SOLUTIA

Solutions for a better life.

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

P.O. Box 66760
St. Louis, Missouri 63166-6760
Tel 314-674-1000

May 26, 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
1st 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 1st 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
1st Quarter 2009 Data Report
Solutia Inc., W. G. Krummrich Plant, Sauget, IL

USEPA

Leah Evison
USEPA Region 5 - SR6J, 77 West Jackson Boulevard, Chicago, IL 60604

IEPA

Sandra Bron
IEPA Bureau of Land/FSRS, 1021 North Grand Avenue East, Springfield, IL 62706

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

Booz Allen Hamilton

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

Solutia

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

1ST 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

May 2009

URS Corporation
1001 Highland Plaza Drive West, Suite 300
St. Louis, MO 63110
(314) 429-0100
Project # 21562046.00000

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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 1st Quarter 2009 (1Q09). A Site location map is presented in **Figure 1**.

During the 1Q09 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 certain 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) conducted the 1Q09 Illinois Route 3 Drum Site groundwater sampling activities on February 24 (groundwater level measurements) and March 3, 2009 (groundwater sampling). Groundwater samples were collected from two monitoring wells during the 1Q09 sampling event. This section summarizes the field investigative procedures.

Groundwater Level Measurements - On February 24, 2009, 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 1Q09 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 on March 3, 2009. At each monitoring well, disposable, low-density polyethylene tubing was attached to a submersible pump, which was then lowered into the well to the middle of the screened interval. Monitoring wells were purged at a rate of 200 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-0209” which denotes Groundwater Monitoring well number 31A sampled in February 2009. However, it should be noted the February site sampling event extended into March, and the “0209” samples were actually collected on March 3, 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 approximately 4^{o}C. Field personnel recorded the project identification and number, sample description/location, required analysis, date and time of sample collection, type and matrix of

sample, number of sample containers, 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 FedEx® Priority 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 certain 40 CFR 264 Appendix IX SVOCs and MNA parameters (per the Route 3 Drum Site O&M Plan), using the following methodologies:

- SVOCs, via EPA 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), methane (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 as described in the Revised Illinois Route 3 Drum Site Operations and Maintenance Plan. Data qualifiers were added, as appropriate, and are included on the data tables and the laboratory result pages. The Quality Assurance report is included as **Appendix C**. 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 and MNA parameters. The results for the various analyses were submitted as sample delivery group (SDG) KOM03 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), USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (USEPA 2004) and the Revised Illinois Route 3 Drum Site Operation and Maintenance Plan (Solutia 2008). 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 (**J/UJ**) data, was 100 percent.

5.0 OBSERVATIONS

SVOCs were detected in groundwater samples from both monitoring wells, along with the duplicate sample collected during the 1Q09 sampling event. Laboratory analytical data for monitoring well sample GM-31A-0209, and corresponding duplicate GM-31A-0209-AD, indicate 2,4,6-Trichlorophenol was detected at estimated concentrations of 21 µg/L and 19 µg/L, respectively; and 2-Nitrobiphenyl was detected at an estimated concentration of 12 µg/L in both samples. Only 2-Chloronitrobenzene/4-Chloronitrobenzene was detected in monitoring well sample GM-58A-0209, with an estimated concentration of 51 µg/L. A summary of SVOC detections is provided in **Table 2**, with MNA results provided in **Table 3**.

The 1Q09 sampling event was the third 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

FALLING SPRINGS ROAD

STERLING STEEL

SITE H

SITE L

SITE M

SITE N

SITE I

DEAD CREEK

SITE G

CONTAINMENT CELL

CERRO COPPER

QUEENY AVENUE

ROUTE 3

AFTON CHEMICAL

MONSANTO AVENUE

W. G. KRUMMRICH FACILITY

BIG RIVER ZINC

ROUTE 3

LOT F

CENTER ETHANOL COMPANY, LLC

MIDWEST RUBBER

PHILLIPS PETROLEUM

SITE O

SITE P

UNION ELECTRIC

PCHEM POTW

CLAYTON CHEMICAL

SITE S

AMERICAN BOTTOMS POTW

ONYX INCINERATION

CAHOKIA MARINE

R SITE

SITE Q

GROUNDWATER PUMPING WELLS

BARRIER WALL

MISSISSIPPI RIVER

LEGEND

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

Ø 1ØØØ

SCALE FEET

ILLINOIS ROUTE 3 DRUM SITE GROUNDWATER SAMPLING
1ST QUARTER 2ØØ9 DATA REPORT
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

