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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

March 13, 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
4th Quarter 2008 Data Report
Solutia Inc., W. G. Krummrich Plant, Sauget, IL

Dear Mr. Bardo:

Enclosed please find the Route 3 Drum Site Groundwater Monitoring Program 4th Quarter 2008 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

Gerald M. Rinaldi
Manager, Remediation Services

Enclosure

cc: Distribution List

DISTRIBUTION LIST

Route 3 Drum Site Groundwater Monitoring Program
4th Quarter 2008 Data Report
Solutia Inc., W. G. Krummrich Plant, Sauget, IL

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

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Richard Williams	500 Monsanto Avenue, Sauget, IL 62206-1198

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4TH QUARTER 2008
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

March 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 4th Quarter 2008 (4Q08). A Site location map is presented in **Figure 1**.

During the 4Q08 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 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 4Q08 Illinois Route 3 Drum Site groundwater sampling activities on November 17 (groundwater level measurements) and November 25, 2008 (groundwater sampling). Groundwater samples were collected from two monitoring wells during the 4Q08 sampling event. This section summarizes the field investigative procedures.

Groundwater Level Measurements - On November 17, 2008, 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 4Q08 sampling event are presented in **Table 1**.

Groundwater Sampling - Low-flow sampling techniques were used for groundwater sample collection on November 25, 2008. 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 samples were collected.

Each sample was labeled immediately following collection. The groundwater sample identification system included the following nomenclature: “GM-31A-1108” which denotes Groundwater Monitoring well number 31A sampled in November 2008. 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°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,

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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 the 40 CFR 264 Appendix IX SVOCs and MNA parameters, using the following methodologies:

- SVOCs, via 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: alkalinity (310.1), carbon dioxide (310.1), chloride (325.2), total and dissolved iron (6010B), total and dissolved manganese (6010B), methane (RSK 175), nitrate (353.2), sulfate (375.4), and total and dissolved organic carbon (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, and one MS/MSD pair) were prepared and analyzed by Test America for SVOCs by USEPA SW-846 Method 8270C and MNA parameters. The results for the various analyses were submitted as sample delivery group (SDG) KOM02 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. 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

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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 4Q08 sampling event. Laboratory analytical data for monitoring well GM-31A-1108, and corresponding duplicate GM-31A-1108-AD, indicate 1-Chloro-2,4-Dinitrobenzene was detected at concentrations of 15µg/L and 16µg/L; 2,4,6-Trichlorophenol was detected at concentrations of 30µg/L and 29µg/L; 2-Chloronitrobenzene/4-Chloronitrobenzene was detected at concentrations of 56µg/L and 58µg/L; and 2-Nitrobiphenyl was detected at concentrations of 17µg/L and 16µg/L. Only 2-Chloronitrobenzene/4-Chloronitrobenzene was detected in monitoring well GM-58A-1108, with a concentration of 36µg/L. A summary of SVOC detections is provided in **Table 2**, with MNA results provided in **Table 3**.

The 4Q08 sampling event was the second 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.

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Figures

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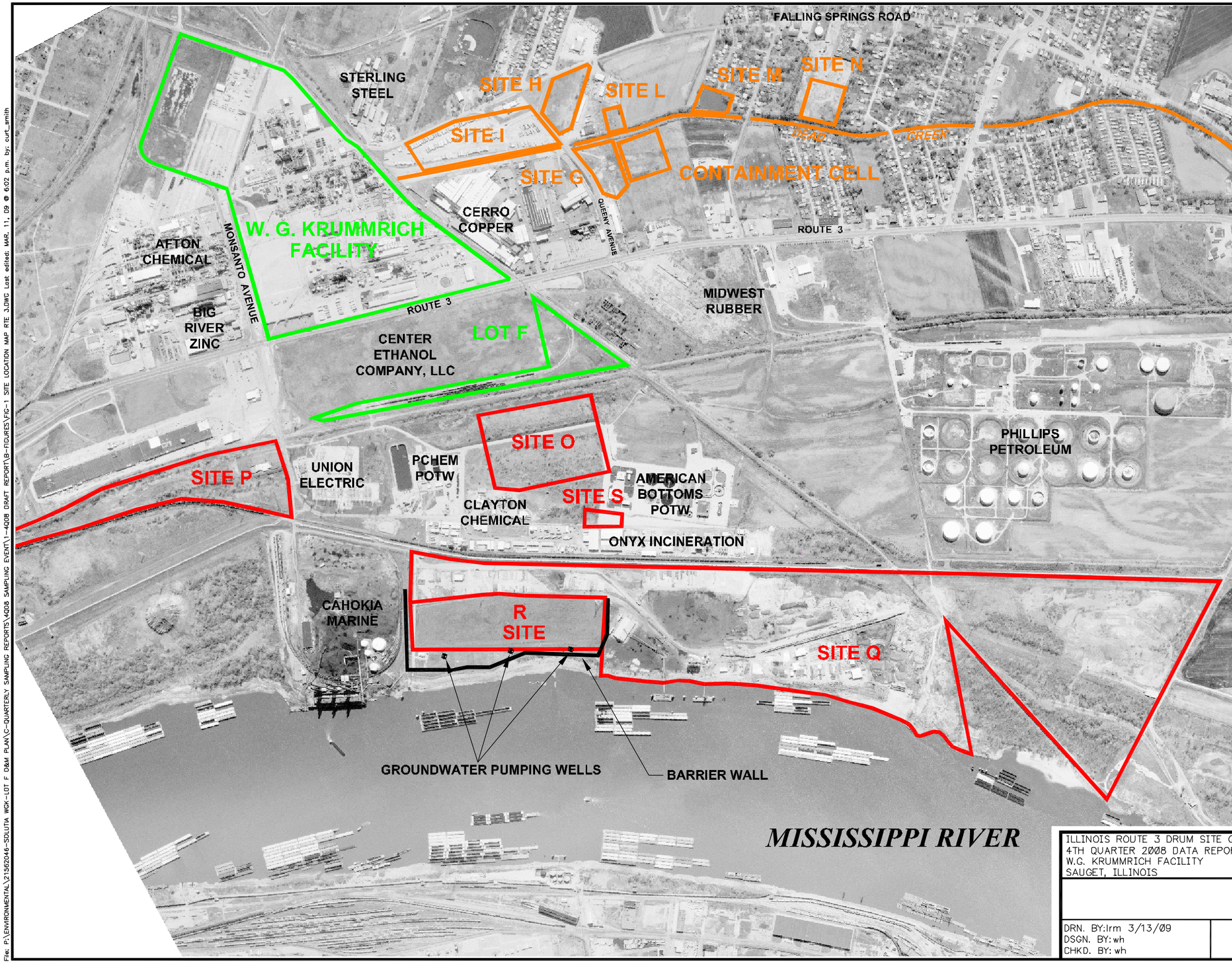


