: 680-65862-2)**
- BSA-MW-3D-0211 (Lab ID: 680-65862-3)
- BSA-MW-3D-0211-F(0.2) (Lab ID: 680-65862-4)
- BSA-MW-3D-EB (Lab ID: 680-65862-5EB)
- BSA-MW-2D-0211 (Lab ID: 680-65862-6)
- BSA-MW-2D-0211-F(0.2) (Lab ID: 680-65862-7)
- CPA-MW-3D-0211 (Lab ID: 680-65862-8)
- CPA-MW-3D-0211-F(0.2) (Lab ID: 680-65862-9)
- Trip Blank (Lab ID: 680-65862-10TB)
- BSA-MW-1S-0211 (Lab ID: 680-65902-1)
- BSA-MW-1S-0211-F(0.2) (Lab ID: 680-65902-2)
- CPA-MW-2D-0211 (Lab ID: 680-65902-3)
- CPA-MW-2D-0211-F(0.2) (Lab ID: 680-65902-4)
- CPA-MW-2D-0211-AD (Lab ID: 680-65902-5FD)
- CPA-MW-1D-0211 (Lab ID: 680-65902-6)
- CPA-MW-1D-0211-F(0.2) (Lab ID: 680-65902-7)
- Trip Blank (Lab ID: 680-65902-8TB)

If you have any questions concerning this data validation report, please contact me at 585-344-7197.

Very truly yours,

MJW Corporation Inc.

Annette Guilds, CES
Senior Scientist

Approved by:

David A. Dooley, Ph.D., CHP
President, MJW Corporation Inc.

University Park, 1900 Sweet Home Road
Amherst, NY 14228-3359
Voice: (716) 631.8291 Fax: (716) 631.5631 Toll Free: 1 (888) MJW.CORP www.mjwcorp.com

QUALITY ASSURANCE REPORT

Solutia Inc.
W.G. Krummrich Facility
Sauget, Illinois

Long-Term Monitoring Program
1st Quarter 2011 Data Validation Report
SDG: KPS063

Prepared for

GEOTECHNOLOGY, INC.
11816 Lackland Road, Suite 150
St. Louis, MO 63146

April 2011

MJW

MJW Corporation, Inc.
1900 Sweet Home Road
Amherst, NY 14228
(716)-631-8291
Project # 2010-1918

DATA ASSESSMENT NARRATIVE
(ORGANICS)

ORGANIC DATA ASSESSMENT

Functional Guidelines for Evaluating Organic Analysis

CASE NO.: _____ SDG NO.: KPS063 LABORATORY: Test America
SITE: Solutia W.G. Krummrich Plant (LTM Site)

DATA ASSESSMENT

All data were found to be valid and acceptable except those analytes that have been rejected, "R" (unusable). Due to various QC problems some analytes may have been qualified with a "J" (estimated), "N" (presumptive evidence for the presence of the material), "U" (non-detect), or "JN" (presumptive evidence for the presence of the material at an estimated value) flag. All action is detailed on the attached sheets.

The "R" flag means that the associated value is unusable. In other words, significant data bias is evident and the reported analyte concentration is unreliable.

Data is fully usable and acceptable.

Reviewer's Signature: Annette Cuni Date: 4/21/2011

MJW Approval: David A Dooley Date: 4/21/2011

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following action was taken in the samples and analytes shown due to excessive holding time.

No action necessary.

2. SURROGATES:

All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below.

No action necessary.

3. MATRIX SPIKE/SPIKE DUPLICATE, MS/MSD:

The MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD may be used in conjunction with other QC criteria for additional qualification of data.

No action necessary.

4. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, trip, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. If the concentration of the analyte is less than 5 times the blank contaminant level (10 times for common contaminants), the analytes are qualified as non-detects, "U". The following analytes in the sample shown were qualified with "U" for these reasons:

A) Method blank contamination:

No action necessary.

B) Field or rinse blank contamination:

No action necessary.

C) Trip blank contamination:

No action necessary.

5. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is (BFB) Bromofluorobenzene and for semi-volatiles Decafluorotriphenyl-phosphine (DFTPP).

If the mass calibration is in error, all associated data will be classified as unusable "R".

No action necessary.

6. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Response Factor GC/MS:

The response factor measures the instrument's response to specific chemical compounds. The response factor for the Target Compound List (TCL) must be ≥ 0.05 in both initial and continuing calibrations. A value < 0.05 indicates a serious detection and quantitation problem (poor sensitivity). Analytes detected in the sample will be qualified as estimated, "J". All non-detects for that compound will be rejected "R".

No action necessary.

7. CALIBRATION:

B) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD must be < 30% and %D must be < 25%. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and non-detects are flagged "UJ". If %RSD and %D grossly exceed QC criteria, non-detects data may be qualified "R".

For the PEST/PCB fraction, if %RSD exceeds 20% for all analytes except for the two surrogates (which must not exceed 30% RSD), qualify all associated positive results "J" and non-detects "UJ".

No action necessary.

8. INTERNAL STANDARDS PERFORMANCE GC/MS:

Internal standards (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must not vary by more than a factor of 2 (-50% to +100%) from the associated continuing calibration standard. The retention time of the internal standard must not vary more than ±30 seconds from the associated continuing calibration standard. If the area count is outside the (-50% to +100%) range of the associated standard, all of the positive results for compounds quantitated using that IS are qualified as estimated, "J", and all non-detects as "UJ", or "R" if there is a severe loss of sensitivity.

If an internal standard retention time varies by more than 30 seconds, the reviewer will use professional judgment to determine either partial or total rejection of the data for that sample fraction.

No action necessary.

9. COMPOUND IDENTIFICATION:

A) Volatile and Semi-Volatile Fractions:

TCL compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound and have an ion spectra which has a ratio of the primary and secondary m/e intensities within 20% of that in the standard compound. For the tentatively identified compounds (TIC) the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

No action necessary.

B) Pesticide Fraction:

The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10ng/ml in the final sample extract.

N/A

10. CONTRACT PROBLEMS NON-COMPLIANCE:

11. FIELD DOCUMENTATION: **A field duplicate was analyzed for sample CPA-MW-02D-0211 for volatiles and semi-volatiles and all %RPD's were acceptable.**

12. OTHER PROBLEMS:

None

13. This package contains reextractions, reanalyses or dilutions. Upon reviewing the QA results, the following Form 1(s) are identified to be used.

None

DATA ASSESSMENT NARRATIVE
(INORGANICS)

INORGANIC DATA ASSESSMENT NARRATIVE

Site: Solutia W.G. Krummich Plant (LTM Site) **Matrix:** Soil

SDG# KPS063 **Lab** Test America **Water** X

Contractor Geotechnology Inc. **Reviewer** Annette Guilds-MJW **Other** _____

A.2.1 Validation **Flags-** The following flags have been applied in red by the data validator and must be considered by the data user.

J- This flag indicates the result qualified as **estimated**

Red- Line- A red line drawn through a sample result indicates **unusable** value. The red lined data are known to contain significant errors based on documented information and must not be used by the data user.

Fully Usable Data- The results that do not carry "J" or "red-line" are fully **usable.**

Contractual Qualifiers- The legend of contractual qualifiers applied by the lab on Form I's is found on page B-20 of SOW ILM01.0.

A.2.2 The data assessment is given below.

Data is usable except for the following samples:

Samples BSA-MW-5D-0211 and CPA-MW-2D-0211 have been estimated "J" for TOC and DOC because the dissolved result is greater than the total result by at least 10%.

Samples CPA-MW-4D-0211 and CPA-MW-1D-0211 have been estimated "J" for Manganese because the dissolved result is greater than the total result by at least 10%.

Several samples have been qualified as estimated "J" for Iron due to out of control limits for Matrix Spike Recovery. Refer to the Summary of Sample Data Qualifiers Form for sample ID's.

The following bulleted items summarize additional comments where data has not been qualifiedbut it is recommended that additional communication with thelaboratory be conducted to further assess the data.

•

A.2.3 Contract-Problem/Non-Compliance

•

Data Reviewer: Annette Guilds Date: 4/21/11
Signature

MJW Approval: David A. Cooley Date: 4/21/11
Signature

Summary Data Qualifiers

Data Outlier Forms

Accuracy Statements, MS/MSD

Samples Affected	Matrix	Analyte	Percent Recovery	Control Limits	Qualifier
CPA-MW-4D-0211	Water	Iron	50.0%	75-125%	J
CPA-MW-4D-0211-F(0.2)	Water	Iron	50.0%	75-125%	J
BSA-MW-3D-0211	Water	Iron	50.0%	75-125%	J
BSA-MW-3D-0211-F(0.2)	Water	Iron	50.0%	75-125%	J
BSA-MW-2D-0211	Water	Iron	50.0%	75-125%	J
BSA-MW-2D-0211-F(0.2)	Water	Iron	50.0%	75-125%	J
CPA-MW-3D-0211	Water	Iron	50.0%	75-125%	J
CPA-MW-3D-0211-F(0.2)	Water	Iron	50.0%	75-125%	J
BSA-MW-1S-0211	Water	Iron	50.0%	75-125%	J
CPA-MW-2D-0211	Water	Iron	50.0%	75-125%	J
CPA-MW-2D-0211-F(0.2)	Water	Iron	50.0%	75-125%	J
CPA-MW-1D-0211	Water	Iron	50.0%	75-125%	J

Total and Dissolved Analyses (Revised)

Sample	Analyte	Total Amt (mg/L)	Dissolved Amt (mg/L)	Qualifier
CPA-MW-4D-0211	Manganese	0.29		J
CPA-MW-4D-F(0.2)-0211	Manganese		0.36	J
CPA-MW-1D-0211	Manganese	0.037		J
CPA-MW-1D-F(0.2)-0211	Manganese		0.050	J
BSA-MW-5D-0211	Organic Carbon	5.30		J
BSA-MW-5D-F(0.2)-0211	Organic Carbon		6.00	J
CPA-MW-2D-0211	Organic Carbon	11.00		J
CPA-MW-2D-F(0.2)-0211	Organic Carbon		13.00	J