PROJECT NO. 21562046

URS

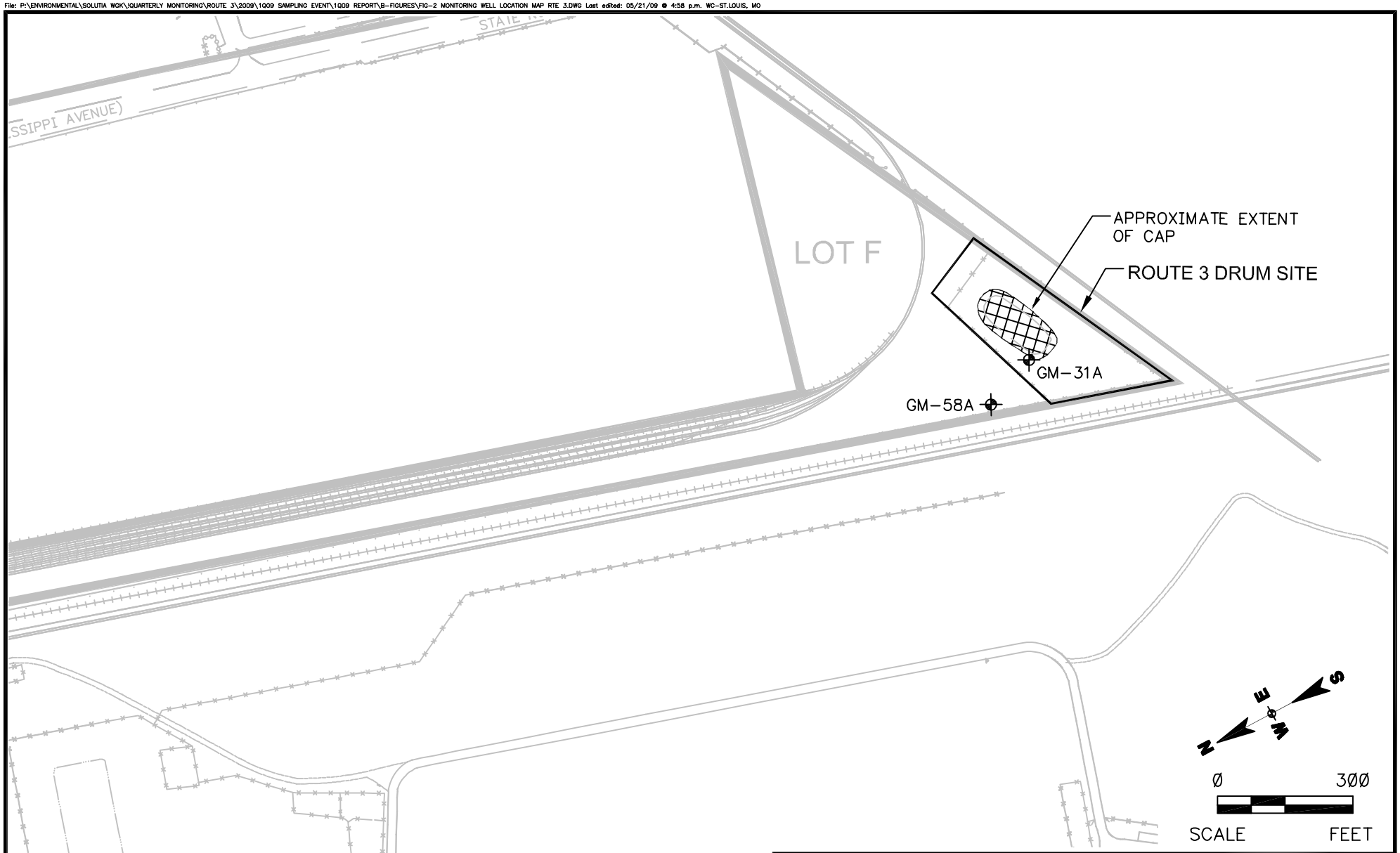
DRN. BY:lrm 5/21/Ø9
DSGN. BY:wh
CHKD. BY:

Site Location Map

FIG. NO. 1

File: P:\ENVIRONMENTAL\SOLUTIA WGK\QUARTERLY MONITORING\ROUTE 3\2009\1Q09 SAMPLING EVENT\1Q09 REPORT\B-FIGURES\FIG-1 SITE LOCATION MAP RTE 3.DWG Last edited: MAY 21, 09 @ 4:56 p.m. by: curt_smith

File: P:\ENVIRONMENTAL\SOLUTIA WGK\QUARTERLY MONITORING\ROUTE 3\2009\1Q09 SAMPLING EVENT\1Q09 REPORT\B-FIGURES\FIG-2 MONITORING WELL LOCATION MAP RTE 3.DWG Last edited: 05/21/09 @ 4:58 p.m. WC-ST.LOUIS, MO



LEGEND

⊕ MONITORING WELL LOCATION

ILLINOIS ROUTE 3 DRUM SITE GROUNDWATER SAMPLING 1ST QUARTER 2Ø09 DATA REPORT W.G. KRUMMRICH FACILITY SAUGET, ILLINOIS		PROJECT NO. 21562Ø46
URS		
DRN. BY:lrm 5/21/Ø9 DSGN. BY: ekf CHKD. BY:	Monitoring Well Location Map	FIG. NO. 2

Tables

Table 1
Monitoring Well Gauging Information

Well ID	Construction Details						24-Feb-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)	Depth to Product (feet btoc)	Depth to Bottom (feet btoc)	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	23.85	-	40.85	394.78
GM-58A	412.24	414.24	19.40	39.40	392.84	372.84	19.72	-	40.41	394.52

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-0209	3/3/2009	<9.7 UJ	<9.7 UJ	<9.7 UJ	**21 J**	<9.7 UJ	<19 UJ	**12 J**	<9.7 UJ	<9.7 UJ	<9.7 UJ	<9.7 UJ	<49 UJ
GM-31A-0209-AD	3/3/2009	<9.7 UJ	<9.7 UJ	<9.7 UJ	**19 J**	<9.7 UJ	<19 UJ	**12 J**	<9.7 UJ	<9.7 UJ	<9.7 UJ	<9.7 UJ	<49 UJ
GM-58A-0209	3/3/2009	<9.7 UJ	<9.7 UJ	<9.7 UJ	<9.7 UJ	<9.7 UJ	**51 J**	<9.7 UJ	<9.7 UJ	<9.7 UJ	<9.7 UJ	<9.7 UJ	<49 UJ

Notes:
µg/L = micrograms per liter
All values estimated - indicated with J qualifier on lab data
< = Result is non-detect, less than the reporting limit given - indicated as a U qualifier on lab data
UJ = Estimated value; 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)	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-0209	3/3/2009	490	63	81	7.96		1.9		1.1		4.5	0.27	160		3.6	55.1
GM-31A-F(0.2)-0209	3/3/2009					0.05		0.058		1				3.1		
GM-58A-0209	3/3/2009	550	65	120	7.01		0.52		1.6		6	0.05	180		4.2	79.7
GM-58A-F(0.2)-0209	3/3/2009					0.08		0.072		1.6				3.8		

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.
A blank space indicates sample not analyzed for select analyte.
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: M. Colbert, S. Moore
DATE: 3/3/09 WEATHER: overcast, 32°
MONITORING WELL ID: GM-31A SAMPLE ID: GM-31A-0209, GM-31A-0209-AD, GM-31A-F(0.2)-0209