LEGEND

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

0 1000
SCALE FEET

ILLINOIS ROUTE 3 DRUM SITE GROUNDWATER SAMPLING
4TH QUARTER 2008 DATA REPORT
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

PROJECT NO. 21562046

URS

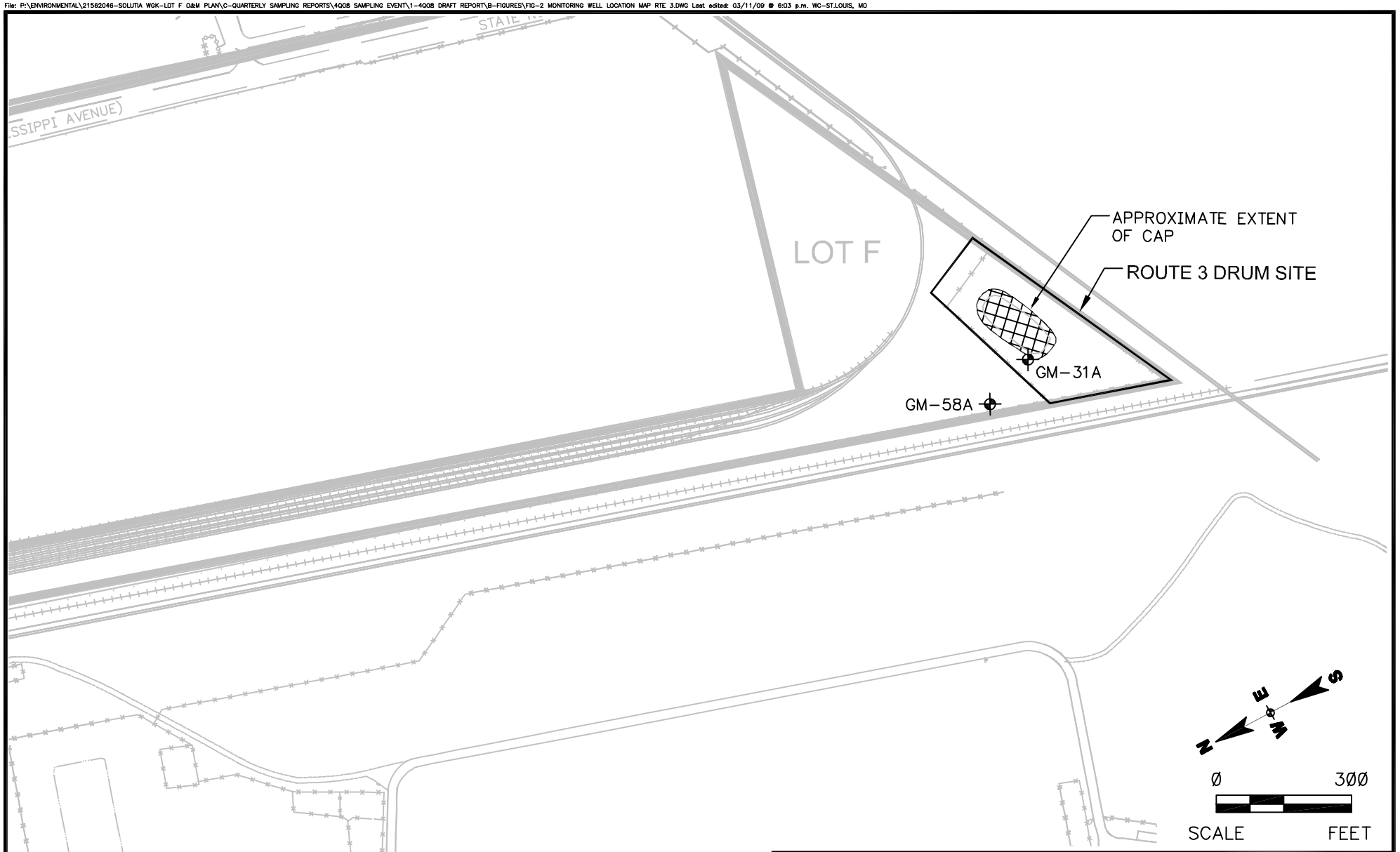
DRN. BY: lrm 3/13/09
DSGN. BY: wh
CHKD. BY: wh