Data Packages: KPS063

Date: 5/17/2011

CERTIFICATES OF ANALYSIS (COA's)

with Data Validation Qualifiers Added

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TOTAL RECOVERABLE

Client Sample ID: CPA-MW-4D-0211 Lab Sample ID: 680-65862-1

Lab Name: TestAmerica Savannah Job No.: 680-65833-1

SDG ID.: KPS063

Matrix: Water Date Sampled: 02/22/2011 08:40

Reporting Basis: WET Date Received: 02/23/2011 09:04

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron	12	0.050	0.024	mg/L		J	1	6010B
7439-96-5	Manganese	0.29	0.010	0.0030	mg/L		J	1	6010B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - DISSOLVED

Client Sample ID: CPA-MW-4D-0211-F(0.2) Lab Sample ID: 680-65862-2

Lab Name: TestAmerica Savannah Job No.: 680-65833-1

SDG ID.: KPS063

Matrix: Water Date Sampled: 02/22/2011 08:40

Reporting Basis: WET Date Received: 02/23/2011 09:04

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron, Dissolved	11	0.050	0.024	mg/L		J	1	6010B
7439-96-5	Manganese, Dissolved	0.36	0.010	0.0030	mg/L		J	1	6010B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TOTAL RECOVERABLE

Client Sample ID: BSA-MW-3D-0211 Lab Sample ID: 680-65862-3

Lab Name: TestAmerica Savannah Job No.: 680-65833-1

SDG ID.: KPS063

Matrix: Water Date Sampled: 02/22/2011 10:15

Reporting Basis: WET Date Received: 02/23/2011 09:04

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron	13	0.050	0.024	mg/L		J	1	6010B
7439-96-5	Manganese	0.57	0.010	0.0030	mg/L			1	6010B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - DISSOLVED

Client Sample ID: BSA-MW-3D-0211-F(0.2) Lab Sample ID: 680-65862-4

Lab Name: TestAmerica Savannah Job No.: 680-65833-1

SDG ID.: KPS063

Matrix: Water Date Sampled: 02/22/2011 10:15

Reporting Basis: WET Date Received: 02/23/2011 09:04

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron, Dissolved	11	0.050	0.024	mg/L		J	1	6010B
7439-96-5	Manganese, Dissolved	0.54	0.010	0.0030	mg/L			1	6010B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TOTAL RECOVERABLE

Client Sample ID: BSA-MW-2D-0211 Lab Sample ID: 680-65862-6

Lab Name: TestAmerica Savannah Job No.: 680-65833-1

SDG ID.: KPS063

Matrix: Water Date Sampled: 02/22/2011 12:15

Reporting Basis: WET Date Received: 02/23/2011 09:04

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron	3.1	0.050	0.024	mg/L		J	1	6010B
7439-96-5	Manganese	0.47	0.010	0.0030	mg/L			1	6010B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - DISSOLVED

Client Sample ID: BSA-MW-2D-0211-F(0.2) Lab Sample ID: 680-65862-7

Lab Name: TestAmerica Savannah Job No.: 680-65833-1

SDG ID.: KPS063

Matrix: Water Date Sampled: 02/22/2011 12:15

Reporting Basis: WET Date Received: 02/23/2011 09:04

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron, Dissolved	2.6	0.050	0.024	mg/L		J	1	6010B
7439-96-5	Manganese, Dissolved	0.44	0.010	0.0030	mg/L			1	6010B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TOTAL RECOVERABLE

Client Sample ID: CPA-MW-3D-0211 Lab Sample ID: 680-65862-8

Lab Name: TestAmerica Savannah Job No.: 680-65833-1

SDG ID.: KPS063

Matrix: Water Date Sampled: 02/22/2011 13:15

Reporting Basis: WET Date Received: 02/23/2011 09:04

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron	12	0.050	0.024	mg/L		J	1	6010B
7439-96-5	Manganese	0.59	0.010	0.0030	mg/L			1	6010B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - DISSOLVED

Client Sample ID: CPA-MW-3D-0211-F(0.2) Lab Sample ID: 680-65862-9

Lab Name: TestAmerica Savannah Job No.: 680-65833-1

SDG ID.: KPS063

Matrix: Water Date Sampled: 02/22/2011 13:15

Reporting Basis: WET Date Received: 02/23/2011 09:04

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron, Dissolved	10	0.050	0.024	mg/L		J	1	6010B
7439-96-5	Manganese, Dissolved	0.54	0.010	0.0030	mg/L			1	6010B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TOTAL RECOVERABLE

Client Sample ID: BSA-MW-1S-0211 Lab Sample ID: 680-65902-1

Lab Name: TestAmerica Savannah Job No.: 680-65833-1

SDG ID.: KPS063

Matrix: Water Date Sampled: 02/23/2011 09:00

Reporting Basis: WET Date Received: 02/24/2011 10:58

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron	3.9	0.050	0.024	mg/L		J	1	6010B
7439-96-5	Manganese	0.52	0.010	0.0030	mg/L			1	6010B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TOTAL RECOVERABLE

Client Sample ID: CPA-MW-2D-0211 Lab Sample ID: 680-65902-3

Lab Name: TestAmerica Savannah Job No.: 680-65833-1

SDG ID.: KPS063

Matrix: Water Date Sampled: 02/23/2011 10:10

Reporting Basis: WET Date Received: 02/24/2011 10:58

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron	8.3	0.050	0.024	mg/L		J	1	6010B
7439-96-5	Manganese	0.40	0.010	0.0030	mg/L			1	6010B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - DISSOLVED

Client Sample ID: CPA-MW-2D-0211-F(0-.2)
Lab Sample ID: 680-65902-4
Lab Name: TestAmerica Savannah
Job No.: 680-65833-1
SDG ID.: KPS063
Matrix: Water
Date Sampled: 02/23/2011 10:10
Reporting Basis: WET
Date Received: 02/24/2011 10:58

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron, Dissolved	7.7	0.050	0.024	mg/L		J	1	6010B
7439-96-5	Manganese, Dissolved	0.38	0.010	0.0030	mg/L			1	6010B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TOTAL RECOVERABLE

Client Sample ID: CPA-MW-1D-0211 Lab Sample ID: 680-65902-6

Lab Name: TestAmerica Savannah Job No.: 680-65833-1

SDG ID.: KPS063

Matrix: Water Date Sampled: 02/23/2011 11:30

Reporting Basis: WET Date Received: 02/24/2011 10:58

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron	0.94	0.050	0.024	mg/L		J	1	6010B
7439-96-5	Manganese	0.037	0.010	0.0030	mg/L		J	1	6010B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - DISSOLVED

Client Sample ID: CPA-MW-1D-0211-F(0.2) Lab Sample ID: 680-65902-7

Lab Name: TestAmerica Savannah Job No.: 680-65833-1

SDG ID.: KPS063

Matrix: Water Date Sampled: 02/23/2011 11:30

Reporting Basis: WET Date Received: 02/24/2011 10:58

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron, Dissolved	0.55	0.050	0.024	mg/L			1	6010B
7439-96-5	Manganese, Dissolved	0.050	0.010	0.0030	mg/L		J	1	6010B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: BSA-MW-05D-0211 Lab Sample ID: 680-65833-3

Lab Name: TestAmerica Savannah Job No.: 680-65833-1

SDG ID.: KPS063

Matrix: Water Date Sampled: 02/21/2011 11:40

Reporting Basis: WET Date Received: 02/22/2011 09:19

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
16887-00-6	Chloride	87	1.0	0.18	mg/L			1	325.2
14797-55-8	Nitrate as N	0.050	0.050	0.010	mg/L	U		1	353.2
14808-79-8	Sulfate	63	25	13	mg/L			5	375.4
7440-44-0	Total Organic Carbon	5.3	1.0	0.50	mg/L		J	1	415.1

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY - DISSOLVED

Client Sample ID: BSA-MW-05D-F(0.2)0211 Lab Sample ID: 680-65833-4

Lab Name: TestAmerica Savannah Job No.: 680-65833-1

SDG ID.: KPS063

Matrix: Water Date Sampled: 02/21/2011 11:40

Reporting Basis: WET Date Received: 02/22/2011 09:19

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Dissolved Organic Carbon	6.0	1.0	0.50	mg/L		J	1	415.1

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: CPA-MW-2D-0211 Lab Sample ID: 680-65902-3

Lab Name: TestAmerica Savannah Job No.: 680-65833-1

SDG ID.: KPS063

Matrix: Water Date Sampled: 02/23/2011 10:10

Reporting Basis: WET Date Received: 02/24/2011 10:58

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
16887-00-6	Chloride	560	10	1.8	mg/L			10	325.2
14797-55-8	Nitrate as N	0.050	0.050	0.010	mg/L	U		1	353.2
14808-79-8	Sulfate	5.0	5.0	2.5	mg/L	U		1	375.4
7440-44-0	Total Organic Carbon	11	1.0	0.50	mg/L		J	1	415.1

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY - DISSOLVED

Client Sample ID: CPA-MW-2D-0211-F(0-.2) Lab Sample ID: 680-65902-4

Lab Name: TestAmerica Savannah Job No.: 680-65833-1

SDG ID.: KPS063

Matrix: Water Date Sampled: 02/23/2011 10:10

Reporting Basis: WET Date Received: 02/24/2011 10:58

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Dissolved Organic Carbon	13	1.0	0.50	mg/L		J	1	415.1

APPENDIX E

MICROBIAL INSIGHTS DATA PACKAGE

2340 Stock Creek Blvd.
Rockford TN 37853-3044
Phone: (865) 573-8188
Fax: (865) 573-8133
Email: info@microbe.com

Client: Duane Kreuger
Geotechnology, Inc.
11816 Lackland Road
St. Louis, MO 63146

Phone: 314.997.7740

Fax: 314.997.2067

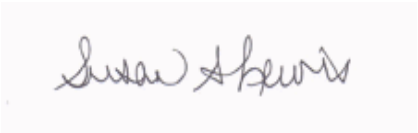
Identifier: 069IC **Date Rec:** 03/29/2011 **Report Date:** 04/15/2011

Client Project #: J017210.09 **Client Project Name:** Solutia - BioTraps

Purchase Order #:

Analysis Requested: PLFA, Stable Isotope Probing, Standard Bio-Trap

Reviewed By:



MICROBIAL INSIGHTS, INC.