INITIAL DATA

Well Diameter: 2 in
Measured Well Depth (btoc): 40.85 ft
Constructed Well Depth (btoc): ~~40.85~~ 41.00 ft
Depth to Water (btoc): 23.75 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): 21.20 ft
Screen Length: 20 ft

Water Column Height (do not include LNAPL or DNAPL): 17.10 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) = ~~30.5~~ 33.00 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): 1,150 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 3,450 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) (±3 %)	Cond. (ms/cm) (±3 %)	Turbidity (NTUs)	DO (mg/l) (±10 % or ±2 mg/L)	ORP (mv) (±20 mV)
0	1110	23.76	light brown	none	6.66	13.06	1.514	182.4	7.48	72.8
1200	1116	↓	↓	↓	6.59	13.37	1.520	102.6	8.14	71.7
2400	1122	↓	↓	↓	6.60	13.67	1.537	37.4	8.09	61.9
3600	1128	↓	colorless	↓	6.57	13.76	1.545	32.0	7.94	57.3
4800	1134	↓	↓	↓	6.56	13.84	1.549	16.9	2.96	55.1

Start Time: 1110
Stop Time: 1134
Elapsed Time: 24 min.
Average Purge Rate (mL/min): 200
Water Quality Meter ID: YSI 6920
Date Calibrated: 3/3/09

SAMPLING DATA

Sample Date: 3/3/09
Sample Method: Stainless Steel Monsoon
Sample Time: 1140
Sample Flow Rate: 200 mL/min
Analysis: SVOCs (see sampling plan), Total Fe & Mn, Dissolved Fe, MNA
Date Calibrated: NA

COMMENTS:

MNA – Alkalinity, Carbon Dioxide, Chloride, Nitrate, Sulfate,
Total Iron, Dissolved Iron(0.2 Micron filter), Total Manganese, Dissolved Manganese (0.2 Micron filter),
Methane, Total Organic Carbon, Dissolved Organic Carbon (0.2 Micron filter)
Ferrous Iron (0.2 Micron filter) = 0.05 ppm

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: WGK Route 3 Drum Lot PROJECT NUMBER: 21562046.00000 FIELD PERSONNEL: M. Corbett, S. Moore
DATE: 3/3/09 WEATHER: Mostly cloudy, 25°
MONITORING WELL ID: GM-58A SAMPLE ID: GM-58A-0209, GM-58A-F(0.2)-0209, GM-58A-0209-MS, GM-58A-0209-MSD

INITIAL DATA

Well Diameter: 2 in
Measured Well Depth (btoc): 40.41 ft
Constructed Well Depth (btoc): 40.40 ft
Depth to Water (btoc): 19.62 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): 20.79 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): 1,150 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 3,450 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: ~~Stainless Steel Monsoon~~ Peristaltic

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH (±0.2 units)	Temp (°C) (±3 %)	Cond. (ms/cm) (±3 %)	Turbidity (NTUs)	DO (mg/l) (±10 % or ±2 mg/L)	ORP (mv) (±20 mV)
0	0934	19.62	colorless	none	6.63	12.85	1.717	3.3	6.48	117.1
1200	0940	↓	↓	↓	6.63	13.09	1.715	-1.1	6.21	100.6
2400	0946				6.57	13.15	1.715	-2.2	6.78	99.1
3600	0952				6.61	13.27	1.712	-1.8	6.76	88.1
4800	0958				6.60	13.31	1.716	-1.9	7.01	79.7

Start Time: 0934
Stop Time: 0958
Elapsed Time: 24 min.
Average Purge Rate (mL/min): 200
Water Quality Meter ID: YSI 6920
Date Calibrated: 3/3/09

SAMPLING DATA

Sample Date: 3/3/09
Sample Method: ~~Stainless Steel Monsoon~~ peristaltic
Sample Time: 1010
Sample Flow Rate: 200 mL/min
Analysis: SVOCs (see sampling plan), Total Fe & Mn, Dissolved Fe, MNA
Date Calibrated: NA

COMMENTS:

MNA – Alkalinity, Carbon Dioxide, Chloride, Nitrate, Sulfate,
Total Iron, Dissolved Iron(0.2 Micron filter), Total Manganese, Dissolved Manganese (0.2 Micron filter),
Methane, Total Organic Carbon, Dissolved Organic Carbon (0.2 Micron filter)

Ferrous Iron (0.2 Micron filter) = 0.08 ppm

Appendix B

Chain-of-Custody

Serial Number 014681

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

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

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
R+3 Drum Lot - WGK	21562046.00000	IL
TAL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Lidya Gulizia		
CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Thomas Adams	314-429-0100	314-429-0462
CLIENT NAME	CLIENT E-MAIL	
URS Corporation	thomas_adams@urscorp.com	
CLIENT ADDRESS		
1001 Highlands Plaza Dr. W Ste 300 St. Louis, MO 63110		
COMPANY CONTRACTING THIS WORK (if applicable)		
Solutia		

PAGE 1 OF 1

STANDARD REPORT DELIVERY ◯
DATE DUE _____
EXPEDITED REPORT DELIVERY (SURCHARGE) ◯
DATE DUE _____
NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	MATRIX TYPE: AQUEOUS (WATER)	MATRIX TYPE: SOLID OR SEMISOLID	MATRIX TYPE: AIR	MATRIX TYPE: NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	REQUIRED ANALYSIS: none 8260C SVOC	Total Fe/Mn 6010B	AK/CO_2 30.1	Sulfate 375.4 Chloride 325.2	Methane RSK 175	Nitrate 353.2	TOC 415.1	DOC 415.1	Diss Fe/Mn 6010B	REMARKS
		Preservative						none	HNO_3	none	none	none	H_2SO_4/none	HCl	HCl	HNO_3	
								NUMBER OF CONTAINERS SUBMITTED									
3/3/09	1140	GM-31A-0209	G	X				2	1	1	1	3	2	1			
	1140	GM-31A-F(0.2)-0209	G	X											1	1	
	1140	GM-31A-0209-AD	G	X				2									
	1010	GM-58A-0209	G	X				2	1	1	1	3	2	1			
		GM-58A-F(0.2)-0209	G	X											1	1	
		GM-58A-0209-MS	G	X				2									
		GM-58A-0209-MSD	G	X				2									

