SOLUTIA
Solutions for a better life.

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

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Tel 314-674-1000

November 23, 2009

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

VIA FEDEX

Re: Route 3 Drum Site Groundwater Monitoring Program
3rd Quarter 2009 Data Report
Solutia Inc., W. G. Krummrich Plant, Sauget, IL

Dear Mr. Bardo:

Enclosed please find the Route 3 Drum Site Groundwater Monitoring Program 3rd Quarter 2009 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

Route 3 Drum Site Groundwater Monitoring Program
3rd Quarter 2009 Data Report
Solutia Inc., W. G. Krummrich Plant, Sauget, IL

USEPA

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Solutia

Cathy Bumb	575 Maryville Centre Drive, St. Louis, MO 63141
Justin Prien	500 Monsanto Avenue, Sauget, IL 62206-1198

3RD QUARTER 2009
DATA REPORT

ILLINOIS ROUTE 3 DRUM SITE GROUNDWATER SAMPLING

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

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

November 2009

URS Corporation
1001 Highland Plaza Drive West, Suite 300
St. Louis, MO 63110
(314) 429-0100
Project # 21562046.00002

1.0 INTRODUCTION 1

2.0 FIELD PROCEDURES 1

3.0 LABORATORY PROCEDURES 3

4.0 QUALITY ASSURANCE 3

5.0 OBSERVATIONS 4

6.0 REFERENCES 4

List of Figures

Figure 1 Site Location Map
Figure 2 Monitoring Well Location Map

List of Tables

Table 1 Monitoring Well Gauging Information
Table 2 Groundwater Analytical Results
Table 3 Monitored Natural Attenuation Results Summary

List of Appendices

Appendix A Groundwater Purging and Sampling Forms
Appendix B Chains-of-Custody
Appendix C Quality Assurance Report
Appendix D Groundwater Analytical Results (with Data Review/Validation Sheets)

1.0 INTRODUCTION

Solutia Inc. (Solutia) is conducting groundwater monitoring activities as outlined in the Revised Illinois Route 3 Drum Site Operation and Maintenance Plan (Solutia, 2008). The Illinois Route 3 Drum Site (Site) is an area associated with the Solutia W.G. Krummrich Facility located in Sauget, Illinois that is subject to a RCRA Administrative Order on Consent (AOC) entered into by the U.S. EPA and Solutia on May 3, 2000. This report presents the results of the sampling event completed in 3rd Quarter 2009 (3Q09). The Site is located in the area identified as "Lot F" in **Figure 1**.

During the 3Q09 sampling event, groundwater samples were collected from two Shallow Hydrogeologic Unit (SHU) monitoring wells, designated GM-31A and GM-58A (**Figure 2**), located hydraulically downgradient of the Site**.** Samples from each well were analyzed for select semivolatile organic compounds (SVOCs) using EPA Method 8270C. In addition, samples were collected from both wells for evaluation of monitored natural attenuation (MNA). The types of natural attenuation processes active at the site will be determined by measurements of the following key geochemical parameters: alkalinity, carbon dioxide, chloride, dissolved oxygen (DO), ferrous iron, total and dissolved iron, total and dissolved manganese, methane, nitrate, sulfate, total and dissolved organic carbon, and oxidation-reduction potential (ORP).

2.0 FIELD PROCEDURES

URS Corporation (URS) personnel collected groundwater level measurements on August 17, and conducted the 3Q09 Illinois Route 3 Drum Site groundwater sampling on August 24, 2009. Groundwater samples were collected from two monitoring wells during the 3Q09 sampling event. This section summarizes the field investigative procedures.

Groundwater Level Measurements - An oil/water interface probe was used to measure depth to static groundwater levels and determine the presence of non-aqueous phase liquids (NAPL). Depth-to-groundwater measurements for the 3Q09 sampling event are presented in **Table 1**. NAPL was not detected in either of the monitoring wells.

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 no more than 400 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 five minutes. Purging of a well was considered complete when the following water quality parameters remained stable over three consecutive flow-thru 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-thru 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. Bottles were filled in the following order:

- Gas Sensitive Parameters (e.g., carbon dioxide, methane)
- Semivolatile 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, ferrous iron, and oxidation reduction potential).

Samples for analysis of ferrous iron, dissolved iron, and dissolved manganese were filtered in the field using in-line 0.2 micron disposable filters.

A Quality Assurance/Quality Control (QA/QC) sample consisting of an analytical duplicate (AD) was collected at a rate of 10% and matrix spike/matrix spike duplicates (MS/MSD) were collected at a rate of 5%. One duplicate and one MS/MSD sample were collected.

Each sample was labeled immediately following collection. The groundwater sample identification system included the following nomenclature: “GM-31A-0809” which denotes Groundwater Monitoring well number 31A sampled in August 2009. QA/QC samples are identified by the suffix AD or MS/MSD. A notation of “F” in the sample nomenclature indicates a sample that was filtered in the field with a 0.2 micron filter.

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 or below approximately 4°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, 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 overnight delivery service. Field sampling data sheets are included in **Appendix A**. COC forms are included in **Appendix B**.

3.0 LABORATORY PROCEDURES

Samples were analyzed by TestAmerica for a subset of 40 CFR 264 Appendix IX SVOCs, MNA parameters (per the Route 3 Drum Site O&M Plan), using the following methodologies:

- SVOCs, via USEPA SW-846 Method 8270C - The constituents of concern (COCs) identified by the USEPA are biphenyl, 2,4-dichlorophenol, dinitrochlorobenzene, nitrobenzene, 2-nitrobiphenyl, 3-nitrobiphenyl, 4-nitrobiphenyl, 2-nitrochlorobenzene, 3-nitrochlorobenzene, 4-nitrochlorobenzene, pentachlorophenol, and 2,4,6-trichlorophenol.
- MNA parameters consisting of alkalinity (310.1), carbon dioxide (310.1), chloride (325.2), total and dissolved iron (6010B), total and dissolved manganese (6010B), dissolved organic carbon (415.1), nitrate (353.2), sulfate (375.4), dissolved gases (RSK 175), and total organic carbon (TOC) (415.1).

Laboratory results were provided in electronic and hard copy formats.

4.0 QUALITY ASSURANCE

Analytical data were reviewed for quality and completeness. 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**. Laboratory result pages (i.e. Form 1's) along with data validation review sheets are included in **Appendix D**.

A total of five groundwater samples (two investigative groundwater samples, one field duplicate pair, and one MS/MSD pair) were prepared and analyzed by TestAmerica for SVOCs by USEPA SW-846 Method 8270C and MNA parameters. The results for the various analyses were submitted as sample delivery group (SDG) KOM05 containing results for GM-31A and GM-58A.

Evaluation of the analytical data followed procedures outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (USEPA 1999) and USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (USEPA 2004). Based on the above mentioned criteria, results reported for the analyses performed were accepted for their intended use. Acceptable levels of accuracy and precision, based on MS/MSD, LCS, surrogate and field duplicate data were achieved for this SDG to meet the project objectives. Completeness, which is defined to be the percentage of

analytical results which are judged to be valid, including estimated detect/non-detect (**J/UJ**) data, was 100 percent.

5.0 OBSERVATIONS

SVOCs were detected in the groundwater sample collected from monitoring well GM-58A, but not GM-31A, during the 3Q09 sampling event. Laboratory analytical data for groundwater sample GM-58A-0809 indicate 2,4,6-Trichlorophenol was detected at a concentration of 18 µg/L and 2-Chloronitrobenzene/4-Chloronitrobenzene was detected at a concentration of 22 µg/L. A summary of SVOC detections is provided in **Table 2**, with MNA results provided in **Table 3**.

The 3Q09 sampling event was the fifth event conducted in accordance with the Revised Illinois Route 3 Drum Site Operations and Maintenance Plan. Groundwater samples will be collected for eight quarters, at which time the results will be analyzed to determine if any statistically significant changes have occurred for any of the constituents of concern. In addition, MNA results will be reviewed/analyzed at the end of eight quarters to determine the types and magnitude of active natural attenuation processes at the Site.

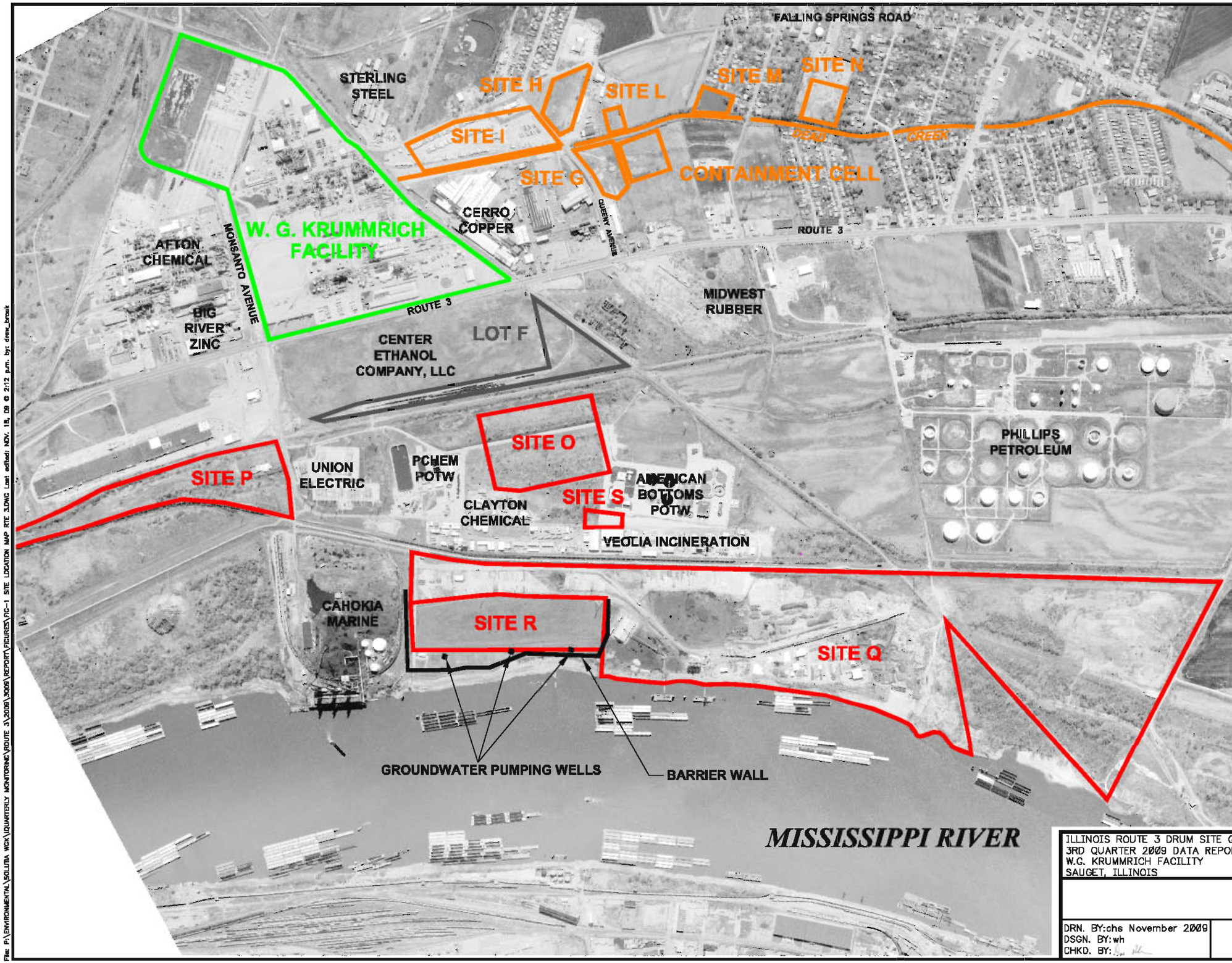
6.0 REFERENCES

Solutia Inc., 2008. Revised Illinois Route 3 Drum Site Operation and Maintenance Plan, W.G. Krummrich Facility, Sauget, IL, May 2008.