2340 Stock Creek Blvd. Rockford, TN 37853-3044
Tel. (865) 573-8188 Fax. (865) 573-8133

PLFA

Client: **Geotechnology, Inc.**
Project: Solutia - BioTraps

MI Project Number: **069IC**
Date Received: 03/29/2011

Sample Information

Sample Name:	**BSA-MW-1S**	**BSA-MW-2D Benzene SIP**	**BSA-MW-2D**	**BSA-MW-3D**	**BSA-MW-4D**
Sample Date:	03/28/2011	03/28/2011	03/28/2011	03/28/2011	03/28/2011
Sample Matrix:	Std. Bio-Trap	Adv. Bio-Trap	Std. Bio-Trap	Std. Bio-Trap	Std. Bio-Trap
Analyst:	BJ	BJ	BJ	BJ	BJ
Biomass Concentrations					
Total Biomass (cells/bead)	**3.73E+05**	**3.78E+05**	**2.21E+05**	**8.00E+04**	**7.17E+05**
Community Structure (% total PLFA)					
Firmicutes (TerBrSats)	**8.13**	**3.36**	**2.32**	**0.00**	**13.92**
Proteobacteria (Monos)	**14.16**	**44.84**	**50.10**	**52.07**	**53.97**
Anaerobic metal reducers (BrMonos)	**0.00**	**0.00**	**0.00**	**0.00**	**1.64**
SRB/Actinomycetes (MidBrSats)	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
General (Nsats)	**77.69**	**49.25**	**47.57**	**43.47**	**29.13**
Eukaryotes (polyenoics)	**0.00**	**2.54**	**0.00**	**4.45**	**1.34**
Physiological Status (Proteobacteria only)					
Slowed Growth	**0.20**	**0.03**	**0.00**	**0.00**	**0.02**
Decreased Permeability	**0.77**	**0.13**	**0.12**	**0.07**	**0.10**

Legend:
NA = Not Analyzed NS = Not Sampled

MICROBIAL INSIGHTS, INC.

2340 Stock Creek Blvd. Rockford, TN 37853-3044
Tel. (865) 573-8188 Fax. (865) 573-8133

PLFA

Client: **Geotechnology, Inc.**
Project: Solutia - BioTraps

MI Project Number: **069IC**
Date Received: 03/29/2011

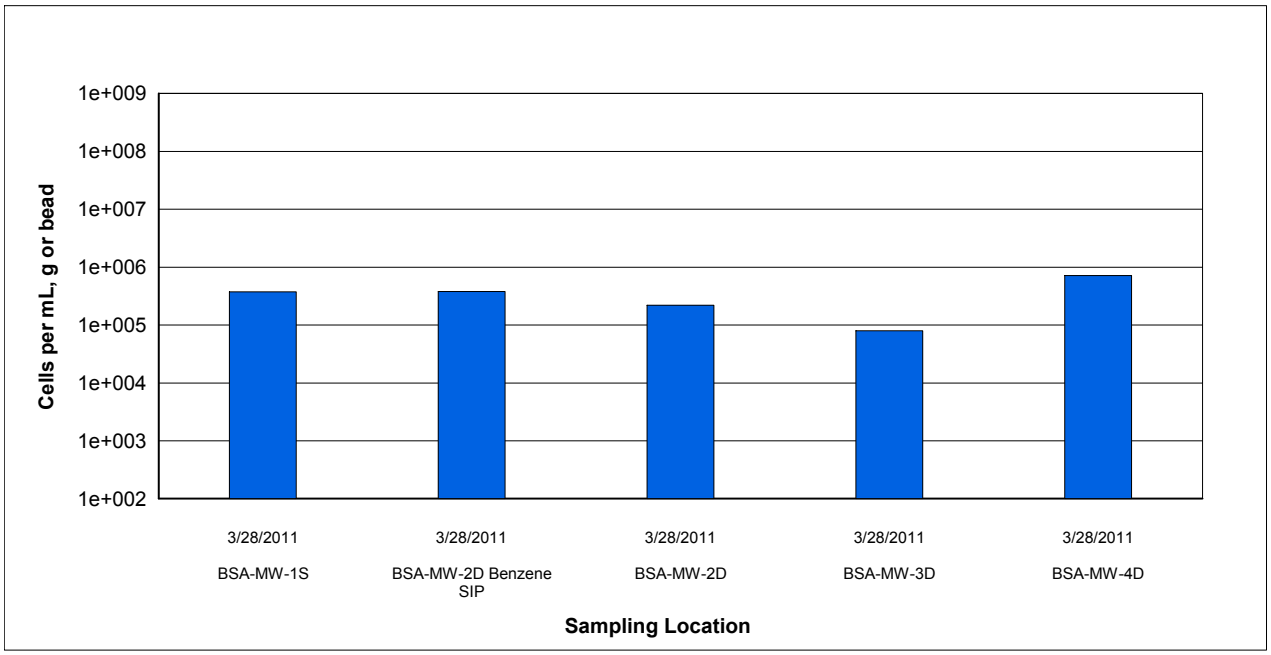


Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass

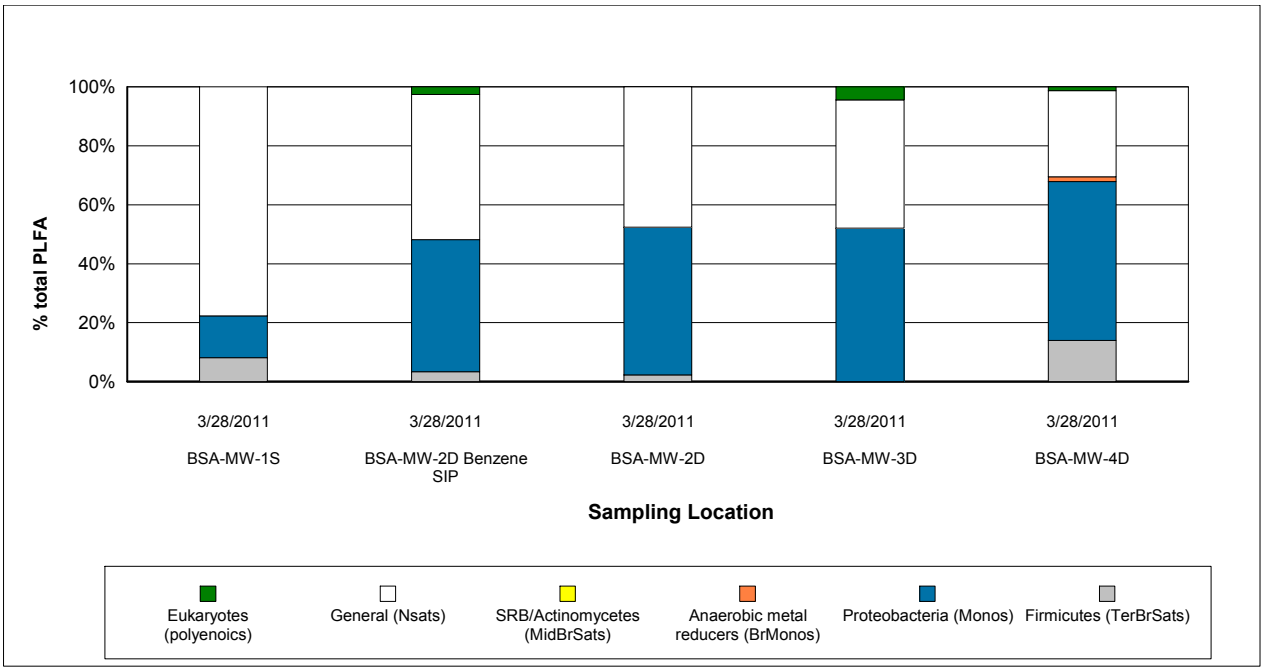


Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis.

MICROBIAL INSIGHTS, INC.

2340 Stock Creek Blvd. Rockford, TN 37853-3044
Tel. (865) 573-8188 Fax. (865) 573-8133

PLFA

Client: **Geotechnology, Inc.**
Project: Solutia - BioTraps

MI Project Number: **069IC**
Date Received: 03/29/2011

Sample Information

Sample Name:	**BSA-MW-5D**	**CPA-MW-1D**	**CPA-MW-2D**	**CPA-MW-3D Chlorobenzene SIP**	**CPA-MW-3D**
Sample Date:	03/28/2011	03/28/2011	03/28/2011	03/28/2011	03/28/2011
Sample Matrix:	Std. Bio-Trap	Std. Bio-Trap	Std. Bio-Trap	Adv. Bio-Trap	Std. Bio-Trap
Analyst:	BJ	BJ	BJ	BJ	BJ
Biomass Concentrations					
Total Biomass (cells/bead)	**2.32E+05**	**9.51E+04**	**2.26E+05**	**5.35E+05**	**7.88E+05**
Community Structure (% total PLFA)					
Firmicutes (TerBrSats)	**6.32**	**0.00**	**3.65**	**6.94**	**7.14**
Proteobacteria (Monos)	**67.52**	**65.61**	**68.84**	**48.13**	**53.71**
Anaerobic metal reducers (BrMonos)	**0.00**	**0.00**	**0.46**	**0.27**	**0.70**
SRB/Actinomycetes (MidBrSats)	**0.00**	**0.00**	**0.00**	**15.34**	**0.00**
General (Nsats)	**22.81**	**34.39**	**20.96**	**20.80**	**38.14**
Eukaryotes (polyenoics)	**3.38**	**0.00**	**6.10**	**8.53**	**0.32**
Physiological Status (Proteobacteria only)					
Slowed Growth	**0.02**	**0.00**	**0.11**	**0.22**	**0.02**
Decreased Permeability	**0.10**	**0.00**	**0.13**	**0.17**	**0.02**

Legend:
NA = Not Analyzed NS = Not Sampled

MICROBIAL INSIGHTS, INC.