42 of 43

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Shelly Medl	3/3/09	1700						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
KL	3/4/09	0902	YES ◯ NO ◯		680-45174	1.8 | 1.6

TAL8240-680 (1207)

Appendix C

Quality Assurance Report

QUALITY ASSURANCE REPORT

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

Illinois Route 3 Drum Site
1st Quarter 2009 Data Report

Prepared for

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

May 2009

URS Corporation
1001 Highland Plaza Drive West, Suite 300
St. Louis, MO 63110
(314) 429-0100
Project # 21562046.00000

1.0 INTRODUCTION

This Quality Assurance Report presents the findings of a review of analytical data for groundwater samples collected in March 2009 at the Illinois Route 3 Drum Site as part of the 1st Quarter 2009 sampling event. The samples were collected by URS Corporation personnel and analyzed by Test America Laboratories located in Savannah, Georgia using USEPA methodologies. Samples were analyzed for certain semivolatile organic compounds (SVOCs), and monitored natural attenuation (MNA) parameters.

One hundred percent of the data were subjected to a data quality review (Level III validation). The Level III validations were performed in order to confirm that the analytical data provided by Test America were acceptable in quality for their intended use.

A total of five samples (two investigative groundwater samples, one field duplicate pair, and one matrix spike and matrix spike duplicate (MS/MSD) pair were analyzed by Test America. These samples were analyzed as Sample Delivery Group (SDG) KOM03, 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 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, USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, October 2004 and the Revised Illinois Route 3 Drum Site Operation and Maintenance Plan, (Solutia 2008).

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	Analyte was not detected at or above the reporting limit.
*	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 (**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 with the exception of extraction holding times for re-extracted samples GM-31A-0209 RE, GM-31A-0209-AD RE, and GM-58A-0209 RE; data was qualified as estimated (J/UJ) for analytes detected and not detected in these samples.

3.0 LABORATORY METHOD BLANK

Laboratory method blank samples evaluate the existence and magnitude of contamination problems resulting from laboratory activities. All laboratory method blank samples were analyzed at the method prescribed frequencies. No analytes were detected in any of the method blanks.

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. However, the laboratory did not spike the LCS sample with all target analytes as part of batch 680-131813; therefore, all associated investigative samples were re-extracted and re-analyzed as part of batch 680-132385 and LCS/LCSD data for SVOC compounds 1,1-Biphenyl and 1-chloro-2,4-dinitrobenzene was not included as part of the SDG for LCS/LCSD samples 680-132385/15-A and 680-132385/28-A because these compounds were not included in the spiking material. Professional judgment was used not to reject or qualify this data since, similar SVOC compounds were spiked and recovered within evaluation criteria. In addition, these compounds were previously qualified due to holding time and no additional qualification of data is required. Data from the original runs was not reported. Only data from the re-extracted/re-analyzed runs was reported.

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

MS/MSD samples are analyzed to assess the accuracy and precision of the analytical process on an analytical sample in a particular matrix. MS/MSD samples were required to be collected at a frequency of one per 20 investigative samples in accordance with the work plan. URS Corporation submitted one MS/MSD sample set for two investigative samples, meeting the work plan frequency requirement.

No qualifications were made to the data if the MS/MSD percent RPD was the only factor outside of criteria. Also, USEPA National Functional Guidelines for Organic Data Review (October 1999) states that organic data should not be qualified based on MS/MSD criteria alone. Therefore, if recoveries were outside evaluation criteria due to matrix interference or abundance of analytes, no qualifiers were assigned unless

these analytes had other quality control criteria outside evaluation criteria.

Samples spiked and analyzed as MS/MSDs and their respective recoveries are discussed further in data reviews in **Appendix D**. 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

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

Appendix D

Groundwater Analytical Results

(with Data Review Sheets)

Solutia Krummrich Data Review

Laboratory SDG: KOM03

Reviewer: Elizabeth Kunkel

Date Reviewed: 4/9/2009

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-0209	GM-31A-F(0.2)-0209
GM-31A-0209-AD	GM-58A-0209
GM-58A-F(0.2)-0209	

1.0 Data Package Completeness

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

No, LCS/LCSD and MS/MSD data for some SVOC compounds were not included since these samples were not spiked with the compounds.

2.0 Laboratory Case Narrative \ Cooler Receipt Form

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

Yes, the laboratory case narrative indicated that samples GM-31A-0209, GM-31A-0209-AD, and GM-58A-0209 were re-extracted outside of holding time. SVOC MS/MSD recoveries were outside of evaluation criteria in sample GM-58A-0209. Samples were diluted due to high level of target analytes. These issues are addressed further in the appropriate sections below.

The cooler receipt form did not indicate any problems.

3.0 Holding Times

Were samples extracted/analyzed within QAPP limits?

No, samples GM-31A-0209, GM-31A-0209-AD and GM-58A-0209 were re-extracted approximately 2 days outside holding time criteria (7 days).

Field ID	Parameter	Analyte	Qualification
GM-31A-0209 RE	SVOCs	SVOC detects/nondetects	**J/UJ**
GM-31A-0209-AD RE	SVOCs	SVOC detects/nondetects	**J/UJ**
GM-58A-0209 RE	SVOCs	SVOC detects/nondetects	**J/UJ**

4.0 Blank Contamination

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

No

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

Yes, however, the laboratory did not spike the LCS sample with all target analytes as part of batch 680-131813; therefore, all associated investigative samples were re-extracted and re-analyzed as part of batch 680-132385 and LCS/LCSD data for SVOC compounds 1,1-Biphenyl and 1-chloro-2,4-dinitrobenzene was not included as part of the SDG for LCS/LCSD samples 680-132385/15-A and 680-132385/28-A because these compounds were not included in the spiking material. Professional judgment was used not to reject or qualify this data since, similar SVOC compounds were spiked and recovered within evaluation criteria. In addition, these compounds were previously qualified due to holding time and no additional qualification of data is required. Data from the original runs was not reported. Only data from the re-extracted/re-analyzed runs was reported.