U.S. Environmental Protection Agency (USEPA), 1999. Contract Laboratory Program National Functional Guidelines for Organic Data Review.

U.S. Environmental Protection Agency (USEPA), 2004. Contract Laboratory Program National Functional Guidelines for Inorganic Data Review.

Figures



LEGEND

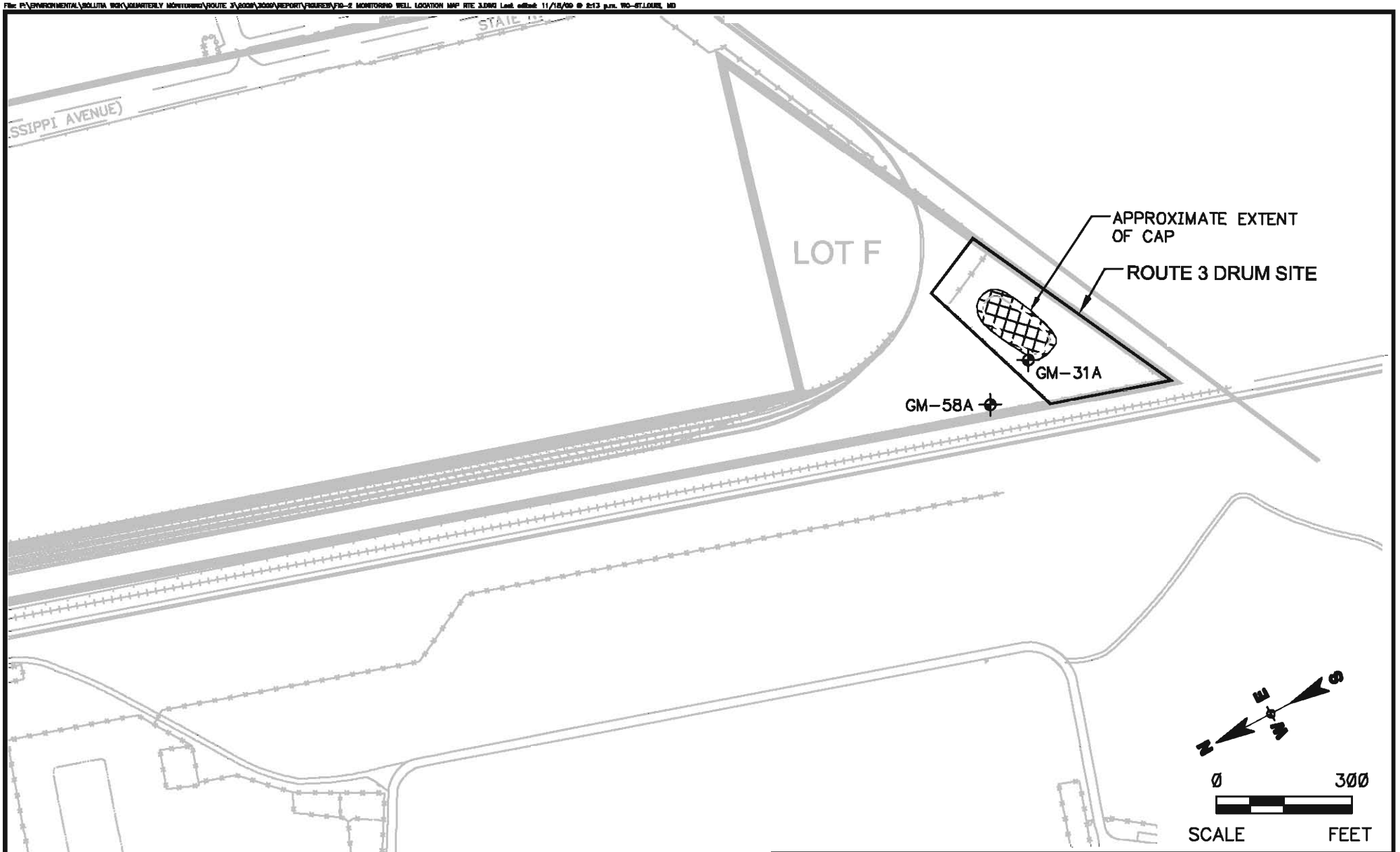
- W.G. KRUMMRICH FACILITY
- SAUGET AREA #1
- SAUGET AREA #2

0 1000
SCALE FEET

ILLINOIS ROUTE 3 DRUM SITE GROUNDWATER SAMPLING 3RD QUARTER 2009 DATA REPORT W.G. KRUMMRICH FACILITY SAUGET, ILLINOIS	PROJECT NO. 21562046
URS	
DRN. BY:chs November 2009 DSGN. BY:wh CHKD. BY:	Site Location Map
	FIG. NO. 1

File: P:\ENVIRONMENTAL\SOLUTIA WGK\QUARTERLY MONITORING\ROUTE 3\2009\3009\REPORT\FIGURES\FIG-1 SITE LOCATION MAP RTE 3.DWG Last edited: NOV. 18, 09 @ 2:12 p.m. by: drew_brouk

File: P:\ENVIRONMENTAL\POLLUTA TION\QUARTERLY MONITORING\ROUTE 3\2009\2009\REPORT\FIGURES\F10-2 MONITORING WELL LOCATION MAP RTE 3.DWG Last edited: 11/18/09 @ 2:13 p.m. TRO-ST.LOUIS, MO



LEGEND

MONITORING WELL LOCATION

ILLINOIS ROUTE 3 DRUM SITE GROUNDWATER SAMPLING 3RD QUARTER 2009 DATA REPORT W.G. KRUMMRICH FACILITY SAUGET, ILLINOIS	PROJECT NO. 21562046
URS	
DRN. BY: chs November 2009 DSGN. BY: ekf CHKD. BY:	Monitoring Well Location Map
	FIG. NO. 2

Tables

Table 1
Monitoring Well Gauging Information

Well ID	Construction Details						17-Aug-09		
	Ground Elevation* (feet)	Top of 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)	Product Thickness (feet)	Water Elevation* (feet)
Shallow Hydrogeologic Unit (SHU 395 - 380 ft NAVD 88)									
GM-31A	416.63	418.63	19.00	39.00	397.63	377.63	20.98	-	397.65
GM-58A	412.24	414.24	19.40	39.40	392.84	372.84	16.95	-	397.29

Notes:
* - Elevation based upon North American Vertical Datum (NAVD) 88 datum
bgs - below ground surface
btoc - below top of casing
Ground elevation for GM-58A calculated using top of screen elevation and depth to top of screen in feet below ground surface

Table 2
Groundwater Analytical Results

Sample ID	Sample Date	1,1'-Biphenyl (ug/L)	1-Chloro-2,4-Dinitrobenzene (ug/L)	1-Chloro-3-Nitrobenzene (ug/L)	2,4,6-Trichlorophenol (ug/L)	2,4-Dichlorophenol (ug/L)	2-Chloronitrobenzene/ 4-Chloronitrobenzene (ug/L)	2-Nitrobiphenyl (ug/L)	3-Nitrobiphenyl (ug/L)	3,4-Dichloronitrobenzene (ug/L)	4-Nitrobiphenyl (ug/L)	Nitrobenzene (ug/L)	Pentachlorophenol (ug/L)
Shallow Hydrogeologic Unit (SHU 395 - 380 ft NAVD 88)													
GM-31A-0809	8/24/2009	<9.4 UJ	<9.4	<9.4	<9.4	<9.4	<19	<9.4	<9.4	<9.4	<9.4	<9.4	<47
GM-31A-0809-AD	8/24/2009	<9.4	<9.4	<9.4	<9.4	<9.4	<19	<9.4	<9.4	<9.4	<9.4	<9.4	<47
GM-58A-0809	8/24/2009	<9.4 UJ	<9.4	<9.4	**18**	<9.4	**22**	<9.4	<9.4	<9.4	<9.4	<9.4	<47

Notes:
µg/L = micrograms per liter
< = Result is non-detect, less than the reporting limit given - indicated as a U qualifier on lab data
UJ = Estimated non-detect
BOLD indicates concentration greater than the reporting limit

Table 3
Monitored Natural Attenuation Results Summary

Sample ID	Sample Date	Alkalinity (mg/L)	Carbon Dioxide (mg/L)	Chloride (mg/L)	Dissolved Oxygen (mg/L)	Ethane (ug/L)	Ethylene (ug/L)	Ferrous Iron (mg/L)	Iron (mg/L)	Iron, Dissolved (mg/L)	Manganese (mg/L)	Manganese, Dissolved (mg/L)	Methane (µg/L)	Nitrogen, Nitrate (mg/L)	Sulfate as SO4 (mg/L)	Dissolved Organic Carbon (mg/L)	Total Organic Carbon (mg/L)	ORP (mV)
Shallow Hydrogeologic Unit (SHU 395 - 380 ft NAVD 88)																		
GM-31A-0809	8/24/2009	500	51 B	84	1.3	<0.35	<0.33		1.1		0.96		14	1.5	240		4	54.8
GM-31A-F(0.2)-0809	8/24/2009							0.03		0.091		0.89				3.8		
GM-58A-0809	8/24/2009	540	<44	97	0.98	<0.35	<0.33		0.2		1.6		12	0.18	150		4.4	141
GM-58A-F(0.2)-0809	8/24/2009							0.12		<0.05		1.6				6.3		

Notes:
DO and ORP were measured in the field using a YSI 6920 equipped with a flow-through cell.
Ferrous Iron readings were measured in the field using a LaMotte Colorimeter after the groundwater passed through a 0.2 µ filter.
mg/L = milligrams per liter
µg/L = micrograms per liter
< = Result is non-detect, less than the reporting limit given - indicated as a U qualifier on lab data
A blank space indicates sample not analyzed for select analyte.
B = Compound was found in the blank and sample
F(0.2) = Sample was filtered utilizing a 0.2 µ filter in the field.
mV = milivolts

Appendix A

Groundwater Purging and Sampling Forms

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: WGK Route 3 Drum Lot PROJECT NUMBER: 21562046.00000 FIELD PERSONNEL: Mike Corbett, Dave Palmer
DATE: 8/24/09 WEATHER: Sunny, 70s
MONITORING WELL ID: GM-31A SAMPLE ID: GM-31A-0809

INITIAL DATA

Well Diameter: 2 in
Measured Well Depth (btoc): 40.85 ft
Constructed Well Depth (btoc): 41.00 ft
Depth to Water (btoc): 21.08 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): 21.00 ft
Screen Length: 20 ft

Water Column Height (do not include LNAPL or DNAPL): 19.77 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Lenth is <4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = 31.00 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are < 4ft,
Place Pump at: Total Well Depth – (0.5 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

Volume of Flow Through Cell): 750 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 2,250 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: Stainless Steel Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH (±0.2 units)	Temp (°C)	Cond. (ms/cm) (±3 %)	Turbidity (NTUs)	DO (mg/l) (±10 % or ±2 mg/L)	ORP (mv) (±20 mV)
0	0932	21.10	lt. brown	none	6.47	15.79	1.482	193.6	0.94	101.0
2,400	0938				6.52	15.95	1.548	91.3	1.18	91.7
4,800	0944				6.54	16.06	1.560	91.0	1.33	87.3
7,200	0950				6.55	16.10	1.567	73.2	1.40	79.9
9,600	0956				6.56	16.07	1.568	61.7	1.40	71.7
12,000	1002				6.57	16.07	1.566	52.8	1.21	65.8
14,400	1006				6.57	16.04	1.574	48.4	1.32	61.2
16,800	1012				6.57	16.03	1.570	46.5	1.40	59.0
19,200	1014				6.57	16.15	1.570	46.1	1.34	57.7
21,600	1016				6.57	16.15	1.573	50.0	1.34	56.3
24,000	1018				6.57	16.08	1.578	50.1	1.30	54.8
					MEC					

Start Time: 0932
Stop Time: 1018
Elapsed Time: 46 min.
Average Purge Rate (mL/min): 400
Water Quality Meter ID: YSI 6920
Date Calibrated: 8/24/09

