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December 20, 2010

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

VIA FEDEX

Re: PCB Groundwater Quality Assessment Program
3rd Quarter 2010 Data Report
Solutia Inc., W. G. Krummrich Plant, Sauget, IL

Dear Mr. Bardo:

Enclosed please find the PCB Groundwater Quality Assessment Program 3rd Quarter 2010 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

PCB Groundwater Quality Assessment Program
3rd Quarter 2010 Data Report
Solutia Inc., W. G. Krummrich Plant, Sauget, IL

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THIRD QUARTER 2010
DATA REPORT
PCB GROUNDWATER QUALITY ASSESSMENT PROGRAM
SOLUTIA INC.
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

Prepared for:

SOLUTIA INC.
St. Louis, Missouri

Prepared by:

GEOTECHNOLOGY, INC.
St. Louis, Missouri

Geotechnology, Inc. Report No. J017210.03

December 17, 2010

J017210.03

THIRD QUARTER 2010
DATA REPORT
PCB GROUNDWATER QUALITY ASSESSMENT PROGRAM
SOLUTIA INC.
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

TABLE OF CONTENTS

		Page
1.0	INTRODUCTION	1
2.0	FIELD PROCEDURES	2
3.0	LABORATORY PROCEDURES	3
4.0	QUALITY ASSURANCE	3
5.0	OBSERVATIONS	4
6.0	REFERENCES	5

TABLES

	Table
Monitoring Well Gauging Information	1
Groundwater Analytical Detections	2
Monitoring Well PMA MW-1M Mann-Kendall Trend Analysis	3
Monitoring Well PMA MW-2M Mann-Kendall Trend Analysis	4
Monitoring Well PMA MW-3S Mann-Kendall Trend Analysis	5
Monitoring Well PMA MW-3M Mann-Kendall Trend Analysis	6
Monitoring Well PMA MW-4D Mann-Kendall Trend Analysis	7
Monitoring Well PMA MW-6D Mann-Kendall Trend Analysis	8

ILLUSTRATIONS

	Figure
Site Location and Topography	1
Former PCB Manufacturing Area Monitoring Well Locations	2
Potentiometric Surface Map – Middle / Deep Hydrogeologic Unit	3
PCB Results – SHU Wells	4
PCB Results – MHU / DHU Wells	5

J017210.03

THIRD QUARTER 2010
DATA REPORT
PCB GROUNDWATER QUALITY ASSESSMENT PROGRAM
SOLUTIA INC.
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

TABLE OF CONTENTS
-continued-

APPENDICES

Appendix

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

J017210.03

THIRD QUARTER 2010
DATA REPORT
PCB GROUNDWATER QUALITY ASSESSMENT PROGRAM
SOLUTIA INC.
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

1.0 INTRODUCTION

This report presents the results of the 3rd Quarter 2010 (3Q10) sampling event performed at the Solutia Inc. (Solutia) W.G. Krummrich Facility located in Sauget, Illinois (Site). This sampling event was conducted in accordance with the Revised PCB Groundwater Quality Assessment Program Work Plan (Solutia 2009). The Site location map is presented in Figure 1.

The PCB Groundwater Quality Assessment Program well network consists of ten monitoring wells, as follows (Figure 2):

- Two source area wells, PMA-MW-4S and PMA-MW-4D, are screened in the Shallow Hydrogeologic Unit (SHU) (designated with an "S") and Deep Hydrogeologic Unit (DHU) (designated with a "D"), respectively.

- Three well clusters (PMA-MW-1S/M, PMA-MW-2S/M and PMA-MW-3S/M) are located down-gradient of the source area. These clusters include wells screened in the SHU and Middle Hydrogeologic Unit (MHU) (designated with an "M").

- Two individual wells designated PMA-MW-5M and PMA-MW-6D are located further down-gradient of the source area, with PMA-MW-5M screened in the MHU and PMA-MW-6D screened in the DHU.

Groundwater samples were collected from the ten monitoring wells during the 3Q10 sampling event.

Field sampling activities were conducted in accordance with the procedures outlined in the Revised PCB Groundwater Quality Assessment Program Work Plan, including the collection of appropriate quality assurance and quality control (QA/QC) samples. The following section summarizes the field investigative procedures.

2.0 FIELD PROCEDURES

Geotechnology, Inc. (Geotechnology) conducted the 3Q10 PCB Groundwater Quality Assessment Program field activities between September 17 and 30, 2010.

Groundwater Level Measurements. An oil/water interface probe was used to measure depth to static groundwater levels and determine the presence of non-aqueous phase liquids (NAPL) in the PCB Groundwater Quality Assessment Program well network. Periodically, well PMA-MW-4S has contained measurable DNAPL, however none was observed in this well during the second quarter sampling event. Depth to groundwater measurements were collected from accessible existing wells (i.e., GM-, K- , PSMW- and PMA-series) and piezometers clusters (installed for the Sauget Area 2 RI/FS and WGK CA-750 Environmental Indicator projects) specified in the Revised PCB Groundwater Quality Assessment Program Work Plan.

Well gauging information for the 3Q10 event is presented in Table 1. As the middle and deep hydrogeologic units are the primary migration pathway for constituents present in groundwater at the WGK Facility, a groundwater potentiometric surface map based on water level data from wells screened in the MHU and DHU is presented as Figure 3.

Groundwater Sampling. Low-flow sampling techniques were used for groundwater sample collection. At each monitoring well, disposable, low-density polyethylene tubing was attached to a submersible pump, which was then lowered into the well to the middle of the screened interval. Monitoring wells were purged at a rate of 200 to 500 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. Consistent with the work plan, samples were collected at a flow rate less than or equal to the rate at which stabilization was achieved.

Quality Assurance/Quality Control (QA/QC) samples consisting of analytical duplicates (AD) and equipment blanks (EB) were collected at a rate of 10% and matrix spike/matrix spike duplicates (MS/MSD) were collected at a rate of 5%, complying with the work plan. All samples were submitted to TestAmerica for PCB analysis.

Each sample was labeled immediately following collection. The sample identification system used for each sample involved the following nomenclature "PMA-MW#-MMYY-QAC" where:

- PMA-MW# – Monitoring Well Location (PCB Manufacturing Area (PMA)) and Number
- MMYY – Month and year of sampling quarter, e.g.: May (second quarter), 2010 (0510)
- QAC – denotes QA/QC samples (when applicable):
  - EB – equipment blank
  - AD – analytical duplicate
  - MS or MSD – Matrix Spike or Matrix Spike Duplicate

Upon collection and labeling, sample containers were immediately placed inside an iced cooler, packed in such a way as to help prevent breakage and maintain inside temperature at or below 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 overnight delivery service (FedEx). 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 PCBs using Method 680.

4.0 QUALITY ASSURANCE

Analytical data were reviewed for quality and completeness, as described in the Revised PCB Groundwater Quality Assessment Work Plan (Solutia 2009). Data qualifiers were added, as appropriate, and are included on the data tables and the laboratory result pages. The Quality Assurance report is included as Appendix C. The laboratory report and data review sheets are included in Appendix D.

A total of 14 samples (ten investigative groundwater samples, one field duplicate pair, one MS/MSD, one equipment blank) were prepared and analyzed by TestAmerica for PCBs. Results for the various analyses were submitted as sample delivery group (SDG) KPM039.

The samples contained in SDG KPM039 are listed below:

KPM039

PMA-MW-1M-0910
PMA-MW-1S-0910
PMA-MW-1S MS-0910
PMA-MW-1S MSD-9010
PMA-MW-2M-0910
PMA-MW-2M AD-0910
PMA-MW-2S-0910
PMA-MW-2S EB-0910
PMA-MW-3M-0910
PMA-MW-3S-0910
PMA-MW-4D-0910
PMA-MW-5M-0910
PMA-MW-6D-0910

Evaluation of the analytical data followed procedures outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, (USEPA 2008) and the Revised PCB Groundwater Quality Assessment Work Plan (Solutia 2009). Based on the above mentioned criteria, results reported for the analyses performed were accepted for their intended use. Acceptable levels of accuracy and precision, based on MS/MSD, LCS, surrogate and field duplicate data were achieved for this SDG to meet the project objectives. Completeness, which is defined to be the percentage of analytical results which are judged to be valid, including estimated detect (J) data was 100 percent.

5.0 OBSERVATIONS

This section presents a brief summary of the groundwater analytical results from the 3Q10 PCB Groundwater Quality Assessment sampling event. A summary of the laboratory results is provided in Table 2 and the entire laboratory data package is provided in Appendix D.

SHALLOW HYDROGEOLOGIC UNIT

Historically, measurable DNAPL has been periodically observed in the source area SHU monitoring well PMA-MW-4S during previous sampling events. DNAPL was detected in PMA-MW-4S by the oil/water interface probe during the 3Q10 event, but a water sample was inadvertently collected. PCBs were detected in one of the three down-gradient PCB Groundwater Quality Assessment Program SHU monitoring wells at a concentration of 0.28 µg/L (PMA-MW-3S). Such data indicate that PCBs in the SHU are attenuating over the 300 to 400 ft distance between PMA-MW-4S and the three downgradient monitoring wells. PCB sampling results for the SHU are presented on Figure 4.

MIDDLE/DEEP HYDROGEOLOGIC UNIT

Laboratory analytical results for monitoring well PMA-MW-4D, located in the Former PCB Manufacturing Area, indicated a total PCB concentration of 0.42 µg/L for the 3Q10 sampling event. PCBs were also detected in four of the five downgradient monitoring wells at concentrations of 0.29 µg/L (PMA-MW-1M), 2.1/2.4 µg/L (PMA-MW-2M/duplicate), 0.75 µg/L (PMA-MW-3M), and 0.1 µg/L (PMA-MW-6D). PCBs were not detected in the groundwater sample collected from monitoring well PMA-MW-5M. Figure 5 displays the 3Q10 PCB sampling results for the MHU/DHU.

The 3Q10 sampling event was the ninth event conducted under the PCB Groundwater Quality Assessment Program. Mann-Kendall trend analyses data forms of total PCBs in unfiltered samples of groundwater from monitoring wells within (PMA-MW-4D) or downgradient of (PMA-MW-1M, -2M, -3S, -3M, and -6D) the former PCB Manufacturing Area are presented in Tables 3 through 8. The data do not indicate upward trends in PCB concentrations in the wells, except for PMA-MW-4D.

6.0 REFERENCES

Solutia Inc, 2009. Revised PCB Groundwater Quality Assessment Program Work Plan, W.G. Krummrich Facility, Sauget, IL, Prepared by URS Corporation, May 2009.

U.S. Environmental Protection Agency (USEPA), 2008 Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review.

Table 1
Monitoring Well Gauging Information

J017210.03
December 2010

Well ID	Construction Details						September 2010		
	Ground Elevation* (feet)	Casing Elevation* (feet)	Depth to Top of Screen (feet bgs)	Depth to Bottom of Screen (feet bgs)	Top of Screen Elevation* (feet)	Bottom of Screen Elevation* (feet)	Depth to Water (feet btoc)	Depth to Bottom (feet btoc)	Water Elevation* (feet)
Shallow Hydrogeologic Unit (SHU 395-380 feet NAVD 88)									
PMA-MW-1S	410.30	410.06	20.18	25.18	390.12	385.12	8.60	NG	401.46
PMA-MW-2S	412.27	411.66	22.94	27.94	389.33	384.33	10.59	NG	401.07
PMA-MW-3S	412.37	412.06	22.71	27.71	389.66	384.66	11.15	NG	400.91
PMA-MW-4S	411.09	410.43	20.99	25.99	390.10	385.10	9.31	NG	401.12
Middle Hydrogeologic Unit (MHU 380-350 feet NAVD 88)									
PMA-MW-1M	410.32	410.08	54.54	59.54	355.78	350.78	9.14	NG	400.94
PMA-MW-2M	412.26	411.93	56.87	61.87	355.39	3.50.39	10.95	NG	400.98
PMA-MW-3M	412.36	412.10	57.07	62.07	355.29	350.29	11.20	NG	400.90
PMA-MW-4M	411.27	410.97	52.17	57.17	359.10	354.10	9.10	NG	401.87
PMA-MW-1	409.37	412.59	37.78	42.78	371.59	366.59	11.26	NG	401.33
Deep Hydrogeologic Unit (DHU 350 feet NAVD 88 - Bedrock)									
BSA-MW-2D	412.00	415.13	68.92	73.92	343.08	338.08	14.24	NG	400.89
BSA-MW-3D	412.91	415.74	107.02	112.02	305.89	300.89	17.30	NG	398.44
BSA-MW-4D	425.00	424.69	118.54	123.54	306.46	301.46	27.24	NG	397.45
BSA-MW-5D	420.80	420.49	115.85	120.85	304.95	299.95	23.50	NG	396.99
CPA-MW-1D	408.62	408.32	66.12	71.12	342.50	337.50	6.98	NG	401.34
CPA-MW-2D	408.51	408.20	96.96	104.96	308.55	303.55	7.61	NG	400.59
CPA-MW-3D	410.87	410.67	108.20	113.20	302.67	297.67	9.40	NG	401.27
CPA-MW-4D	421.57	421.20	116.44	121.44	305.13	300.13	22.50	NG	398.70
CPA-MW-5D	411.03	413.15	107.63	112.63	303.40	298.40	18.15	NG	395.00
DNAPL-K-1	413.07	415.56	108.20	123.20	304.87	289.87	14.30	NG	401.26
DNAPL-K-2	407.94	407.72	97.63	112.63	310.31	295.31	6.54	NG	401.18
DNAPL-K-3	412.13	411.91	104.80	119.80	307.33	292.33	10.54	NG	401.37
DNAPL-K-4	409.48	409.15	102.55	117.55	306.93	291.93	8.28	NG	400.87
DNAPL-K-5	412.27	411.91	102.15	117.15	310.12	295.12	10.50	NG	401.41
DNAPL-K-6	410.43	410.09	102.47	117.47	307.96	292.96	9.00	NG	401.09
DNAPL-K-7	408.32	407.72	100.40	115.40	307.92	292.92	6.58	NG	401.14
DNAPL-K-8	408.56	411.38	102.65	117.65	305.91	290.91	10.49	NG	400.89
DNAPL-K-9	406.45	405.97	97.42	112.42	309.03	294.03	4.12	NG	401.85
DNAPL-K-10	413.50	413.25	105.43	120.43	308.07	293.07	12.05	NG	401.20
DNAPL-K-11	412.20	411.78	105.46	120.46	306.74	291.74	10.50	NG	401.28
GM-9C	409.54	411.21	88.00	108.00	321.54	301.54	9.52	NG	401.69

Table 1
Monitoring Well Gauging Information

Well ID	Construction Details						September 2010		
	Ground Elevation* (feet)	Casing Elevation* (feet)	Depth to Top of Screen (feet bgs)	Depth to Bottom of Screen (feet bgs)	Top of Screen Elevation* (feet)	Bottom of Screen Elevation* (feet)	Depth to Water (feet btoc)	Depth to Bottom (feet btoc)	Water Elevation* (feet)
Deep Hydrogeologic Unit (DHU 350 feet NAVD 88 - Bedrock)									
GWE-1D (PIEZ-1D)	412.80	415.60	117.00	127.00	295.80	285.80	16.40	NG	399.20
GWE-2D (PIEZ-2D)	417.45	417.14	127.00	137.00	290.45	280.45	21.08	NG	396.06
GWE-4D (TRA3-PZADHU)	406.05	405.74	74.00	80.00	332.05	326.05	6.58	NG	399.16
GWE-10D (PIEZ 6D)	410.15	412.87	102.50	112.50	307.65	297.65	12.18	NG	400.69
GWE-14D (TRA5-PZCDHU)	420.47	422.90	90.00	96.00	330.47	324.47	25.14	NG	397.76
PMA-MW-4D	411.22	410.88	68.84	73.84	342.38	337.38	9.92	NG	400.96
PMA-MW-6D	407.63	407.32	96.49	101.49	311.14	306.14	5.65	NG	401.67
PSMW-6	404.11	406.63	99.80	104.80	304.31	299.31	7.96	NG	398.67
PSMW-9	403.92	403.52	100.40	105.40	303.52	298.52	1.80	NG	401.72
PSMW-10	409.63	412.18	101.23	106.23	308.40	303.40	15.15	NG	397.03
PSMW-13	405.80	405.53	106.08	111.08	299.72	294.72	6.18	NG	399.35
PSMW-17	420.22	423.26	121.25	126.25	298.97	293.97	28.50	NG	394.76

* Elevation based upon North American Vertical Datum (NAVD) 88 datum.