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

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

Yes, sample GM-58A-0209 was spiked and analyzed for SVOCs.

Were MS/MSD recoveries within evaluation criteria?

No

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery	RPD	MS/MSD/ RPD Criteria
GM-58A-0209	SVOCs	Nitrobenzene	**119/112**	6	46-110/40
GM-58A-0209	SVOCs	1-chloro-2,4-dinitrobenzene	**0/0**	200	70-130/30

USEPA National Functional Guidelines for Organic Data Review indicates that organic data should not be qualified based on MS/MSD data alone and LCS recoveries were within evaluation criteria; therefore, no further qualification of data was required. The compound 1-chloro-2,4-dinitrobenzene was not spiked or recovered in sample GM-58A-0209. This issue was discussed in Section 5.0 of this data review report. No qualification of data was required.

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-31A-0209 was duplicated and analyzed for sulfate.

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-0209	GM-31A-0209-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

SAMPLE SUMMARY

Client: Solutia Inc.

Job Number: 680-45174-1
Sdg Number: KOM03

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-45174-1	GM-31A-0209	Water	03/03/2009 1140	03/04/2009 0902
680-45174-2	GM-31A-F(0.2)-0209	Water	03/03/2009 1140	03/04/2009 0902
680-45174-3FD	GM-31A-0209-AD	Water	03/03/2009 1140	03/04/2009 0902
680-45174-4	GM-58A-0209	Water	03/03/2009 1010	03/04/2009 0902
680-45174-4MS	GM-58A-0209	Water	03/03/2009 1010	03/04/2009 0902
680-45174-4MSD	GM-58A-0209	Water	03/03/2009 1010	03/04/2009 0902
680-45174-5	GM-58A-F(0.2)-0209	Water	03/03/2009 1010	03/04/2009 0902

SAMPLE RESULTS

Do not use this data. Data was reported from the re-extracted/re-analyzed run.

Analytical Data

Client: Solutia Inc.

Job Number: 680-45174-1
Sdg Number: KOM03

Client Sample ID: **GM-31A-0209**

Lab Sample ID: 680-45174-1
Client Matrix: Water

Date Sampled: 03/03/2009 1140
Date Received: 03/04/2009 0902

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

Method: 8270C
Preparation: 3520C
Dilution: 1.0
Date Analyzed: 03/13/2009 1542
Date Prepared: 03/05/2009 1336

Analysis Batch: 680-132863
Prep Batch: 680-131813

Instrument ID: GC/MS SemiVolatiles - G
Lab File ID: g5576.d
Initial Weight/Volume: 1030 mL
Final Weight/Volume: 1 mL
Injection Volume: 1.0 uL

Analyte	Result (ug/L)	Qualifier	RL
1,1'-Biphenyl	9.7	U	9.7
2,4-Dichlorophenol	9.7	U	9.7
Nitrobenzene	9.7	U	9.7
Pentachlorophenol	49	U	49
2,4,6-Trichlorophenol	25		9.7
1-Chloro-3-nitrobenzene	9.7	U	9.7
2-Nitrobiphenyl	19		9.7
3-Nitrobiphenyl	9.7	U	9.7
3,4-Dichloronitrobenzene	9.7	U	9.7
4-Nitrobiphenyl	9.7	U	9.7
2-chloronitrobenzene / 4-chloronitrobenzene	23		19
1-chloro-2,4-dinitrobenzene	9.7	U	9.7

Surrogate	%Rec	Acceptance Limits
2-Fluorobiphenyl	68	50 - 113
2-Fluorophenol	67	36 - 110
Nitrobenzene-d5	68	45 - 112
Phenol-d5	63	38 - 116
Terphenyl-d14	46	10 - 121
2,4,6-Tribromophenol	83	40 - 139

Use this data only.

Analytical Data

Client: Solutia Inc.

Job Number: 680-45174-1
Sdg Number: KOM03

Client Sample ID: **GM-31A-0209**

Lab Sample ID: 680-45174-1
Client Matrix: Water

Date Sampled: 03/03/2009 1140
Date Received: 03/04/2009 0902

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

Method: 8270C
Preparation: 3520C
Dilution: 1.0
Date Analyzed: 03/23/2009 1205
Date Prepared: 03/12/2009 1423

Analysis Batch: 680-133430
Prep Batch: 680-132385
Run Type: RE

Instrument ID: GC/MS SemiVolatiles - G
Lab File ID: g5690.d
Initial Weight/Volume: 1030 mL
Final Weight/Volume: 1 mL
Injection Volume: 1.0 uL

Surrogate	%Rec	Acceptance Limits
2-Fluorobiphenyl	67	50 - 113
2-Fluorophenol	64	36 - 110
Nitrobenzene-d5	68	45 - 112
Phenol-d5	65	38 - 116
Terphenyl-d14	57	10 - 121
2,4,6-Tribromophenol	83	40 - 139

Method: 8270C
Preparation: 3520C
Dilution: 1.0
Date Analyzed: 03/23/2009 1205
Date Prepared: 03/12/2009 1423

Analysis Batch: 680-133430
Prep Batch: 680-132385
Run Type: RE

Instrument ID: GC/MS SemiVolatiles - G
Lab File ID: g5690.d
Initial Weight/Volume: 1030 mL
Final Weight/Volume: 1 mL
Injection Volume: 1.0 uL