Site Location Map

FIG. NO. 1

File: P:\ENVIRONMENTAL\21562046-SOLUTIA WGK-LOT F O&M PLAN\C-QUARTERLY SAMPLING REPORTS\4Q08 SAMPLING EVENT\1-4Q08 DRAFT REPORT\B-FIGURES\FIG-1 SITE LOCATION MAP RTE 3.DWG Last edited: MAR. 11, 09 @ 6:02 p.m. by: curt_smith

File: P:\ENVIRONMENTAL\21562046-SOLUTIA WGK-LOT F O&M PLAN\C-QUARTERLY SAMPLING REPORTS\4Q08 SAMPLING EVENT\1-4Q08 DRAFT REPORT\B-FIGURES\FIG-2 MONITORING WELL LOCATION MAP RTE 3.DWG Last edited: 03/11/09 @ 6:03 p.m. WC-ST.LOUIS, MO



LEGEND

MONITORING WELL LOCATION

ILLINOIS ROUTE 3 DRUM SITE GROUNDWATER SAMPLING 4TH QUARTER 2008 DATA REPORT W.G. KRUMMRICH FACILITY SAUGET, ILLINOIS		PROJECT NO. 21562046
URS		
DRN. BY: lrm 3/13/09 DSGN. BY: ekf CHKD. BY:	**Monitoring Well Location Map**	FIG. NO. 2

Tables

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Table 1
Monitoring Well Gauging Information

Well ID	Construction Details						17-Nov-08			
	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	21.83	-	40.85	396.80
GM-58A	412.24	414.24	19.40	39.40	392.84	372.84	17.72	-	40.79	396.52

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

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Table 2
Groundwater Analytical Results

Sample ID	Sample Date	1,1'-Biphenyl (µg/L)	1-Chloro-2,4-Dinitrobenzene (µg/L)	2,4,6-Trichlorophenol (µg/L)	2,4-Dichlorophenol (µg/L)	2-Chloronitrobenzene/ 4-Chloronitrobenzene (µg/L)	2-Nitrobiphenyl (µg/L)	3-Nitrobiphenyl (µg/L)	3-Nitrochlorobenzene (µg/L)	4-Nitrobiphenyl (µg/L)	Nitrobenzene (µg/L)	Pentachlorophenol (µg/L)
GM-31A-1108	11/25/2008	<9.4	**15**	**30**	<9.4	**56 * J**	**17**	<9.4	<9.4	<9.4	<9.4	<47
GM-31A-1108-AD	11/25/2008	<9.4	**16**	**29**	<9.4	**58 * J**	**16**	<9.4	<9.4	<9.4	<9.4	<47
GM-58A-1108	11/25/2008	<9.7	<9.7	<9.7	<9.7	**36 * J**	<9.7	<9.7	<9.7	<9.7	<9.7	<49

Notes:
µg/L = micrograms per liter
< = Result is non-detect, less than the reporting limit given.
* = LCS, LCSD, MS,MSD, MD or surrogate exceeds the control limits
J = Estimated value
BOLD indicates concentration greater than the reporting limit

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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)
GM-31A-1108	11/25/2008	520	51	46	5.97		2.4		1		6.4	7.2	91		3.4	64.2
GM-31A-F-1108	11/25/2008					0		<0.05		1.2				2.9		
GM-58A-1108	11/25/2008	530	58	100 J	6.8		0.35		1.4		6.4	0.65	150		3.6	59.9
GM-58A-F-1108	11/25/2008					0.1		0.058		1.5				2.6		

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 = Sample was filtered utilizing a 0.2 µ filter in the field.
J = Estimated value
mV=milivolts

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Appendix A

Groundwater Purging and Sampling Forms

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: WGK Route 3 Drum Lot
PROJECT NUMBER: 21562046.00004
FIELD PERSONNEL: N. Satam and M. Gabell
DATE: 11/25/2008
WEATHER:
MONITORING WELL ID: ~~GM-58A~~ GM-~~38A~~ 31A sm
SAMPLE ID: ~~GM-58A-1108~~ GM-31A-1108

INITIAL DATA

Well Diameter: 2" ~~in~~
Measured Well Depth (btoc): 40.90 ft
Constructed Well Depth (btoc): – ft
Depth to Water (btoc): 22.26 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): ft 19.00
Screen Length: 20 ft