J017210.03
December 2010

Table 2
Groundwater Analytical Detections

Sample ID	Sample Date	Units	Monochlorobiphenyl	Dichlorobiphenyl	Trichlorobiphenyl	Tetrachlorobiphenyl	Pentachlorobiphenyl	Hexachlorobiphenyl	Heptachlorobiphenyl	Octachlorobiphenyl	Nonachlorobiphenyl	Decachlorobiphenyl
Shallow Hydrologic Unit												
PMA-MW-1S-0910	09/30/10	µg/L	<0.098	<0.098	<0.098	<0.20	<0.20	<0.20	<0.29	<0.29	<0.49	<0.49
PMA-MW-2S-0910	09/30/10	µg/L	<0.097	<0.097	<0.097	<0.19	<0.19	<0.19	<0.29	<0.29	<0.49	<0.49
PMA-MW-3S-0910	09/30/10	µg/L	**0.28**	<0.098	<0.098	<0.20	<0.20	<0.20	<0.29	<0.29	<0.49	<0.49
PMA-MW-4S-0910 [1]	09/30/10	µg/L	<9.7	**660**	**10,000**	**20,000**	**18,000**	**34,000**	**27,000**	**2,200**	<49	**110**
Middle / Deep Hydrologic Unit												
PMA-MW-1M-0910	09/30/10	µg/L	**0.29 J**	<0.097	<0.097	<0.19	<0.19	<0.19	<0.29	<0.29	<.049	<0.49
PMA-MW-2M-0910	09/30/10	µg/L	**2.1 J**	<0.097	<0.097	<0.19	<0.19	<0.19	<0.29	<0.29	<0.49	<0.49
PMA-MW-2M-0910-AD	09/30/10	µg/L	**2.4**	<0.097	<0.097	<0.19	<0.19	<0.19	<0.29	<0.29	<0.49	<0.49
PMA-MW-3M-0910	09/30/10	µg/L	**0.75**	<0.095	<0.095	<0.19	<0.19	<0.19	<0.29	<0.29	<0.48	<0.48
PMA-MW-4D-0910	09/30/10	µg/L	**0.24**	**0.18**	<0.10	<0.20	<0.20	<0.20	<0.30	<0.30	<0.50	<0.50
PMA-MW-5M-0910	09/30/10	µg/L	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.31	<0.31	<0.51	<0.51
PMA-MW-6D-0910	09/30/10	µg/L	**0.1**	<0.097	<0.097	<0.19	<0.19	<0.19	<0.29	<0.29	<0.49	<0.49

Notes:
µg/L = micrograms per liter
< = Result is non-detect, less than the reporting limit
AD = Analytical Duplicate
BOLD indicates concentration greater than the reporting limit
[1] = DNAPL present; groundwater sampled inadvertently
J= Estimated value

Table 3
Monitoring Well PMA MW-1M Mann-Kendall Trend Analysis

W.G.Krummrich Facility PCB Mfg. Area Monitoring Well MW-1M Mann-Kendall Trend Analysis																		
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14	Event 15	Event 16	Event 17	Event 18	Row
	2Q06	3Q06	4Q06	1Q07	2Q07	3Q07	4Q07	1Q08	2Q08	3Q08	4Q08	1Q09	2Q09	3Q09	4Q09	1Q10	2Q10	3Q10	Total
Total PCBs, µg/L	ND	0.24	0.21	0.17	0.26	0.29	48	ND	0.18	0.38	0.26	0.16	0.21	0.27	0.27	0.20	ND	0.29	
Compare to Event 1		1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0	1	15
Compare to Event 2			-1	-1	1	1	1	-1	-1	1	1	-1	-1	1	1	-1	-1	1	0
Compare to Event 3				-1	1	1	1	-1	-1	1	1	-1	0	1	1	-1	-1	1	2
Compare to Event 4					1	1	1	-1	1	1	1	-1	1	1	1	1	-1	1	8
Compare to Event 5						1	1	-1	-1	1	0	-1	-1	1	1	-1	-1	1	0
Compare to Event 6							1	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	0	-7
Compare to Event 7								-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-11
Compare to Event 8									1	1	1	1	1	1	1	1	0	1	9
Compare to Event 9										1	1	-1	1	1	1	1	-1	1	5
Compare to Event 10											-1	-1	-1	-1	-1	-1	-1	-1	-8
Compare to Event 11												-1	-1	1	1	-1	-1	1	-1
Compare to Event 12													1	1	1	1	-1	1	4
Compare to Event 13														1	1	-1	-1	1	1
Compare to Event 14															0	-1	-1	1	-1
Compare to Event 15																-1	-1	1	-1
Compare to Event 16																	-1	1	0
Compare to Event 17																		1	1

Mann-Kendall Statistic (S)	**16**
90 % Confidence Mann-Kendall Statistic	**35**

Table 4
Monitoring Well PMA MW-2M Mann-Kendall Trend Analysis

W.G.Krummrich Facility PCB Mfg. Area Monitoring Well MW-2M Mann-Kendall Trend Analysis																		
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14	Event 15	Event 16	Event 17	Event 18	Row
	2Q06	3Q06	4Q06	1Q07	2Q07	3Q07	4Q07	1Q08	2Q08	3Q08	4Q08	1Q09	2Q09	3Q09	4Q09	1Q10	2Q10	3Q10	Total
Total PCBs, µg/L	2.3	2.4	2.8	2.1	3.3	2.5	3.1	1.7	3.0	4.3	2.5	2.9	4.14	3.1	2.7	2.4	3.9	2.25	
Compare to Event 1		1	1	-1	1	1	1	-1	1	1	1	1	1	1	1	1	1	-1	11
Compare to Event 2			1	-1	1	1	1	-1	1	1	1	1	1	1	1	0	1	-1	9
Compare to Event 3				-1	1	-1	1	-1	1	1	-1	1	1	1	-1	-1	1	-1	1
Compare to Event 4					1	1	1	-1	1	1	1	1	1	1	1	1	1	1	12
Compare to Event 5						-1	-1	-1	-1	1	-1	-1	1	-1	-1	-1	1	-1	-7
Compare to Event 6							1	-1	1	1	0	1	1	1	1	-1	1	-1	5
Compare to Event 7								-1	-1	1	-1	-1	1	0	-1	-1	1	-1	-4
Compare to Event 8									1	1	1	1	1	1	1	1	1	1	10
Compare to Event 9										1	-1	-1	1	1	-1	-1	1	-1	-1
Compare to Event 10											-1	-1	-1	-1	-1	-1	-1	-1	-8
Compare to Event 11												1	1	1	1	-1	1	-1	3
Compare to Event 12													1	1	-1	-1	1	-1	0
Compare to Event 13														-1	-1	-1	-1	-1	-5
Compare to Event 14															-1	-1	1	-1	-2
Compare to Event 15																-1	1	-1	-1
Compare to Event 16																	1	-1	0
Compare to Event 17																		-1	-1

Mann-Kendall Statistic (S)	**22**
90 % Confidence Mann-Kendall Statistic	**35**

Table 5
Monitoring Well PMA MW-3S Mann-Kendall Trend Analysis

W.G.Krummrich Facility PCB Mfg. Area Monitoring Well MW-2M Mann-Kendall Trend Analysis																		
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14	Event 15	Event 16	Event 17	Event 18	Row
	2Q06	3Q06	4Q06	1Q07	2Q07	3Q07	4Q07	1Q08	2Q08	3Q08	4Q08	1Q09	2Q09	3Q09	4Q09	1Q10	2Q10	3Q10	Total
Total PCBs, µg/L	0.66	0.32	0.2	0.35	0.8	0.3	0.21	0.25	0.64	0.26	0.24	0.79	ND	0.34	2.0	ND	0.63	0.28	
Compare to Event 1		-1	-1	-1	1	-1	-1	-1	-1	-1	-1	1	-1	-1	1	-1	-1	-1	-11
Compare to Event 2			-1	1	1	-1	-1	-1	1	-1	-1	1	-1	1	1	-1	1	-1	-2
Compare to Event 3				1	1	1	1	1	1	1	1	1	-1	1	1	-1	1	1	11
Compare to Event 4					1	-1	-1	-1	1	-1	-1	1	-1	-1	1	-1	1	-1	-4
Compare to Event 5						-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1	-1	-1	-11
Compare to Event 6							-1	-1	1	-1	-1	1	-1	1	1	-1	1	-1	-2
Compare to Event 7								1	1	1	1	1	-1	1	1	-1	1	1	7
Compare to Event 8									1	1	-1	1	-1	1	1	-1	1	1	4
Compare to Event 9										-1	-1	1	-1	-1	1	-1	-1	-1	-5
Compare to Event 10											-1	1	-1	1	1	-1	1	1	2
Compare to Event 11												1	-1	1	1	-1	1	1	3
Compare to Event 12													-1	-1	1	-1	-1	-1	-4
Compare to Event 13														1	1	0	1	1	4
Compare to Event 14															1	-1	1	-1	0
Compare to Event 15																-1	-1	-1	-3
Compare to Event 16																	1	1	2
Compare to Event 17																		-1	-1

Mann-Kendall Statistic (S)	**-10**
90 % Confidence Mann-Kendall Statistic	**-35**

Table 6
Monitoring Well PMA MW-3M Mann-Kendall Trend Analysis

W.G.Krummrich Facility PCB Mfg. Area Monitoring Well MW-3M Mann-Kendall Trend Analysis																		
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14	Event 15	Event 16	Event 17	Event 18	Row
	2Q06	3Q06	4Q06	1Q07	2Q07	3Q07	4Q07	1Q08	2Q08	3Q08	4Q08	1Q09	2Q09	3Q09	4Q09	1Q10	2Q10	3Q10	Total
Total PCBs, µg/L	5.18	1.9	ND	0.77	ND	0.86	0.76	0.39	0.92	1.3	0.71	1.4	1.3	0.85	0.85	0.87	0.82	0.75	
Compare to Event 1		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-17
Compare to Event 2			-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-16
Compare to Event 3				1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	14
Compare to Event 4					-1	1	-1	-1	1	1	-1	1	1	1	1	1	1	-1	4
Compare to Event 5						1	1	1	1	1	1	1	1	1	1	1	1	1	13
Compare to Event 6							-1	-1	1	1	-1	1	1	-1	-1	1	-1	-1	-2
Compare to Event 7								-1	1	1	-1	1	1	1	1	1	1	-1	5
Compare to Event 8									1	1	1	1	1	1	1	1	1	1	10
Compare to Event 9										1	-1	1	1	-1	-1	-1	-1	-1	-3
Compare to Event 10											-1	1	0	-1	-1	-1	-1	-1	-5
Compare to Event 11												1	1	1	1	1	1	1	7
Compare to Event 12													-1	-1	-1	-1	-1	-1	-6
Compare to Event 13														-1	-1	-1	-1	-1	-5
Compare to Event 14															0	1	-1	-1	-1
Compare to Event 15																1	-1	-1	-1
Compare to Event 16																	-1	-1	-2
Compare to Event 17																		-1	-1

Mann-Kendall Statistic (S)	**-6**
90 % Confidence Mann-Kendall Statistic	**-35**

Table 7
Monitoring Well PMA MW-4D Mann-Kendall Trend Analysis

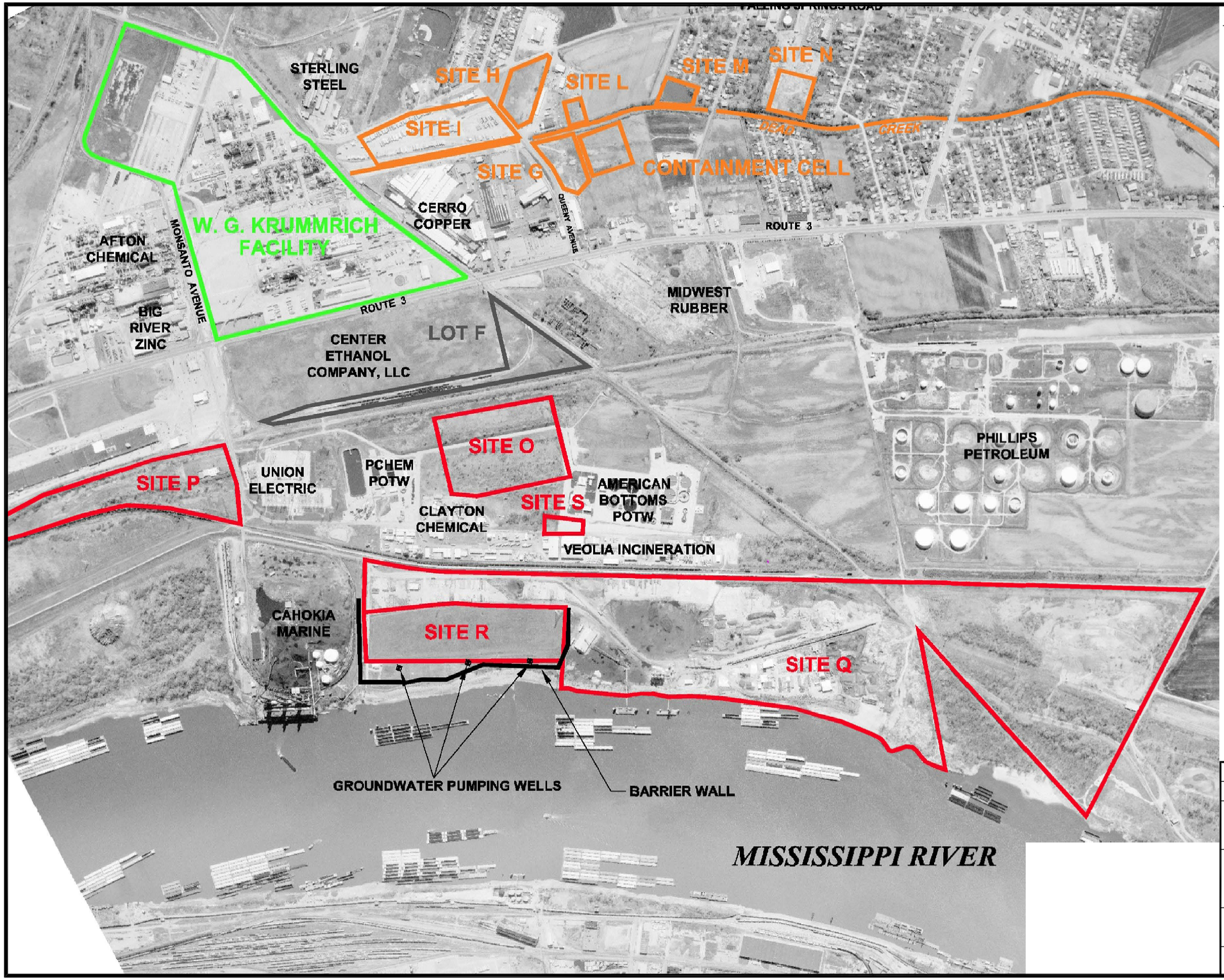
W.G.Krummrich Facility PCB Mfg. Area Monitoring Well MW-4D Mann-Kendall Trend Analysis																		
	Event 1 2Q06	Event 2 3Q06	Event 3 4Q06	Event 4 1Q07	Event 5 2Q07	Event 6 3Q07	Event 7 4Q07	Event 8 1Q08	Event 9 2Q08	Event 10 4Q08	Event 11 1Q09	Event 12 2Q09	Event 13 3Q09	Event 14 4Q09	Event 15 1Q10	Event 16 2Q10	Event 17 3Q10	Row Total
Total PCBs, µg/L	0.34	0.10	2.07	0.33	0.50	0.35	0.23	0.27	0.44	0.27	2.73	0.59	0.37	0.61	0.54	0.72	0.42	
Compare to Event 1		-1	1	-1	1	1	-1	-1	1	-1	1	1	1	1	1	1	1	6
Compare to Event 2			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
Compare to Event 3				-1	-1	-1	-1	-1	-1	-1	1	-1	-1	-1	-1	-1	-1	-12
Compare to Event 4					1	1	-1	-1	1	-1	1	1	1	1	1	1	1	7
Compare to Event 5						-1	-1	-1	-1	-1	1	1	-1	1	1	1	-1	-2
Compare to Event 6							-1	-1	1	-1	1	1	1	1	1	1	1	5
Compare to Event 7								1	1	1	1	1	1	1	1	1	1	10
Compare to Event 8									1	0	1	1	1	1	1	1	1	8
Compare to Event 9										-1	1	1	-1	1	1	1	-1	2
Compare to Event 10											1	1	1	1	1	1	1	7
Compare to Event 11												-1	-1	-1	-1	-1	-1	-6
Compare to Event 12													-1	1	-1	1	-1	-1
Compare to Event 13														1	1	1	1	4
Compare to Event 14															-1	1	-1	-1
Compare to Event 15																1	-1	0
Compare to Event 16																	-1	-1