SAMPLING DATA

Sample Date: 8/24/09
Sample Method: Stainless Steel Monsoon
Sample Time: 1025
Sample Flow Rate: 400 mL/min
Analysis: SVOCs, Metals, MNA
QA/QC Samples: AD → GM-31A-0809-AD

COMMENTS:

MNA – Alkalinity, CO_2, Chloride, Ferrous Iron, Methane, Nitrate, Sulfate, DOC, TOC

Ferrous Iron (0.2 Micron filter) = 0.12 ppm

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: WGK Route 3 Drum Lot PROJECT NUMBER: 21562046.00000 FIELD PERSONNEL: Mike Corbett, Drew Brouk
DATE: 8/24/09 WEATHER: sunny, 70s
MONITORING WELL ID: GM-58A SAMPLE ID: GM-58A-0809

INITIAL DATA

Well Diameter: 2 in
Measured Well Depth (btoc): 40.90 ft
Total Well Depth (btoc): 41.40 ft
Depth to Water (btoc): 16.92 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): 21.40 ft
Screen Length: 20 ft

Water Column Height (do not include LNAPL or DNAPL): 23.98 ~~24.48~~ ~~23.49~~ ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Lenth is <4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = 31.40 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are < 4ft,
Place Pump at: Total Well Depth – (0.5 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

Volume of Flow Through Cell): 750 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 2,250 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: Peristaltic

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH (±0.2 units)	Temp (°C)	Cond. (ms/cm) (±3 %)	Turbidity (NTUs)	DO (mg/l) (±10 % or ±2 mg/L)	ORP (mv) (±20 mV)
0	1232	16.92	colorless	none	6.54	16.24	1.210	26.8	0.79	118.8
750	1235				6.47	16.83	1.379	27.7	0.76	132.2
1,500	1238				6.47	16.97	1.431	21.0	0.82	137.0
2,250	1241				6.49	17.91	1.450	21.6	0.98	137.5
3,000	1244				6.50	17.94	1.456	20.4	1.05	138.6
3,750	1247				6.50	18.34	1.448	21.3	1.01	140.2
4,500	1250				6.50	17.67	1.449	24.0	0.98	141.0

MEC

Start Time: 1232
Stop Time: 1250
Elapsed Time: 18 min.
Average Purge Rate (mL/min): 250
Water Quality Meter ID: YSI 6920
Date Calibrated: 8/24/09

SAMPLING DATA

Sample Date: 8/24/09
Sample Time: 1300
Analysis: SVOCs, Metals, MNA
Sample Method: Peristaltic
Sample Flow Rate: 250 mL/min
QA/QC Samples: MS/MSD → GM-58A-0809-MS
→ GM-58A-0809-MSD

COMMENTS:
MNA – MNA – Alkalinity, CO_2, Chloride, Ferrous Iron, Methane, Nitrate, Sulfate, DOC, TOC
Ferrous Iron (0.2 Micron filter) = 0.03 ppm

Appendix B

Chain-of-Custody

Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax 912.352.0165

Chain of Custody Record

TestAmerica

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Jeff Adams	Site Contact: Mike Corbett	Date: 8/24/09	COC No:
URS Corporation	Tel/Fax: (314) 743-4228	Lab Contact: Lidya Gulizia	Carrier: Fed Ex	1 of 1 COCs
1001 Highlands Plaza Drive West, Suite 300	Analysis Turnaround Time			Job No. 21562046.00004
St. Louis, MO 63110	Calendar (C) or Work Days (W)			
(314) 429-0100 Phone	TAT if different from Below Standard			
(314) 429-0462 FAX	☐ 2 weeks			SDG No.
Project Name: 3Q09 Route 3 GW Sampling	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	SVOCs by 8270C*	Total Fe/Mn by 6010B	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Methane by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010B	DOC by 415.1	Sample Specific Notes:
GM-31A-0809	8/24/09	1025	G	Water	11		2	1	1	1	3	2	1			
GM-31A-0809-AD		1025	G	Water	2		2									
GM-31A-F(0.2)-0809		1025	G	Water	2	X								1	1	
GM-58A-0809		1300	G	Water	11		2	1	1	1	3	2	1			
GM-58A-0809-MS		1300	G	Water	2		2									
GM-58A-0809-MSD		1300	G	Water	2		2									
GM-58A-F(0.2)-0809		1300	G	Water	2	X								1	1	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____							1	4	1	1	1	3,1	2	4	2	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant Poison B ☐ Unknown ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ■ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements & Comments: Level 4 Data Package

0.8 / 2.3
680-50164

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	URS	8/24/09 1530			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by: [signature]	Company: TA SV	Date/Time: 8/25/09 0931

Appendix C

Quality Assurance Report

QUALITY ASSURANCE REPORT

Solutia Inc.
W.G. Krummrich Facility
Sauget, Illinois

Illinois Route 3 Drum Site
3rd Quarter 2009 Data Report

Prepared for

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

November 2009

URS Corporation
1001 Highland Plaza Drive West, Suite 300
St. Louis, MO 63110
(314) 429-0100
Project # 21562046

1.0 INTRODUCTION 1

2.0 RECEIPT CONDITION AND SAMPLE HOLDING TIMES 3

3.0 LABORATORY METHOD BLANKS 3

4.0 SURROGATE SPIKE RECOVERIES 4

5.0 LABORATORY CONTROL SAMPLE RECOVERIES 4

6.0 MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) SAMPLES 4

7.0 FIELD DUPLICATE RESULTS 4

8.0 INTERNAL STANDARD RESPONSES 5

9.0 RESULTS REPORTED FROM DILUTIONS 5

1.0 INTRODUCTION

This Quality Assurance Report presents the findings of a review of analytical data for groundwater samples collected in August 2009 at the Illinois Route 3 Drum Site on the Solutia W.G. Krummrich Facility as part of the 3rd Quarter 2009 sampling event. The samples were collected by URS Corporation personnel and analyzed by TestAmerica Laboratories located in Savannah, Georgia using USEPA methodologies. Samples were analyzed for certain semi-volatile organic compounds (SVOCs), monitored natural attenuation (MNA) parameters, and metals.

One hundred percent of the data were subjected to a data quality review (Level III validation); ten percent of these data were subjected to a full data validation (Level IV validation). Please see **Appendix D for the three validation reports** (Full Validation of SVOC Data – SDG KOM05, Full Validation of Metals Data – SDG KOM05, and Full Validation of Wet Chemistry Data – SDG KOM05). The Level III and IV validations were performed in order to confirm that the analytical data provided by TestAmerica were acceptable in quality for their intended use.

A total of five samples (two investigative groundwater samples, one field duplicate, and one matrix spike and matrix spike duplicate (MS/MSD) pair) were analyzed by TestAmerica. These samples were analyzed as Sample Delivery Group (SDG) KOM05, utilizing the following USEPA SW-846 Methods:

- USEPA SW-846 Method 8270C for SVOCs

Samples were also analyzed for MNA parameters by the following methods:

- Method RSK-175 for Dissolved Gases (Ethane, Ethylene, and Methane)
- USEPA Method 310.1 for Alkalinity and Carbon Dioxide
- USEPA Method 325.2 for Chloride
- USEPA Method 6010B for Total and Dissolved Iron and Manganese
- USEPA Method 415.1 for Total and Dissolved Organic Carbon
- USEPA Method 353.2 for Nitrogen, Nitrate
- USEPA Method 375.4 for Sulfate

Samples were reviewed following procedures outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999 and USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, October 2004.

The above guidelines provided the criteria to review the data. Additional quantitative criteria are given in the analytical methods. Qualifiers assigned by the data reviewer have been applied to the laboratory reporting forms (Form-1s). The qualifiers indicate data that did not meet acceptance criteria and 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.
*	LCS, LCSD, MS, MSD, MD or surrogate exceeds the control limits.
E	Result exceeded the calibration range, secondary dilution required.
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution will be flagged with a D.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
N	MS, MSD: Spike recovery exceeds upper or lower control limits.
H	Sample was prepped or analyzed beyond the specified holding time.
B	Compound was found in the blank and sample.
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.

TABLE 2 URS Data Qualifiers

URS Qualifier	Definition
U	The analyte was analyzed for but was not detected.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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, including estimated detect/non-detect (**J/UJ**) values was 100 percent, which meets the completeness goal of 95 percent.

The data review included evaluation of the following criteria:

Organics

- Receipt condition and sample holding times
- Laboratory method blanks
- Surrogate spike recoveries
- Laboratory control sample (LCS) recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) sample recoveries and Relative Percent Difference (RPD) values
- Field duplicate results
- Results reported from dilutions
- Internal standard responses

Inorganics/General chemistry

- 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.

3.0 LABORATORY METHOD BLANK

Laboratory method blank samples evaluate the existence and magnitude of contamination problems resulting from laboratory activities. Laboratory method blank samples were analyzed at the method prescribed frequencies. The method blank sample contained carbon dioxide as summarized in the following table:

SDG	Blank ID	Parameter	Analyte	Concentration	Units
KOM05	MB 680-146367	General Chemistry	Carbon dioxide, free	9.78	mg/L

Qualifications due to blank contamination are included in the table below. Analytical data that were reported non-detect or at concentrations greater than (5X) the associated blank concentration (10X for common laboratory contaminants) did not require qualification.

Field ID	Parameter	Analyte	New Reporting Limit (RL)	Qualification
GM-58A-0809	General Chemistry	Carbon dioxide, free	44	**U**

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 SVOCs were spiked with surrogate compounds during sample preparation. USEPA National Functional Guidelines for Organic Data Review state how data is qualified, if surrogate spike recoveries do not meet evaluation criteria.

Surrogate recoveries were within evaluation criteria. Surrogates that were associated with quality control samples did not require qualification. In addition, no qualification of data was required if only one SVOC acid or base fraction surrogate was outside evaluation criteria. The USEPA National Functional Guidelines for Organic Data Review indicates to qualify data if two or more surrogates per SVOC fraction are outside criteria. No qualifications of data were required due to surrogate recoveries.

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 spiked LCS recoveries were within evaluation criteria.

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 to be collected at a frequency of one per 20 investigative samples in accordance with the work plan. URS Corporation submitted one MS/MSD sample set for two investigative samples, meeting the work plan frequency requirement.

Sample GM-58A-0809 was spiked and analyzed for SVOCs. All MS/MSD recoveries were within evaluation criteria. No qualification of data was required.

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 two investigative samples. This satisfies the requirement in the work plan (one per 10 investigative samples or 10 percent). All field duplicate RPDs were within evaluation criteria. No qualification of the data was 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. IS areas must be within -50 percent to +100 percent for SVOCs. Also, the IS retention times must be within 30 seconds of the preceding IS CV retention time.

The internal standards area responses for the SVOCs were verified for the data reviews. IS responses met the criteria. No qualification of the data was required.

9.0 RESULTS REPORTED FROM DILUTIONS

Sulfate samples were diluted and reanalyzed due to the high levels of sulfate in these samples. The diluted sample results for sulfate were reported at the lowest possible reporting limit.

Appendix D

Groundwater Analytical Results

(with Data Review/Validation Sheets)

D.1.a Solutia Krummrich Data Review

Laboratory SDG: KOM05

Reviewer: Elizabeth Kunkel

Date Reviewed: 9/29/2009

Guidance: USEPA National Functional Guidelines for Organic Data Review 1999. USEPA National Functional Guidelines for Inorganic Data Review 2004.

Applicable Work Plan: **Revised Illinois Route 3 Drum Site Operation and Maintenance Plan (Solutia 2008)**

Sample Identification	Sample Identification
GM-31A-0809	GM-31A-0809-AD
GM-31A-F(0.2)-0809	GM-58A-0809
GM-58A-F(0.2)-0809	

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC?

Yes

2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

The laboratory case narrative indicated that free carbon dioxide was detected in the method blank. Additionally, samples were diluted due to high levels of sulfate. These issues are addressed further in the appropriate sections below.

The cooler receipt form did not indicate any problems, however the laboratory omitted the hyphen between F(0.2) and 0809 in sample GM-58A-F(0.2)-0809. The results were reported using the sample ID as it appears on the COC.