Water Column Height (do not include LNAPL or DNAPL): 27.64 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) ~~= 35 ft~~ 30.90 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): ~~500~~ 1150 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) ~~1500~~ 3450 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)
1500	12:50	22.26	brown-orange	None	6.47	15.08	1.123	612	6.39	19.2
2500	12:55	22.26			6.43	15.17	1.143	180	6.27	42.2
3500	missed	reading	– Cleared	flow	through	cell				
4500	13:05	22.26	Clear	None	6.43	15.34	1.207	24.9	6.32	51.8
5500	13:10	22.26			6.36	15.43	1.221	19.0	6.05	51.0
6500	13:20	22.26			6.35	15.47	1.226	15.1	6.02	60.5
7500	1325	22.26			6.35	15.43	1.230	12.4	6.00	54.5
8500	1330	22.26			6.36	15.20	1.243	22.6	6.17	90.7
9500	1335	22.26			6.35	15.07	1.246	30.5	6.03	22.6
10500	1340	22.26			6.33	15.03	1.251	25.2	6.00	59.6
11500	1345	22.26			6.33	15.06	1.252	23.5	5.99	70.4
12500	1350	22.26			6.33	15.10	1.252	23.5	5.97	59.5

Start Time: ~~1445~~ MT 1250
Stop Time: ~~1550~~ MT 1350
Elapsed Time: 60 mins
Average Purge Rate (mL/min): 200 mL/min
Water Quality Meter ID: YSI 6920
Date Calibrated: 11/25/2008

SAMPLING DATA

Sample Date: 11/25/2008
Sample Method: Stainless Steel Monsoon
Sample Time: 1350
Sample Flow Rate: 200 ml/m
Analysis: SVOCs (see sampling plan), Total Fe & Mn, Dissolved Fe, MNA
Date Calibrated: ~~NA~~ 11/25/08

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) = 0.0

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: WGK Route 3 Drum Lot
PROJECT NUMBER: 21562046.00004
FIELD PERSONNEL: N. Salam & M Corbett
DATE: 11/25 /2008
WEATHER: ~30°F, Sunny
MONITORING WELL ID: ~~GM-31A~~ GM-58A-1108
SAMPLE ID: ~~GM-31A-1108~~ GM-58A-1108

INITIAL DATA

Well Diameter: 2" in
Measured Well Depth (btoc): 40.90 ft
Constructed Well Depth (btoc): NA ft
Depth to Water (btoc): 18.19 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): ~~15~~ 17.40 ft
Screen Length: ~~15~~ 20 ft

Water Column Height (do not include LNAPL or DNAPL): 22.71 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) = ~~41.5~~ 38.90 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): ~~500~~ 1150 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) ~~1500~~ 3450 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: ~~Stainless Steel Monsoon~~ Peristaltic Pump (Geopump 10)

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)
1500	0930	18.19 ~~40.90~~	Cloudy-Gray	None	6.32	12.49	1.251	55.2	6.49	245.0
2500	0935	—			6.40	12.69	1.269	36.2	6.30	172.0
3500	0940	—			6.40	12.71	1.270	24.0	6.29	161.2
4500	0950	—			6.38	12.82	1.273	20.0	6.21	129.0
5500	0955	—			6.37	13.22	1.346	13.8	6.18	107.1
6500	1000	—			6.36	13.27	1.429	6.30	6.19	89.9
7500	1005	—			6.38	13.43	1.446	5.10	6.06	83.8
8500	1010	—			6.37	13.44	1.460	4.5	6.08	79.0
9500	1015	—			6.36	13.46	1.467	4.2	6.06	74.0
10500	1020	—			6.36	13.44	1.463	4.0	6.08	69.0
11500	1025	—			6.36	13.47	1.465	3.8	6.08	65.0
12500	1030	17.19			6.36	13.46	1.464	3.7	6.08	64.2

Start Time: 0930
Stop Time: 1030
Elapsed Time: 60 mins
Average Purge Rate (mL/min): 200 mL/min
Water Quality Meter ID: YSI 6920
Date Calibrated: 11/25 /2008

SAMPLING DATA

Sample Date: 11/25 /2008
Sample Method: ~~Stainless Steel Monsoon~~ Peristaltic Pump
Sample Time: 1030
Sample Flow Rate: 200 mL/min
Analysis: SVOCs (see sampling plan), Total Fe & Mn, Dissolved Fe, MNA
Date Calibrated: ~~NA~~ 11/25/08

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) = 0.1

Appendix B

Chain-of-Custody

US EPA ARCHIVE DOCUMENT

Serial Number 019020

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)
WGK Rte3 Drum Site	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
VRS Corporation	thomas_adams@urscorp.com

CLIENT ADDRESS: 1001 Highlands Plaza Dr. West Ste300 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:

REQUIRED ANALYSIS / NUMBER OF CONTAINERS SUBMITTED

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	SVOCs 8270C (none)	Total Fe, Mn 6010B (HNO_3)	Dissolved Fe, Mn 6010B (HNO_3)	Alk/CO_2 310.1 (none)	Sulfate/Chloride 325.2/375.4 (none)	Methane RSK 175 (none)	Nitrate 353.2 (H_2SO_4/H_2SO_4)	TOC 415.1 (HCl)	DOC 415.1 (HCl)	REMARKS
11/25/08	1030	GM-58A-1108 ✓		X				2	1		1	1	3	2	1		
	1030	GM-58A-F-1108 ✓		X						1						1	
	1030	GM-58A-1108-MS ✓		X				2	1		1	1	3	2	1		
	1030	GM-58A-1108-MSD ✓		X				2	1		1	1	3	2	1		
	1030	GM-58A-F-1108-MS ✓		X						1						1	
	1030	GM-58A-F-1108-MSD ✓		X						1						1	
	1350	GM-31A-1108 ✓		X				2	1		1	1	3	2	1		
	1350	GM-31A-F-1108 ✓		X						1						1	
	1350	GM-31A-1108-AD ✓		X				2	1		1	1	3	2	1		
	1350	GM-31A-F-1108-AD		X						1						1	