Mann-Kendall Statistic (S)	**41**
90 % Confidence Mann-Kendall Statistic	**34**

Table 8
Monitoring Well PMA MW-6D Mann-Kendall Trend Analysis

W.G.Krummrich Facility Well PMA MW-6D Mann-Kendall Trend Analysis										
	Event 1 3Q08	Event 2 4Q08	Event 3 1Q09	Event 4 2Q09	Event 5 3Q09	Event 6 4Q09	Event 7 1Q10	Event 8 2Q10	Event 9 3Q10	Row Total
Total PCBs, ug/L	0.21	0.43	0.32	0.29	0.20	0.30	0.19	0.33	0.10	
Compare to Event 1		1	1	1	-1	1	-1	1	-1	2
Compare to Event 2			-1	-1	-1	-1	-1	-1	-1	-7
Compare to Event 3				-1	-1	-1	-1	1	-1	-4
Compare to Event 4					-1	1	-1	1	-1	-1
Compare to Event 5						1	-1	1	-1	0
Compare to Event 6							-1	1	-1	-1
Compare to Event 7								1	-1	0
Compare to Event 8									-1	-1

Mann-Kendall Statistic (S)	**-12**
90 % Confidence Mann-Kendall Statistic	**-14**



NOTES:

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

LEGEND:

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

N

0 1,000 2,000

SCALE IN FEET

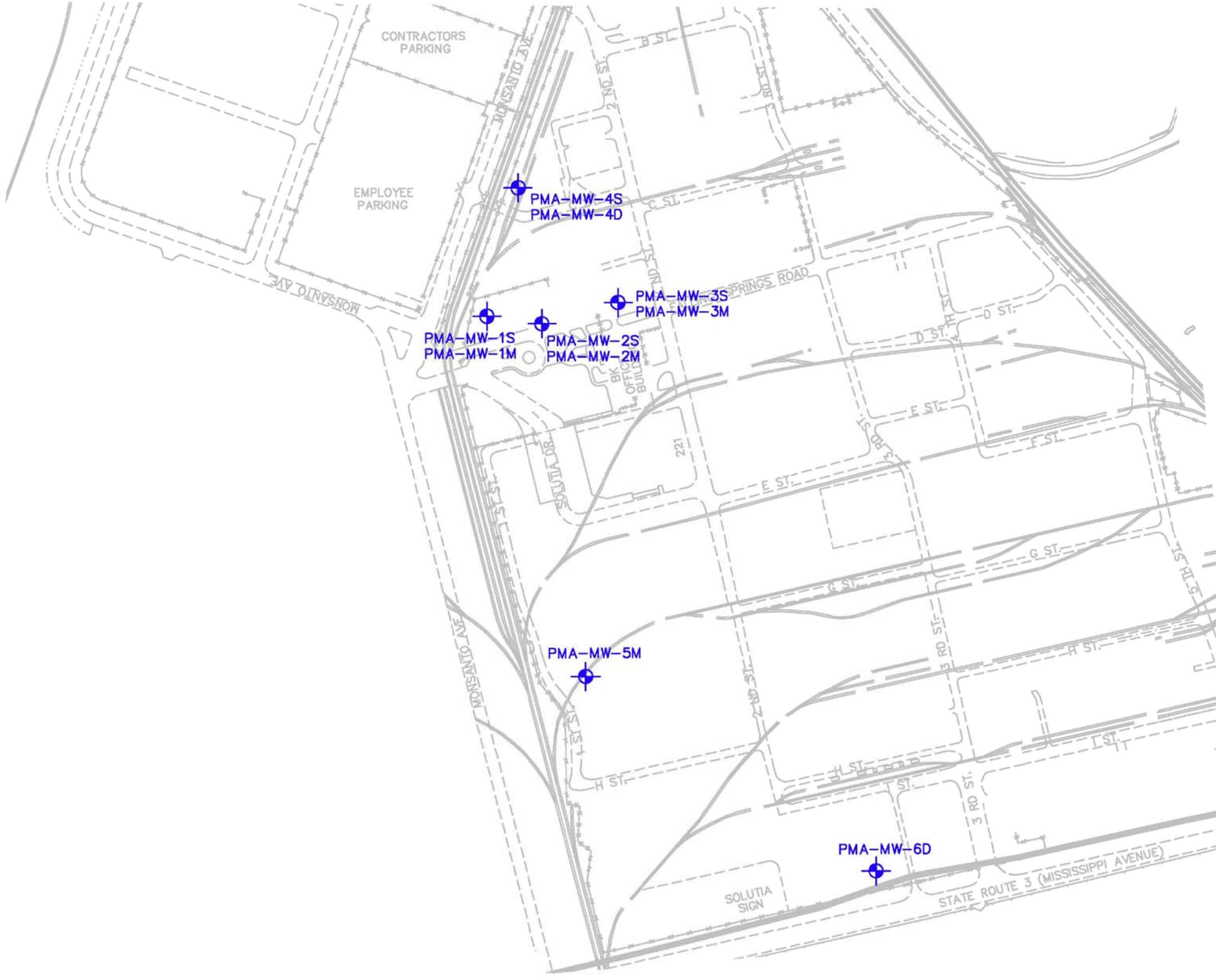
Drawn By: SLC	Ck'd By: AMS	App'vd By: DTK
Date: 11-22-10	Date: 12-17-10	Date: 12-17-10

GEOTECHNOLOGY INC
FROM THE GROUND UP

3Q 2010
PCB Monitoring Program
Sauget, Illinois

SITE LOCATION MAP

Project Number	PLATE 1
J017210.03	



NOTES:

1. Plan adapted from a drawing titled "Former PCB Manufactoring Area Monitoring Well Locations" provided by URS.

LEGEND:

Monitoring Well Location

N

0 300 600

SCALE IN FEET

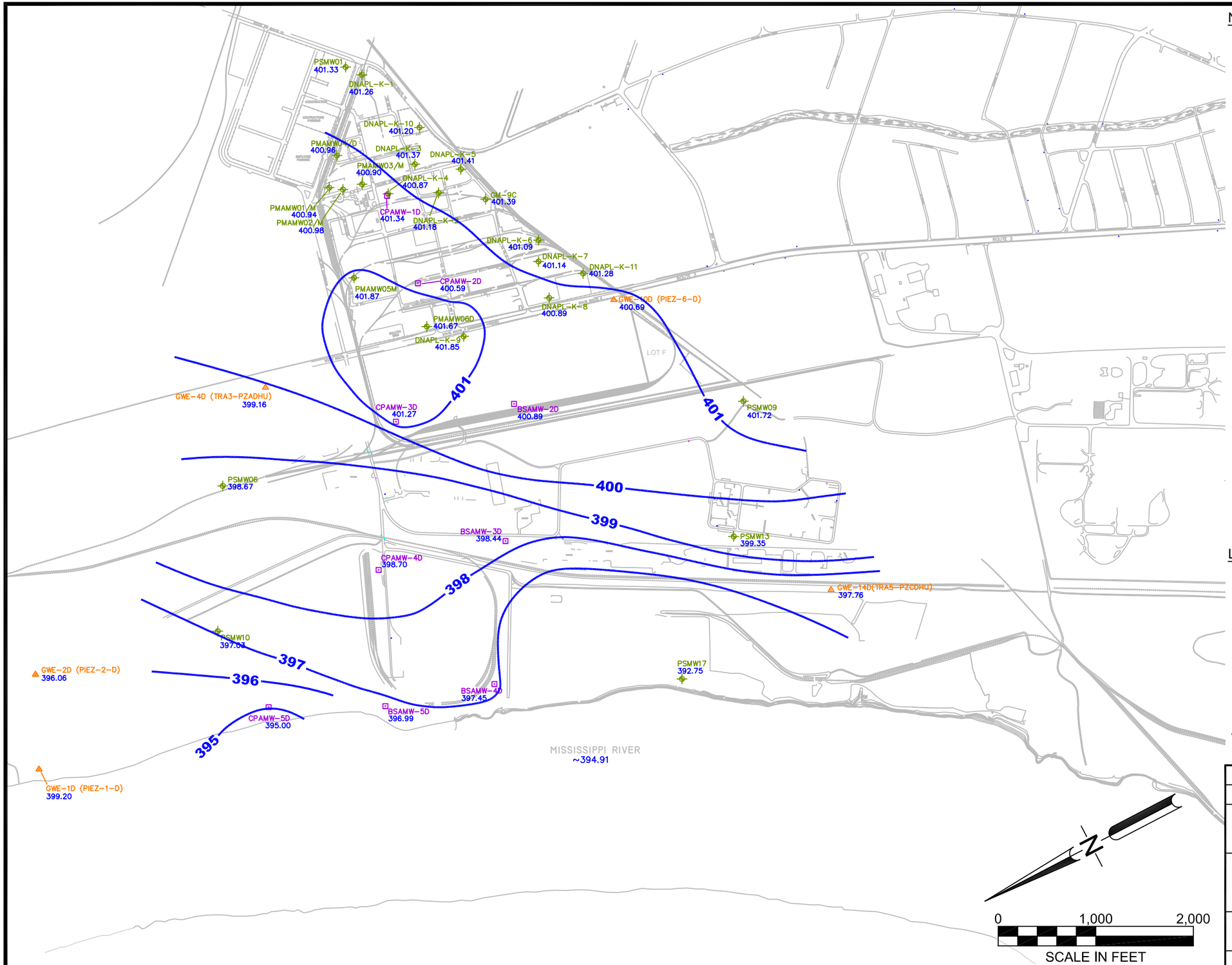
Drawn By: SLC	Ck'd By: AMS	App'vd By: DTK
Date: 11-22-10	Date: 12-17-10	Date: 12-17-10

GEOTECHNOLOGY INC
FROM THE GROUND UP

3Q 2010
PCB Monitoring Program
Sauget, Illinois

FORMER PCB MANUFACTORING AREA MONITORING WELL LOCATIONS

Project Number	PLATE 2
J017210.03	



NOTES:

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

2. Groundwater levels were measured September 23 & 24, 2010.

3. Contours genterated primarily using surfer software version 8. Some interpretation was done using professional judgement and contours lines were modiffied by hand.

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

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

LEGEND:

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

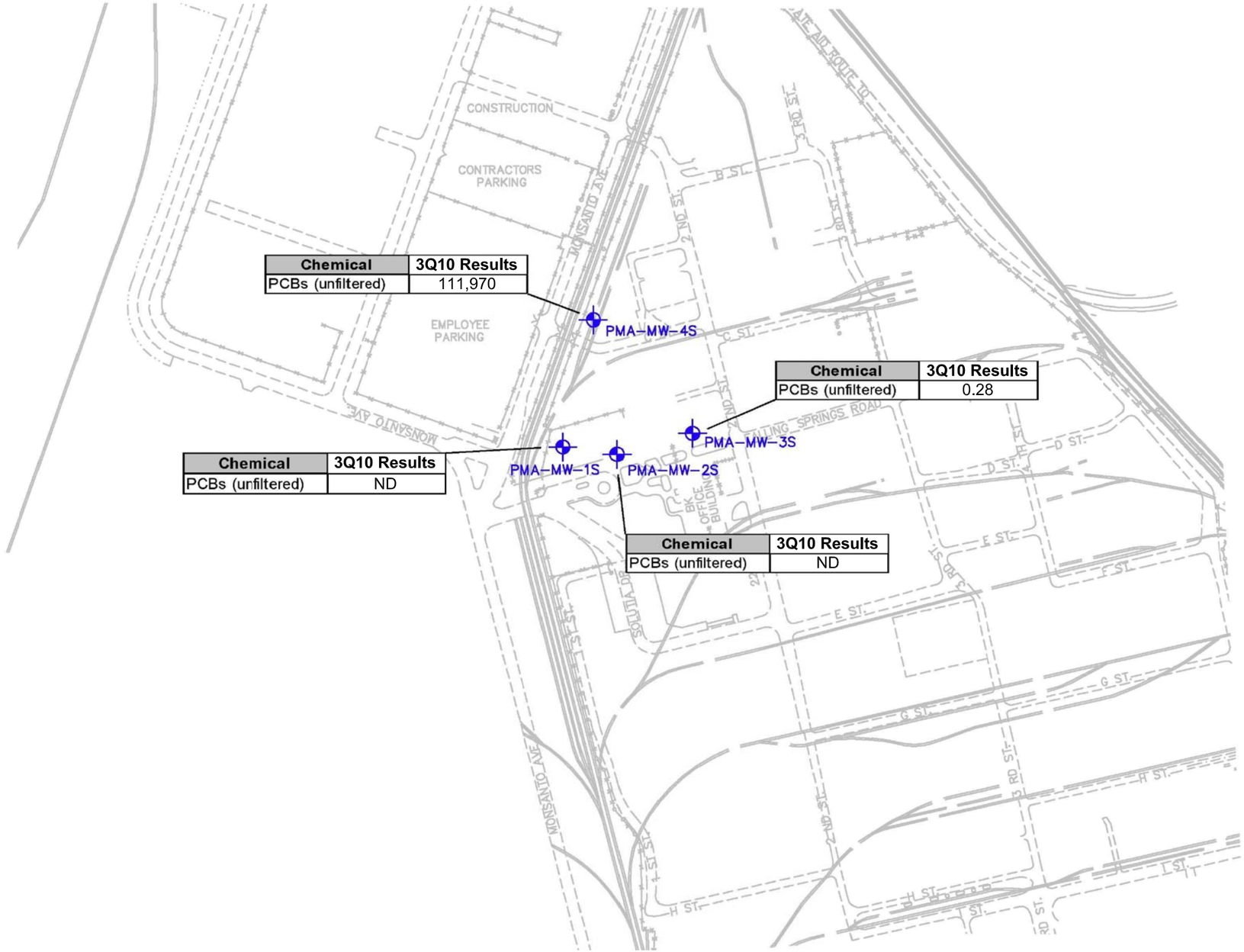
Drawn By: SLC	Ck'd By: AMS	App'vd By: DTK
Date: 11-22-10	Date: 12-17-10	Date: 12-17-10

GEOTECHNOLOGY INC
FROM THE GROUND UP

3Q 2010
PCB Monitoring Program
Sauget, Illinois

POTENTIOMETRIC SURFACE MAP MIDDLE/DEEP HYDROGEOLOGIC UNIT

Project Number J017210.03	PLATE 3



NOTES:

1. Plan adapted from a drawing titled "PCB Results - SHU Wells" provided by URS.
2. Total PCB results include the sum of all method 680 Homologs.
3. Results are shown in ug/L.
4. ND = Not Detected.
5. PMA-MW-4S: DNAPL present-groundwater sampled inadvertently.