Analyte	Result (ug/L)	Qualifier	RL
1,1'-Biphenyl	9.7	~~UH~~ "UJ"	9.7
2,4-Dichlorophenol	9.7	~~UH~~ "UJ"	9.7
Nitrobenzene	9.7	~~UH~~ "UJ"	9.7
Pentachlorophenol	49	~~UH~~ "UJ"	49
2,4,6-Trichlorophenol	21	~~H~~ "J"	9.7
1-Chloro-3-nitrobenzene	9.7	~~UH~~ "UJ"	9.7
2-Nitrobiphenyl	12	~~H~~ "J"	9.7
3-Nitrobiphenyl	9.7	~~UH~~ "UJ"	9.7
3,4-Dichloronitrobenzene	9.7	~~UH~~ "UJ"	9.7
4-Nitrobiphenyl	9.7	~~UH~~ "UJ"	9.7
2-chloronitrobenzene / 4-chloronitrobenzene	19	~~UH~~ "UJ"	19
1-chloro-2,4-dinitrobenzene	9.7	~~UH*~~ "UJ"	9.7

Do not use this data. Data was reported from the re-extracted/re-analyzed run.

Analytical Data

Client: Solutia Inc.

Job Number: 680-45174-1
Sdg Number: KOM03

Client Sample ID: **GM-31A-0209-AD**

Lab Sample ID: 680-45174-3FD
Client Matrix: Water

Date Sampled: 03/03/2009 1140
Date Received: 03/04/2009 0902

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

Method: 8270C
Preparation: 3520C
Dilution: 1.0
Date Analyzed: 03/13/2009 1605
Date Prepared: 03/05/2009 1336

Analysis Batch: 680-132863
Prep Batch: 680-131813

Instrument ID: GC/MS SemiVolatiles - G
Lab File ID: g5577.d
Initial Weight/Volume: 1060 mL
Final Weight/Volume: 1 mL
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	25		9.4
1-Chloro-3-nitrobenzene	9.4	U	9.4
2-Nitrobiphenyl	19		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	29		19
1-chloro-2,4-dinitrobenzene	9.4	U	9.4

Surrogate	%Rec	Acceptance Limits
2-Fluorobiphenyl	70	50 - 113
2-Fluorophenol	66	36 - 110
Nitrobenzene-d5	68	45 - 112
Phenol-d5	59	38 - 116
Terphenyl-d14	38	10 - 121
2,4,6-Tribromophenol	82	40 - 139

Use this data only.

Analytical Data

Client: Solutia Inc.

Job Number: 680-45174-1
Sdg Number: KOM03

Client Sample ID: **GM-31A-0209-AD**

Lab Sample ID: 680-45174-3FD
Client Matrix: Water

Date Sampled: 03/03/2009 1140
Date Received: 03/04/2009 0902

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

Method: 8270C
Preparation: 3520C
Dilution: 1.0
Date Analyzed: 03/23/2009 1228
Date Prepared: 03/12/2009 1423

Analysis Batch: 680-133430
Prep Batch: 680-132385
Run Type: RE

Instrument ID: GC/MS SemiVolatiles - G
Lab File ID: g5691.d
Initial Weight/Volume: 1030 mL
Final Weight/Volume: 1 mL
Injection Volume: 1.0 uL

Surrogate	%Rec	Acceptance Limits
2-Fluorobiphenyl	57	50 - 113
2-Fluorophenol	56	36 - 110
Nitrobenzene-d5	62	45 - 112
Phenol-d5	57	38 - 116
Terphenyl-d14	48	10 - 121
2,4,6-Tribromophenol	77	40 - 139

Method: 8270C
Preparation: 3520C
Dilution: 1.0
Date Analyzed: 03/23/2009 1228
Date Prepared: 03/12/2009 1423

Analysis Batch: 680-133430
Prep Batch: 680-132385
Run Type: RE

Instrument ID: GC/MS SemiVolatiles - G
Lab File ID: g5691.d
Initial Weight/Volume: 1030 mL
Final Weight/Volume: 1 mL
Injection Volume: 1.0 uL

Analyte	Result (ug/L)	Qualifier	RL
1,1'-Biphenyl	9.7	UH "U"	9.7
2,4-Dichlorophenol	9.7	UH "U"	9.7
Nitrobenzene	9.7	UH "U"	9.7
Pentachlorophenol	49	UH "U"	49
2,4,6-Trichlorophenol	19	H "J"	9.7
1-Chloro-3-nitrobenzene	9.7	UH "U"	9.7
2-Nitrobiphenyl	12	H "J"	9.7
3-Nitrobiphenyl	9.7	UH "U"	9.7
3,4-Dichloronitrobenzene	9.7	UH "U"	9.7
4-Nitrobiphenyl	9.7	UH "U"	9.7
2-chloronitrobenzene / 4-chloronitrobenzene	19	UH "U"	19
1-chloro-2,4-dinitrobenzene	9.7	UH* "U"	9.7

Do not use this data. Data was reported from the re-extracted/re-analyzed run.

Analytical Data

Client: Solutia Inc.

Job Number: 680-45174-1
Sdg Number: KOM03

Client Sample ID: **GM-58A-0209**

Lab Sample ID: 680-45174-4
Client Matrix: Water

Date Sampled: 03/03/2009 1010
Date Received: 03/04/2009 0902

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

Method: 8270C
Preparation: 3520C
Dilution: 1.0
Date Analyzed: 03/13/2009 1628
Date Prepared: 03/05/2009 1336

Analysis Batch: 680-132863
Prep Batch: 680-131813

Instrument ID: GC/MS SemiVolatiles - G
Lab File ID: g5578.d
Initial Weight/Volume: 1030 mL
Final Weight/Volume: 1 mL
Injection Volume: 1.0 uL

Analyte	Result (ug/L)	Qualifier	RL
1,1'-Biphenyl	9.7	U	9.7
2,4-Dichlorophenol	9.7	U	9.7
Nitrobenzene	9.7	U	9.7
Pentachlorophenol	49	U	49
2,4,6-Trichlorophenol	9.7	U	9.7
1-Chloro-3-nitrobenzene	9.7	U	9.7
2-Nitrobiphenyl	9.7	U	9.7
3-Nitrobiphenyl	9.7	U	9.7
3,4-Dichloronitrobenzene	9.7	U	9.7
4-Nitrobiphenyl	9.7	U	9.7
2-chloronitrobenzene / 4-chloronitrobenzene	60		19
1-chloro-2,4-dinitrobenzene	9.7	U	9.7

Surrogate	%Rec	Acceptance Limits
2-Fluorobiphenyl	64	50 - 113
2-Fluorophenol	59	36 - 110
Nitrobenzene-d5	63	45 - 112
Phenol-d5	54	38 - 116
Terphenyl-d14	36	10 - 121
2,4,6-Tribromophenol	77	40 - 139

Use this data only.