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
[signature]	11/25/08	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
[signature]	112608		YES ◯ NO ◯		08042643	1.1/2.6 TEMP

TAL8240-680 (1207)

Appendix C

Quality Assurance Report

US EPA ARCHIVE DOCUMENT

QUALITY ASSURANCE REPORT

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

Illinois Route 3 Drum Site
4th Quarter 2008 Data Report

Prepared for

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

March 2009

URS Corporation
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(314) 429-0100
Project # 21562046.00000

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1.0 INTRODUCTION

This Quality Assurance Report presents the findings of a review of analytical data for groundwater samples collected in November 2008 at the Illinois Route 3 Drum Site on the Solutia W.G. Krummrich Facility as part of the 4th Quarter 2008 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 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) KOM02, utilizing the following USEPA SW-846 Methods:

- 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.

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

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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; no qualification of data was required.

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 with the exception of those surrogates in data reviews discussed further in Appendix D. 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 LCS recoveries were within evaluation criteria with the exception of those surrogates in data reviews discussed further in **Appendix D**. Qualifications due to LCS recoveries are included in the table below.

Field ID	Parameter	Analyte	Qualification
GM-58A-1108	SVOCs	2-Chlorobenzene/4-Chlorobenzene	**J**
GM-31A-1108	SVOCs	2-Chlorobenzene/4-Chlorobenzene	**J**
GM-31A-1108-AD	SVOCs	2-Chlorobenzene/4-Chlorobenzene	**J**

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 one investigative sample, 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**.

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Samples that required qualification based on MS/MSD recoveries or matrix spike/matrix duplicate recoveries are included in the table below.

Field ID	Parameter	Analyte	Qualification
GM-58A-1108	General Chemistry	Chloride	**J**

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 2.5 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.

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.

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.

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Appendix D

Groundwater Analytical Results

(with Data Review Sheets)

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Solutia Krummrich Data Review

Laboratory SDG: KOM02

Reviewer: Elizabeth Kunkel

Date Reviewed: 01/12/2009

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-58A-1108	GM-58A-F-1108
GM-31A-1108	GM-31A-F-1108
GM-31A-1108-AD	

1.0 Data Package Completeness

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

No, samples GM-31A-1108-AD and GM-31A-F-1108-AD were listed on the COC for MNA parameters and sample results were not received as part of this data package. However, URS cancelled MNA parameters for field duplicate samples GM-31A-1108-AD and GM-31A-F-1108-AD after samples were received by the laboratory.

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 SVOC surrogate, LCS, and MS/MSD recoveries and MS/MSD RPDs were outside evaluation criteria. The MSD recovery for methane was outside evaluation criteria. Also the MS/MSD recoveries were outside evaluation criteria for chloride and the MS recovery was outside evaluation criteria for sulfate. Samples were diluted due to high levels 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?

Yes

Field ID	Parameter	Analyte	Qualification
N/A			

4.0 Blank Contamination

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

No

Blank ID	Parameter	Analyte	Concentration	Units
N/A				

Qualifications due to blank contamination are included in the table below.

Field ID	Parameter	Analyte	New RL	Qualification
N/A				

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

No

LCS ID	Parameter	Analyte	LCS Recovery	RPD	LCS Criteria
680-123965/6-A	SVOCs	2-Chloronitrobenzene/ 4-Chloronitrobenzene	**151**	NA	70-130

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Analytical data that required qualification based on LCS data are included in the table below.

Field ID	Parameter	Analyte	Qualification
GM-58A-1108	SVOCs	2-Chloronitrobenzene/ 4-Chloronitrobenzene	**J**
GM-31A-1108	SVOCs	2-Chloronitrobenzene/ 4-Chloronitrobenzene	**J**
GM-31A-1108-AD	SVOCs	2-Chloronitrobenzene/ 4-Chloronitrobenzene	**J**

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

No

Field ID	Parameter	Surrogate	Recovery	Criteria
GM-58A-1108	SVOCs	2-Fluorobiphenyl	**49**	50 - 113

Analytical data that required qualification based on surrogate data are included in the table below. Since only one base fraction surrogate was outside criteria and Functional Guidelines indicates to qualify data if two or more surrogates per SVOC fraction are outside criteria, no qualification of the SVOC data was required.

Field ID	Parameter	Analyte	Qualification
N/A			

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

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

Yes, sample GM-58A-1108 was spiked and analyzed for SVOCs, methane, iron and manganese, chloride, nitrate, nitrate-nitrite, sulfate and total organic carbon. Sample GM-58A-F-1108 was spiked and analyzed for dissolved iron, manganese and dissolved organic carbon.

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Were MS/MSD recoveries within evaluation criteria?