LEGEND:

Monitoring Well Location

N

0 300 600

SCALE IN FEET

Drawn By: SLC	Ck'd By: AMS	App'vd By: DTK
Date: 11-22-10	Date: 12-17-10	Date: 12-17-10

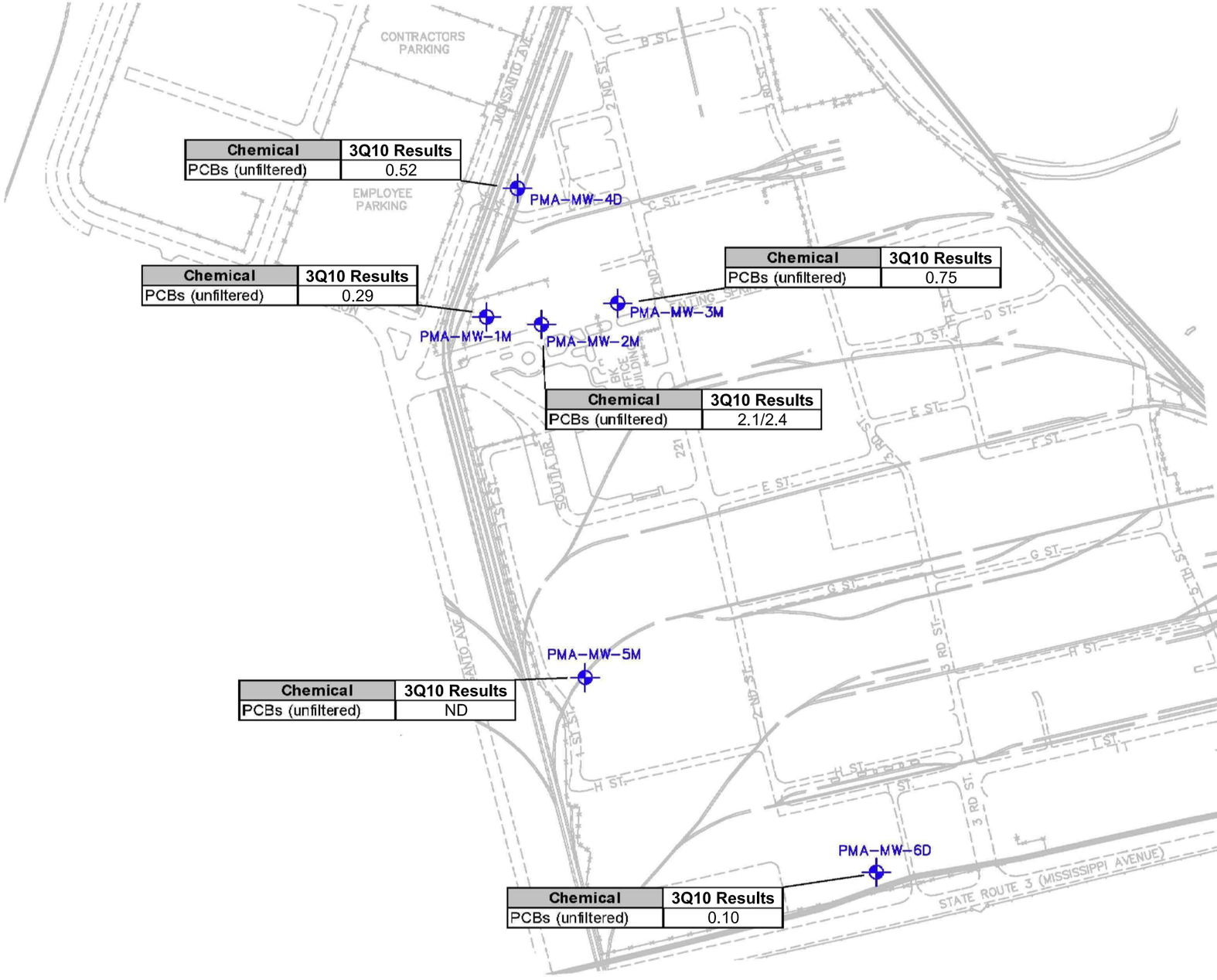
GEOTECHNOLOGY INC
FROM THE GROUND UP

3Q 2010
PCB Monitoring Program
Sauget, Illinois

PCB RESULTS
SHU WELLS

Project Number
J017210.03

PLATE 4



Chemical	3Q10 Results
PCBs (unfiltered)	0.52

Chemical	3Q10 Results
PCBs (unfiltered)	0.29

Chemical	3Q10 Results
PCBs (unfiltered)	0.75

Chemical	3Q10 Results
PCBs (unfiltered)	2.1/2.4

Chemical	3Q10 Results
PCBs (unfiltered)	ND

Chemical	3Q10 Results
PCBs (unfiltered)	0.10

NOTES:

1. Plan adapted from a drawing titled "PCB Results - MHU/DHU Wells" provided by URS.
2. Total PCB results include the sum of all method 680 Homologs.
3. Results are shown in ug/L.
4. ND = Not Detected.

LEGEND:

Monitoring Well Location

N

0 300 600

SCALE IN FEET

Drawn By: SLC	Ck'd By: AMS	App'vd By: DTK
Date: 11-22-10	Date: 12-17-10	Date: 12-17-10

GEOTECHNOLOGY INC
FROM THE GROUND UP

3Q 2010
PCB Monitoring Program
Sauget, Illinois

PCB RESULTS
MHU/DHU WELLS

Project Number
J017210.03

PLATE 5

APPENDIX A

GROUNDWATER PURGING AND SAMPLING FORMS

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

J017210.02

PROJECT NAME: WGK PCB 3Q10 | PROJECT NUMBER: J017210.03 | FIELD PERSONNEL: Steve Graham, Kevin Roberts
DATE: 9-30-10 | WEATHER: 80° clear
MONITORING WELL ID: PMA-MW-25 | SAMPLE ID: PMA-MW-25-0910

INITIAL DATA

Well Diameter: 2" in
Measured Well Depth (btoc): - ft
Constructed Well Depth (btoc): 27.33 ft
Depth to Water (btock): 10.95 ft
Depth to LNAPL/DNAPL (btoc): - ft
Depth to Top of Screen (btoc): 22.33 ft
Screen Length: 5.0 ft

Water Column Height (do not include LNAPL or DNAPL): 16.38 ft
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 24.83 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are <4 ft,
Place Pump at: Total Well Depth -)9.5 X Water Column Height + DNAPL Column Height) = - ft btoc
If Screen Length and/or water column height is <4 ft, Place Pump at: Total Well Depth - 2 ft = - ft btoc
DNPL Present NO If Present, Do Not Sample

Volume of Flow Through Cell): 1000 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 3000 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: Pegasus Peristaltic Pump

					HAVE THE STABILIZATION PARAMETERS BEEN SATISFIED? All are units unless %					
					± 0.2	± 0.2	± 3%	± 10%	± 10% or ± 0.2	± 20
Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. Ms/cm	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
-	1450	10.95								
1000	1452	10.95	Clear	Yes	6.05	20.33	1.01	1.7	7.98	-85
2000	1455	10.95	↓	↓	6.22	20.48	0.75	0.0	6.88	-80
3000	1500	10.95			5.80	20.55	0.781	0.0	6.09	-63
5500	1505	10.95			5.63	20.64	0.785	0.0	5.24	-53
6750	1511	10.94			5.63	20.47	0.781	1.8	0.06	-49
8000	1516	10.94	↓	↓	5.63	20.47	0.799	0.3	0.02	-46

Start Time: 1450
Stop Time: 1516
Elapsed Time: 26 min
Average Purge Rate (mL/min): 300
Water Quality Meter ID: Horiba - U-52
Date Calibrated: 9-30-10

SAMPLING DATA

Sample Date: 9-30-10
Sample Method: Low Flow Peristaltic
Sample Time: 1516
Sample Flow Rate: 300 mL/min
Analysis: Total PCB's
QA/QC Samples: Equipment Blank

VOA Vials, No Headspace ☒ Initials: SWG

COMMENTS:

Ferrous Iron (Filtered 0.2 micron) =

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

J017210.02

PROJECT NAME: WGK PCB 3Q10 PROJECT NUMBER: J017210.03 FIELD PERSONNEL: Steve Graham
DATE: 9-30-10 WEATHER: 80° Clear Kevin Roberts
MONITORING WELL ID: PMA-MW-15 SAMPLE ID: PMA-MW-15-0910

INITIAL DATA

Well Diameter: 2" in
Measured Well Depth (btoc): - ft
Constructed Well Depth (btoc): 24.94 ft
Depth to Water (btock): 9.38 ft
Depth to LNAPL/DNAPL (btoc): - ft
Depth to Top of Screen (btoc): 19.94 ft
Screen Length: 5.0 ft

Water Column Height (do not include LNAPL or DNAPL): 15.56 ft
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 22.44 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are <4 ft,
Place Pump at: Total Well Depth -)9.5 X Water Column Height + DNAPL Column Height) = - ft btoc
If Screen Length and/or water column height is <4 ft, Place Pump at: Total Well Depth - 2 ft = - ft btoc
DNPL Present NO If Present, Do Not Sample

Volume of Flow Through Cell): 1000 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 3000 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: Pegasus Peristaltic Pump

					HAVE THE STABILIZATION PARAMETERS BEEN SATISFIED? All are units unless %					
					± 0.2	± 0.2	± 3%	± 10%	± 10% or ± 0.2	± 20
Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. Ms/cm	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
-	1347	9.38								
1000	1350	9.38	Clear	Slight	5.98	17.04	1.56	1.4	0.19	-85
3000	1355	9.38	↓	↓	5.77	17.01	1.45	0.0	0.18	-69
5000	1400	9.38			5.60	17.04	1.49	0.3	0.16	-62
8300	1405	9.39			5.46	17.13	1.49	0.0	0.14	-53

Start Time: 1347
Stop Time: 1405
Elapsed Time: 18 min
Average Purge Rate (mL/min): 400
Water Quality Meter ID: Horiba - U-52
Date Calibrated: 9-30-10

SAMPLING DATA

Sample Date: 9-30-10
Sample Method: low flow Peristaltic
Sample Time: 1405
Sample Flow Rate: 400 mL/min
Analysis: Total PCB's
QA/QC Samples: MS, MSD

VOA Vials, No Headspace [X] Initials: SWG

COMMENTS: Ferrous Iron (Filtered 0.2 micron) =

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

J017210.02

PROJECT NAME: WGK PCB 3Q10 | PROJECT NUMBER: J017210.03 | FIELD PERSONNEL: Steve Graham
DATE: 9-30-10 | WEATHER: 80° clear | Kevin Roberts
MONITORING WELL ID: PMA-MW-1M | SAMPLE ID: PMA-MW-1M-0910

INITIAL DATA

Well Diameter: 2" in
Measured Well Depth (btoc): - ft
Constructed Well Depth (btoc): 59.30 ft
Depth to Water (btock): 9.40 ft
Depth to LNAPL/DNAPL (btoc): - ft
Depth to Top of Screen (btoc): 54.30 ft
Screen Length: 5.0 ft

Water Column Height (do not include LNAPL or DNAPL): 49.9 ft
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 56.8 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are <4 ft,
Place Pump at: Total Well Depth -)9.5 X Water Column Height + DNAPL Column Height) = - ft btoc
If Screen Length and/or water column height is <4 ft, Place Pump at: Total Well Depth - 2 ft = - ft btoc
DNPL Present NO If Present, Do Not Sample

Volume of Flow Through Cell): 1000 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 3000 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA
Pump Type: QED Sample Pro Bladder Pump

					HAVE THE STABILIZATION PARAMETERS BEEN SATISFIED? All are units unless %					
					± 0.2	± 0.2	± 3%	± 10%	± 10% or ± 0.2	± 20
Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. Ms/cm	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
-	1325	9.40								
1500	1327	9.45	clear	NO	8.42	17.65	2.35	13.8	2.42	-38
2500	1330	9.40	Some Haze		7.26	16.97	2.37	6.8	2.55	-58
5000	1335	9.40			6.37	16.77	2.32	0.9	0.92	-74
7500	1340	9.40			5.93	16.72	2.35	0.1	0.46	-83
9000	1342	9.40			5.85	16.67	2.37	0.2	0.34	-86
10000	1345	9.40			5.73	16.70	2.40	0.1	0.24	-89

Start Time: 1325
Stop Time: 1345
Elapsed Time: 20 min
Average Purge Rate (mL/min): 500
Water Quality Meter ID: Horiba -U-52
Date Calibrated: 9-30-10

SAMPLING DATA

Sample Date: 9-30-10
Sample Method: low flow bladder
Sample Time: 1345
Sample Flow Rate: 500 mL/min
Analysis: Total PCB's
QA/QC Samples: None

VOA Vials, No Headspace [X] Initials: SWG

COMMENTS:
Ferrous Iron (Filtered 0.2 micron) =

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

J017210.02

PROJECT NAME: W6K PCB 3Q10 PROJECT NUMBER: J017210.03 FIELD PERSONNEL: Steve Graham
DATE: 9-30-10 WEATHER: 80° Clear Kevin Roberts
MONITORING WELL ID: PMA-MW-5M SAMPLE ID: PMA-MW-5M-0910