2340 Stock Creek Blvd. Rockford, TN 37853-3044
Tel. (865) 573-8188 Fax. (865) 573-8133

PLFA

Client: **Geotechnology, Inc.**
Project: Solutia - BioTraps

MI Project Number: **069IC**
Date Received: 03/29/2011

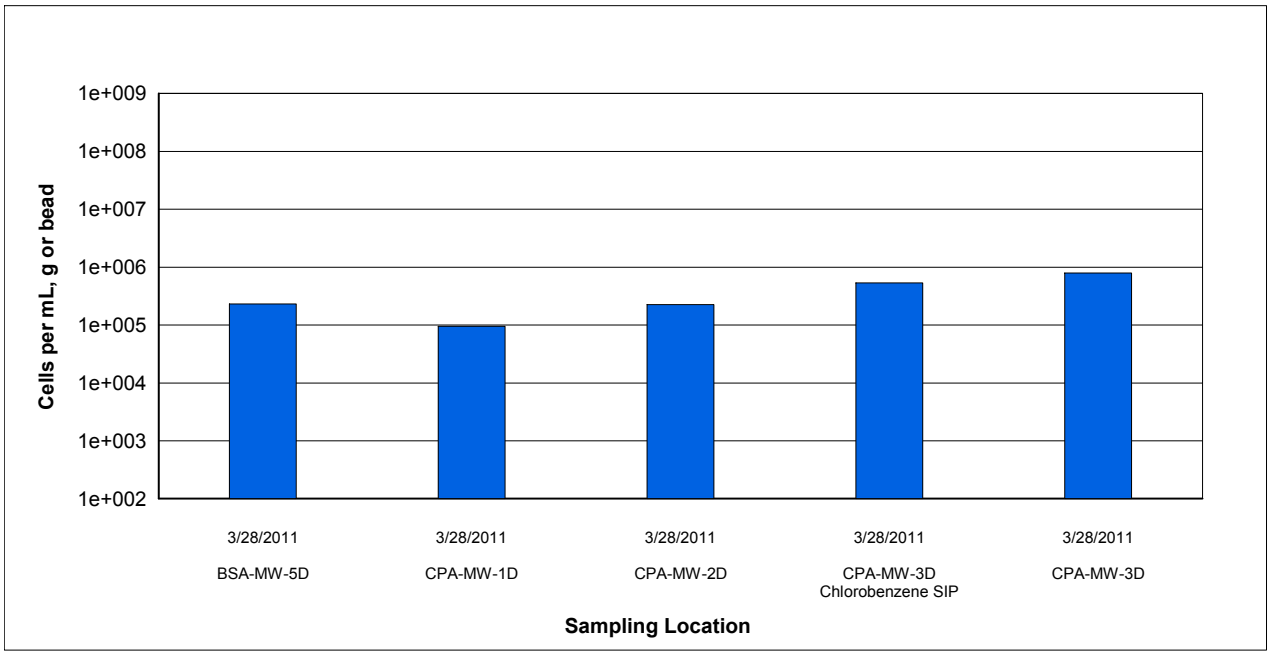


Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass

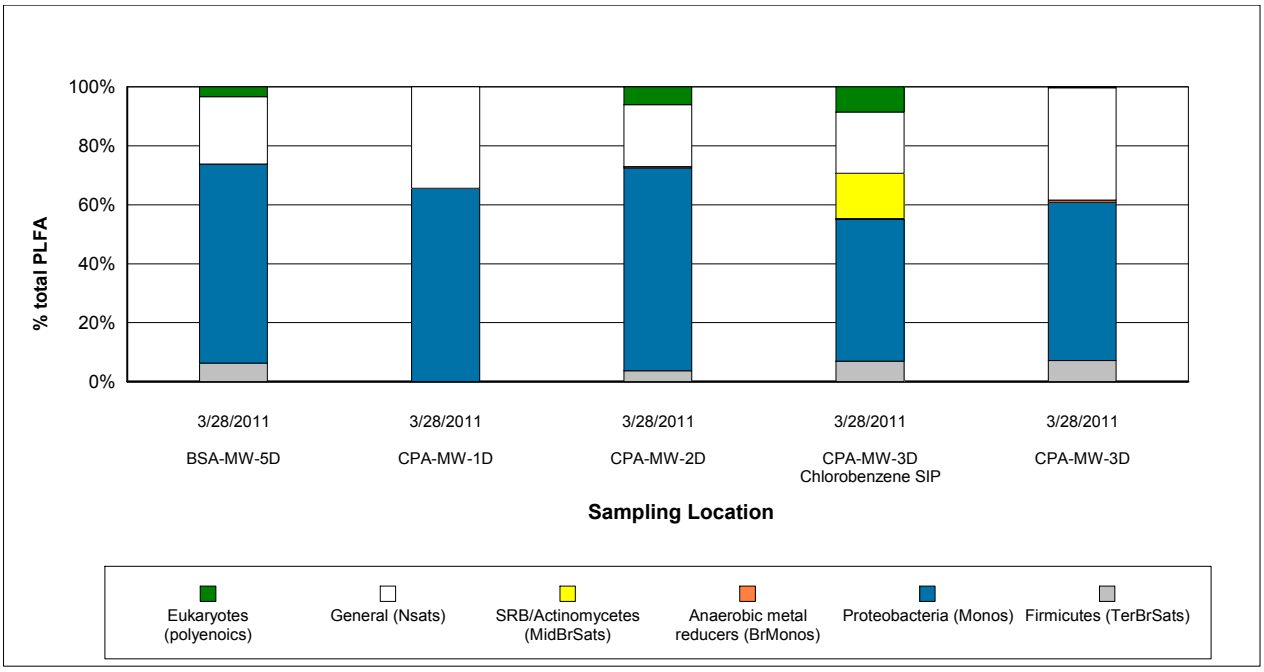


Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis.

MICROBIAL INSIGHTS, INC.

2340 Stock Creek Blvd. Rockford, TN 37853-3044
Tel. (865) 573-8188 Fax. (865) 573-8133

PLFA

Client: **Geotechnology, Inc.**
Project: Solutia - BioTraps

MI Project Number: **069IC**
Date Received: 03/29/2011

Sample Information

Sample Name:	**CPA-MW-4D**	**CPA-MW-5D**
Sample Date:	03/28/2011	03/28/2011
Sample Matrix:	Std. Bio-Trap	Std. Bio-Trap
Analyst:	BJ	BJ

Biomass Concentrations

Total Biomass (cells/bead)	**2.37E+06**	**5.70E+04**

Community Structure (% total PLFA)

Firmicutes (TerBrSats)	**9.49**	**5.95**
Proteobacteria (Monos)	**57.76**	**53.04**
Anaerobic metal reducers (BrMonos)	**0.95**	**0.00**
SRB/Actinomycetes (MidBrSats)	**0.00**	**0.00**
General (Nsats)	**30.04**	**37.44**
Eukaryotes (polyenoics)	**1.78**	**3.58**

Physiological Status (Proteobacteria only)

Slowed Growth	**0.00**	**0.10**
Decreased Permeability	**0.16**	**0.24**

Legend:
NA = Not Analyzed NS = Not Sampled

MICROBIAL INSIGHTS, INC.