No

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery	RPD	MS/MSD/ RPD Criteria
GM-58A-1108	SVOCs	Nitrobenzene	**136**/83	**49**	46-110/40
GM-58A-1108	SVOCs	2-Chloronitrobenzene/ 4-Chloronitrobenzene	**181/171**	5	70-130/40
GM-58A-1108	Dissolved Gases	Methane	83/**73**	11	75-125/30
GM-58A-1108	General Chemistry	Chloride	**80/84**	1	85-115/30
GM-58A-0808	General Chemistry	Sulfate	**66**/75	1	75-125/30

Analytical data that required qualification based on MS/MSD data are included in the table below. The MS/MSD recoveries for inorganic compounds with sample concentrations greater than four times (4X) the matrix spike concentration did not require evaluation or qualification. 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 qualification of the data was required.

Field ID	Parameter	Analyte	Qualification
GM-58A-1108	General Chemistry	Chloride	**J**

8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

Yes

Field ID	Parameter	Analyte	IS Area Recovery	IS Criteria
N/A				

Analytical data that required qualification based on IS data are included in the table below.

Field ID	Parameter	Analyte	Qualification
N/A			

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9.0 Laboratory Duplicate Results

Were laboratory duplicate samples collected as part of this SDG?

Yes, sample GM-31A-1108 was duplicated and analyzed for total organic carbon.

Were laboratory duplicate sample RPDs within criteria?

Yes

Field ID	Parameter	Analyte	RPD	Criteria
N/A				

Data qualified due to outlying laboratory duplicate recoveries are identified below:

Field ID	Parameter	Analyte	Qualification
N/A			

10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

Yes

Field ID	Field Duplicate ID
GM-31A-1108	GM-31A-1108-AD

Were field duplicates within evaluation criteria?

Yes

Field ID	Field Duplicate ID	Parameter	Analyte	RPD	Qualification
N/A					

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11.0 Sample Dilutions

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

Analytes were detected in samples that were diluted.

The following table identifies the analyses which were reported as nondetect, diluted, and an undiluted run ***was not*** reported:

Field ID	Parameter	Dilution Factor
N/A		

12.0 Additional Qualifications

Were additional qualifications applied?

No

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SAMPLE SUMMARY

Client: Solutia Inc.

Job Number: 680-42643-1
Sdg Number: KOM02

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-42643-1	GM-58A-1108	Water	11/25/2008 1030	11/26/2008 0848
680-42643-1MS	GM-58A-1108 MS	Water	11/25/2008 1030	11/26/2008 0848
680-42643-1MSD	GM-58A-1108 MSD	Water	11/25/2008 1030	11/26/2008 0848
680-42643-2	GM-58A-F-1108	Water	11/25/2008 1030	11/26/2008 0848
680-42643-2MS	GM-58A-F-1108 -MS	Water	11/25/2008 1030	11/26/2008 0848
680-42643-2MSD	GM-58A-F-1108 - MSD	Water	11/25/2008 1030	11/26/2008 0848
680-42643-3	GM-31A-1108 AD **	Water	11/25/2008 1350	11/26/2008 0848
680-42643-4	GM-31A-F-1108	Water	11/25/2008 1350	11/26/2008 0848
680-42643-5	GM-31A-1108-AD	Water	11/25/2008 1350	11/26/2008 0848

* already designated as AD, last sample on list -

SAMPLE RESULTS

Client: Solutia Inc.

Job Number: 680-42643-1
Sdg Number: KOM02

Client Sample ID: **GM-58A-1108**

Lab Sample ID: 680-42643-1
Client Matrix: Water

Date Sampled: 11/25/2008 1030
Date Received: 11/26/2008 0848

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

Method: 8270C
Preparation: 3520C
Dilution: 1.0
Date Analyzed: 12/05/2008 1455
Date Prepared: 11/28/2008 1331

Analysis Batch: 680-124764
Prep Batch: 680-123965

Instrument ID: GC/MS SemiVolatiles - G
Lab File ID: g4406.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	36	"J"	19
1-chloro-2,4-dinitrobenzene	9.7	U	9.7

Surrogate	%Rec		Acceptance Limits
2-Fluorobiphenyl	49	X	50 - 113
2-Fluorophenol	52		36 - 110
Nitrobenzene-d5	53		45 - 112
Phenol-d5	54		38 - 116
Terphenyl-d14	32		10 - 121
2,4,6-Tribromophenol	68		40 - 139

Client: Solutia Inc.

Job Number: 680-42643-1
Sdg Number: KOM02

Client Sample ID: **GM-31A-1108**

Lab Sample ID: 680-42643-3
Client Matrix: Water

Date Sampled: 11/25/2008 1350
Date Received: 11/26/2008 0848

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

Method: 8270C
Preparation: 3520C
Dilution: 1.0
Date Analyzed: 12/05/2008 1518
Date Prepared: 11/28/2008 1331

Analysis Batch: 680-124764
Prep Batch: 680-123965

Instrument ID: GC/MS SemiVolatiles - G
Lab File ID: g4407.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	30		9.4
1-Chloro-3-nitrobenzene	9.4	U	9.4
2-Nitrobiphenyl	17		9.4
3-Nitrobiphenyl	9.4	U	9.4
3,4-Dichloronitrobenzene	9.4	U	9.4
4-Nitrobiphenyl	9.4	U "J"	9.4
2-chloronitrobenzene / 4-chloronitrobenzene	56		19
1-chloro-2,4-dinitrobenzene	15		9.4

Surrogate	%Rec	Acceptance Limits
2-Fluorobiphenyl	62	50 - 113
2-Fluorophenol	53	36 - 110
Nitrobenzene-d5	65	45 - 112
Phenol-d5	55	38 - 116
Terphenyl-d14	32	10 - 121
2,4,6-Tribromophenol	76	40 - 139

Analytical Data

Client: Solutia Inc.