3.0 Holding Times

Were samples extracted/analyzed within QAPP limits?

Yes

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

Yes

Blank ID	Parameter	Analyte	Concentration	Units
MB 680-146367	General Chemistry	Carbon dioxide, free	9.78	mg/L

Qualifications due to blank contamination are included in the table below. Analytical data that were reported non-detect or at concentrations greater than (5X) the associated blank concentration (10X for common laboratory contaminants) did not require qualification.

Field ID	Parameter	Analyte	New Reporting Limit (RL)	Qualification
GM-58A-0809	General Chemistry	Carbon dioxide, free	44	**U**

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

Yes

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples collected as part of this SDG?

Yes, sample GM-58A-0809 was spiked and analyzed for SVOCs.

Were MS/MSD recoveries within evaluation criteria?

Yes

8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

Yes

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples collected as part of this SDG?

Yes, sample GM-58A-F(0.2)-0809 was duplicated and analyzed for dissolved organic carbon.

Were laboratory duplicate sample RPDs within criteria?

Yes

10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

Yes

Field ID	Field Duplicate ID
GM-31A-0809	GM-31A-0809-AD

Were field duplicates within evaluation criteria?

Yes

11.0 Sample Dilutions

For samples that were diluted and nondetect, were undiluted results also reported?

Analytes were detected in samples that were diluted.

12.0 Additional Qualifications

Were additional qualifications applied?

No

D.1.b FULL VALIDATION OF SVOC DATA – SDG KOM05

This section describes the full validation for two water samples which were prepared by USEPA SW-846 Method 3520C and analyzed for semivolatile organic compounds (SVOCs) by USEPA SW-846 Method 8270C. Samples were analyzed by TestAmerica Laboratory of Savanna, Georgia, and submitted as part of sample delivery group (SDG) KOM05. Samples included as part of this validation are listed below:

Sample Identification
GM-31A-0809
GM-58A-0809

QA/QC criteria were identified in USEPA SW-846 Method 8270C. Evaluation of the analytical data followed procedures outlined in the USEPA Contract Program National Functional Guidelines for Organic Data Review (USEPA 1999) where applicable to SW-846 Method 8270C.

Criteria evaluated included the following method performance criteria:

- Data package completeness
- Laboratory case narrative/cooler receipt form
- Sample preservation and holding times
- Instrument performance
- Initial calibration
- Calibration verification
- Blank samples
- Surrogate spike recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) samples
- Internal standard areas and retention times
- Laboratory control sample (LCS)
- Target compound identification and quantitation
- Overall data assessment

1.0 Data Package Completeness

The data package was reviewed to make certain that it contained the data contractually required in the deliverable. This included checking the data package for the results of each analyte requested for each field sample submitted in the analytical batch, along with requested QC documentation for the respective methods. The data package was complete.

1.2 Laboratory Case Narrative/Cooler Receipt Form

The laboratory case narrative and cooler receipt form did not indicate any problems for the validated samples.

1.3 Sample Preservation and Holding Times

Review of the sample collection and analysis dates involved comparing the chain-of-custody, the summary forms, the raw data forms, and the chromatograms for accuracy,

consistency, and holding time compliance. No qualification of data was required due to sample preservation or holding time criteria.

1.4 Instrument Performance

GC/MS instrument performance checks were performed to ensure mass resolution, identification, and instrument sensitivity. Criteria for evaluation of instrument performance included possible transcription/calculation errors, adherence to instrument tuning frequency requirements, mass assignments, and ion abundance criteria. Instrument performance check samples were evaluated against the laboratory tuning criteria established in Method 8270C.

Based on the raw data, the ion abundance criteria were within evaluation criteria for all masses, therefore; no qualification of the data was required. The raw data forms were checked against the summary forms and no calculation or transcription errors were noted.

1.5 Initial Calibration

An Initial calibration (ICAL) was established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data for semivolatile analysis. Samples as part of SDG KOM05 were analyzed using instrument MST5973. The ICAL for instrument MST5973 was established on 9-15-2009 prior to sample analysis and using at least five concentration standards to establish the initial calibration curve as required by Method 8270C. An average response factor (RF) was determined for each target analyte, and the RFs were reviewed and verified as greater than 0.05 for all target analytes.

Review of the initial calibration summary forms indicated calibration check compounds (CCCs) had percent relative standard deviations (%RSDs) $\leq$ 30%. All other target analytes had %RSDs less than 15% with some exceptions. The initial calibration for compounds with %RSD values above 15% was determined using least square linear regression. All correlation coefficients (r) were greater than 0.990. No qualification of data was required. Recalculations of the RFs and %RSD for one compound per internal standard were performed, and no errors in calculation were noted.

1.6 Calibration Verification

Review of sample chromatograms indicated the calibration verifications (CVs) were performed at the required frequency of every 12 hours. Review of continuing calibration summary form indicated all RFs met the evaluation criteria of greater than 0.05 for all target analytes. Target analytes that were quantified using linear regression had a percent drift less than 15%, as required by USEPA SW-846 Method 8270C. In addition, percent differences (%Ds) met the evaluation criteria of 20% for CCCs and target analytes that were quantitated using linear calibration (response factor), with the exception summarized in the table below:

CCV Date and Time	Analyte	%D or %Drift
09/15/2009 16:31	1,1-Biphenyl	-30.0

Qualifications for 1,1-biphenyl (%D below evaluation criteria) are summarized in the table below:

Field ID	Analyte	Qualification
GM-31A-0809	1,1-Biphenyl	**UJ**
GM-58A-0809	1,1-Biphenyl	**UJ**

Recalculations of the RFs and %RSD for one compound per internal standard were performed, and no errors in calculation were noted.

1.7 Blank Samples

The purpose of method blank samples is to evaluate the existence and magnitude of contamination problems emanating from laboratory activities. Method blank samples were analyzed with each analytical batch as required by USEPA SW-846 Method 8270C. All target compounds in the blank samples were reported as non-detect. No qualification of data was required.

1.8 Surrogate Spike Recoveries

Surrogate compounds were used to evaluate the overall laboratory sample preparation efficiency on a per-sample basis. Surrogate recoveries were within the method acceptance criteria for all validated samples, no qualification of data was required.

A minimum of 10% of the surrogate recoveries was recalculated, and the summary forms versus the raw data were verified. No calculation or transcription errors were noted.

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

MS/MSD samples are analyzed to assess potential matrix effects. Sample GM-58A-0809 was spiked and analyzed for SVOCs. MS/MSD recoveries and RPDs were within evaluation criteria, no qualification of the data was required. A minimum of 10% of the spiking compound recoveries for the MS/MSD were recalculated using the MS/MSD summary forms, and no calculation or transcription errors were noted.

1.10 Internal Standard Areas and Retention Times

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during each analytical run. Following Method 8270C, the IS areas for the samples and CVs must be within –50% to +100% and retention times must be within 30 seconds of the IS area and retention time of the midpoint of the ICAL.

The IS areas for the CVs and the validated samples in this SDG were within evaluation criteria. No qualifications of data based on IS areas or retention times were required.

1.11 Laboratory Control Sample (LCS)

Laboratory control samples were analyzed with each analytical batch to assess the accuracy of the analytical process. LCS recoveries were within evaluation criteria, no qualification of data was required. A minimum of 10% of the spiking compound recoveries for the LCS were recalculated from the raw data and verified using the LCS summary forms, and no calculation or transcription errors were noted.

1.12 Target Compound Identification and Quantitation

For validation of the compound identification, chromatograms were reviewed to verify the major peaks were identified, the spectra of the identified compounds were verified against the library spectra, and the relative retention time was no greater than 0.06 different from the associated CV retention times. A minimum of 10% of the detected target analytes and spiking compounds were verified. No anomalies were noted with the identification of the target compounds in the samples.

For the validation of compound quantitation, 10% of the target analytes were recalculated from the raw data, and no calculation errors were noted. Additionally, the reporting limits were verified to determine if reporting limits (RLs) were adjusted for dilutions. No qualification of the data was required and review of the data indicated the correct RLs were reported.

1.13 Overall Data Assessment

Based on the criteria outlined, it is recommended that the results reported for these analyses are accepted for their intended use. In addition, completeness defined to be the percentage of analytical results, which are judged to be valid, including estimated detect/non-detect **(J/UJ**) data was 100% for this SDG.

D.1.c FULL VALIDATION OF METALS DATA – SDG KOM05

This section describes the full data validation for three water samples which were prepared by USEPA SW-846 Method 3005A and analyzed for total and dissolved iron and manganese by USEPA SW-846 Method 6010B. Samples were analyzed by TestAmerica Laboratory of Savanna, Georgia, and submitted as part of sample delivery group (SDG) KOM05. Samples included as part of this validation are listed below:

Sample Identification
GM-31A-0809
GM-31A-F(0.2)-0809
GM-58A-0809
GM-58A-F(0.2)-0809

QA/QC criteria were identified USEPA SW-846 Method 6010B. Evaluation of the analytical data followed procedures outlined in the USEPA Contract Program National Functional Guidelines for Inorganic Data Review (USEPA 2004) where applicable to SW-846 Methods 6010B.

Criteria evaluated included the following method performance criteria:

- Data package completeness
- Laboratory case narrative /cooler receipt form
- Sample preservation and holding times
- Blank contamination
- Initial calibration
- Calibration verification
- Laboratory control sample (LCS)
- Matrix spike/matrix spike duplicate (MS/MSD)
- Laboratory duplicate sample
- ICP serial dilution
- ICP interference check samples (ICS)
- Sample result verification
- Overall assessment of data

1.1 Data Package Completeness

The data package was reviewed to make certain that it contained the data contractually required in the deliverable. This included checking the data package for the results of each analyte requested for each field sample submitted in the analytical batch, along with requested QC documentation for the respective methods. The data package was complete for this SDG.

1.2 Laboratory Case Narrative / Cooler Receipt Form

The laboratory case narrative and cooler receipt form did not indicate any problems for the validated samples.

1.3 Sample Preservation and Holding Times

Review of the sample collection and analysis dates involved comparing the chain-of-custody, the sample preparation logs, the analysis run logs, and raw data forms for holding time compliance. The samples were received by the laboratory at 4°C ± 2 °C and at a pH < 2, and were analyzed within the evaluation criteria of 6 months for metals. No qualification of data was required based on holding time criteria or sample preservation.

1.4 Blank Contamination

The purpose of blank samples was to evaluate the existence and magnitude of contamination problems emanating from laboratory activities. Initial calibration, continuing calibration, and preparation blanks were reported non-detect for all metals analyzed. No qualification of data was required based on blank results.

1.5 Initial Calibration

Initial calibration (ICAL) criteria were established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data for metals analyses. An ICAL was analyzed at the beginning of the run sequence. ICAL curves were established using a blank and three standards for analysis of metals by inductively coupled plasma atomic emission (ICP-AE). All initial calibration verification (ICV) recoveries were within evaluation criteria (ICP metals, 90-110%). A minimum of 10 % of the ICAL curve and ICV recoveries were recalculated and compared to the raw data; no calculation or transcription errors were noted. No qualification of the data was required based on ICV data.

1.6 Calibration Verification

Calibration Verification (CV) criteria were established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data established by the ICAL. The laboratory analyzed CV samples at a frequency of 10% as specified by the methodologies. CV samples associated with the validated samples had recoveries within the evaluation criteria (ICP metals, 90-110%). A minimum of 10% of the CV sample recoveries were recalculated and compared to the raw data and no calculation or transcription errors were noted.

1.7 Laboratory Control Sample (LCS)

Laboratory control spike (LCS) samples were analyzed to assess the accuracy of the analytical method and to demonstrate laboratory performance. The LCS recoveries for metals were within evaluation criteria (75-125%). A minimum of 10% of the LCS recoveries were recalculated and compared to the raw data; no calculation or transcription errors were noted. No qualification of data was required based on LCS recoveries.

1.8 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

MS/MSD samples are analyzed to assess accuracy, precision and the effects of matrix interference during the analysis of a particular sample. No MS/MSDs were performed on samples chosen for validation.