INITIAL DATA

Well Diameter: 2" in
Measured Well Depth (btoc): - ft
Constructed Well Depth (btoc): 56.87 ft
Depth to Water (btock): 5.93 ft
Depth to LNAPL/DNAPL (btoc): - ft
Depth to Top of Screen (btoc): 51.87 ft
Screen Length: 5.0 ft

Water Column Height (do not include LNAPL or DNAPL): 50.94 ft
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 54.37 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are <4 ft,
Place Pump at: Total Well Depth -)9.5 X Water Column Height + DNAPL Column Height) = - ft btoc
If Screen Length and/or water column height is <4 ft, Place Pump at: Total Well Depth - 2 ft = - ft btoc
DNPL Present No If Present, Do Not Sample

Volume of Flow Through Cell): 1000 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 3000 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA
Pump Type: QED Sample Pro Bladder Pump

					HAVE THE STABILIZATION PARAMETERS BEEN SATISFIED? All are units unless %					
					± 0.2	± 0.2	± 3%	± 10%	± 10% or ± 0.2	± 20
Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. Ms/cm	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
-	0732	5.93								
-	0734	7.82								
-	0736	8.5								
2000	0739	8.7	Clear	NO	7.57	17.49	2.66	0.6	4.70	42
3500	0745	9.05	↓	↓	7.61	17.39	2.63	0.4	5.55	19
5000	0750	9.05			7.33	17.38	2.62	0.1	4.58	4
7000	0755	9.05			7.34	17.35	2.63	0.0	3.72	-8
9000	0800	9.05			7.95	17.30	2.63	0.0	3.48	-14

Start Time: 0732
Stop Time: 0802
Elapsed Time: 30 min
Average Purge Rate (mL/min): 300
Water Quality Meter ID: Horiba - U-52
Date Calibrated: 9-30-10

SAMPLING DATA

Sample Date: 9-30-10
Sample Method: low flow bladder
Sample Time: 0802
Sample Flow Rate: 300 mL/min
Analysis: Total PCB's
QA/QC Samples: none

VOA Vials, No Headspace ☒ Initials: SWG

COMMENTS:

Ferrous Iron (Filtered 0.2 micron) =

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

J017210.02

PROJECT NAME: W6K PCB 3Q10 | PROJECT NUMBER: J017210.03 | FIELD PERSONNEL: Steve Graham, Kevin Roberts

DATE: 9-30-10 | WEATHER: 80° clear

MONITORING WELL ID: PMA - MW-45 | SAMPLE ID: PMA - MW-45 - 0910

INITIAL DATA

Well Diameter: 2" in
Measured Well Depth (btoc): - ft
Constructed Well Depth (btoc): 25.33 ft
Depth to Water (btock): 9.8 ft
Depth to LNAPL/DNAPL (btoc): 1/100th / ND ft
Depth to Top of Screen (btoc): 20.33 ft
Screen Length: 5.0 ft

Water Column Height (do not include LNAPL or DNAPL): 15.5 ft
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 22.83 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are <4 ft,
Place Pump at: Total Well Depth -)9.5 X Water Column Height + DNAPL Column Height) = - ft btoc
If Screen Length and/or water column height is <4 ft, Place Pump at: Total Well Depth - 2 ft = - ft btoc
DNPL Present Not during Gauging If Present, Do Not Sample

Volume of Flow Through Cell): 1000 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 3000 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 9.0 ppm

PURGE DATA

Pump Type: Pegasus Peristaltic Pump

					HAVE THE STABILIZATION PARAMETERS BEEN SATISFIED? All are units unless %					
					± 0.2	± 0.2	± 3%	± 10%	± 10% or ± 0.2	± 20
Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. Ms/cm	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
-	1118	9.8		Strong						
500	1120	9.8	Black oil		6.13	19.25	2.08	6.2	1.62	-112
-	STOP Test - Clean DNAPL out of Flow Through Cell						-	-	-	-
1000	1130	9.8	Haze		5.79	18.67	2.62	29.9	0.09	-73
2500	1140	9.8	clear		5.47	18.73	2.63	31.4	0.00	-73
5000	1145	9.8	↓	↓	5.40	18.81	2.62	21.2	0.00	-76

Start Time: 1118
Stop Time: 1145

Elapsed Time: 15 min
Average Purge Rate (mL/min): 350

Water Quality Meter ID: Horiba - U-52
Date Calibrated: 9-30-10

SAMPLING DATA

Sample Date: 9-30-10
Sample Method: low flow Peristaltic

Sample Time: 1145
Sample Flow Rate: 350 mL/min

Analysis: Total PCB's
QA/QC Samples: none

VOA Vials, No Headspace [X] Initials: SWG

COMMENTS:

Ferrous Iron (Filtered 0.2 micron) =

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

J017210.02

PROJECT NAME: WGK PCB 3Q10 PROJECT NUMBER: J017210.03 FIELD PERSONNEL: Steve Graham
DATE: 9-30-10 WEATHER: 80° clear Kevin Roberts
MONITORING WELL ID: PMA - MW- 35 SAMPLE ID: PMA - MW - 35 - 0910

INITIAL DATA

Well Diameter: 2" in
Measured Well Depth (btoc): - ft
Constructed Well Depth (btoc): 27.40 ft
Depth to Water (btock): 11.2 ft
Depth to LNAPL/DNAPL (btoc): - ft
Depth to Top of Screen (btoc): 22.4 ft
Screen Length: 5.0 ft

Water Column Height (do not include LNAPL or DNAPL): 16.2 ft
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 24.9 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are <4 ft,
Place Pump at: Total Well Depth -)9.5 X Water Column Height + DNAPL Column Height) = - ft btoc
If Screen Length and/or water column height is <4 ft, Place Pump at: Total Well Depth - 2 ft = - ft btoc
DNPL Present NO If Present, Do Not Sample

Volume of Flow Through Cell): 1000 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 3000 mL
Ambient PID/FID Reading: 0.5 ppm
Wellbore PID/FID Reading: 10.5 ppm

PURGE DATA

Pump Type: Pegasus Peristaltic Pump

					HAVE THE STABILIZATION PARAMETERS BEEN SATISFIED? All are units unless %.					
					± 0.2	± 0.2	± 3%	± 10%	± 10% or ± 0.2	± 20
Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. Ms/cm	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
-	0844	11.2	black	yes						
500	0846	11.2	clear	↓	7.47	17.63	2.80	42.6	0.14	-57
1000	0850		↓	↓	7.85	17.74	2.84	8.3	0.00	-74
2500	0855	12.21	↓	↓	7.85	17.74	2.85	5.3	0.00	-76
3500	0900	12.60	↓	↓	7.92	17.73	2.86	2.8	0.00	-79

Start Time: 0844
Stop Time: 0900
Elapsed Time: 16 min
Average Purge Rate (mL/min): 200
Water Quality Meter ID: Horiba - U-52
Date Calibrated: 9-30-10

SAMPLING DATA

Sample Date: 9-30-10
Sample Method: low flow peristaltic
Sample Time: 0900
Sample Flow Rate: 200 mL/min
Analysis: Total PCB's
QA/QC Samples: None

VOA Vials, No Headspace [X] Initials: SWG

COMMENTS: Ferrous Iron (Filtered 0.2 micron) =

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

J017210.02

PROJECT NAME: W6K PCB 3Q10 | PROJECT NUMBER: J017210.03 | FIELD PERSONNEL: Steve Graham, Kevin Roberts
DATE: 9-30-10 | WEATHER: 80° clear
MONITORING WELL ID: PMA-MW-2M | SAMPLE ID: PMA-MW-2M-0910

INITIAL DATA

Well Diameter: 2" in
Measured Well Depth (btoc): – ft
Constructed Well Depth (btoc): 61.54 ft
Depth to Water (btock): 11.27 ft
Depth to LNAPL/DNAPL (btoc): – ft
Depth to Top of Screen (btoc): 56.54 ft
Screen Length: 5.0 ft

Water Column Height (do not include LNAPL or DNAPL): 50.27 ft
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 59.04 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are <4 ft,
Place Pump at: Total Well Depth -)9.5 X Water Column Height + DNAPL Column Height) = – ft btoc
If Screen Length and/or water column height is <4 ft, Place Pump at: Total Well Depth - 2 ft = – ft btoc
DNPL Present NO If Present, Do Not Sample

Volume of Flow Through Cell): 1000 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 3000 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: QED Sample Pro Bladder Pump

					HAVE THE STABILIZATION PARAMETERS BEEN SATISFIED? All are units unless %					
					± 0.2	± 0.2	± 3%	± 10%	± 10% or ± 0.2	± 20
Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. Ms/cm	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
–	14.29	11.27	Black	YES						
1000	14.32	11.27	Black	↓	5.4	19.13	1.92	72.5	1.06	-18
2000	1435	11.27	more clear	↓	5.58	18.36	2.01	28.5	0.08	-61
3500	1440	11.27	more clear	↓	5.78	18.25	2.01	13.1	0.00	-88
5000	1445	11.27	clear	↓	5.88	18.33	2.0	2.6	0.00	-103

Start Time: 1429
Stop Time: 1445
Elapsed Time: 16 min
Average Purge Rate (mL/min): 350
Water Quality Meter ID: Horiba U-52
Date Calibrated: 9-30-10

SAMPLING DATA

Sample Date: 9-30-10
Sample Method: low flow bladder
Sample Time: 1445
Sample Flow Rate: 350 mL/min
Analysis: Total PCB's
QA/QC Samples: Analytical Duplicate

VOA Vials, No Headspace ☒ Initials: SWG

COMMENTS: Ferrous Iron (Filtered 0.2 micron) =

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

J017210.02

PROJECT NAME: W6K PCB 3Q10 | PROJECT NUMBER: J017210.03 | FIELD PERSONNEL: Steve Graham, Kevin Roberts
DATE: 9-30-10 | WEATHER: 80° clear
MONITORING WELL ID: PMA - MW - 3M | SAMPLE ID: PMA - MW - 3M - 0910

INITIAL DATA

Well Diameter: 2" in
Measured Well Depth (btoc): - ft
Constructed Well Depth (btoc): 61.81 ft
Depth to Water (btock): 11.2 ft
Depth to LNAPL/DNAPL (btoc): - ft
Depth to Top of Screen (btoc): 56.81 ft
Screen Length: 5.0 ft

Water Column Height (do not include LNAPL or DNAPL): 50.61 ft
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 59.31 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are <4 ft,
Place Pump at: Total Well Depth -)9.5 X Water Column Height + DNAPL Column Height) = - ft btoc
If Screen Length and/or water column height is <4 ft, Place Pump at: Total Well Depth - 2 ft = - ft btoc
DNPL Present NO If Present, Do Not Sample

Volume of Flow Through Cell): 1000 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 3000 mL
Ambient PID/FID Reading: 10.2 ppm
Wellbore PID/FID Reading: 10.2 ppm

PURGE DATA
Pump Type: QED Sample Pro Bladder Pump

					HAVE THE STABILIZATION PARAMETERS BEEN SATISFIED? All are units unless %					
					± 0.2	± 0.2	± 3%	± 10%	± 10% or ± 0.2	± 20
Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. Ms/cm	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
-	0903	11.2	brown	yes						
1000	0905	11.3	slight color		7.4	18.17	2.80	10.1	0.08	24
3000	0910	11.1	clear		7.00	18.11	2.84	10.4	0.05	32
5000	0915	11.1			6.76	18.08	2.90	3.6	0.00	37
6500	0921	11.22			6.43	18.07	2.90	1.9	0.0	30
8000	0925	11.22			6.04	18.11	2.90	1.3	0.0	20
9250	0930	11.22			5.81	18.12	2.90	2.2	0.0	18
10750	0935	11.22	↓	↓	5.69	18.09	2.90	2.2	0.0	15

Start Time: 0903
Stop Time: 0935
Elapsed Time: 32 min
Average Purge Rate (mL/min): 400
Water Quality Meter ID: Horiba - U-52
Date Calibrated: 9-30-10

SAMPLING DATA

Sample Date: 9-30-10
Sample Method: low flow bladder
Sample Time: 0935
Sample Flow Rate: 400 mL/min
Analysis: Total PCB's
QA/QC Samples: none

VOA Vials, No Headspace [X] Initials: SWG

COMMENTS:

Ferrous Iron (Filtered 0.2 micron) =

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

J017210.02

PROJECT NAME: WGK PCB 3Q10 | PROJECT NUMBER: J017210.03 | FIELD PERSONNEL: Steve Graham, Kevin Roberts

DATE: 9-30-10 | WEATHER: 80° clear

MONITORING WELL ID: PMA-MW-6D | SAMPLE ID: PMA-MW-6D-0910

INITIAL DATA

Well Diameter: 2" in
Measured Well Depth (btoc): - ft
Constructed Well Depth (btoc): 101.18 ft
Depth to Water (btock): 5.18 ft
Depth to LNAPL/DNAPL (btoc): - ft
Depth to Top of Screen (btoc): 96.18 ft
Screen Length: 5.0 ft

Water Column Height (do not include LNAPL or DNAPL): 96.0 ft
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 98.68 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are <4 ft,
Place Pump at: Total Well Depth -)9.5 X Water Column Height + DNAPL Column Height) = - ft btoc
If Screen Length and/or water column height is <4 ft, Place Pump at: Total Well Depth - 2 ft = - ft btoc
DNPL Present NO If Present, Do Not Sample

Volume of Flow Through Cell): 1000 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 3000 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: QED Sample Pro Bladder Pump

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

	± 0.2	± 0.2	± 3%	± 10%	± 10% or ± 0.2	± 20
Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. Ms/cm	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
-	1002	5.18	clear	NO						
-	1004	5.18	↓	↓						
1000	1005	5.18			6.62	20.39	1.27	5.0	5.14	43
2000	1010	5.18			6.07	19.00	1.32	2.5	3.19	-41
3000	1015	5.18			6.07	19.00	1.32	2.5	3.19	-41
4000	1020	5.18	↓	↓	6.07	19.00	1.32	2.5	3.19	-41

Start Time: 1002
Stop Time: 1020

Elapsed Time: 18 min
Average Purge Rate (mL/min): 250

Water Quality Meter ID: Horiba-U-52
Date Calibrated: 9-30-10

SAMPLING DATA

Sample Date: 9-30-10
Sample Method: low flow bladder

Sample Time: 1020
Sample Flow Rate: 250 mL/min

Analysis: Total PCB's
QA/QC Samples: None

VOA Vials, No Headspace ☒ Initials: KCR/SWG

COMMENTS:

Ferrous Iron (Filtered 0.2 micron) =

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

J017210.02

PROJECT NAME: WGK PCB 3Q10
DATE: 9-30-10
MONITORING WELL ID: PMA - MW - 4D

PROJECT NUMBER: J017210.03
WEATHER: 80° clear
SAMPLE ID: PMA - MW - 4D - 0910

FIELD PERSONNEL: Steve Graham
Kevin Roberts

INITIAL DATA

Well Diameter: 2" in
Measured Well Depth (btoc): - ft
Constructed Well Depth (btoc): 73.5 ft
Depth to Water (btock): 10.02 ft
Depth to LNAPL/DNAPL (btoc): - ft
Depth to Top of Screen (btoc): 68.5 ft
Screen Length: 5.0 ft