Analytical Data

Client: Solutia Inc.

Job Number: 680-45174-1
Sdg Number: KOM03

Client Sample ID: **GM-58A-0209**

Lab Sample ID: 680-45174-4
Client Matrix: Water

Date Sampled: 03/03/2009 1010
Date Received: 03/04/2009 0902

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

Method:	8270C	Analysis Batch: 680-133430	Instrument ID:	GC/MS SemiVolatiles - G	
Preparation:	3520C	Prep Batch: 680-132385	Lab File ID:	g5692.d	
Dilution:	1.0		Initial Weight/Volume:	1030	mL
Date Analyzed:	03/23/2009 1251	Run Type: RE	Final Weight/Volume:	1	mL
Date Prepared:	03/12/2009 1423		Injection Volume:	1.0	uL

Surrogate	%Rec	Acceptance Limits
2-Fluorobiphenyl	64	50 - 113
2-Fluorophenol	64	36 - 110
Nitrobenzene-d5	66	45 - 112
Phenol-d5	62	38 - 116
Terphenyl-d14	46	10 - 121
2,4,6-Tribromophenol	80	40 - 139

Method:	8270C	Analysis Batch: 680-133430	Instrument ID:	GC/MS SemiVolatiles - G	
Preparation:	3520C	Prep Batch: 680-132385	Lab File ID:	g5692.d	
Dilution:	1.0		Initial Weight/Volume:	1030	mL
Date Analyzed:	03/23/2009 1251	Run Type: RE	Final Weight/Volume:	1	mL
Date Prepared:	03/12/2009 1423		Injection Volume:	1.0	uL

Analyte	Result (ug/L)	Qualifier	RL
1,1'-Biphenyl	9.7	~~UH~~ "U"	9.7
2,4-Dichlorophenol	9.7	~~UH~~ "U"	9.7
Nitrobenzene	9.7	~~UH~~ "U"	9.7
Pentachlorophenol	49	~~UH~~ "U"	49
2,4,6-Trichlorophenol	9.7	~~UH~~ "U"	9.7
1-Chloro-3-nitrobenzene	9.7	~~UH~~ "U"	9.7
2-Nitrobiphenyl	9.7	~~UH~~ "U"	9.7
3-Nitrobiphenyl	9.7	~~UH~~ "U"	9.7
3,4-Dichloronitrobenzene	9.7	~~UH~~ "U"	9.7
4-Nitrobiphenyl	9.7	~~UH~~ "U"	9.7
2-chloronitrobenzene / 4-chloronitrobenzene	51	~~H~~ "J"	19
1-chloro-2,4-dinitrobenzene	9.7	~~UH~~ "U"	9.7

Client: Solutia Inc.

Job Number: 680-45174-1
Sdg Number: KOM03

Client Sample ID: **GM-31A-0209**

Lab Sample ID: 680-45174-1
Client Matrix: Water

Date Sampled: 03/03/2009 1140
Date Received: 03/04/2009 0902

RSK-175 Dissolved Gases (GC)

Method: RSK-175
Preparation: N/A
Dilution: 1.0
Date Analyzed: 03/13/2009 1002
Date Prepared: N/A

Analysis Batch: 680-132577

Instrument ID: GC Volatiles - U FID
Lab File ID: U03217.D
Initial Weight/Volume: 1000 uL
Final Weight/Volume: 1 mL
Injection Volume: 1 uL
Column ID: PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Ethane	0.35	U	0.35
Ethylene	0.33	U	0.33
Methane	4.5		0.19

Client: Solutia Inc.

Job Number: 680-45174-1
Sdg Number: KOM03

Client Sample ID: **GM-58A-0209**

Lab Sample ID: 680-45174-4
Client Matrix: Water

Date Sampled: 03/03/2009 1010
Date Received: 03/04/2009 0902

RSK-175 Dissolved Gases (GC)

Method: RSK-175
Preparation: N/A
Dilution: 1.0
Date Analyzed: 03/13/2009 1014
Date Prepared: N/A

Analysis Batch: 680-132577

Instrument ID: GC Volatiles - U FID
Lab File ID: U03218.D
Initial Weight/Volume: 1000 uL
Final Weight/Volume: 1 mL
Injection Volume: 1 uL
Column ID: PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Ethane	0.35	U	0.35
Ethylene	0.33	U	0.33
Methane	6.0		0.19

Client: Solutia Inc.

Job Number: 680-45174-1
Sdg Number: KOM03

Client Sample ID: **GM-31A-0209**

Lab Sample ID:	680-45174-1	Date Sampled:	03/03/2009 1140
Client Matrix:	Water	Date Received:	03/04/2009 0902

6010B Metals (ICP)-Total Recoverable

Method:	6010B	Analysis Batch: 680-132215		Instrument ID:	ICP/AES - D
Preparation:	3005A	Prep Batch: 680-132095		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	03/09/2009 1804			Final Weight/Volume:	50 mL
Date Prepared:	03/09/2009 1211				

Analyte	Result (mg/L)	Qualifier	RL
Iron	1.9		0.050
Manganese	1.1		0.010

Client: Solutia Inc.