2340 Stock Creek Blvd. Rockford, TN 37853-3044
Tel. (865) 573-8188 Fax. (865) 573-8133

PLFA

Client: **Geotechnology, Inc.**
Project: Solutia - BioTraps

MI Project Number: **069IC**
Date Received: 03/29/2011

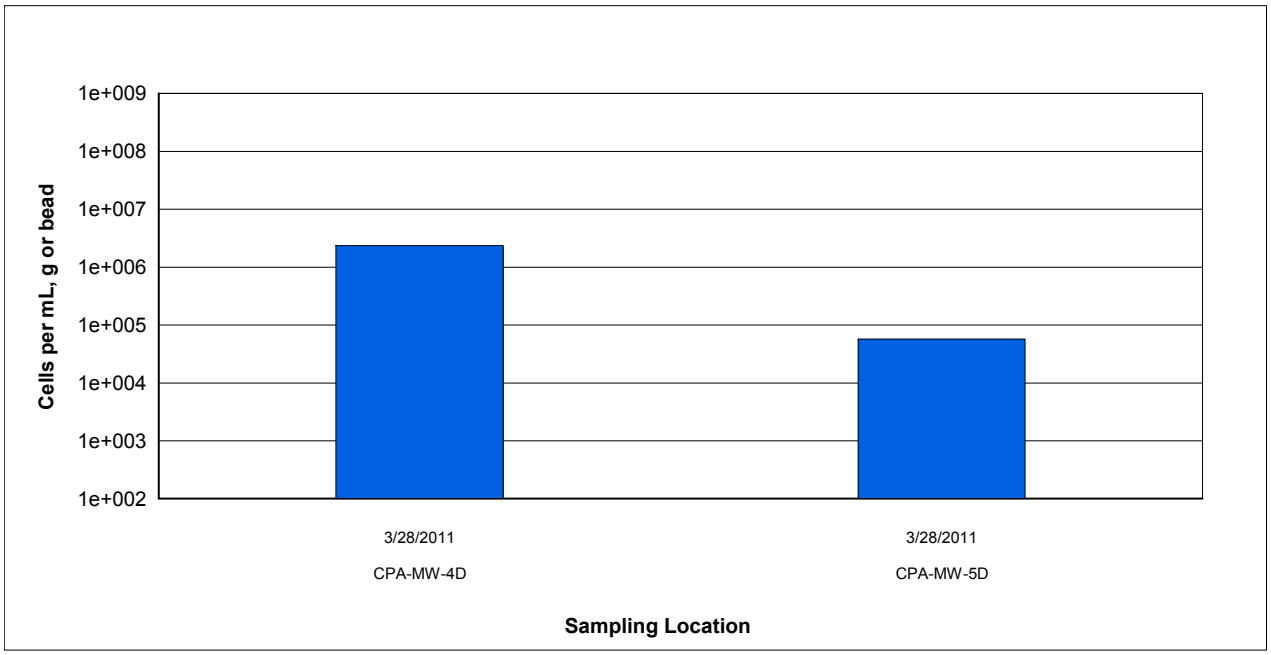


Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass

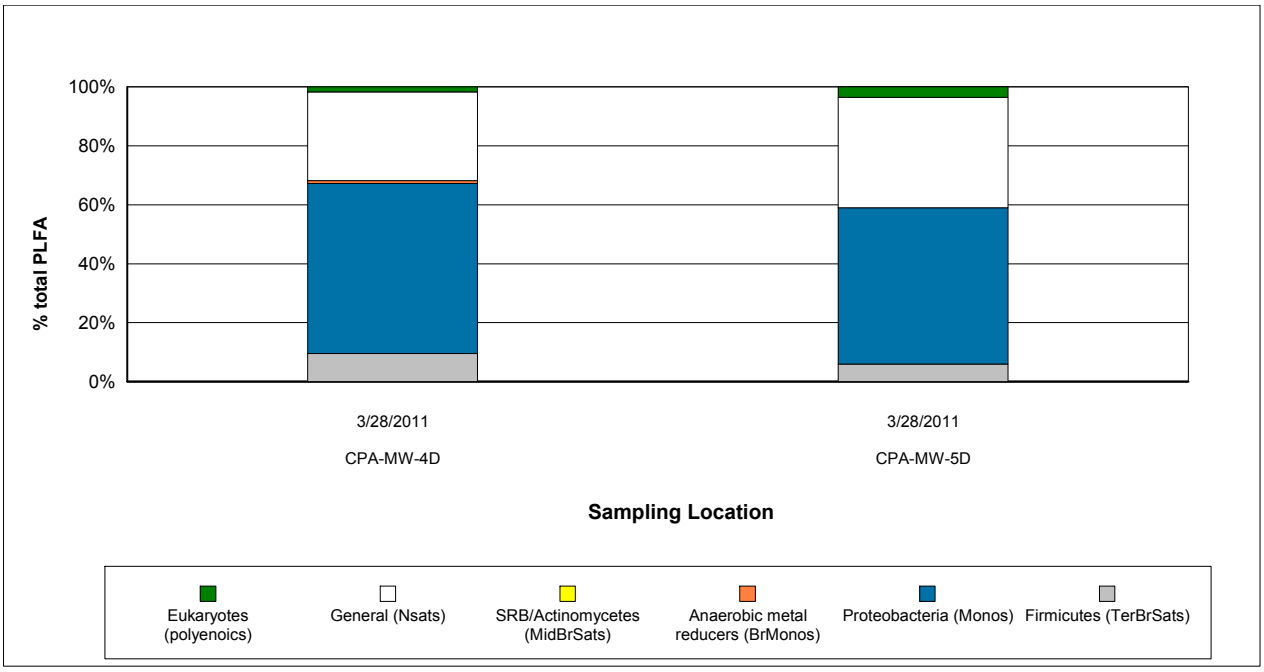


Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis.

microbialinsights

2340 Stock Creek Blvd.
Rockford TN 37853-3044
Phone (865) 573-8188
Fax: (865) 573-8133
Email: info@microbe.com

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 conversation 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.

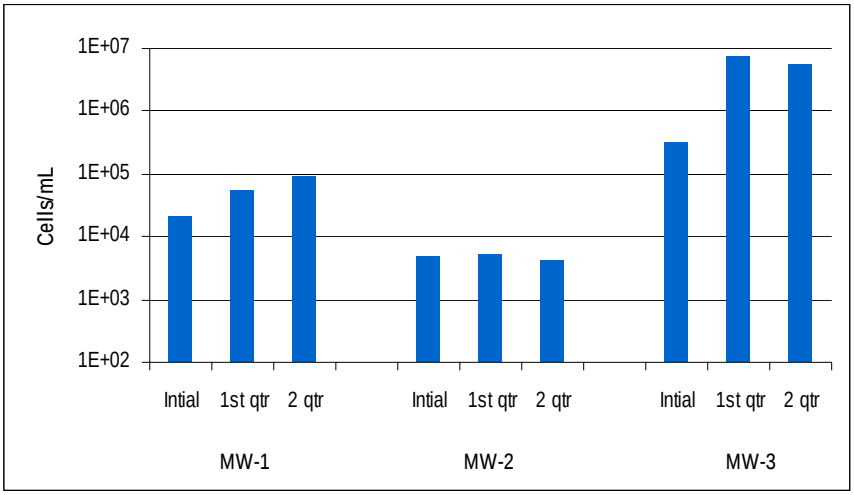


Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass (associated with higher organisms).

Conclusions from graph above:

- MW-1 showed a trend of biomass levels increasing steadily over time, although cell concentrations were ~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 ~10^5 to ~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 *Clostridia/Bacteriodes*-like), which produce the H_2 necessary for reductive dechlorination
Branched Monoenoic (BrMonos)	Found in the cell membranes of micro-aerophiles and anaerobes, such as sulfate- or iron-reducing bacteria	In contaminated environments high proportions are often associated with anaerobic sulfate and iron reducing bacteria
Mid-Chain Branched Saturated (MidBrSats)	Common in sulfate reducing bacteria and also Actinobacteria (High G+C Gram-positive bacteria).	In contaminated environments high proportions are often associated with anaerobic sulfate and iron reducing bacteria
Normal Saturated (Nsats)	Found in all organisms.	High proportions often indicate less diverse populations.
Polyenoic	Found in eukaryotes such as fungi, protozoa, algae, higher plants, and animals.	Eukaryotic scavengers will often rise up and prey on contaminant utilizing bacteria

Following are answers to some of the common questions about community composition and some detailed descriptions of some typical shifts which can be observed between sampling events.

How is the community structure data presented?

Community structure data is presented as percentage (%) of the total amount of PLFA. In order to relate the complex mixture of PLFA to the organisms present, the ratio of a specific PLFA group is determined (detailed in Table 1 above), and this corresponds to the proportion of the related bacterial classification within the overall community structure. Because normal saturated PLFA are found in both prokaryotes (bacteria) and eukaryotes (fungi, protozoa, diatoms etc), their distribution provides little insight into the types of microbes that are present at a sampling location. However, high proportions of normal saturates are often associated with less diverse microbial populations.

How can community structure data be used to manage my site?

It is important to understand that microbial communities are often a mixture of different types of bacteria (e.g. aerobes, sulfate reducers, methanogens, etc) with the abundance of each group behaving like a seesaw, i.e. as the population of one group increases, another is likely decreasing, mostly due to competition for available resources. The PLFA profile of a sample provides a "fingerprint" of the microbial community, showing relative proportions of the specific bacterial types at the time of sampling. This is a great tool for detecting shifts within the community over time and also to evaluate similarities/differences between sampling locations. It is important to note that PLFA analysis of community structure is analyzing the microbes directly, not just secondary breakdown products. So this provides evidence of how the entire microbial community is responding to the treatment.

How do I recognize community shifts and what they mean?

Shifts in the community structure are indications of changing conditions and their effect on the microbial community, and, by extension on the metabolic processes occurring at the sampling location. Some of the more commonly seen shifts within the community are illustrated and discussed below:

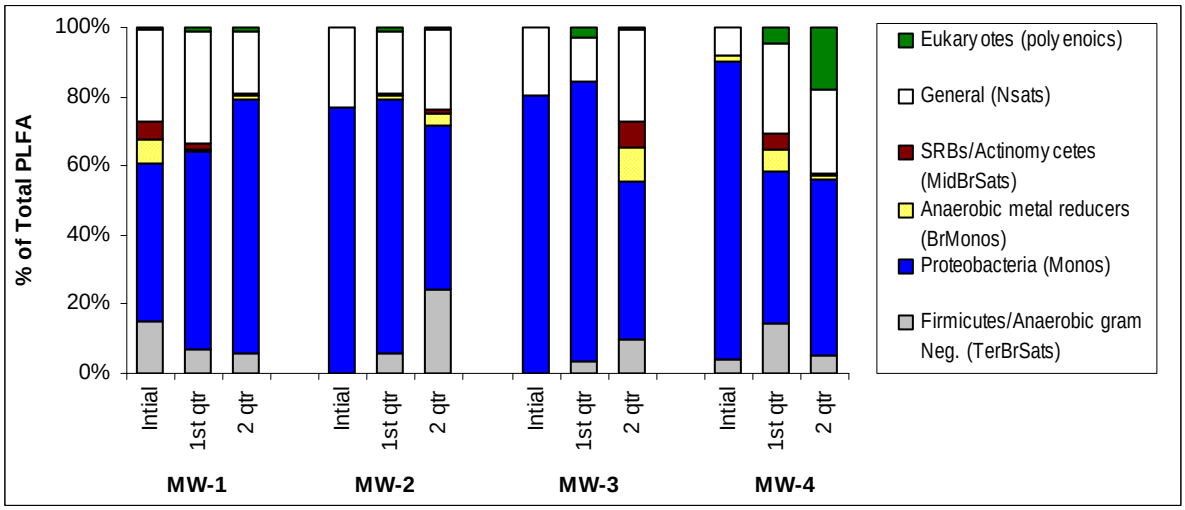


Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis. See Table 1 for detailed descriptions of structural groups.

- **Increased Proteobacteria**

Proportions of Proteobacteria are of interest because it is one of the largest groups of bacteria and represents a wide variety of both aerobe and anaerobes. The majority of hydrocarbons (including benzene and naphthalene) are metabolized by some member of Proteobacteria, mainly due to their ability to grow opportunistically, quickly taking advantage of available food (i.e. hydrocarbons), and adapting quickly to changes in the environment. The detection of increased proportions of Proteobacteria coupled with increased biomass suggests that the Proteobacteria are consuming something. In situations where it is important to determine the extent to which the Proteobacteria are utilizing anaerobic or aerobic pathways, it is possible to measure relative proportions of specific biomarkers that are associated with anaerobic or aerobic pathways thus separating the Proteobacteria into different groups, based on pathways used. Sample MW-1 from Figure 2 depicts a shift in community structure where the proportion of Proteobacteria has increased over time.

- **Increased Firmicutes/Anaerobic Gram negative bacteria**

Increased proportions of Firmicutes/Anaerobic Gram negative bacteria generally indicate that conditions are becoming more reductive (i.e. more anaerobic). Proportions of Firmicutes are of particular interest in sites contaminated with chlorinated hydrocarbons because Firmicutes include anaerobic fermenting bacteria (mainly *Clostridia/Bacteriodes*-like), which produce the H_2 necessary for reductive dechlorination.

Enhanced bioremediation of chlorinated solvents often employs the injection of fermentable substrates which, when utilized by fermenting bacteria, results in the release of H_2. Engineered shifts in the microbial community can be shown by observing increased proportions Firmicutes following an injection of fermentable substrate. Through long-term monitoring of the community structure it is possible to know when re-injection may be necessary or desirable. Sample MW-2 from Figure 2 depicts a shift in community structure where the proportion of Firmicutes has increased over time.