Water Column Height (do not include LNAPL or DNAPL): 63.48 ft
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 71.0 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are <4 ft,
Place Pump at: Total Well Depth -)9.5 X Water Column Height + DNAPL Column Height) = - ft btoc
If Screen Length and/or water column height is <4 ft, Place Pump at: Total Well Depth - 2 ft = - ft btoc
DNPL Present NO If Present, Do Not Sample

Volume of Flow Through Cell): 1000 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 3000mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: QED Sample Pro Bladder Pump

					HAVE THE STABILIZATION PARAMETERS BEEN SATISFIED? All are units unless %					
					± 0.2	± 0.2	± 3%	± 10%	± 10% or ± 0.2	± 20
Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. Ms/cm	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
-	1054	10.02								
-	1056	10.12	clear	Slight						
2000	1100	10.12	↓	↓						
3500	1103	10.11			6.44	18.43	2.35	9.0	0.01	-99
4000	1105	10.11			6.42	18.42	2.37	8.5	0.00	-102
5500	1110	10.11			6.36	18.40	2.34	7.9	0.00	-111
7000	1115	10.11	↓	↓	6.29	18.37	2.35	8.1	0.00	-114

Start Time: 1054
Stop Time: 1115

Elapsed Time: 21 min
Average Purge Rate (mL/min): 400

Water Quality Meter ID: Horiba - U-52
Date Calibrated: 9-30-10

SAMPLING DATA

Sample Date: 9-30-10
Sample Method: Low flow bladder

Sample Time: 1115
Sample Flow Rate: 400 mL/min

Analysis: Total PCB's
QA/QC Samples: none

VOA Vials, No Headspace ☒ Initials: SWG

COMMENTS:

Ferrous Iron (Filtered 0.2 micron) =

APPENDIX B

CHAINS-OF-CUSTODY

Serial Number 032430

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: WGK - PCB - 3Q10	PROJECT NO.	PROJECT LOCATION (STATE): IL	
TAL (LAB) PROJECT MANAGER: GM Rinaldi	P.O. NUMBER: 4503869001	CONTRACT NO.	
CLIENT (SITE) PM: GM Rinaldi	CLIENT PHONE: 314-674-3312	CLIENT FAX: 314-674-8808	
CLIENT NAME: Solutia, Inc.	CLIENT E-MAIL: gmrina@solutia.com		
CLIENT ADDRESS: 575 Maryville Center Dr. St. Louis, MO 63141			
COMPANY CONTRACTING THIS WORK (if applicable)			

MATRIX TYPE (C = COMPOSITE OR G = GRAB INDICATE): AQUEOUS (WATER); SOLID OR SEMISOLID; AIR; NONAQUEOUS LIQUID (OIL, SOLVENT, ...)

REQUIRED ANALYSIS: Total PCBs, 680

PRESERVATIVE: None

PAGE: OF

STANDARD REPORT DELIVERY: X

DATE DUE:

EXPEDITED REPORT DELIVERY (SURCHARGE): O

DATE DUE:

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	AQUEOUS (WATER)	NUMBER OF CONTAINERS SUBMITTED	REMARKS
9/30/10	0802	PMA-MW-5M 0910	X	2	
9/30/10	1115	PMA-MW-4D 0910	X	2	
9/30/10	1145	PMA-MW-4S 0910	X	2	
9/30/10	1020	PMA-MW-6D 0910	X	2	
9/30/10	0935	PMA-MW-3M 0910	X	2	
9/30/10	0900	PMA-MW-3S 0910	X	2	
9/30/10	1345	PMA-MW-1M 0910	X	2	
9/30/10	1405	PMA-MW-1S 0910	X	2	
9/30/10	1405	PMA-MW-1S MS 0910	X	2	
9/30/10	1405	PMA-MW-1S MSD 0910	X	2	
9/30/10	1445	PMA-MW-2M 0910	X	2	
9/30/10	1445	PMA-MW-2M AD 0910	X	2	

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
[signature]	9/30/10	1600						
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]	10/01/10	0941	YES X NO O		680-61757	Temps (°C): 0.9, 1.0, 1.2, 1.3

TAL8240-680 (1207)

Serial Number 032431

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: WGK-PCB-3Q10	PROJECT NO.: JOM210	PROJECT LOCATION (STATE): IL
TAL (LAB) PROJECT MANAGER: GM Rinaldi	P.O. NUMBER: 4503869001	CONTRACT NO.:
CLIENT (SITE) PM: GM Rinaldi	CLIENT PHONE: 314-674-3312	CLIENT FAX: 314-674-8808
CLIENT NAME: Solutia, Inc.	CLIENT E-MAIL: gmrina@solutia.com	
CLIENT ADDRESS: 575 Maryville Center Dr. St. Louis, MO 63141		
COMPANY CONTRACTING THIS WORK (if applicable):		

PAGE ___ OF ___

STANDARD REPORT DELIVERY ☒ DATE DUE ______

EXPEDITED REPORT DELIVERY (SURCHARGE) ◯ DATE DUE ______

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

MATRIX TYPE: COMPOSITE (C) OR GRAB (G) INDICATE / AQUEOUS (WATER) / SOLID OR SEMISOLID / AIR / NONAQUEOUS LIQUID (OIL, SOLVENT, ...)

REQUIRED ANALYSIS: Total PCB 680

PRESERVATIVE: none

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G)	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID	NUMBER OF CONTAINERS SUBMITTED (Total PCB 680)	REMARKS
9/30/10	1516	PMA-MW25-0910		X				2	
9/30/10	1516	PMA-MW25-EB-0910		X				2	

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Stephen Graf [signature]	9/30/10	1600						
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]	10/01/10	0941	YES ● NO ◯		680-61757	

APPENDIX C

QUALITY ASSURANCE REPORT

THIRD QUARTER 2010
PCB GROUNDWATER QUALITY ASSESSMENT PROGRAM
QUALITY ASSURANCE REPORT
SOLUTIA INC.
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

Prepared for:

SOLUTIA INC.
St. Louis, Missouri

Prepared by:

GEOTECHNOLOGY, INC.
St. Louis, Missouri

Geotechnology, Inc. Report No. J017210.03

December 17, 2010

J017210.03

THIRD QUARTER 2010
PCB GROUNDWATER QUALITY ASSESSMENT PROGRAM
QUALITY ASSURANCE REPORT
SOLUTIA INC.
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

TABLE OF CONTENTS

		Page
1.0	INTRODUCTION	1
2.0	RECEIPT CONDITION AND SAMPLE HOLDING TIMES	3
3.0	LABORATORY METHOD AND EQUIPMENT BLANK SAMPLES	4
4.0	SURROGATE SPIKE RECOVERIES	4
5.0	LABORATORY CONTROL SAMPLE RECOVERIES	4
6.0	MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) SAMLES	4
7.0	FIELD DUPLICATE RESULTS	5
8.0	INTERNAL STANDARD RESPONSES	5
9.0	RESULTS REPORTED FROM DILUTIONS	5
10.0	MASS SPECTROMETER TUNING	6
11.0	CALIBRATION	6
12.0	COMPOUND IDENTIFICATION	6
13.0	OTHER PROBLEMS/DOCUMENTATION	6

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THIRD QUARTER 2010
PCB GROUNDWATER QUALITY ASSESSMENT PROGRAM
QUALITY ASSURANCE REPORT
SOLUTIA INC.
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

1.0 INTRODUCTION

This Quality Assurance Report presents the findings of a review of analytical data for groundwater samples collected in September of 2010 at the Solutia W.G. Krummrich plant as part of the 3rd Quarter 2010 PCB Groundwater Quality Assessment Program. The samples were collected by Geotechnology, Inc. (Geotechnology) personnel and analyzed by TestAmerica Laboratories located in Savannah, Georgia using USEPA methodologies. Groundwater samples were analyzed for polychlorinated biphenyls (PCBs).

Geotechnology subcontracted with the M.J.W. Corporation to conduct third party Level III and Level IV data validation. One hundred percent of the data was subjected to a data quality review (Level III validation). M.J.W. Corporation selected four random groundwater samples for Level IV data validation (PMA-MW-1M-0910, PMA-MS-2M-0910, PMA-MW-1S-0910 and PMA-MW-2S-0910.) The Level III and Level IV reviews were performed in order to confirm that the analytical data provided by TestAmerica were acceptable in quality for their intended use.

A total of 14 samples (ten investigative groundwater samples, one field duplicate, one matrix spike and matrix spike duplicate (MS/MSD) pair, and one equipment blank) were analyzed by TestAmerica. These samples were analyzed as part of Sample Delivery Group (SDG) KPM039 utilizing the following USEPA SW-846 Methods:

- Method 680 for PCBs

Samples were reviewed following procedures outlined in the USEPA National Functional Guidelines for Superfund Organic Methods Data Review (USEPA 2008) and the Revised PCB Groundwater Quality Assessment Work Plan (Solutia 2009).

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

Table 1 – Laboratory Data Qualifiers

Lab Qualifier	Definition
U	Indicates the analyte was analyzed for but not detected.
*	LCS, LCSD, MS, MSD, MD or surrogate exceeds the control limits.
E	Results exceeded the calibration range.
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	Compounds 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 – Geotechnology (M.J.W. Corporation) Data Qualifiers

M.J.W. Corp. Qualifier	Definition
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification.”
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified: and the associated numerical value represents its approximate concentration.
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/nondetect (J/UJ) values was 100 percent, which meets the completeness of goal of 95 percent.

The data review included evaluation of the following criteria:

Organics

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

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. Upon review of SDG KPM039, sample PMA-MW-1M was received with one broken container; however, the laboratory conducted the required analyses with the second water container.

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

The cooler receipt form indicated that the four coolers were received by the laboratory at temperatures below the 4°C $\pm$ 2°C criteria. Samples received were in good condition and not frozen; therefore, no qualification of data was required.

3.0 LABORATORY METHOD BLANK AND EQUIPMENT BLANK SAMPLES

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

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

4.0 SURROGATE SPIKE RECOVERIES

Surrogate compounds are used to evaluate overall laboratory performance for sample preparation efficiency on a per sample basis. All samples analyzed for PCBs were spiked with surrogate compounds during sample preparation. USEPA National Functional Guidelines for Superfund Organic Methods Data Review state how data is qualified, if surrogate spike recoveries do not meet evaluation criteria. Surrogate recoveries were within evaluation criteria; therefore, 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. No qualification of data was required.

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

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

No qualifications were made to the data if the MS/MSD percent recoveries were zero due to dilutions or if the Relative Percent Difference (RPD) was the only factor outside of criteria. Also, USEPA National Functional Guidelines for Superfund Organic Methods Data Review (2008) states that organic data does not need qualification based on MS/MSD criteria alone.

Therefore, if recoveries were outside evaluation criteria due to matrix interference or abundance of analytes, no qualifiers were assigned unless these analytes had other quality control criteria outside evaluation criteria.

Sample PMA-MW-1S-0910 was spiked and analyzed for PCBs in SDG KPM039. All MS/MSD recoveries were within evaluation criteria. No qualification of data was required.

7.0 FIELD DUPLICATE RESULTS

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

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

8.0 INTERNAL STANDARD RESPONSES

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during each analytical run. For the PCBs (Method 680), the IS areas must be within +/- 30 percent of the preceding calibration verification (CV) IS value. Also, the IS retention times must be within 30 seconds of the preceding IS CV retention time. If the IS area count is outside criteria, Method 680 indicates the mean IS area obtained during the initial calibration (ICAL) (+/- 50 percent) should be used.

The internal standards area responses for PCBs were verified for the data reviews. IS responses met the criteria as described above.

9.0 RESULTS REPORTED FROM DILUTIONS

Sample PMA-MW-4S-0910 was diluted due to abundance of target analytes. The diluted sample results for PCBs were reported at the lowest possible reporting limit.

10. MASS SPECTROMETER TUNING

Instrument performance was determined to be satisfactory; therefore, no qualifications of data were required.

11.0 CALIBRATION

Percent Relative Standard Deviation (%RSD) is used to indicate the stability of a specific compound response factor over increasing concentration. Percent D (%D) is a measure of the instrument's daily performance. Percent RSD must be <30% and Percent D must be <25%. Monochlorobiphenyl had a %D>30 on the analysis date of 10/16/2010, and therefore the samples associated with that calibration date have been qualified as illustrated in the table below.

Sample ID	Parameter	Analyte	Qualification
PMA-MW-1M-0910	PCBs	Monochlorobiphenyl	J
PMA-MW-2M-0910	PCBs	Monochlorobiphenyl	J
PMA-MW-2S-EB-0210	PCBs	Monochlorobiphenyl	UJ

12.0 COMPOUND IDENTIFICATION

Compound identification was determined to be satisfactory; therefore, no qualifications of data were required.

13.0 OTHER PROBLEMS/DOCUMENTATION

Other problems with non-compliance, field documentation, etc., were not identified; therefore, no qualifications of data were required.

APPENDIX D

GROUNDWATER ANALYTICAL RESULTS (WITH DATA REVIEW SHEETS)

SDG KPM039

Results of Samples from Monitoring Wells:
PMA-MW-1M
PMA-MW-1S
PMA-MW-2M
PMA-MW-2S
PMA-MW-3M
PMA-MW-3S
PMA-MW-4D
PMA-MW-4S
PMA-MW-5M
PMA-MW-6D

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 680-61757-1

SDG Number: KPM039

Job Description: WGK PCB GW Quality 3Q10 - SEP 2010

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

Attention: Mr. Jerry Rinaldi

Approved for release.
Lidya Gulizia
Project Manager I
10/27/2010 5:20 PM

Lidya Gulizia
Project Manager I
lidya.gulizia@testamericainc.com
10/27/2010

cc: Mr. Duane Kreuger

Savannah Certifications and ID #s: A2LA: 0399.01; AL: 41450; ARDEQ: 88-0692; ARDOH; CA: 03217CA; CO; CT: PH0161; DE; FL: E87052; GA: 803; Guam; HI; IL: 200022; IN; IA: 353; KS: E-10322; KY EPPC: 90084; KY UST; LA DEQ: 30690; LA DHH: LA080008; ME: 2008022; MD: 250; MA: M-GA006; MI: 9925; MS; NFESC: 249; NV: GA00006; NJ: GA769; NM; NY: 10842; NC DWQ: 269; NC DHHS: 13701; PA: 68-00474; PR: GA00006; RI: LAO00244; SC: 98001001; TN: TN0296; TX: T104704185; USEPA: GA00006; VT: VT-87052; VA: 00302; WA; WV DEP: 094; WV DHHR: 9950 C; WI DNR: 999819810; WY/EPAR8: 8TMS-Q

TestAmerica Laboratories, Inc.
TestAmerica Savannah 5102 LaRoche Avenue, Savannah, GA 31404
Tel (912) 354-7858 Fax (912) 352-0165 www.testamericainc.com

ACCREDITED IN ACCORDANCE WITH helac

12/2/16

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

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

Comments
No additional comments.

12/2/16

METHOD SUMMARY

Client: Solutia Inc.

Job Number: 680-61757-1
Sdg Number: KPM039

Description	Lab Location	Method	Preparation Method
Matrix Water			
Polychlorinated Biphenyls (PCBs) (GC/MS)	TAL SAV	EPA 680	
Liquid-Liquid Extraction (Separatory Funnel)	TAL SAV		EPA 680

Lab References:

TAL SAV = TestAmerica Savannah

Method References:

EPA = US Environmental Protection Agency

12/9/16

METHOD / ANALYST SUMMARY

Client: Solutia Inc.