1.9 Laboratory Duplicate Sample

Laboratory duplicate samples are analyzed to assess the precision of a particular sample. No laboratory duplicates were performed on the samples chosen for validation.

1.10 ICP Serial Dilution

Serial dilutions were analyzed to assess the potential significant physical or chemical interferences due to sample matrix. Serial dilutions were not analyzed on samples in this SDG. No qualification of data was required.

1.11 ICP Interference Check Sample

An Interference Check Sample (ICS) was analyzed to verify the contract laboratory's interelement and background correction factors for analysis of metals by ICP. The laboratory analyzed the ICS at the beginning of the analytical run as specified in USEPA SW-846 Method 6010B. The ICS recoveries for all metals analyzed were within evaluation criteria (80-120%); therefore, no qualification of the ICP data was required. A minimum of 10% of the ICS recoveries were recalculated and compared to the raw data; no transcription or calculation errors were noted.

1.12 Sample Result Verification

The metals results were recalculated to validate that analyte quantitation was derived accurately, and no calculation errors were noted. Data summary forms were reviewed and compared to the raw data package. No transcription errors were noted and the correct reporting limits were used.

1.13 Overall Data Assessment

Based on the criteria outlined, it is recommended that the results reported for these analyses be accepted for their intended use. Completeness, defined to be the percentage of analytical results that are judged to be valid, including estimated detect/nondetect (**J/UJ**) data, was 100% for this SDG.

D.1.d. FULL VALIDATION OF WET CHEMISTRY DATA – SDG KOM05

This section describes the full data validation of two water samples which were analyzed for various wet chemistry parameters. The analytical parameters and methodologies are summarized below:

Parameter	Method	Reference
Nitrate/Nitrite	353.2	USEPA Methods for Chemical Analysis of Water and Waste (USEPA, 1983)
Sulfate	375.4	
Total and dissolved Organic Carbon	415.1	
Chloride	325.2	
Alkalinity	310.1	
Carbon Dioxide	Calc from 310.1	
Dissolved Gasses	RSK-175	RSK-175

Samples were analyzed by TestAmerica Laboratory, of Savannah, Georgia, and submitted as part of sample delivery group (SDG) KOM05. Samples included as a part of this validation are listed below:

Sample Identification
GM-31A-0809
GM-31A-F(0.2)-0809
GM-58A-0809
GM-58A-F(0.2)-0809

Evaluation of the analytical data followed procedures outlined in USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (USEPA 2004), where applicable to the above mentioned USEPA Methods. The evaluation criteria used during the validation were a combination of those criteria presented in the respective methods and the laboratory criteria based on historical data.

Criteria evaluated included the following method performance criteria:

- Data package completeness
- Laboratory case narrative/cooler receipt form
- Sample preservation and holding times
- Blank contamination
- Initial calibration
- Calibration verification
- Laboratory control samples (LCS)
- Laboratory duplicate analysis
- Matrix spike/matrix spike duplicate samples (MS/MSD)
- Sample result verification
- Overall data assessment

1.1 Data Package Completeness

The data package was reviewed to make certain that it contained the data contractually required in the deliverable. This included checking the data package for results of each analyte requested for each field sample submitted in the analytical batch, along with requested QC documentation for the respective method. The data package was complete.

1.2 Laboratory Case Narrative/Cooler Receipt Form

The laboratory case narrative indicated that free carbon dioxide was detected in the method blank. Additionally, samples were diluted due to high levels of sulfate. These issues are addressed further in the appropriate sections below. The cooler receipt form did not indicate any problems, however the laboratory omitted the hyphen between F(0.2) and 0809 in sample GM-58A-F(0.2)-0809. The results were reported using the sample ID as it appears on the COC.

1.3 Sample Preservation and Holding Times

Review of the sample collection, extraction and analyses dates involved comparing the chain-of -custody, the sample preparation logs, the analysis run logs, and raw data forms for holding time compliance. The samples were persevered properly (4°C ± 2 °C) and at a pH <2 for sulfate and total organic carbon and all samples were analyzed within holding time criteria; 28 days for chloride, nitrate/nitrite, sulfate, total organic carbon and 14 days for alkalinity and RSK-175. No qualifications of data were required based on holding times and sample preservation.

1.4 Blank Contamination

The purpose of method blank samples was to evaluate the existence and magnitude of contamination problems emanating from laboratory activities. Method blank samples were analyzed with each analytical batch as required. A review of the method blank summary forms and the raw data forms indicated all target compounds were reported as non-detect with the exception of free carbon dioxide summarized in the table below:

Blank ID	Parameter	Analyte	Concentration	Units
MB 680-146367	General Chemistry	Carbon dioxide, free	9.78	mg/L

Qualifications due to blank contamination are included in the table below. Analytical data that were reported nondetect or at concentrations greater than (5X) the associated blank concentration (10X for common laboratory contaminants) did not require qualification.

Field ID	Parameter	Analyte	New Reporting Limit (RL)	Qualification
GM-58A-0809	General Chemistry	Carbon dioxide, free	44	**U**

1.5 Initial Calibration

Initial calibration (ICAL) criteria were established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data for the wet chemistry analyses. Alkalinity concentrations are determined by titration; therefore, no calibration curve was generated. The verification of alkalinity analyses was achieved with the analysis of laboratory

control samples (LCS). The LCS data is further discussed in the appropriate section below. An initial calibration was established at the beginning of the run sequence for the all other analyses. A minimum of five standards was used to establish the initial calibration curve as required by the analytical methods. Review of the initial calibration data indicated that the correlation coefficient (r) values were greater than 0.995 for all calibration curves; therefore, no qualification of data was required. The ICAL for RSK-175 was established using at least eight concentration standards to establish the external calibration and all r values were greater than or equal to 0.995. No qualification of data was required based on initial calibration. Approximately 10% of the initial calibration and ICV recoveries were recalculated and compared to the raw data; no calculation or transcription errors were noted.

1.6 Calibration Verification

Calibration verification (CV) criteria were established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data established by the initial calibration curve. CV samples were analyzed at the required frequency of every 10 samples and the percent differences (%D) or percent drift (%drift) values were within evaluation criteria for each analytical method with the exception of ethylene (22.2% drift). Compounds that were non-detect and had an increase in response (%drift above evaluation) did not require qualification.

Ethylene was non-detect in the validated samples; therefore, no qualification of data was required for marginal increases in %drift. Approximately 10% of the CV sample recoveries were recalculated and compared to the raw data. No calculation or transcription errors were noted.

1.7 Laboratory Control Sample

Laboratory control samples (LCS) were established to assess the accuracy of the analytical method and to demonstrate laboratory performance. LCS recoveries were within the evaluation criteria; therefore, no qualification of data was required. A minimum of 10% of LCS recoveries were recalculated and compared to the raw data; no calculation or transcription errors were noted.

1.8 Laboratory Duplicate Analysis

Laboratory duplicate samples assess the precision of a particular sample. Laboratory duplicates were not analyzed for the validated samples; therefore, no qualification of data was required.

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

MS/MSD samples are analyzed to assess the accuracy, precision and the effects of matrix interference during the analysis of a particular sample. No general chemistry MS/MSDs were analyzed for the samples chosen for validation.

1.10 Sample Result Verification

A minimum of 10% of the validated sample results were recalculated to verify that analyte quantitation was derived accurately, and no calculation errors were noted. Data summary forms were reviewed and compared to the raw data package. No transcription errors were noted and the correct reporting limits were used.

1.11 Overall Data Assessment

Based on the criteria outlined, it is recommended that the results reported for these analyses be accepted for their intended use. Completeness, defined to be the percentage of analytical results that are judged to be valid, including estimated detect/nondetect (**J/UJ**) data, was 100 percent for this SDG.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 680-50164-1

SDG Number: KOM05

Job Description: WGK Route 3 Drum Site O&M 3Q09 AUG 09

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

Attention: Mr. Jerry Rinaldi

Lidya Gulizia

Approved for release.
Lidya Gulizia
Project Manager I
9/28/2009 4:46 PM

Lidya Gulizia
Project Manager I
lidya.gulizia@testamericainc.com
09/28/2009

Reviewed on 9/29/2009 ERK

cc: Mr. Jeff Adams
Mr. Bob Billman
Dave Palmer

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ACCREDITED IN ACCORDANCE WITH nelac

Job Narrative
680-J50164-1 / SDG KOM05

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

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

GC VOA
No analytical or quality issues were noted.

Metals
No analytical or quality issues were noted.

General Chemistry
Method(s) 310.1: The method blank associated with samples GM-31A-0809 (680-50164-1), GM-58A-0809 (680-50164-4) contained Free Carbon Dioxide above the laboratory RL. Since free CO2 is a calculation based on bicarbonate alkalinity and pH, slight shifts in blank pH or Bicarbonate alkalinity values can cause elevated Free CO2 values.

Method(s) 375.4, 9038: Due to the high concentration of sulfate, the matrix spike / matrix spike duplicate (MS/MSD) for batch 147200 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method(s) 415.1: The DOC result is higher than the corresponding TOC result for sample GM-58A-0809. The sample was reanalyzed and the original lab findings were confirmed.

No other analytical or quality issues were noted.

Comments
No additional comments.

SEP 29 2009

METHOD SUMMARY

Client: Solutia Inc.

Job Number: 680-50164-1
Sdg Number: KOM05

Description	Lab Location	Method	Preparation Method
Matrix Water			
Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	TAL SAV	SW846 8270C	
Liquid-Liquid Extraction (Continuous)	TAL SAV		SW846 3520C
Dissolved Gases (GC)	TAL SAV	RSK RSK-175	
Metals (ICP)	TAL SAV	SW846 6010B	
Sample Filtration, Field	TAL SAV		FIELD_FLTRD
Preparation, Total Recoverable or Dissolved Metals	TAL SAV		SW846 3005A
Alkalinity	TAL SAV	MCAWW 310.1	
Chloride	TAL SAV	MCAWW 325.2	
Nitrogen, Nitrate-Nitrite	TAL SAV	MCAWW 353.2	
Sulfate	TAL SAV	MCAWW 375.4	
TOC	TAL SAV	MCAWW 415.1	
DOC	TAL SAV	MCAWW 415.1	
Sample Filtration, Field	TAL SAV		FIELD_FLTRD

Lab References:

TAL SAV = TestAmerica Savannah

Method 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.

METHOD / ANALYST SUMMARY

Client: Solutia Inc.

Job Number: 680-50164-1
Sdg Number: KOM05

Method	Analyst	Analyst ID
SW846 8270C	Chamberlain, Kim	KAC
RSK RSK-175	Moncrief, Amy	AEM
SW846 6010B	Bland, Brian	BCB
MCAWW 310.1	Vasquez, Juana	JV
MCAWW 325.2	Ross, Jon	JR
MCAWW 353.2	Ross, Jon	JR
MCAWW 375.4	Ross, Jon	JR
MCAWW 415.1	Blackshear, Kim	KB

SAMPLE SUMMARY

Client: Solutia Inc.

Job Number: 680-50164-1
Sdg Number: KOM05

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-50164-1	GM-31A-0809	Water	08/24/2009 1025	08/25/2009 0931
680-50164-2FD	GM-31A-0809-AD	Water	08/24/2009 1025	08/25/2009 0931
680-50164-3	GM-31A-F(0.2)-0809	Water	08/24/2009 1025	08/25/2009 0931
680-50164-4	GM-58A-0809	Water	08/24/2009 1300	08/25/2009 0931
680-50164-4MS	GM-58A-0809-MS	Water	08/24/2009 1300	08/25/2009 0931
680-50164-4MSD	GM-58A-0809-MSD	Water	08/24/2009 1300	08/25/2009 0931
680-50164-5	GM-58A-F(0.2)0809	Water	08/24/2009 1300	08/25/2009 0931

SAMPLE RESULTS

Client: Solutia Inc.