Job Number: 680-42643-1
Sdg Number: KOM02

Client Sample ID: **GM-31A-1108-AD**

Lab Sample ID: 680-42643-5
Client Matrix: Water

Date Sampled: 11/25/2008 1350
Date Received: 11/26/2008 0848

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

Method: 8270C
Preparation: 3520C
Dilution: 1.0
Date Analyzed: 12/05/2008 1541
Date Prepared: 11/28/2008 1331

Analysis Batch: 680-124764
Prep Batch: 680-123965

Instrument ID: GC/MS SemiVolatiles - G
Lab File ID: g4408.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	29		9.4
1-Chloro-3-nitrobenzene	9.4	U	9.4
2-Nitrobiphenyl	16		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	58	"J"	19
1-chloro-2,4-dinitrobenzene	16		9.4

Surrogate	%Rec	Acceptance Limits
2-Fluorobiphenyl	63	50 - 113
2-Fluorophenol	49	36 - 110
Nitrobenzene-d5	64	45 - 112
Phenol-d5	50	38 - 116
Terphenyl-d14	40	10 - 121
2,4,6-Tribromophenol	80	40 - 139

Client: Solutia Inc.

Job Number: 680-42643-1
Sdg Number: KOM02

Client Sample ID: **GM-58A-1108**

Lab Sample ID: 680-42643-1
Client Matrix: Water

Date Sampled: 11/25/2008 1030
Date Received: 11/26/2008 0848

RSK-175 Dissolved Gases (GC)

Method: RSK-175
Preparation: N/A
Dilution: 1.0
Date Analyzed: 12/04/2008 1125
Date Prepared: N/A

Analysis Batch: 680-124521

Instrument ID: GC Volatiles - U FID
Lab File ID: U12031.D
Initial Weight/Volume: 1000 uL
Final Weight/Volume: 1 mL
Injection Volume: 1 uL
Column ID: PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Methane	6.4		0.19

Client: Solutia Inc.

Job Number: 680-42643-1
Sdg Number: KOM02

Client Sample ID: **GM-31A-1108**

Lab Sample ID: 680-42643-3
Client Matrix: Water

Date Sampled: 11/25/2008 1350
Date Received: 11/26/2008 0848

RSK-175 Dissolved Gases (GC)

Method: RSK-175
Preparation: N/A
Dilution: 1.0
Date Analyzed: 12/04/2008 1138
Date Prepared: N/A

Analysis Batch: 680-124521

Instrument ID: GC Volatiles - U FID
Lab File ID: U12032.D
Initial Weight/Volume: 1000 uL
Final Weight/Volume: 1 mL
Injection Volume: 1 uL
Column ID: PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Methane	6.4		0.19

Client: Solutia Inc.

Job Number: 680-42643-1
Sdg Number: KOM02

Client Sample ID: **GM-58A-1108**

Lab Sample ID:	680-42643-1	Date Sampled:	11/25/2008 1030
Client Matrix:	Water	Date Received:	11/26/2008 0848

6010B Metals (ICP)-Total Recoverable

Method:	6010B	Analysis Batch: 680-124827	Instrument ID:	ICP/AES - D
Preparation:	3005A	Prep Batch: 680-124345	Lab File ID:	N/A
Dilution:	1.0		Initial Weight/Volume:	50 mL
Date Analyzed:	12/09/2008 0126		Final Weight/Volume:	50 mL
Date Prepared:	12/03/2008 1727			

Analyte	Result (mg/L)	Qualifier	RL
Iron	0.35		0.050
Manganese	1.4		0.010

Analytical Data

Client: Solutia Inc.

Job Number: 680-42643-1
Sdg Number: KOM02

Client Sample ID: **GM-58A-F-1108**

Lab Sample ID:	680-42643-2	Date Sampled:	11/25/2008 1030
Client Matrix:	Water	Date Received:	11/26/2008 0848

6010B Metals (ICP)-Dissolved

Method:	6010B	Analysis Batch: 680-124827	Instrument ID:	ICP/AES - D
Preparation:	3005A	Prep Batch: 680-124345	Lab File ID:	N/A
Dilution:	1.0		Initial Weight/Volume:	50 mL
Date Analyzed:	12/09/2008 0151		Final Weight/Volume:	50 mL
Date Prepared:	12/03/2008 1727			

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	0.058		0.050
Manganese, Dissolved	1.5		0.010

Client: Solutia Inc.

Job Number: 680-42643-1
Sdg Number: KOM02

Client Sample ID: **GM-31A-1108**

Lab Sample ID:	680-42643-3	Date Sampled:	11/25/2008 1350
Client Matrix:	Water	Date Received:	11/26/2008 0848

6010B Metals (ICP)-Total Recoverable

Method:	6010B	Analysis Batch: 680-124827	Instrument ID:	ICP/AES - D
Preparation:	3005A	Prep Batch: 680-124345	Lab File ID:	N/A
Dilution:	1.0		Initial Weight/Volume:	50 mL
Date Analyzed:	12/09/2008 0216		Final Weight/Volume:	50 mL
Date Prepared:	12/03/2008 1727			

Analyte	Result (mg/L)	Qualifier	RL
Iron	2.4		0.050
Manganese	1.0		0.010

Client: Solutia Inc.