Job Number: 680-61757-1
Sdg Number: KPM039

Method	Analyst	Analyst ID
EPA 680	Davis, Nancy	ND

SAMPLE SUMMARY

Client: Solutia Inc.

Job Number: 680-61757-1
Sdg Number: KPM039

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-61757-1	PMA-MW-5M 0910	Water	09/30/2010 0802	10/01/2010 0941
680-61757-2	PMA-MW-4D 0910	Water	09/30/2010 1115	10/01/2010 0941
680-61757-3	PMA-MW-4S 0910	Water	09/30/2010 1145	10/01/2010 0941
680-61757-4	PMA-MW-6D 0910	Water	09/30/2010 1020	10/01/2010 0941
680-61757-5	PMA-MW-3M 0910	Water	09/30/2010 0935	10/01/2010 0941
680-61757-6	PMA-MW-3S 0910	Water	09/30/2010 0900	10/01/2010 0941
680-61757-7	PMA-MW-1M 0910	Water	09/30/2010 1345	10/01/2010 0941
680-61757-8	PMA-MW-1S 0910	Water	09/30/2010 1405	10/01/2010 0941
680-61757-8MS	PMA-MW-1S MS 0910	Water	09/30/2010 1405	10/01/2010 0941
680-61757-8MSD	PMA-MW-1S MSD 0910	Water	09/30/2010 1405	10/01/2010 0941
680-61757-9	PMA-MW-2M 0910	Water	09/30/2010 1445	10/01/2010 0941
680-61757-10FD	PMA-MW-2M AD 0910	Water	09/30/2010 1445	10/01/2010 0941
680-61757-11	PMA-MW-2S 0910	Water	09/30/2010 1516	10/01/2010 0941
680-61757-12EB	PMA-MW-2S EB 0910	Water	09/30/2010 1516	10/01/2010 0941

12/2/10

SAMPLE RESULTS

12/2/16

Client: Solutia Inc.

Job Number: 680-61757-1
Sdg Number: KPM039

Client Sample ID: **PMA-MW-5M 0910**

Lab Sample ID: 680-61757-1
Client Matrix: Water

Date Sampled: 09/30/2010 0802
Date Received: 10/01/2010 0941

680 Polychlorinated Biphenyls (PCBs) (GC/MS)

Method:	680	Analysis Batch: 680-182959		Instrument ID:	MSF
Preparation:	680	Prep Batch: 680-181957		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	980 mL
Date Analyzed:	10/07/2010 1754			Final Weight/Volume:	1 mL
Date Prepared:	10/05/2010 1414			Injection Volume:	

Analyte	Result (ug/L)	Qualifier	RL
Monochlorobiphenyl	0.10	U	0.10
Dichlorobiphenyl	0.10	U	0.10
Trichlorobiphenyl	0.10	U	0.10
Tetrachlorobiphenyl	0.20	U	0.20
Pentachlorobiphenyl	0.20	U	0.20
Hexachlorobiphenyl	0.20	U	0.20
Heptachlorobiphenyl	0.31	U	0.31
Octachlorobiphenyl	0.31	U	0.31
Nonachlorobiphenyl	0.51	U	0.51
DCB Decachlorobiphenyl	0.51	U	0.51

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl-13C12	75		25 - 113

10/2/10

Client: Solutia Inc.

Job Number: 680-61757-1
Sdg Number: KPM039

Client Sample ID: **PMA-MW-4D 0910**

Lab Sample ID: 680-61757-2
Client Matrix: Water

Date Sampled: 09/30/2010 1115
Date Received: 10/01/2010 0941

680 Polychlorinated Biphenyls (PCBs) (GC/MS)

Method:	680	Analysis Batch: 680-182959		Instrument ID:	MSF
Preparation:	680	Prep Batch: 680-181957		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1000 mL
Date Analyzed:	10/07/2010 1827			Final Weight/Volume:	1 mL
Date Prepared:	10/05/2010 1414			Injection Volume:	

Analyte	Result (ug/L)	Qualifier	RL
Monochlorobiphenyl	0.24		0.10
Dichlorobiphenyl	0.18		0.10
Trichlorobiphenyl	0.10	U	0.10
Tetrachlorobiphenyl	0.20	U	0.20
Pentachlorobiphenyl	0.20	U	0.20
Hexachlorobiphenyl	0.20	U	0.20
Heptachlorobiphenyl	0.30	U	0.30
Octachlorobiphenyl	0.30	U	0.30
Nonachlorobiphenyl	0.50	U	0.50
DCB Decachlorobiphenyl	0.50	U	0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl-13C12	57		25 - 113

AS 12/2/10

Client: Solutia Inc.

Job Number: 680-61757-1
Sdg Number: KPM039

Client Sample ID: **PMA-MW-4S 0910**

Lab Sample ID: 680-61757-3
Client Matrix: Water

Date Sampled: 09/30/2010 1145
Date Received: 10/01/2010 0941

680 Polychlorinated Biphenyls (PCBs) (GC/MS)

Method:	680	Analysis Batch: 680-183446		Instrument ID:	MSF
Preparation:	680	Prep Batch: 680-181957		Lab File ID:	N/A
Dilution:	100			Initial Weight/Volume:	1030 mL
Date Analyzed:	10/14/2010 2000			Final Weight/Volume:	1 mL
Date Prepared:	10/05/2010 1414			Injection Volume:	

Analyte	Result (ug/L)	Qualifier	RL
Monochlorobiphenyl	9.7	U	9.7
Dichlorobiphenyl	660		9.7
Trichlorobiphenyl	4200	E	9.7
Tetrachlorobiphenyl	8100	E	19
Pentachlorobiphenyl	8300	E	19
Hexachlorobiphenyl	15000	E	19
Heptachlorobiphenyl	12000	E	29
Octachlorobiphenyl	2200		29
Nonachlorobiphenyl	49	U	49
DCB Decachlorobiphenyl	110		49

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl-13C12	0	D	25 - 113

AB 12/2/10

Client: Solutia Inc.

Job Number: 680-61757-1
Sdg Number: KPM039

Client Sample ID: **PMA-MW-4S 0910**

Lab Sample ID: 680-61757-3
Client Matrix: Water

Date Sampled: 09/30/2010 1145
Date Received: 10/01/2010 0941

680 Polychlorinated Biphenyls (PCBs) (GC/MS)

Method:	680	Analysis Batch: 680-183584		Instrument ID:	MSF
Preparation:	680	Prep Batch: 680-181957		Lab File ID:	N/A
Dilution:	2000			Initial Weight/Volume:	1030 mL
Date Analyzed:	10/20/2010 1629	Run Type:	DL	Final Weight/Volume:	1 mL
Date Prepared:	10/05/2010 1414			Injection Volume:	

Analyte	Result (ug/L)	Qualifier	RL
Monochlorobiphenyl	190	U	190
Dichlorobiphenyl	1700	D	190
Trichlorobiphenyl	10000	D	190
Tetrachlorobiphenyl	20000	D	390
Pentachlorobiphenyl	18000	D	390
Hexachlorobiphenyl	34000	D	390
Heptachlorobiphenyl	27000	D	580
Octachlorobiphenyl	4200	D	580
Nonachlorobiphenyl	970	U	970
DCB Decachlorobiphenyl	970	U	970

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl-13C12	0	D	25 - 113

AS 12/2/16

Client: Solutia Inc.

Job Number: 680-61757-1
Sdg Number: KPM039

Client Sample ID: **PMA-MW-6D 0910**

Lab Sample ID: 680-61757-4
Client Matrix: Water

Date Sampled: 09/30/2010 1020
Date Received: 10/01/2010 0941

680 Polychlorinated Biphenyls (PCBs) (GC/MS)

Method:	680	Analysis Batch: 680-183446		Instrument ID:	MSF
Preparation:	680	Prep Batch: 680-181957		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1030 mL
Date Analyzed:	10/14/2010 2033			Final Weight/Volume:	1 mL
Date Prepared:	10/05/2010 1414			Injection Volume:	

Analyte	Result (ug/L)	Qualifier	RL
Monochlorobiphenyl	0.10		0.097
Dichlorobiphenyl	0.097	U	0.097
Trichlorobiphenyl	0.097	U	0.097
Tetrachlorobiphenyl	0.19	U	0.19
Pentachlorobiphenyl	0.19	U	0.19
Hexachlorobiphenyl	0.19	U	0.19
Heptachlorobiphenyl	0.29	U	0.29
Octachlorobiphenyl	0.29	U	0.29
Nonachlorobiphenyl	0.49	U	0.49
DCB Decachlorobiphenyl	0.49	U	0.49

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl-13C12	68		25 - 113

AS 12/2/10

Client: Solutia Inc.

Job Number: 680-61757-1
Sdg Number: KPM039

Client Sample ID: **PMA-MW-3M 0910**

Lab Sample ID: 680-61757-5
Client Matrix: Water

Date Sampled: 09/30/2010 0935
Date Received: 10/01/2010 0941

680 Polychlorinated Biphenyls (PCBs) (GC/MS)

Method:	680	Analysis Batch: 680-182959	Instrument ID: MSF
Preparation:	680	Prep Batch: 680-181957	Lab File ID: N/A
Dilution:	1.0		Initial Weight/Volume: 1050 mL
Date Analyzed:	10/07/2010 2003		Final Weight/Volume: 1 mL
Date Prepared:	10/05/2010 1414		Injection Volume:

Analyte	Result (ug/L)	Qualifier	RL
Monochlorobiphenyl	0.75		0.095
Dichlorobiphenyl	0.095	U	0.095
Trichlorobiphenyl	0.095	U	0.095
Tetrachlorobiphenyl	0.19	U	0.19
Pentachlorobiphenyl	0.19	U	0.19
Hexachlorobiphenyl	0.19	U	0.19
Heptachlorobiphenyl	0.29	U	0.29
Octachlorobiphenyl	0.29	U	0.29
Nonachlorobiphenyl	0.48	U	0.48
DCB Decachlorobiphenyl	0.48	U	0.48

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl-13C12	62		25 - 113

AB 12/2/10

Client: Solutia Inc.

Job Number: 680-61757-1
Sdg Number: KPM039

Client Sample ID: **PMA-MW-3S 0910**

Lab Sample ID: 680-61757-6
Client Matrix: Water

Date Sampled: 09/30/2010 0900
Date Received: 10/01/2010 0941

680 Polychlorinated Biphenyls (PCBs) (GC/MS)

Method:	680	Analysis Batch: 680-183446	Instrument ID: MSF
Preparation:	680	Prep Batch: 680-181957	Lab File ID: N/A
Dilution:	1.0		Initial Weight/Volume: 1020 mL
Date Analyzed:	10/14/2010 2105		Final Weight/Volume: 1 mL
Date Prepared:	10/05/2010 1414		Injection Volume:

Analyte	Result (ug/L)	Qualifier	RL
Monochlorobiphenyl	0.28		0.098
Dichlorobiphenyl	0.098	U	0.098
Trichlorobiphenyl	0.098	U	0.098
Tetrachlorobiphenyl	0.20	U	0.20
Pentachlorobiphenyl	0.20	U	0.20
Hexachlorobiphenyl	0.20	U	0.20
Heptachlorobiphenyl	0.29	U	0.29
Octachlorobiphenyl	0.29	U	0.29
Nonachlorobiphenyl	0.49	U	0.49
DCB Decachlorobiphenyl	0.49	U	0.49

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl-13C12	59		25 - 113

12/2/16

Client: Solutia Inc.

Job Number: 680-61757-1
Sdg Number: KPM039

Client Sample ID: **PMA-MW-1M 0910**

Lab Sample ID: 680-61757-7
Client Matrix: Water

Date Sampled: 09/30/2010 1345
Date Received: 10/01/2010 0941

680 Polychlorinated Biphenyls (PCBs) (GC/MS)

Method: 680
Preparation: 680
Dilution: 1.0
Date Analyzed: 10/16/2010 1159
Date Prepared: 10/05/2010 1414

Analysis Batch: 680-183449
Prep Batch: 680-181957

Instrument ID: MSF
Lab File ID: N/A
Initial Weight/Volume: 1030 mL
Final Weight/Volume: 1 mL
Injection Volume:

Analyte	Result (ug/L)	Qualifier	RL
Monochlorobiphenyl	0.29	J	0.097
Dichlorobiphenyl	0.097	U	0.097
Trichlorobiphenyl	0.097	U	0.097
Tetrachlorobiphenyl	0.19	U	0.19
Pentachlorobiphenyl	0.19	U	0.19
Hexachlorobiphenyl	0.19	U	0.19
Heptachlorobiphenyl	0.29	U	0.29
Octachlorobiphenyl	0.29	U	0.29
Nonachlorobiphenyl	0.49	U	0.49
DCB Decachlorobiphenyl	0.49	U	0.49

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl-13C12	66		25 - 113

12/2/10

Client: Solutia Inc.

Job Number: 680-61757-1
Sdg Number: KPM039

Client Sample ID: **PMA-MW-1S 0910**

Lab Sample ID: 680-61757-8
Client Matrix: Water

Date Sampled: 09/30/2010 1405
Date Received: 10/01/2010 0941

680 Polychlorinated Biphenyls (PCBs) (GC/MS)

Method:	680	Analysis Batch: 680-183446		Instrument ID:	MSF
Preparation:	680	Prep Batch: 680-181957		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1020 mL
Date Analyzed:	10/14/2010 2137			Final Weight/Volume:	1 mL
Date Prepared:	10/05/2010 1414			Injection Volume:	

Analyte	Result (ug/L)	Qualifier	RL
Monochlorobiphenyl	0.098	U	0.098
Dichlorobiphenyl	0.098	U	0.098
Trichlorobiphenyl	0.098	U	0.098
Tetrachlorobiphenyl	0.20	U	0.20
Pentachlorobiphenyl	0.20	U	0.20
Hexachlorobiphenyl	0.20	U	0.20
Heptachlorobiphenyl	0.29	U	0.29
Octachlorobiphenyl	0.29	U	0.29
Nonachlorobiphenyl	0.49	U	0.49
DCB Decachlorobiphenyl	0.49	U	0.49

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl-13C12	64		25 - 113

12/2/10

Client: Solutia Inc.

Job Number: 680-61757-1
Sdg Number: KPM039

Client Sample ID: **PMA-MW-2M 0910**

Lab Sample ID: 680-61757-9
Client Matrix: Water

Date Sampled: 09/30/2010 1445
Date Received: 10/01/2010 0941

680 Polychlorinated Biphenyls (PCBs) (GC/MS)

Method:	680	Analysis Batch: 680-183449		Instrument ID:	MSF
Preparation:	680	Prep Batch: 680-181957		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1030 mL
Date Analyzed:	10/16/2010 1054			Final Weight/Volume:	1 mL
Date Prepared:	10/05/2010 1414			Injection Volume:	

Analyte	Result (ug/L)	Qualifier	RL
Monochlorobiphenyl	2.1	"J"	0.097
Dichlorobiphenyl	0.097	U	0.097
Trichlorobiphenyl	0.097	U	0.097
Tetrachlorobiphenyl	0.19	U	0.19
Pentachlorobiphenyl	0.19	U	0.19
Hexachlorobiphenyl	0.19	U	0.19
Heptachlorobiphenyl	0.29	U	0.29
Octachlorobiphenyl	0.29	U	0.29
Nonachlorobiphenyl	0.49	U	0.49
DCB Decachlorobiphenyl	0.49	U	0.49

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl-13C12	61		25 - 113

12/2/10

Client: Solutia Inc.