Job Number: 680-50164-1
Sdg Number: KOM05

Client Sample ID: GM-31A-0809

Lab Sample ID: 680-50164-1
Client Matrix: Water

Date Sampled: 08/24/2009 1025
Date Received: 08/25/2009 0931

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 680-147927		Instrument ID:	MST
Preparation:	3520C	Prep Batch: 680-146473		Lab File ID:	t3258.d
Dilution:	1.0			Initial Weight/Volume:	1060 mL
Date Analyzed:	09/15/2009 2022			Final Weight/Volume:	1 mL
Date Prepared:	08/27/2009 1347			Injection Volume:	1.0 uL

Analyte	Result (ug/L)	Qualifier	RL
1,1'-Biphenyl	9.4	= UJ"	9.4
2,4-Dichlorophenol	9.4	U	9.4
Nitrobenzene	9.4	U	9.4
Pentachlorophenol	47	U	47
2,4,6-Trichlorophenol	9.4	U	9.4
1-Chloro-3-nitrobenzene	9.4	U	9.4
2-Nitrobiphenyl	9.4	U	9.4
3-Nitrobiphenyl	9.4	U	9.4
3,4-Dichloronitrobenzene	9.4	U	9.4
4-Nitrobiphenyl	9.4	U	9.4
2-chloranitrobenzene / 4-chloranitrobenzene	19	U	19
1-chloro-2,4-dinitrobenzene	9.4	U	9.4

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	73		50 - 113
2-Fluorophenol	64		36 - 110
Nitrobenzene-d5	78		45 - 112
Phenol-d5	60		38 - 116
Terphenyl-d14	29		10 - 121
2,4,6-Tribromophenol	78		40 - 139

SEP 29 2009 EZL

Client: Solutia Inc.

Job Number: 680-50164-1
Sdg Number: KOM05

Client Sample ID: GM-31A-0809-AD

Lab Sample ID: 680-50164-2FD
Client Matrix: Water

Date Sampled: 08/24/2009 1025
Date Received: 08/25/2009 0931

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 680-147927		Instrument ID:	MST
Preparation:	3520C	Prep Batch: 680-146473		Lab File ID:	t3259.d
Dilution:	1.0			Initial Weight/Volume:	1060 mL
Date Analyzed:	09/15/2009 2048			Final Weight/Volume:	1 mL
Date Prepared:	08/27/2009 1347			Injection Volume:	1.0 uL

Analyte	Result (ug/L)	Qualifier	RL
1,1'-Biphenyl	9.4	U	9.4
2,4-Dichlorophenol	9.4	U	9.4
Nitrobenzene	9.4	U	9.4
Pentachlorophenol	47	U	47
2,4,6-Trichlorophenol	9.4	U	9.4
1-Chloro-3-nitrobenzene	9.4	U	9.4
2-Nitrobiphenyl	9.4	U	9.4
3-Nitrobiphenyl	9.4	U	9.4
3,4-Dichloronitrobenzene	9.4	U	9.4
4-Nitrobiphenyl	9.4	U	9.4
2-chloronitrobenzene / 4-chloronitrobenzene	19	U	19
1-chloro-2,4-dinitrobenzene	9.4	U	9.4

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	78		50 - 113
2-Fluorophenol	73		36 - 110
Nitrobenzene-d5	82		45 - 112
Phenol-d5	71		38 - 116
Terphenyl-d14	42		10 - 121
2,4,6-Tribromophenol	88		40 - 139

SEP 29 2009 ZZ

Client: Solutia Inc.

Job Number: 680-50164-1
Sdg Number: KOM05

Client Sample ID: **GM-58A-0809**

Lab Sample ID: 680-50164-4
Client Matrix: Water

Date Sampled: 08/24/2009 1300
Date Received: 08/25/2009 0931

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 680-147927		Instrument ID:	MST
Preparation:	3520C	Prep Batch: 680-146473		Lab File ID:	t3260.d
Dilution:	1.0			Initial Weight/Volume:	1060 mL
Date Analyzed:	09/15/2009 2113			Final Weight/Volume:	1 mL
Date Prepared:	08/27/2009 1347			Injection Volume:	1.0 uL

Analyte	Result (ug/L)	Qualifier	RL
1,1'-Biphenyl	9.4	UJ	9.4
2,4-Dichlorophenol	9.4	U	9.4
Nitrobenzene	9.4	U	9.4
Pentachlorophenol	47	U	47
2,4,6-Trichlorophenol	18		9.4
1-Chloro-3-nitrobenzene	9.4	U	9.4
2-Nitrobiphenyl	9.4	U	9.4
3-Nitrobiphenyl	9.4	U	9.4
3,4-Dichloronitrobenzene	9.4	U	9.4
4-Nitrobiphenyl	9.4	U	9.4
2-chloronitrobenzene / 4-chloronitrobenzene	22		19
1-chloro-2,4-dinitrobenzene	9.4	U	9.4

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	66		50 - 113
2-Fluorophenol	63		36 - 110
Nitrobenzene-d5	76		45 - 112
Phenol-d5	63		38 - 116
Terphenyl-d14	30		10 - 121
2,4,6-Tribromophenol	82		40 - 139

SEP 29 2009

Client: Solutia Inc.

Job Number: 680-50164-1
Sdg Number: KOM05

Client Sample ID: **GM-31A-0809**

Lab Sample ID: 680-50164-1
Client Matrix: Water

Date Sampled: 08/24/2009 1025
Date Received: 08/25/2009 0931

RSK-175 Dissolved Gases (GC)

Method:	RSK-175	Analysis Batch: 680-146656	Instrument ID:	VGUFID2
Preparation:	N/A		Lab File ID:	U1548.D
Dilution:	1.0		Initial Weight/Volume:	17000 uL
Date Analyzed:	08/28/2009 1156		Final Weight/Volume:	17 mL
Date Prepared:			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
Ethane	0.35	U	0.35
Ethylene	0.33	U	0.33
Methane	14		0.19

SEP 29 2009

Client: Solutia Inc.

Job Number: 680-50164-1
Sdg Number: KOM05

Client Sample ID: GM-58A-0809

Lab Sample ID: 680-50164-4
Client Matrix: Water

Date Sampled: 08/24/2009 1300
Date Received: 08/25/2009 0931

RSK-175 Dissolved Gases (GC)

Method:	RSK-175	Analysis Batch: 680-146656	Instrument ID:	VGUFID2
Preparation:	N/A		Lab File ID:	U1549.D
Dilution:	1.0		Initial Weight/Volume:	17000 uL
Date Analyzed:	08/28/2009 1208		Final Weight/Volume:	17 mL
Date Prepared:			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
Ethane	0.35	U	0.35
Ethylene	0.33	U	0.33
Methane	12		0.19

SEP 29 2009 ZLK

Client: Solutia Inc.

Job Number: 680-50164-1
Sdg Number: KOM05

Client Sample ID: **GM-31A-0809**

Lab Sample ID: 680-50164-1
Client Matrix: Water

Date Sampled: 08/24/2009 1025
Date Received: 08/25/2009 0931

6010B Metals (ICP)-Total Recoverable

Method:	6010B	Analysis Batch: 680-146515	Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-146348	Lab File ID:	N/A
Dilution:	1.0		Initial Weight/Volume:	50 mL
Date Analyzed:	08/26/2009 2228		Final Weight/Volume:	50 mL
Date Prepared:	08/26/2009 1058			

Analyte	Result (mg/L)	Qualifier	RL
Iron	1.1		0.050
Manganese	0.96		0.010

SEP 29 2009 EZK

Client: Solutia Inc.

Job Number: 680-50164-1
Sdg Number: KOM05

Client Sample ID: GM-31A-F(0.2)-0809

Lab Sample ID: 680-50164-3
Client Matrix: Water

Date Sampled: 08/24/2009 1025
Date Received: 08/25/2009 0931

6010B Metals (ICP)-Dissolved

Method:	6010B	Analysis Batch: 680-146515	Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-146348	Lab File ID:	N/A
Dilution:	1.0		Initial Weight/Volume:	50 mL
Date Analyzed:	08/26/2009 2233		Final Weight/Volume:	50 mL
Date Prepared:	08/26/2009 1058			

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	0.091		0.050
Manganese, Dissolved	0.89		0.010

SEP 29 2009 EK

Client: Solutia Inc.

Job Number: 680-50164-1
Sdg Number: KOM05

Client Sample ID: GM-58A-0809

Lab Sample ID: 680-50164-4
Client Matrix: Water

Date Sampled: 08/24/2009 1300
Date Received: 08/25/2009 0931

6010B Metals (ICP)-Total Recoverable

Method:	6010B	Analysis Batch: 680-146515	Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-146348	Lab File ID:	N/A
Dilution:	1.0		Initial Weight/Volume:	50 mL
Date Analyzed:	08/26/2009 2238		Final Weight/Volume:	50 mL
Date Prepared:	08/26/2009 1058			

Analyte	Result (mg/L)	Qualifier	RL
Iron	0.16		0.050
Manganese	1.6		0.010

SEP 29 2009 EZR

Client: Solutia Inc.

Job Number: 680-50164-1
Sdg Number: KOM05

Client Sample ID: **GM-58A-F(0.2)0809**

Lab Sample ID: 680-50164-5
Client Matrix: Water

Date Sampled: 08/24/2009 1300
Date Received: 08/25/2009 0931

6010B Metals (ICP)-Dissolved

Method:	6010B	Analysis Batch: 680-146515		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-146348		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	08/26/2009 2254			Final Weight/Volume:	50 mL
Date Prepared:	08/26/2009 1058				

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	0.050	U	0.050
Manganese, Dissolved	1.6		0.010

SEP 29 2009 ZTR

General Chemistry

Client Sample ID: **GM-31A-0809**

Lab Sample ID: 680-50164-1
Client Matrix: Water

Date Sampled: 08/24/2009 1025
Date Received: 08/25/2009 0931

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	84		mg/L	1.0	1.0	325.2
Analysis Batch: 680-146667	Date Analyzed: 08/28/2009 1235					
Nitrate as N	1.5		mg/L	0.050	1.0	353.2
Analysis Batch: 680-146313	Date Analyzed: 08/25/2009 1540					
Sulfate	240		mg/L	50	10	375.4
Analysis Batch: 680-147200	Date Analyzed: 09/04/2009 1023					
Total Organic Carbon	4.0		mg/L	1.0	1.0	415.1
Analysis Batch: 680-146978	Date Analyzed: 08/31/2009 1421					

Analyte	Result	Qual	Units	RL	Dil	Method
Alkalinity	500		mg/L	5.0	1.0	310.1
Analysis Batch: 680-146367	Date Analyzed: 08/25/2009 1715					
Carbon Dioxide, Free	51	B	mg/L	5.0	1.0	310.1
Analysis Batch: 680-146367	Date Analyzed: 08/25/2009 1715					

SEP 29 2009 EJR

Client: Solutia Inc.

Job Number: 680-50164-1
Sdg Number: KOM05

General Chemistry

Client Sample ID: GM-31A-F(0.2)-0809

Lab Sample ID: 680-50164-3
Client Matrix: Water

Date Sampled: 08/24/2009 1025
Date Received: 08/25/2009 0931

Analyte	Result	Qual	Units	RL	Dil	Method
Dissolved Organic Carbon-Dissolved	3.8		mg/L	1.0	1.0	415.1

Analysis Batch: 680-146774 Date Analyzed: 08/26/2009 0936

SEP 29 2009 ERL

Client: Solutia Inc.

Job Number: 680-50164-1
Sdg Number: KOM05

General Chemistry

Client Sample ID: **GM-58A-0809**

Lab Sample ID: 680-50164-4
Client Matrix: Water

Date Sampled: 08/24/2009 1300
Date Received: 08/25/2009 0931

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	97		mg/L	1.0	1.0	325.2
Analysis Batch: 680-146667	Date Analyzed: 08/28/2009 1235					
Nitrate as N	0.18		mg/L	0.050	1.0	353.2
Analysis Batch: 680-146313	Date Analyzed: 08/25/2009 1540					
Sulfate	150		mg/L	50	10	375.4
Analysis Batch: 680-147200	Date Analyzed: 09/04/2009 1123					
Total Organic Carbon	4.4		mg/L	1.0	1.0	415.1
Analysis Batch: 680-146978	Date Analyzed: 08/31/2009 1435					

Analyte	Result	Qual	Units	RL	Dil	Method
Alkalinity	540		mg/L	5.0	1.0	310.1
Analysis Batch: 680-146367	Date Analyzed: 08/25/2009 1715					
Carbon Dioxide, Free	0 ~~44~~ ND	~~B~~ "U"	mg/L	5.0	1.0	310.1
Analysis Batch: 680-146367	Date Analyzed: 08/25/2009 1715					

SEP 29 2009 EKK

Client: Solutia Inc.