- **Increased anaerobic metal reducing bacteria (BrMonos) and SRB/Actinomycetes (MidBrSats)**

An increase in the proportions of metal and sulfate reducing bacterial groups, especially when combined with shifts in the other bacterial groups, can provide information helpful to monitoring bioremediation. Generally, an increase in metal and sulfate reducers points to more reduced (anaerobic) conditions at the sampled location. This is especially true if there is an increase in Firmicutes at the same time. Large increases in either metal and sulfate reducers, particularly if accompanied by a decrease in Firmicutes, may suggest that conditions are becoming increasingly reduced. In this situation the metal and sulfate reducers may be out-competing dechlorinators for available H_2, thereby limiting the potential for reductive dechlorination at that location. Sample MW-3 from Figure 2 depicts a shift in community structure where the proportion of metal reducing bacteria has increased over time.

- **Increased Eukaryotes**

Eukaryotes include organisms such as fungi, protozoa, and diatoms. At a contaminated location, an increase in eukaryotes, particularly if seen with a decrease in the contaminant utilizing bacteria, suggests that eukaryotic scavengers are preying upon what had been an abundance of bacteria which were consuming the contaminant. Sample MW-4 from Figure 2 depicts a shift in community structure where the proportion of eukaryotes has increased over time.

Physiological status of Proteobacteria

The membrane of a microbe adapts to the changing conditions of its environment, and these changes are reflected in the PLFA. Toxic compounds or environmental conditions may disrupt the membrane and some bacteria respond by making *trans* fatty acids instead of the usual *cis* fatty acids (7) in order to strengthen the cell membrane, making it less permeable. Many Proteobacteria respond to lack of available substrate or to highly toxic conditions by making cyclopropyl (7) or mid-chain branched fatty acids (20) which point to less energy expenditure and a slowed growth rate. The physiological status ratios for Decreased Permeability (trans/cis ratio) and for Slowed Growth (cy/cis ratio) are based on dividing the amount of the fatty acid induced by environmental conditions by the amount of its biosynthetic precursor.

What does slowed growth or decreased permeability mean?

Ratios for slowed growth and for decreased permeability of the cell membrane provide information on the “health” of the Gram negative community, that is, how this population is responding to the conditions present in the environment. It should be noted that one must be cautious when interpreting these measures from only one sampling event. The most effective way to use the physiological status indicators is in long term monitoring and comparing how these ratios increase/decrease over time.

A marked increase in either of these ratios suggests a change in environment which is less favorable to the Gram negative Proteobacteria population. The ratio for slowed growth is a relative measure, and does not directly correspond to log or stationary phases of growth, but is useful as a comparison of growth rates among sampling locations and also over time. An increase in this ratio (i.e. slower growth rate) suggests a change in conditions which is not as supportive of rapid, “healthy” growth of the Gram negative population, often due to reduced available substrate (food). A larger ratio for decreased permeability suggests that the environment has become more toxic to the Gram negative population, requiring energy expenditure to produce *trans* fatty acids in order to make the membrane more rigid.

References

1. Amann, R. I., W. Ludwig, and K.-H. Schleifer. 1995. Phylogenetic identification and in situ detection of individual microbial cells without cultivation. Microbiological Reviews 59:143-169.
2. Cottrell, MT and David L. Kirchman. Appl Environ Microbiol. 2000 April; 66 (4): 16921697.
3. Gillis, M., V. Tran Van, R. Bardin, M. Goor, P. Hebbar, A. Willems, P. Segers, K. Kerstens, T. Heulin, and M. P. Fernadez. 1995. Polyphasic taxonomy in the genus Burkholderia leading to an amended description of the genus and proposition of Burkholderia vietnamiensis sp. nov. for N2-fixing isolates from rice in Vietnam. Int. J. Syst. Bacteriol. 45:274-289.
4. Dowling, N. J. E., F. Widdel, and D. C. White. 1986. Phospholipid ester-linked fatty acid biomarkers of acetate-oxidizing sulfate reducers and other sulfide forming bacteria. Journal of General Microbiology 132:1815-1825.
5. Edlund, A., P. D. Nichols, R. Roffey, and D. C. White. 1985. Extractable and lipopolysaccharide fatty acid and hydroxy acid profiles from Desulfovibrio species. Journal of Lipid Research 26:982-988.
6. Guckert, J. B., C. P. Antworth, P. D. Nichols, and D. C. White. 1985. Phospholipid ester-linked fatty acid profiles as reproducible assays for changes in prokaryotic community structure of estuarine sediments. FEMS Microbiol. Ecol. 31:147-158.
7. Guckert, J. B., M. A. Hood, and D. C. White. 1986. Phospholipid ester-linked fatty acid profile changes during nutrient deprivation of Vibrio cholerae: increases in the trans/cis ratio and proportions of cyclopropyl fatty acids. Appl. Environ. Microbiol. 52:794–801.
8. Hedrick, D.B., A Peacock, J.R. Stephen, S.J. Macnaughton, Julia Brüggemann, and David C. White. 2000. Measuring soil microbial community diversity using polar lipid fatty acid and denatured gradient gel electrophoresis data. J. Microbiol. Methods, 41, 235-248.
9. ITRC Internet Training on Natural Attenuation of Chlorinated Solvents in Groundwater: Principles and Practices, Apr 00.
10. Löffler, F. E., Q. Sun, et al. (2000). "16S rRNA gene-based detection of tetrachloroethene-dechlorinating Desulfuromonas and Dehalococcoides species." Appl Environ Microbiol 66(4): 1369-1374.
11. Maymo-Gatell X, Chien Y, Gossett JM, Zinder SH. 1997. Isolation of a bacterium that reductively dechlorinates tetrachloroethene to ethene. Science 276(5318):1568-71.
12. Muyzer, G., E. C. De Waal, and A. G. Uitterlinden. 1993. Profiling of complex microbial populations by denaturing gradient gel electrophoresis analysis of polymerase chain reaction-amplified genes coding for 16S rRNA. Applied and Environmental Microbiology 59:695-700.
13. Ribosomal Database Project (http://rdp.cme.msu.edu. National Center for Biotechnology Information. (http://www.ncbi.nlm.nih.gov/)
14. Overman, J., "Family Chlorobiaceae," in M. Dworkin et al., eds., The Prokaryotes: An Evolving Electronic Resource for the Microbiological Community, 3rd edition, release 3.7, November 2, 2001, Springer-Verlag, New York, www.prokaryotes.com.
15. Ringelberg, D. B., G. T. Townsend, K. A. DeWeerd, J. M. Sulita, and D. C. White. 1994. Detection of the anaerobic dechlorinating microorganism Desulfomonile tiedjei in environmental matrices by its signature lipopolysaccharide branch-long-chain hydroxy fatty acids. FEMS Microbiol. Ecol. 14:9-18.
16. Schlötelburg, C. 2001. Mikrobielle Diversität und Dynamik einer 1,2-Dichlorpropan dechlorierenden Mischkultur (Microbial Diversity and Dynamics in a 1,2-Dichloropropane Dechlorinating Mixed Culture). Dissertation, Humbolt University, Berlin, Germany. In German: http://edoc.hu-berlin.de/dissertationen/schloetelburg-cord-2001-12-07/PDF/Schloetelburg.pdf
17. Sharp, R., D. Cossar, and R. Williams. 1995. Physiology and metabolism of Thermus. Biotechnol. Handb. 9:67-91.
18. Stephen, J. R., Y.-J. Chang, Y. D. Gan, A. Peacock, S. Pfiffner, M. Barcelona, D. C. White, and S. J. Macnaughton. 1999. Microbial characterization of a JP-4 fuel-contaminated site using a combined lipid biomarker/polymerase chain reaction-denaturing gradient gel electrophoresis (PCR-DGGE) based approach. Environmental Microbiology 1:231-241.
19. Tighe, S.W., de Lajudie, P., Dipietro, K., Lindström, K., Nick, G. & Jarvis, B.D.W. (2000). Analysis of cellular fatty acids and phenotypic relationships of Agrobacterium, Bradyrhizobium, Mesorhizobium, Rhizobium and Sinorhizobium species using the Sherlock Microbial Identification System. Int J Syst Evol Microbiol 50, 787-801.
20. Tsitko, I.V. Gennadi M. Zaitsev, Anatoli G. Lobanok, and Mirja S. Salkinoja-Salonen. 1999. Applied and Environmental Microbiology 65(2) 853-855.
21. White, D. C., W. M. Davis, J. S. Nickels, J. D. King, and R. J. Bobbie. 1979. Determination of the sedimentary microbial biomass by extractable lipid phosphate. Oecologia 40:51-62.
22. White, D. C., H. C. Pinkart, and D. B. Ringelberg. 1997. Biomass measurements: Biochemical approaches, p. 91-101. In C. J. Hurst, G. R. Knudsen, M. J. McInerney, L. D. Stetzenbach, and M. V. Walter (ed.), Manual of Environmental Microbiology. ASM Press, Washington.
23. White, D. C., and D. B. Ringelberg. 1995. Utility of signature lipid biomarker analysis in determining in situ viable biomass, community structure, and nutritional / physiological status of the deep subsurface microbiota. In P. S. Amy and D. L. Halderman (ed.), The microbiology of the terrestrial subsurface. CRC Press, Boca Raton.
24. White, D. C., J. O. Stair, and D. B. Ringelberg. 1996. Quantitative comparisons of in situ microbial biodiversity by signature biomarker analysis. Journal of Industrial Microbiology 17:185-196.
25. Vandamme P, Pot B, Gillis M, de Vos P, Kersters K, Swings J. Polyphasic taxonomy, a consensus approach to bacterial systematics. Microbiol Rev 1996 Jun;60(2):407-38.

2340 Stock Creek Blvd.
Rockford, TN 37853-3044
Phone: 865.573.8188
Fax: 865.573.8133
Web: www.microbe.com

SITE LOGIC Report

Stable Isotope Probing (SIP) Study

Contact: Duane Kreuger
Address: Geotechnology – St. Louis MO
11816 Lackland Road
St. Louis, MO 63146

Phone: 314-997-7740

Email: d_kreuger@geotechnology.com

MI Identifier: 069IC

Report Date: May 16, 2011

Project: Solutia - BioTraps

Comments: Final Report

Executive Summary

Bio-Trap® samplers baited with ^{13}C labeled benzene or chlorobenzene were deployed for 28 days and then recovered for analysis. A complete summary of the results is provided in Table 1.