Job Number: 680-45174-1
Sdg Number: KOM03

Client Sample ID: **GM-31A-F(0.2)-0209**

Lab Sample ID: 680-45174-2
Client Matrix: Water

Date Sampled: 03/03/2009 1140
Date Received: 03/04/2009 0902

6010B Metals (ICP)-Dissolved

Method: 6010B
Preparation: 3005A
Dilution: 1.0
Date Analyzed: 03/10/2009 1019
Date Prepared: 03/09/2009 1211

Analysis Batch: 680-132215
Prep Batch: 680-132095

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

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	0.058		0.050
Manganese, Dissolved	1.0		0.010

Client: Solutia Inc.

Job Number: 680-45174-1
Sdg Number: KOM03

Client Sample ID: **GM-58A-0209**

Lab Sample ID: 680-45174-4
Client Matrix: Water

Date Sampled: 03/03/2009 1010
Date Received: 03/04/2009 0902

6010B Metals (ICP)-Total Recoverable

Method:	6010B	Analysis Batch: 680-132215	Instrument ID:	ICP/AES - D
Preparation:	3005A	Prep Batch: 680-132095	Lab File ID:	N/A
Dilution:	1.0		Initial Weight/Volume:	50 mL
Date Analyzed:	03/09/2009 1825		Final Weight/Volume:	50 mL
Date Prepared:	03/09/2009 1211			

Analyte	Result (mg/L)	Qualifier	RL
Iron	0.52		0.050
Manganese	1.6		0.010

Client: Solutia Inc.

Job Number: 680-45174-1
Sdg Number: KOM03

Client Sample ID: **GM-58A-F(0.2)-0209**

Lab Sample ID: 680-45174-5
Client Matrix: Water

Date Sampled: 03/03/2009 1010
Date Received: 03/04/2009 0902

6010B Metals (ICP)-Dissolved

Method: 6010B
Preparation: 3005A
Dilution: 1.0
Date Analyzed: 03/09/2009 1831
Date Prepared: 03/09/2009 1211

Analysis Batch: 680-132215
Prep Batch: 680-132095

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

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	0.072		0.050
Manganese, Dissolved	1.6		0.010

General Chemistry

Client Sample ID: **GM-31A-0209**

Lab Sample ID: 680-45174-1
Client Matrix: Water

Date Sampled: 03/03/2009 1140
Date Received: 03/04/2009 0902

Analyte	Result	Qual	Units		RL	Dil	Method
Chloride	81		mg/L		1.0	1.0	325.2
	Anly Batch: 680-132741		Date Analyzed	03/16/2009 1543			
Nitrate as N	0.27		mg/L		0.050	1.0	353.2
	Anly Batch: 680-131880		Date Analyzed	03/04/2009 1703			
Sulfate	160		mg/L		25	5.0	375.4
	Anly Batch: 680-132708		Date Analyzed	03/16/2009 1315			
Total Organic Carbon	3.6		mg/L		1.0	1.0	415.1
	Anly Batch: 680-132774		Date Analyzed	03/13/2009 1553			

Analyte	Result	Qual	Units		RL	Dil	Method
Alkalinity	490		mg/L		5.0	1.0	310.1
	Anly Batch: 680-131820		Date Analyzed	03/04/2009 1916			
Carbon Dioxide, Free	63		mg/L		5.0	1.0	310.1
	Anly Batch: 680-131820		Date Analyzed	03/04/2009 1916			

Client Sample ID: **GM-31A-F(0.2)-0209**

Lab Sample ID: 680-45174-2
Client Matrix: Water

Date Sampled: 03/03/2009 1140
Date Received: 03/04/2009 0902

Analyte	Result	Qual	Units		RL	Dil	Method
Dissolved Organic Carbon-D	3.1		mg/L		1.0	1.0	415.1
	Anly Batch: 680-132794		Date Analyzed	03/16/2009 1706			

General Chemistry

Client Sample ID: **GM-58A-0209**

Lab Sample ID: 680-45174-4
Client Matrix: Water

Date Sampled: 03/03/2009 1010
Date Received: 03/04/2009 0902

Analyte	Result	Qual	Units		RL	Dil	Method
Chloride	120		mg/L		2.0	2.0	325.2
	Anly Batch: 680-132741		Date Analyzed	03/16/2009 1634			
Nitrate as N	0.050	U	mg/L		0.050	1.0	353.2
	Anly Batch: 680-131880		Date Analyzed	03/04/2009 1703			
Sulfate	180		mg/L		50	10	375.4
	Anly Batch: 680-132708		Date Analyzed	03/16/2009 1339			
Total Organic Carbon	4.2		mg/L		1.0	1.0	415.1
	Anly Batch: 680-132774		Date Analyzed	03/13/2009 1607			

Analyte	Result	Qual	Units		RL	Dil	Method
Alkalinity	550		mg/L		5.0	1.0	310.1
	Anly Batch: 680-131820		Date Analyzed	03/04/2009 1926			
Carbon Dioxide, Free	65		mg/L		5.0	1.0	310.1
	Anly Batch: 680-131820		Date Analyzed	03/04/2009 1926			

Client Sample ID: **GM-58A-F(0.2)-0209**

Lab Sample ID: 680-45174-5
Client Matrix: Water

Date Sampled: 03/03/2009 1010
Date Received: 03/04/2009 0902

Analyte	Result	Qual	Units		RL	Dil	Method
Dissolved Organic Carbon-D	3.8		mg/L		1.0	1.0	415.1
	Anly Batch: 680-132794		Date Analyzed	03/16/2009 1706			

DATA REPORTING QUALIFIERS

Client: Solutia Inc.

Job Number: 680-45174-1
Sdg Number: KOM03

Lab Section	Qualifier	Description
GC/MS Semi VOA		
	U	Indicates the analyte was analyzed for but not detected.
	*	LCS or LCSD exceeds the control limits
	F	MS or MSD exceeds the control limits
	*	RPD of the LCS and LCSD exceeds the control limits
	H	Sample was prepped or analyzed beyond the specified holding time
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		
	U	Indicates the analyte was analyzed for but not detected.