Job Number: 680-50164-1
Sdg Number: KOM05

General Chemistry

Client Sample ID: GM-58A-F(0.2)0809

Lab Sample ID: 680-50164-5
Client Matrix: Water

Date Sampled: 08/24/2009 1300
Date Received: 08/25/2009 0931

Analyte	Result	Qual	Units	RL	Dil	Method
Dissolved Organic Carbon-Dissolved	6.3		mg/L	1.0	1.0	415.1

Analysis Batch: 680-146774 Date Analyzed: 08/26/2009 0936

SEP 29 2009 EKR

DATA REPORTING QUALIFIERS

Client: Solutia Inc.

Job Number: 680-50164-1
Sdg Number: KOM05

Lab Section	Qualifier	Description
GC/MS Semi VOA		
	U	Indicates the analyte was analyzed for but not detected.
GC VOA		
	U	Indicates the analyte was analyzed for but not detected.
Metals		
	U	Indicates the analyte was analyzed for but not detected.
General Chemistry		
	B	Compound was found in the blank and sample.
	U	Indicates the analyte was analyzed for but not detected.

QUALITY CONTROL RESULTS

Client: Solutia Inc.

Job Number: 680-50164-1
Sdg Number: KOM05

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS Semi VOA					
Prep Batch: 680-146473					
LCS 680-146473/8-A	Lab Control Sample	T	Water	3520C	
MB 680-146473/7-A	Method Blank	T	Water	3520C	
680-50164-1	GM-31A-0809	T	Water	3520C	
680-50164-2FD	GM-31A-0809-AD	T	Water	3520C	
680-50164-4	GM-58A-0809	T	Water	3520C	
680-50164-4MS	Matrix Spike	T	Water	3520C	
680-50164-4MSD	Matrix Spike Duplicate	T	Water	3520C	
Analysis Batch:680-147927					
LCS 680-146473/8-A	Lab Control Sample	T	Water	8270C	680-146473
MB 680-146473/7-A	Method Blank	T	Water	8270C	680-146473
680-50164-1	GM-31A-0809	T	Water	8270C	680-146473
680-50164-2FD	GM-31A-0809-AD	T	Water	8270C	680-146473
680-50164-4	GM-58A-0809	T	Water	8270C	680-146473
680-50164-4MS	Matrix Spike	T	Water	8270C	680-146473
680-50164-4MSD	Matrix Spike Duplicate	T	Water	8270C	680-146473

Report Basis
T = Total

GC VOA					
Analysis Batch:680-146656					
LCS 680-146656/11	Lab Control Sample	T	Water	RSK-175	
MB 680-146656/12	Method Blank	T	Water	RSK-175	
680-50164-1	GM-31A-0809	T	Water	RSK-175	
680-50164-4	GM-58A-0809	T	Water	RSK-175	

Report Basis
T = Total

Client: Solutia Inc.

Job Number: 680-50164-1
Sdg Number: KOM05

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 680-146348					
LCS 680-146348/11-A	Lab Control Sample	R	Water	3005A	
MB 680-146348/10-A	Method Blank	R	Water	3005A	
680-50164-1	GM-31A-0809	R	Water	3005A	
680-50164-3	GM-31A-F(0.2)-0809	D	Water	3005A	
680-50164-4	GM-58A-0809	R	Water	3005A	
680-50164-5	GM-58A-F(0.2)0809	D	Water	3005A	
Analysis Batch:680-146515					
LCS 680-146348/11-A	Lab Control Sample	R	Water	6010B	680-146348
MB 680-146348/10-A	Method Blank	R	Water	6010B	680-146348
680-50164-1	GM-31A-0809	R	Water	6010B	680-146348
680-50164-3	GM-31A-F(0.2)-0809	D	Water	6010B	680-146348
680-50164-4	GM-58A-0809	R	Water	6010B	680-146348
680-50164-5	GM-58A-F(0.2)0809	D	Water	6010B	680-146348

Report Basis
D = Dissolved
R = Total Recoverable

Client: Solutia Inc.

Job Number: 680-50164-1
Sdg Number: KOM05

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:680-146313					
LCS 680-146313/2	Lab Control Sample	T	Water	353.2	
MB 680-146313/1	Method Blank	T	Water	353.2	
680-50164-1	GM-31A-0809	T	Water	353.2	
680-50164-4	GM-58A-0809	T	Water	353.2	
Analysis Batch:680-146367					
LCS 680-146367/2	Lab Control Sample	T	Water	310.1	
MB 680-146367/1	Method Blank	T	Water	310.1	
680-50164-1	GM-31A-0809	T	Water	310.1	
680-50164-4	GM-58A-0809	T	Water	310.1	
Analysis Batch:680-146667					
LCS 680-146667/4	Lab Control Sample	T	Water	325.2	
MB 680-146667/1	Method Blank	T	Water	325.2	
680-50164-1	GM-31A-0809	T	Water	325.2	
680-50164-4	GM-58A-0809	T	Water	325.2	
Analysis Batch:680-146774					
LCS 680-146774/2	Lab Control Sample	D	Water	415.1	
MB 680-146774/1	Method Blank	D	Water	415.1	
680-50164-3	GM-31A-F(0.2)-0809	D	Water	415.1	
680-50164-5	GM-58A-F(0.2)0809	D	Water	415.1	
680-50164-5DU	Duplicate	D	Water	415.1	
Analysis Batch:680-146978					
LCS 680-146978/4	Lab Control Sample	T	Water	415.1	
MB 680-146978/2	Method Blank	T	Water	415.1	
680-50164-1	GM-31A-0809	T	Water	415.1	
680-50164-4	GM-58A-0809	T	Water	415.1	
Analysis Batch:680-147200					
LCS 680-147200/2	Lab Control Sample	T	Water	375.4	
MB 680-147200/1	Method Blank	T	Water	375.4	
680-50164-1	GM-31A-0809	T	Water	375.4	
680-50164-4	GM-58A-0809	T	Water	375.4	

Report Basis
D = Dissolved
T = Total

Client: Solutia Inc.

Job Number: 680-50164-1
Sdg Number: KOM05

Surrogate Recovery Report

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	FBP %Rec	2FP %Rec	NBZ %Rec	PHL %Rec	TPH %Rec	TBP %Rec
680-50164-1	GM-31A-0809	73	64	78	60	29	78
680-50164-2	GM-31A-0809-AD	78	73	82	71	42	88
680-50164-4	GM-58A-0809	66	63	76	63	30	82
MB 680-146473/7-A		54	55	61	56	66	61
LCS 680-146473/8-A		65	76	80	73	84	76
680-50164-4 MS	GM-58A-0809 MS	63	75	81	72	57	79
680-50164-4 MSD	GM-58A-0809 MSD	63	78	80	79	61	76

Surrogate	Acceptance Limits
FBP = 2-Fluorobiphenyl	50-113
2FP = 2-Fluorophenol	36-110
NBZ = Nitrobenzene-d5	45-112
PHL = Phenol-d5	38-116
TPH = Terphenyl-d14	10-121
TBP = 2,4,6-Tribromophenol	40-139

SEP 29 2009

Client: Solutia Inc.

Job Number: 680-50164-1
Sdg Number: KOM05

Method Blank - Batch: 680-146473

Method: 8270C
Preparation: 3520C

Lab Sample ID:	MB 680-146473/7-A	Analysis Batch:	680-147927	Instrument ID:	GC/MS SemiVolatiles - T
Client Matrix:	Water	Prep Batch:	680-146473	Lab File ID:	I3256.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	1000 mL
Date Analyzed:	09/15/2009 1931			Final Weight/Volume:	1 mL
Date Prepared:	08/27/2009 1347			Injection Volume:	1.0 uL

Analyte	Result	Qual	RL
1,1'-Biphenyl	10	U	10
2,4-Dichlorophenol	10	U	10
Nitrobenzene	10	U	10
Pentachlorophenol	50	U	50
2,4,6-Trichlorophenol	10	U	10
1-Chloro-3-nitrobenzene	10	U	10
2-Nitrobiphenyl	10	U	10
3-Nitrobiphenyl	10	U	10
3,4-Dichloronitrobenzene	10	U	10
4-Nitrobiphenyl	10	U	10
2-chloronitrobenzene / 4-chloronitrobenzene	20	U	20
1-chloro-2,4-dinitrobenzene	10	U	10

Surrogate	% Rec	Acceptance Limits
2-Fluorobiphenyl	54	50 - 113
2-Fluorophenol	55	36 - 110
Nitrobenzene-d5	61	45 - 112
Phenol-d5	56	38 - 116
Terphenyl-d14	66	10 - 121
2,4,6-Tribromophenol	61	40 - 139

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 29 2009

Client: Solutia Inc.

Job Number: 680-50164-1
Sdg Number: KOM05

Lab Control Sample - Batch: 680-146473

Method: 8270C
Preparation: 3520C

Lab Sample ID: LCS 680-146473/8-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/15/2009 1956
Date Prepared: 08/27/2009 1347

Analysis Batch: 680-147927
Prep Batch: 680-146473
Units: ug/L

Instrument ID: GC/MS SemiVolatiles - T
Lab File ID: 13257.d
Initial Weight/Volume: 1000 mL
Final Weight/Volume: 1 mL
Injection Volume: 1.0 uL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1'-Biphenyl	100	55.1	55	47 - 112	
2,4-Dichlorophenol	100	74.6	75	46 - 115	
Nitrobenzene	100	74.5	75	46 - 110	
Pentachlorophenol	100	86.3	86	37 - 132	
2,4,6-Trichlorophenol	100	65.9	66	46 - 120	
1-Chloro-3-nitrobenzene	100	87.2	87	70 - 130	
2-Nitrobiphenyl	100	86.4	86	70 - 130	
3-Nitrobiphenyl	100	91.9	92	70 - 130	
3,4-Dichloronitrobenzene	100	83.1	83	70 - 130	
4-Nitrobiphenyl	100	88.6	89	70 - 130	
2-chloronitrobenzene / 4-chloronitrobenzene	200	173	86	70 - 130	
1-chloro-2,4-dinitrobenzene	100	103	103	70 - 130	

Surrogate	% Rec	Acceptance Limits
2-Fluorobiphenyl	65	50 - 113
2-Fluorophenol	76	36 - 110
Nitrobenzene-d5	80	45 - 112
Phenol-d5	73	38 - 116
Terphenyl-d14	84	10 - 121
2,4,6-Tribromophenol	76	40 - 139

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 29 2009 EZK

Quality Control Results

Client: Solutia Inc.