- Quantification of the ^{13}C dissolved inorganic carbon (DIC) showed a high level of mineralization occurring in the ^{13}C benzene sampler. There was a moderate level of mineralization occurring in the ^{13}C chlorobenzene sampler.
- Quantification of ^{13}C enriched biomass demonstrated a high level of utilization of the ^{13}C benzene in the sampler BSA-MW-2D Benzene SIP. There was a low level of incorporation of ^{13}C chlorobenzene into the biomass in well CPA-MW-3D Chlorobenzene SIP. However, the fact that incorporation is seen in both samplers indicates that biodegradation is occurring.
- Comparison of pre- and post-deployment concentrations of ^{13}C labeled benzene and ^{13}C labeled chlorobenzene showed little if any loss of the labeled contaminants. Despite this finding, biodegradation is occurring under current site conditions as evidenced by the incorporation of the ^{13}C contaminants into the biomass and the observed mineralization.
- A moderate level of biomass was detected in the ^{13}C benzene and in the ^{13}C chlorobenzene sampler (~10^5 cells/bead).

2340 Stock Creek Blvd.
Rockford, TN 37853-3044
Phone: 865.573.8188
Fax: 865.573.8133
www.microbe.com

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.

2340 Stock Creek Blvd.
Rockford, TN 37853-3044
Phone: 865.573.8188
Fax: 865.573.8133
www.microbe.com

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 Benzene SIP	CPA-MW-3D Chlorobenzene SIP
^{13}C Contaminant Loss		
Benzene Pre-deployment (mg/bd)	1.65 ± 0.031	----
Benzene Post-deployment (mg/bd)	1.65 ± 0.127	----
Chlorobenzene Pre-deployment (mg/bd)	----	0.91 ± 0.075
Chlorobenzene Post-deployment (mg/bd)	----	0.93 ± 0.058
Biomass & ^{13}C Incorporation		
Total Biomass (Cells/bd)	3.78E+05	5.35E+05
^{13}C Enriched Biomass (Cells/bd)	6.92E+03	5.79E+03
Average PLFA Del (‰)	1,128	46
Maximum PLFA Del (‰)	2,479	110
^{13}C Mineralization		
DIC Del (‰)	11,874	259
% 13C	12.46%	1.37%
Community Structure (% total PLFA)		
Firmicutes (TerBrSats)	3.4	6.9
Proteobacteria (Monos)	44.8	48.1
Anaerobic metal reducers (BrMonos)	0.0	0.3
Actinomycetes (MidBrSats)	0.0	15.3
General (Nsats)	49.3	20.8
Eukaryotes (Polyenoics)	2.5	8.5
Physiological Status (Proteobacteria only)		
Slowed Growth	0.03	0.22
Decreased Permeability	0.13	0.17

2340 Stock Creek Blvd.
Rockford, TN 37853-3044
Phone: 865.573.8188
Fax: 865.573.8133
www.microbe.com

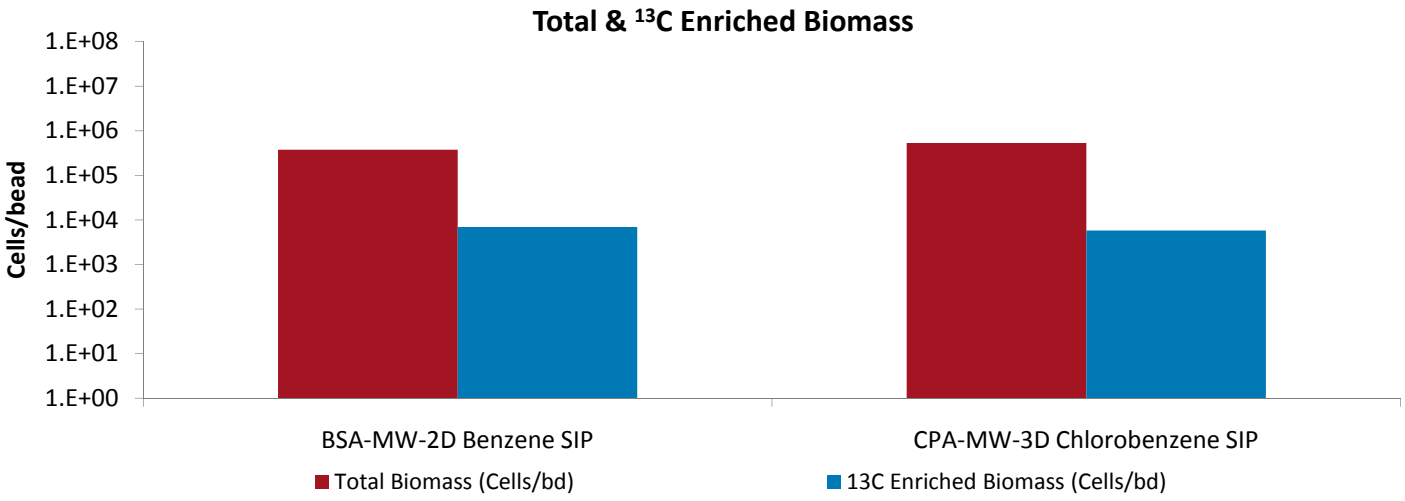


Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass (associated with higher organisms).

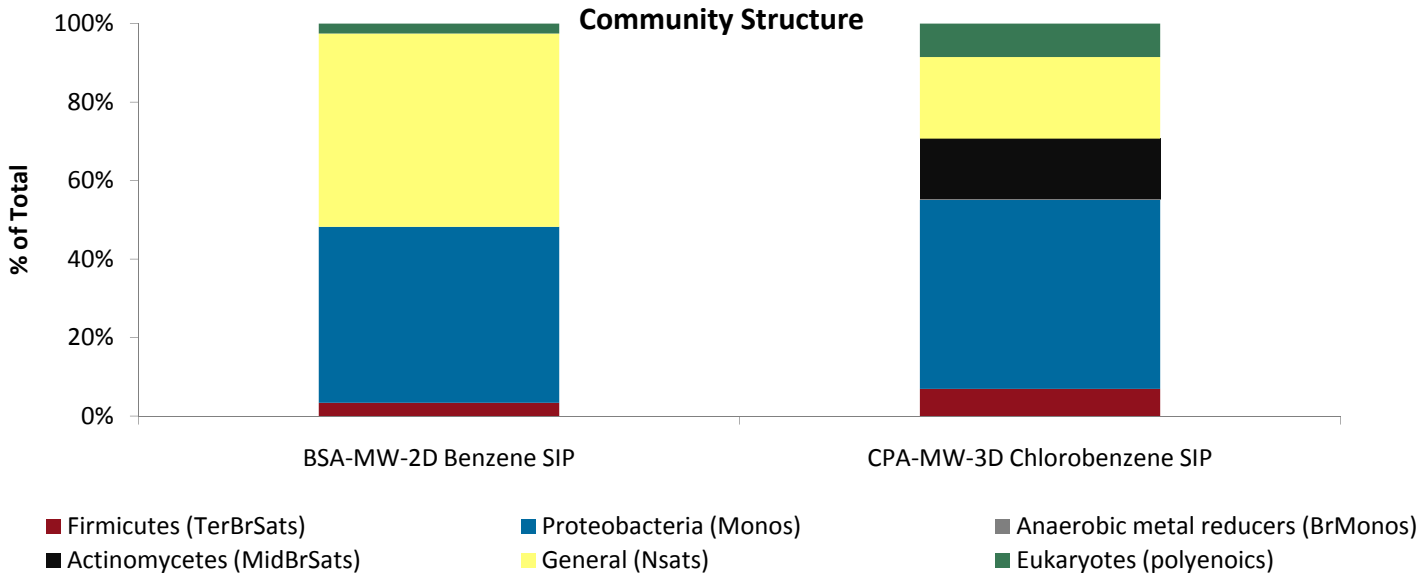


Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis. See the table in the interpretation section for detailed descriptions of the structural groups.

2340 Stock Creek Blvd.
Rockford, TN 37853-3044
Phone: 865.573.8188
Fax: 865.573.8133
www.microbe.com

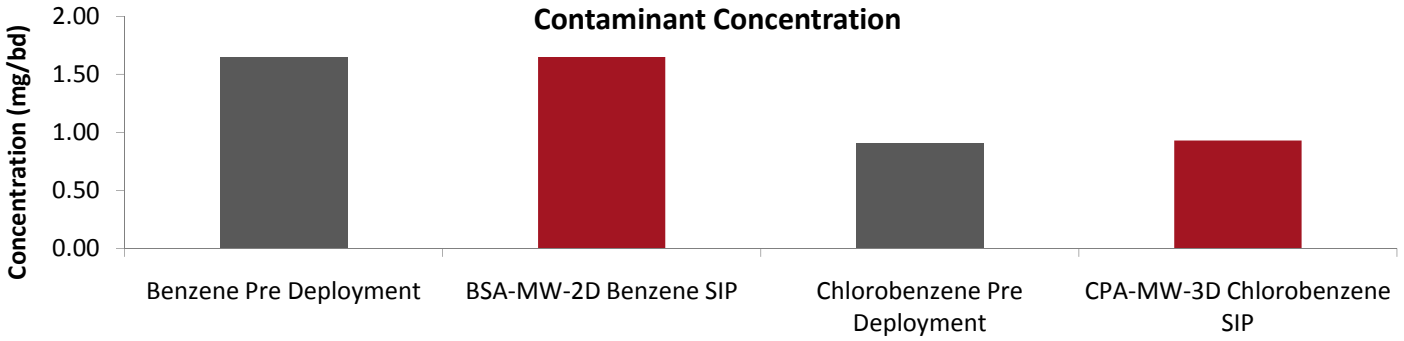


Figure 3. Comparison of Pre-deployment concentrations loaded on Bio-Sep beads to the concentrations detected after incubation.