Job Number: 680-42643-1
Sdg Number: KOM02

Client Sample ID: **GM-31A-F-1108**

Lab Sample ID:	680-42643-4	Date Sampled:	11/25/2008 1350
Client Matrix:	Water	Date Received:	11/26/2008 0848

6010B Metals (ICP)-Dissolved

Method:	6010B	Analysis Batch: 680-124827	Instrument ID:	ICP/AES - D
Preparation:	3005A	Prep Batch: 680-124345	Lab File ID:	N/A
Dilution:	1.0		Initial Weight/Volume:	50 mL
Date Analyzed:	12/09/2008 0221		Final Weight/Volume:	50 mL
Date Prepared:	12/03/2008 1727			

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	0.050	U	0.050
Manganese, Dissolved	1.2		0.010

Client: Solutia Inc.

Job Number: 680-42643-1
Sdg Number: KOM02

General Chemistry

Client Sample ID: **GM-58A-1108**

Lab Sample ID: 680-42643-1
Client Matrix: Water

Date Sampled: 11/25/2008 1030
Date Received: 11/26/2008 0848

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	100	"J"	mg/L	2.0	2.0	325.2
	Anly Batch: 680-124148	Date Analyzed	12/01/2008 1356			
Nitrate as N	0.65		mg/L	0.050	1.0	353.2
	Anly Batch: 680-124259	Date Analyzed	11/26/2008 1532			
Sulfate	150		mg/L	25	5.0	375.4
	Anly Batch: 680-124444	Date Analyzed	12/04/2008 1415			
Total Organic Carbon	3.6		mg/L	1.0	1.0	415.1
	Anly Batch: 680-124401	Date Analyzed	12/03/2008 1245			

Analyte	Result	Qual	Units	RL	Dil	Method
Alkalinity	530		mg/L	1.0	1.0	310.1
	Anly Batch: 680-123897	Date Analyzed	11/26/2008 1147			
Carbon Dioxide, Free	58		mg/L	4.0	1.0	310.1
	Anly Batch: 680-123897	Date Analyzed	11/26/2008 1147			

Client Sample ID: **GM-58A-F-1108**

Lab Sample ID: 680-42643-2
Client Matrix: Water

Date Sampled: 11/25/2008 1030
Date Received: 11/26/2008 0848

Analyte	Result	Qual	Units	RL	Dil	Method
Dissolved Organic Carbon-D	2.6		mg/L	1.0	1.0	415.1
	Anly Batch: 680-124682	Date Analyzed	12/05/2008 0959			

Client: Solutia Inc.

Job Number: 680-42643-1
Sdg Number: KOM02

General Chemistry

Client Sample ID: **GM-31A-1108**

Lab Sample ID: 680-42643-3
Client Matrix: Water

Date Sampled: 11/25/2008 1350
Date Received: 11/26/2008 0848

Analyte	Result	Qual	Units		RL	Dil	Method
Chloride	46		mg/L		1.0	1.0	325.2
	Anly Batch: 680-124148		Date Analyzed	12/01/2008 1346			
Nitrate as N	7.2		mg/L		1.0	20	353.2
	Anly Batch: 680-124259		Date Analyzed	11/26/2008 1532			
Sulfate	91		mg/L		25	5.0	375.4
	Anly Batch: 680-124444		Date Analyzed	12/04/2008 1417			
Total Organic Carbon	3.4		mg/L		1.0	1.0	415.1
	Anly Batch: 680-124401		Date Analyzed	12/03/2008 1406			

Analyte	Result	Qual	Units		RL	Dil	Method
Alkalinity	520		mg/L		1.0	1.0	310.1
	Anly Batch: 680-123897		Date Analyzed	11/26/2008 1156			
Carbon Dioxide, Free	51		mg/L		4.0	1.0	310.1
	Anly Batch: 680-123897		Date Analyzed	11/26/2008 1156			

Client Sample ID: **GM-31A-F-1108**

Lab Sample ID: 680-42643-4
Client Matrix: Water

Date Sampled: 11/25/2008 1350
Date Received: 11/26/2008 0848

Analyte	Result	Qual	Units		RL	Dil	Method
Dissolved Organic Carbon-D	2.9		mg/L		1.0	1.0	415.1
	Anly Batch: 680-124682		Date Analyzed	12/05/2008 0959			

DATA REPORTING QUALIFIERS

Client: Solutia Inc.

Job Number: 680-42643-1
Sdg Number: KOM02

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
	F	RPD of the MS and MSD exceeds the control limits
	X	Surrogate exceeds the control limits
GC VOA		
	U	Indicates the analyte was analyzed for but not detected.
	F	MS or MSD exceeds the control limits
Metals		
	U	Indicates the analyte was analyzed for but not detected.
General Chemistry		
	U	Indicates the analyte was analyzed for but not detected.
	F	MS or MSD exceeds the control limits
	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.