Job Number: 680-50164-1
Sdg Number: KOM05

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-146473

Method: 8270C
Preparation: 3520C

MS Lab Sample ID:	680-50164-4	Analysis Batch: 680-147927	Instrument ID: GC/MS SemiVolatiles - T
Client Matrix:	Water	Prep Batch: 680-146473	Lab File ID: t3261.d
Dilution:	1.0		Initial Weight/Volume: 1060 mL
Date Analyzed:	09/15/2009 2139		Final Weight/Volume: 1 mL
Date Prepared:	08/27/2009 1347		Injection Volume: 1.0 uL

MSD Lab Sample ID:	680-50164-4	Analysis Batch: 680-147927	Instrument ID: GC/MS SemiVolatiles - T
Client Matrix:	Water	Prep Batch: 680-146473	Lab File ID: t3262.d
Dilution:	1.0		Initial Weight/Volume: 1060 mL
Date Analyzed:	09/15/2009 2204		Final Weight/Volume: 1 mL
Date Prepared:	08/27/2009 1347		Injection Volume: 1.0 uL

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
1,1'-Biphenyl	52	55	47 - 112	5	40		
2,4-Dichlorophenol	75	77	46 - 115	2	40		
Nitrobenzene	72	78	46 - 110	7	40		
Pentachlorophenol	85	88	37 - 132	3	40		
2,4,6-Trichlorophenol	63	60	46 - 120	4	40		
1-Chloro-3-nitrobenzene	91	91	70 - 130	0	40		
2-Nitrobiphenyl	90	90	70 - 130	1	40		
3-Nitrobiphenyl	92	91	70 - 130	1	40		
3,4-Dichloronitrobenzene	87	87	70 - 130	0	40		
4-Nitrobiphenyl	88	89	70 - 130	1	40		
2-chloronitrobenzene / 4-chloronitrobenzene	84	86	70 - 130	2	40		
1-chloro-2,4-dinitrobenzene	102	107	70 - 130	4	30		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
2-Fluorobiphenyl	63	63	50 - 113
2-Fluorophenol	75	78	36 - 110
Nitrobenzene-d5	81	80	45 - 112
Phenol-d5	72	79	38 - 116
Terphenyl-d14	57	61	10 - 121
2,4,6-Tribromophenol	79	76	40 - 139

SEP 29 2009 ZK

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Solutia Inc.

Job Number: 680-50164-1
Sdg Number: KOM05

Method Blank - Batch: 680-146656

Method: RSK-175
Preparation: N/A

Lab Sample ID:	MB 680-146656/12	Analysis Batch:	680-146656	Instrument ID:	GC Volatiles - U FID
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	UQ412.D
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	17000 uL
Date Analyzed:	08/28/2009 1028			Final Weight/Volume:	17 mL
Date Prepared:	N/A			Injection Volume:	1 uL

Analyte	Result	Qual	RL
Ethane	0.35	U	0.35
Ethylene	0.33	U	0.33
Methane	0.19	U	0.19

Lab Control Sample - Batch: 680-146656

Method: RSK-175
Preparation: N/A

Lab Sample ID:	LCS 680-146656/11	Analysis Batch:	680-146656	Instrument ID:	GC Volatiles - U FID
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	UQ408.D
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	17000 uL
Date Analyzed:	08/28/2009 0851			Final Weight/Volume:	17 mL
Date Prepared:	N/A			Injection Volume:	1 uL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Ethane	282	315	112	75 - 125	
Ethylene	271	323	119	75 - 125	
Methane	153	182	119	75 - 125	

SEP 29 2009

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Solutia Inc.

Job Number: 680-50164-1
Sdg Number: KOM05

Method Blank - Batch: 680-146348

Method: 6010B
Preparation: 3005A
Total Recoverable

Lab Sample ID: MB 680-146348/10-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/26/2009 2152
Date Prepared: 08/26/2009 1058

Analysis Batch: 680-146515
Prep Batch: 680-146348
Units: mg/L

Instrument ID: ICP/AES - D
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Iron	0.050	U	0.050
Iron, Dissolved	0.050	U	0.050
Manganese	0.010	U	0.010
Manganese, Dissolved	0.010	U	0.010

Lab Control Sample - Batch: 680-146348

Method: 6010B
Preparation: 3005A
Total Recoverable

Lab Sample ID: LCS 680-146348/11-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/26/2009 2157
Date Prepared: 08/26/2009 1058

Analysis Batch: 680-146515
Prep Batch: 680-146348
Units: mg/L

Instrument ID: ICP/AES - D
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Iron	1.00	1.07	107	75 - 125	
Iron, Dissolved	1.00	1.07	107	75 - 125	
Manganese	0.500	0.518	104	75 - 125	
Manganese, Dissolved	0.500	0.518	104	75 - 125	

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 29 2009 EYK

Quality Control Results

Client: Solutia Inc.

Job Number: 680-50164-1
Sdg Number: KOM05

Method Blank - Batch: 680-146367

Method: 310.1
Preparation: N/A

Lab Sample ID:	MB 680-146367/1	Analysis Batch:	680-146367	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Units:	mg/L	Initial Weight/Volume:	25 mL
Date Analyzed:	08/25/2009 1715			Final Weight/Volume:	25 mL
Date Prepared:	N/A				

Analyte	Result	Qual	RL
Alkalinity	5.0	U	5.0
Carbon Dioxide, Free	9.78		5.0

Lab Control Sample - Batch: 680-146367

Method: 310.1
Preparation: N/A

Lab Sample ID:	LCS 680-146367/2	Analysis Batch:	680-146367	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Units:	mg/L	Initial Weight/Volume:	25 mL
Date Analyzed:	08/25/2009 1715			Final Weight/Volume:	25 mL
Date Prepared:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Alkalinity	369	426	115	80 - 120	

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 29 2009 EK

Client: Solutia Inc.

Job Number: 680-50164-1
Sdg Number: KOM05

Method Blank - Batch: 680-146667

Method: 325.2
Preparation: N/A

Lab Sample ID:	MB 680-146667/1	Analysis Batch:	680-146667	Instrument ID:	KoneLab1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Units:	mg/L	Initial Weight/Volume:	2 mL
Date Analyzed:	08/28/2009 1214			Final Weight/Volume:	2 mL
Date Prepared:	N/A				

Analyte	Result	Qual	RL
Chloride	1.0	U	1.0

Lab Control Sample - Batch: 680-146667

Method: 325.2
Preparation: N/A

Lab Sample ID:	LCS 680-146667/4	Analysis Batch:	680-146667	Instrument ID:	KoneLab1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Units:	mg/L	Initial Weight/Volume:	2 mL
Date Analyzed:	08/28/2009 1215			Final Weight/Volume:	2 mL
Date Prepared:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	50.0	49.9	100	85 - 115	

SEP 29 2009 EJK

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Solutia Inc.

Job Number: 680-50164-1
Sdg Number: KOM05

Method Blank - Batch: 680-146313

Method: 353.2
Preparation: N/A

Lab Sample ID: MB 680-146313/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/25/2009 1558
Date Prepared: N/A

Analysis Batch: 680-146313
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Result	Qual	RL
Nitrate as N	0.050	U	0.050
Nitrate Nitrite as N	0.050	U	0.050
Nitrite as N	0.050	U	0.050

Lab Control Sample - Batch: 680-146313

Method: 353.2
Preparation: N/A

Lab Sample ID: LCS 680-146313/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/25/2009 1558
Date Prepared: N/A

Analysis Batch: 680-146313
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N	1.00	0.961	96	90 - 110	
Nitrate Nitrite as N	1.00	0.961	96	90 - 110	

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 29 2009

Client: Solutia Inc.

Job Number: 680-50164-1
Sdg Number: KOM05

Method Blank - Batch: 680-147200

Method: 375.4
Preparation: N/A

Lab Sample ID:	MB 680-147200/1	Analysis Batch:	680-147200	Instrument ID:	KoneLab1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Units:	mg/L	Initial Weight/Volume:	2 mL
Date Analyzed:	09/04/2009 0954			Final Weight/Volume:	2 mL
Date Prepared:	N/A				

Analyte	Result	Qual	RL
Sulfate	5.0	U	5.0

Lab Control Sample - Batch: 680-147200

Method: 375.4
Preparation: N/A

Lab Sample ID:	LCS 680-147200/2	Analysis Batch:	680-147200	Instrument ID:	KoneLab1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Units:	mg/L	Initial Weight/Volume:	2 mL
Date Analyzed:	09/04/2009 0954			Final Weight/Volume:	2 mL
Date Prepared:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Sulfate	20.0	20.1	100	75 - 125	

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 29 2009 EZK

Client: Solutia Inc.

Job Number: 680-50164-1
Sdg Number: KOM05

Method Blank - Batch: 680-146774

Method: 415.1
Preparation: N/A

Lab Sample ID: MB 680-146774/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/26/2009 0936
Date Prepared: N/A

Analysis Batch: 680-146774
Prep Batch: N/A
Units: mg/L

Instrument ID: Total Organic Carbon Analyze
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 25 mL

Analyte	Result	Qual	RL
Dissolved Organic Carbon-Dissolved	1.0	U	1.0

Lab Control Sample - Batch: 680-146774

Method: 415.1
Preparation: N/A

Lab Sample ID: LCS 680-146774/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/26/2009 0936
Date Prepared: N/A

Analysis Batch: 680-146774
Prep Batch: N/A
Units: mg/L

Instrument ID: Total Organic Carbon Analyze
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 25 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Dissolved Organic Carbon-Dissolved	20.0	20.4	102	80 - 120	

Duplicate - Batch: 680-146774

Method: 415.1
Preparation: N/A

Lab Sample ID: 680-50164-5
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/26/2009 0936
Date Prepared: N/A

Analysis Batch: 680-146774
Prep Batch: N/A
Units: mg/L

Instrument ID: Total Organic Carbon Analyze
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 25 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Dissolved Organic Carbon-Dissolved	6.3	6.26	1	30	

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 29 2009

Quality Control Results

Client: Solutia Inc.

Job Number: 680-50164-1
Sdg Number: KOM05

Method Blank - Batch: 680-146978

Method: 415.1
Preparation: N/A

Lab Sample ID: MB 680-146978/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/31/2009 1032
Date Prepared: N/A

Analysis Batch: 680-146978
Prep Batch: N/A
Units: mg/L

Instrument ID: Total Organic Carbon Analyze
Lab File ID: N/A
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Result	Qual	RL
Total Organic Carbon	1.0	U	1.0

Lab Control Sample - Batch: 680-146978

Method: 415.1
Preparation: N/A

Lab Sample ID: LCS 680-146978/4
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/31/2009 1104
Date Prepared: N/A

Analysis Batch: 680-146978
Prep Batch: N/A
Units: mg/L

Instrument ID: Total Organic Carbon Analyze
Lab File ID: N/A
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Organic Carbon	20.0	20.5	103	80 - 120	

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 29 2009 EZK

Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax 912.352.0165

Chain of Custody Record

TestAmerica

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Jeff Adams	Site Contact: Mike Corbett	Date:	COC No:
URS Corporation	Tel/Fax: (314) 743-4228	Lab Contact: Lidya Gulizia	Carrier: Fed EX	1 of 1 COCs
1001 Highlands Plaza Drive West, Suite 300	Analysis Turnaround Time			Job No. 21562046.00004
St. Louis, MO 63110	Calendar (C) or Work Days (W)			
(314) 429-0100 Phone	TAT if different from Below Standard			
(314) 429-0462 FAX	☐ 2 weeks			SDG No.
Project Name: 3Q09 Route 3 GW Sampling	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	SVOCs by 8270C*	Total Fe/Mn by 6010B	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Methane by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010B	DOC by 415.1	Sample Specific Notes:
GM-31A-0809	8/24/09	1025	G	Water	11		2	1	1	1	3	2	1			
GM-31A-0809-AD		1025	G	Water	2		2									
GM-31A-F(0.2)-0809		1025	G	Water	2	X								1	1	
GM-58A-0809		1300	G	Water	11		2	1	1	1	3	2	1			
GM-58A-0809-MS		1300	G	Water	2		2									
GM-58A-0809-MSD		1300	G	Water	2		2									
GM-58A-F(0.2)-0809		1300	G	Water	2	X								1	1	
							1	4	1	1	1	3,1	2	4	2	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant Poison B ☐ Unknown ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ■ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements & Comments: Level 4 Data Package

0.8 / 2.3
680-50164

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	URS	8/24/09 1530			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by: [signature]	Company: TA SV	Date/Time: 8/25/09 0931

SEP 29 2009 EAK

Login Sample Receipt Check List

Client: URS Corporation

Job Number: 680-50164-1
SDG Number: KOM05

Login Number: 50164
Creator: Conner, Keaton
List Number: 1

List Source: TestAmerica Savannah

Question	T / F/ NA	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	0.8 and 2.3 C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
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	
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	
Is the Field Sampler's name present on COC?	False	
Sample Preservation Verified	True	

SEP 29 2009