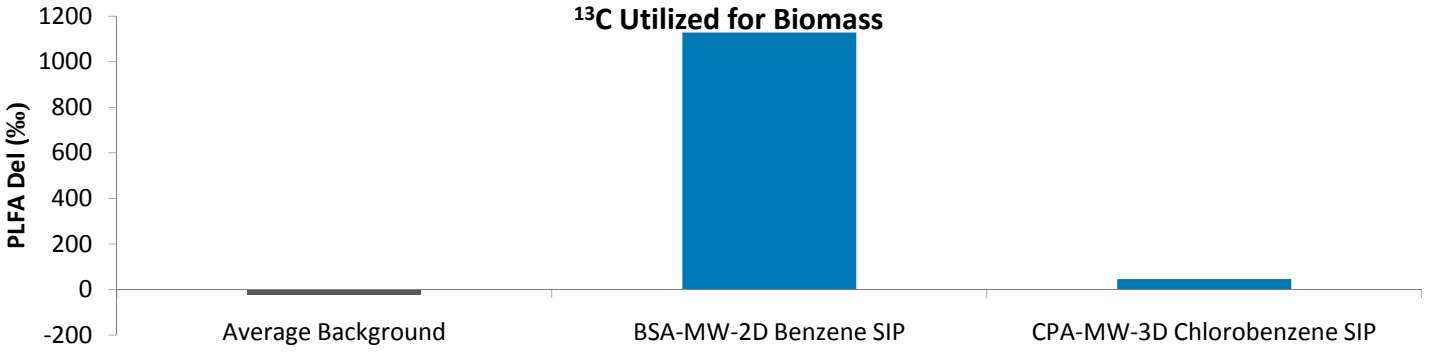


Figure 4. Comparison of the average Del value obtained from PLFA biomarkers from each Bio-Trap® unit to the average background Del observed in samples not exposed to ^{13}C enriched compounds.

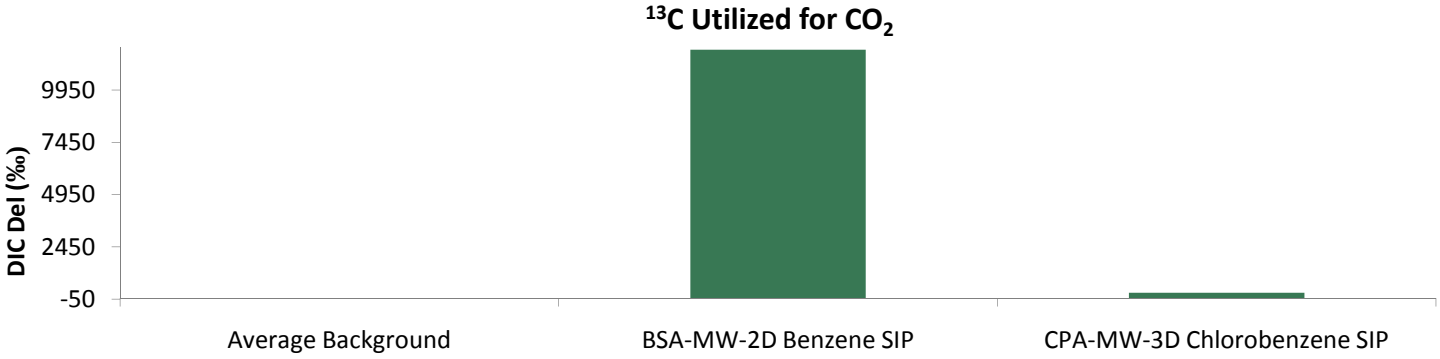


Figure 5. Comparison of the Del value obtained from DIC from each Bio-Trap® unit to the average background Del observed in samples not exposed to ^{13}C enriched compounds.

2340 Stock Creek Blvd.
Rockford, TN 37853-3044
Phone: 865.573.8188
Fax: 865.573.8133
www.microbe.com

Interpretation

Interpretation of the results of the SIP Bio-Trap® study must be performed with due consideration of site conditions, site activities, and the desired treatment mechanism. The following discussion describes interpretation of results in general terms and is meant to serve as a guide.

Contaminant Concentration: Bio-Traps® are baited with a ^{13}C labeled contaminant of concern and a pre-deployment concentration is determined prior to shipping. Following deployment, Bio-Traps® are recovered for analysis including measurement of the concentration of the ^{13}C labeled contaminant remaining. Pre- and post-deployment concentrations are used to calculate percent loss.

Biomass Concentrations: PLFA analysis is one of the most reliable and accurate methods available for the determination of viable (live) biomass. Phospholipids break down rapidly upon cell death, so biomass calculations based on PLFA content do not include "fossil" lipids from dead cells. Total biomass (cells/bead) is calculated from total PLFA using a conversion factor of 20,000 cells/pmole of PLFA. When making comparisons between wells, treatments, or over time, differences of one order of magnitude or more are considered significant.

Total Biomass		
Low	**Moderate**	**High**
10^3 to 10^4 cells	10^5 to 10^6 cells	10^7 to 10^8 cells

For SIP studies, the ^{13}C enriched PLFA is also determined to conclusively demonstrate contaminant biodegradation and quantify incorporation into biomass as a result of the ^{13}C being used for cellular growth. The % ^{13}C incorporation (^{13}C enriched biomass/total biomass) is also provided in the data summary table, but the value must be interpreted carefully especially when comparing wells or treatments. Typically, biodegradation of a contaminant of concern is performed by a small subset of the total microbial community. For Bio-Traps® with large total biomass, the % ^{13}C incorporation value could be low despite significant ^{13}C labeled biomass and loss of the compound. The % ^{13}C incorporation should be viewed in light of total biomass, percent loss, and dissolved inorganic carbon (DIC) results.

^{13}C enrichment data is often reported as a del value. The del value is the difference between the isotopic ratio ($^{13}C/^{12}C$) of the sample (R_x) and a standard (R_{std}) normalized to the isotopic ratio of the standard (R_{std}) and multiplied by 1,000 (units are parts per thousand, denoted ‰).

R_{std} is the naturally occurring isotopic ratio and is approximately 0.011180 (roughly 1% of naturally occurring carbon is ^{13}C). The isotopic ratio, R_x, of PLFA is typically less than the R_{std} under natural conditions, resulting in a del value between -20 and -30‰. For a SIP Bio-Trap® study, biodegradation and incorporation of the ^{13}C labeled compound into PLFA results in a larger $^{13}C/^{12}C$ ratio (R_x) and thus del values greater than under natural conditions. Typical PLFA del values are provided below.

PLFA Del (‰)		
Low	**Moderate**	**High**
0 to 100	100 to 1,000	>1,000

2340 Stock Creek Blvd.
Rockford, TN 37853-3044
Phone: 865.573.8188
Fax: 865.573.8133
www.microbe.com

Dissolved Inorganic Carbon (DIC): Often, bacteria can utilize the ^{13}C labeled compound as both a carbon and energy source. The ^{13}C portion used as a carbon source for growth can be incorporated into PLFA as discussed above, while the ^{13}C used for energy is oxidized to $^{13}CO_2$ (mineralized).

^{13}C enriched CO_2 data is often reported as a del value as described above for PLFA. Under natural conditions, the R_x of CO_2 is approximately the same as R_{std} (0.01118 or about 1.1% ^{13}C). For an SIP Bio-Trap® study, mineralization of the ^{13}C labeled contaminant of concern would lead to a greater value of R_x (increased $^{13}CO_2$ production) and thus a positive del value. As with PLFA, del values between 0 and 100‰ are considered low, values between 100 and 1,000‰ are considered moderate, and values greater than 1,000‰ are considered high. Thus DIC $\%^{13}C$ are considered low if the value is less than 1.23%, moderate if between 1.23 and 2.24%, and high if greater than 2.24%.

Dissolved Inorganic Carbon (DIC) Del and $\%^{13}C$		
Low	**Moderate**	**High**
0 to 100	100 to 1,000	>1,000
1.11 to 1.23%	1.23 to 2.24%	>2.24%

Community Structure (% total PLFA): Community structure data is presented as a percentage of PLFA structural groups normalized to the total PLFA biomass. The relative proportions of the PLFA structural groups provide a "fingerprint" of the types of microbial groups (e.g. anaerobes, sulfate reducers, etc.) present and therefore offer insight into the dominant metabolic processes occurring at the sample location. Thorough interpretation of the PLFA structural groups depends in part on an understanding of site conditions and the desired microbial biodegradation pathways. For example, an increase in mid chain branched saturated PLFA (MidBrSats), indicative of sulfate reducing bacteria (SRB) and *Actinomycetes*, may be desirable at a site where anaerobic BTEX biodegradation is the treatment mechanism, but would not be desirable for a corrective action promoting aerobic BTEX or MTBE biodegradation. The following table provides a brief summary of each PLFA structural group and its potential relevance to bioremediation.

Table 2. Description of PLFA structural groups.

PLFA Structural Group	General classification	Potential Relevance to Bioremediation Studies
Monoenoic (Monos)	Abundant in Proteobacteria (Gram negative bacteria), typically fast growing, utilize many carbon sources, and adapt quickly to a variety of environments.	Proteobacteria is one of the largest groups of bacteria and represents a wide variety of both aerobes and anaerobes. The majority of Hydrocarbon utilizing bacteria fall within the Proteobacteria
Terminally Branched Saturated (TerBrSats)	Characteristic of Firmicutes (Low G+C Gram-positive bacteria), and also found in Bacteriodes, and some Gram-negative bacteria (especially anaerobes).	Firmicutes are indicative of presence of anaerobic fermenting bacteria (mainly *Clostridia/Bacteriodes*-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

2340 Stock Creek Blvd.
Rockford, TN 37853-3044
Phone: 865.573.8188
Fax: 865.573.8133
www.microbe.com

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 ($^{13}C/^{12}C$) 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 ‰).

$$Del = (R_x - R_{std})/R_{std} \times 1000$$

References

1. White, D.C., W.M. Davis, J.S. Nickels, J.D. King, and R.J. Bobbie. 1979. Determination of the sedimentary microbial biomass by extractable lipid phosphate. Oecologia 40:51-62.
2. White, D.C. and D.B. Ringelberg. 1995. Utility of signature lipid biomarker analysis in determining in situ viable biomass. In P.S. Amy and D.L. Halderman (eds.) The microbiology of the terrestrial surface. CRC Press, Boca Raton.
3. Guckert, J.B., M.A. Hood, and D.C. White. 1986. Phospholipid ester-linked fatty acid profile changes during nutrient deprivation of *Vibrio chloerae*: increases in the trans/cis ratio and proportions of cyclopropyl fatty acids. Applied and Environmental Microbiology. 52:794-801.
4. Tsitko, I.V., G. M. Zaitsev, A. G. Lobanok, and M.S. Salkinoja-Salonen. 1999. Effect of aromatic compounds on cellular fatty acid composition of *Rhodococcus opacus*. Applied and Environmental Microbiology. 65:853-855.

2340 Stock Creek Blvd.
Rockford, TN 37853-3044
Phone: 865.573.8188
Fax: 865.573.8133
www.microbe.com