Job Number: 680-61757-1
Sdg Number: KPM039

Client Sample ID: **PMA-MW-2M AD 0910**

Lab Sample ID: 680-61757-10FD
Client Matrix: Water

Date Sampled: 09/30/2010 1445
Date Received: 10/01/2010 0941

680 Polychlorinated Biphenyls (PCBs) (GC/MS)

Method: 680
Preparation: 680
Dilution: 1.0
Date Analyzed: 10/14/2010 2241
Date Prepared: 10/05/2010 1414

Analysis Batch: 680-183446
Prep Batch: 680-181957

Instrument ID: MSF
Lab File ID: N/A
Initial Weight/Volume: 1030 mL
Final Weight/Volume: 1 mL
Injection Volume:

Analyte	Result (ug/L)	Qualifier	RL
Monochlorobiphenyl	2.4		0.097
Dichlorobiphenyl	0.097	U	0.097
Trichlorobiphenyl	0.097	U	0.097
Tetrachlorobiphenyl	0.19	U	0.19
Pentachlorobiphenyl	0.19	U	0.19
Hexachlorobiphenyl	0.19	U	0.19
Heptachlorobiphenyl	0.29	U	0.29
Octachlorobiphenyl	0.29	U	0.29
Nonachlorobiphenyl	0.49	U	0.49
DCB Decachlorobiphenyl	0.49	U	0.49

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl-13C12	62		25 - 113

AB 12/2/10

Client: Solutia Inc.

Job Number: 680-61757-1
Sdg Number: KPM039

Client Sample ID: **PMA-MW-2S 0910**

Lab Sample ID: 680-61757-11
Client Matrix: Water

Date Sampled: 09/30/2010 1516
Date Received: 10/01/2010 0941

680 Polychlorinated Biphenyls (PCBs) (GC/MS)

Method: 680
Preparation: 680
Dilution: 1.0
Date Analyzed: 10/14/2010 2313
Date Prepared: 10/05/2010 1414

Analysis Batch: 680-183446
Prep Batch: 680-181957

Instrument ID: MSF
Lab File ID: N/A
Initial Weight/Volume: 1030 mL
Final Weight/Volume: 1 mL
Injection Volume:

Analyte	Result (ug/L)	Qualifier	RL
Monochlorobiphenyl	0.097	U	0.097
Dichlorobiphenyl	0.097	U	0.097
Trichlorobiphenyl	0.097	U	0.097
Tetrachlorobiphenyl	0.19	U	0.19
Pentachlorobiphenyl	0.19	U	0.19
Hexachlorobiphenyl	0.19	U	0.19
Heptachlorobiphenyl	0.29	U	0.29
Octachlorobiphenyl	0.29	U	0.29
Nonachlorobiphenyl	0.49	U	0.49
DCB Decachlorobiphenyl	0.49	U	0.49

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl-13C12	65		25 - 113

AB 12/2/10

Client: Solutia Inc.

Job Number: 680-61757-1
Sdg Number: KPM039

Client Sample ID: PMA-MW-2S EB 0910

Lab Sample ID: 680-61757-12EB
Client Matrix: Water

Date Sampled: 09/30/2010 1516
Date Received: 10/01/2010 0941

680 Polychlorinated Biphenyls (PCBs) (GC/MS)

Method:	680	Analysis Batch: 680-183449		Instrument ID:	MSF
Preparation:	680	Prep Batch: 680-181957		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1050 mL
Date Analyzed:	10/16/2010 1127			Final Weight/Volume:	1 mL
Date Prepared:	10/05/2010 1414			Injection Volume:	

Analyte	Result (ug/L)	Qualifier	RL
Monochlorobiphenyl	0.095	U	0.095
Dichlorobiphenyl	0.095	U	0.095
Trichlorobiphenyl	0.095	U	0.095
Tetrachlorobiphenyl	0.19	U	0.19
Pentachlorobiphenyl	0.19	U	0.19
Hexachlorobiphenyl	0.19	U	0.19
Heptachlorobiphenyl	0.29	U	0.29
Octachlorobiphenyl	0.29	U	0.29
Nonachlorobiphenyl	0.48	U	0.48
DCB Decachlorobiphenyl	0.48	U	0.48

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl-13C12	53		25 - 113

12/2/10

DATA REPORTING QUALIFIERS

Client: Solutia Inc.

Job Number: 680-61757-1
Sdg Number: KPM039

Lab Section	Qualifier	Description
GC/MS Semi VOA		
	U	Indicates the analyte was analyzed for but not detected.
	E	Result exceeded calibration range.
	D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution may be flagged with a D.

12/2/16

QUALITY CONTROL RESULTS

AG 12/2/16

Client: Solutia Inc.

Job Number: 680-61757-1
Sdg Number: KPM039

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS Semi VOA					
Prep Batch: 680-181957					
LCS 680-181957/15-A	Lab Control Sample	T	Water	680	
MB 680-181957/14-A	Method Blank	T	Water	680	
680-61757-1	PMA-MW-5M 0910	T	Water	680	
680-61757-2	PMA-MW-4D 0910	T	Water	680	
680-61757-3	PMA-MW-4S 0910	T	Water	680	
680-61757-3DL	PMA-MW-4S 0910	T	Water	680	
680-61757-4	PMA-MW-6D 0910	T	Water	680	
680-61757-5	PMA-MW-3M 0910	T	Water	680	
680-61757-6	PMA-MW-3S 0910	T	Water	680	
680-61757-7	PMA-MW-1M 0910	T	Water	680	
680-61757-8	PMA-MW-1S 0910	T	Water	680	
680-61757-8MS	Matrix Spike	T	Water	680	
680-61757-8MSD	Matrix Spike Duplicate	T	Water	680	
680-61757-9	PMA-MW-2M 0910	T	Water	680	
680-61757-10FD	PMA-MW-2M AD 0910	T	Water	680	
680-61757-11	PMA-MW-2S 0910	T	Water	680	
680-61757-12EB	PMA-MW-2S EB 0910	T	Water	680	
Analysis Batch:680-182959					
MB 680-181957/14-A	Method Blank	T	Water	680	680-181957
680-61757-1	PMA-MW-5M 0910	T	Water	680	680-181957
680-61757-2	PMA-MW-4D 0910	T	Water	680	680-181957
680-61757-5	PMA-MW-3M 0910	T	Water	680	680-181957
Analysis Batch:680-182960					
LCS 680-181957/15-A	Lab Control Sample	T	Water	680	680-181957
Analysis Batch:680-183446					
680-61757-3	PMA-MW-4S 0910	T	Water	680	680-181957
680-61757-4	PMA-MW-6D 0910	T	Water	680	680-181957
680-61757-6	PMA-MW-3S 0910	T	Water	680	680-181957
680-61757-8	PMA-MW-1S 0910	T	Water	680	680-181957
680-61757-10FD	PMA-MW-2M AD 0910	T	Water	680	680-181957
680-61757-11	PMA-MW-2S 0910	T	Water	680	680-181957
Analysis Batch:680-183448					
680-61757-8MS	Matrix Spike	T	Water	680	680-181957
680-61757-8MSD	Matrix Spike Duplicate	T	Water	680	680-181957
Analysis Batch:680-183449					
680-61757-7	PMA-MW-1M 0910	T	Water	680	680-181957
680-61757-9	PMA-MW-2M 0910	T	Water	680	680-181957
680-61757-12EB	PMA-MW-2S EB 0910	T	Water	680	680-181957

Client: Solutia Inc.

Job Number: 680-61757-1
Sdg Number: KPM039

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS Semi VOA					
Analysis Batch:680-183584					
680-61757-3DL	PMA-MW-4S 0910	T	Water	680	680-181957

Report Basis
T = Total

Surrogate Recovery Report

680 Polychlorinated Biphenyls (PCBs) (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	13DCB %Rec
680-61757-1	PMA-MW-5M 0910	75
680-61757-2	PMA-MW-4D 0910	57
680-61757-3	PMA-MW-4S 0910	0D
680-61757-3 DL	PMA-MW-4S 0910 DL	0D
680-61757-4	PMA-MW-6D 0910	68
680-61757-5	PMA-MW-3M 0910	62
680-61757-6	PMA-MW-3S 0910	59
680-61757-7	PMA-MW-1M 0910	66
680-61757-8	PMA-MW-1S 0910	64
680-61757-9	PMA-MW-2M 0910	61
680-61757-10	PMA-MW-2M AD 0910	62
680-61757-11	PMA-MW-2S 0910	65
680-61757-12	PMA-MW-2S EB 0910	53
MB 680-181957/14-A		78
LCS 680-181957/15-A		74
680-61757-8 MS	PMA-MW-1S 0910 MS	66
680-61757-8 MSD	PMA-MW-1S 0910 MSD	77

Surrogate	Acceptance Limits
13DCB = Decachlorobiphenyl-13C12	25-113

12/2/10

Client: Solutia Inc.

Job Number: 680-61757-1
Sdg Number: KPM039

Method Blank - Batch: 680-181957

Method: 680
Preparation: 680

Lab Sample ID: MB 680-181957/14-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/07/2010 1639
Date Prepared: 10/05/2010 1414

Analysis Batch: 680-182959
Prep Batch: 680-181957
Units: ug/L

Instrument ID: MSF
Lab File ID: N/A
Initial Weight/Volume: 1000 mL
Final Weight/Volume: 1 mL
Injection Volume:

Analyte	Result	Qual	RL
Monochlorobiphenyl	0.10	U	0.10
Dichlorobiphenyl	0.10	U	0.10
Trichlorobiphenyl	0.10	U	0.10
Tetrachlorobiphenyl	0.20	U	0.20
Pentachlorobiphenyl	0.20	U	0.20
Hexachlorobiphenyl	0.20	U	0.20
Heptachlorobiphenyl	0.30	U	0.30
Octachlorobiphenyl	0.30	U	0.30
Nonachlorobiphenyl	0.50	U	0.50
DCB Decachlorobiphenyl	0.50	U	0.50

Surrogate	% Rec	Acceptance Limits
Decachlorobiphenyl-13C12	78	25 - 113

Lab Control Sample - Batch: 680-181957

Method: 680
Preparation: 680

Lab Sample ID: LCS 680-181957/15-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/13/2010 1653
Date Prepared: 10/05/2010 1414

Analysis Batch: 680-182960
Prep Batch: 680-181957
Units: ug/L

Instrument ID: MSF
Lab File ID: N/A
Initial Weight/Volume: 1000 mL
Final Weight/Volume: 1 mL
Injection Volume:

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Monochlorobiphenyl	2.00	1.39	69	10 - 125	
Dichlorobiphenyl	2.00	1.49	75	10 - 110	
Trichlorobiphenyl	2.00	1.50	75	17 - 110	
Tetrachlorobiphenyl	4.00	2.99	75	18 - 110	
Pentachlorobiphenyl	4.00	3.33	83	34 - 110	
Hexachlorobiphenyl	4.00	3.19	80	31 - 110	
Heptachlorobiphenyl	6.00	4.85	81	33 - 110	
Octachlorobiphenyl	6.00	4.76	79	33 - 110	
DCB Decachlorobiphenyl	10.0	6.97	70	26 - 115	

Surrogate	% Rec	Acceptance Limits
Decachlorobiphenyl-13C12	74	25 - 113

12/2/10

Client: Solutia Inc.

Job Number: 680-61757-1
Sdg Number: KPM039

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-181957

Method: 680
Preparation: 680

MS Lab Sample ID:	680-61757-8	Analysis Batch: 680-183448	Instrument ID: MSF
Client Matrix:	Water	Prep Batch: 680-181957	Lab File ID: N/A
Dilution:	1.0		Initial Weight/Volume: 1030 mL
Date Analyzed:	10/15/2010 0436		Final Weight/Volume: 1 mL
Date Prepared:	10/05/2010 1414		Injection Volume:

MSD Lab Sample ID:	680-61757-8	Analysis Batch: 680-183448	Instrument ID: MSF
Client Matrix:	Water	Prep Batch: 680-181957	Lab File ID: N/A
Dilution:	1.0		Initial Weight/Volume: 1030 mL
Date Analyzed:	10/15/2010 0508		Final Weight/Volume: 1 mL
Date Prepared:	10/05/2010 1414		Injection Volume:

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Monochlorobiphenyl	45	49	10 - 125	8	40		
Dichlorobiphenyl	49	55	10 - 110	12	40		
Trichlorobiphenyl	51	60	17 - 110	16	40		
Tetrachlorobiphenyl	52	57	18 - 110	9	40		
Pentachlorobiphenyl	56	65	34 - 110	14	40		
Hexachlorobiphenyl	55	62	31 - 110	11	40		
Heptachlorobiphenyl	57	65	33 - 110	14	40		
Octachlorobiphenyl	59	69	33 - 110	16	40		
DCB Decachlorobiphenyl	62	71	26 - 115	14	40		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
Decachlorobiphenyl-13C12	66	77	25 - 113

12/2/10

Serial Number 05240U

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: WGK - PCB - 3Q10	PROJECT NO.	PROJECT LOCATION (STATE): IL	
TAL (LAB) PROJECT MANAGER: GM Rinaldi	P.O. NUMBER: 4503869001	CONTRACT NO.	
CLIENT (SITE) PM: GM Rinaldi	CLIENT PHONE: 314-674-3312	CLIENT FAX: 314-674-8608	
CLIENT NAME: Solutia, Inc.	CLIENT E-MAIL: gmrina@solutia.com		
CLIENT ADDRESS: 575 Maryville Center Dr. St. Louis, MO 63141			
COMPANY CONTRACTING THIS WORK (if applicable)			

MATRIX TYPE (COMPOSITE (C) OR GRAB (G) INDICATE): AQUEOUS (WATER); SOLID OR SEMISOLID; AIR; NONAQUEOUS LIQUID (OIL, SOLVENT, ...)

REQUIRED ANALYSIS: Total PCBs, 680

PRESERVATIVE: None

PAGE: OF

STANDARD REPORT DELIVERY: X

DATE DUE:

EXPEDITED REPORT DELIVERY (SURCHARGE): O

DATE DUE:

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	AQUEOUS (WATER)	NUMBER OF CONTAINERS SUBMITTED	REMARKS
9/30/10	0802	PMA - MW - 5M 0910	X	2	
9/30/10	1115	PMA - MW - 4D 0910	X	2	
9/30/10	1145	PMA - MW - 4S 0910	X	2	
9/30/10	1020	PMA - MW - 6D 0910	X	2	
9/30/10	0935	PMA - MW - 3M 0910	X	2	
9/30/10	0900	PMA - MW - 3S 0910	X	2	
9/30/10	1345	PMA - MW - 1M 0910	X	2	
9/30/10	1405	PMA - MW - 1S 0910	X	2	
9/30/10	1405	PMA - MW - 1S MS 0910	X	2	
9/30/10	1405	PMA - MW - 1S MSD 0910	X	2	
9/30/10	1445	PMA - MW 2M 0910	X	2	
9/30/10	1495	PMA - MW 2M AD 0910	X	2	

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Stephen Graham	9/30/10	1600						
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
Tom Howard	10/01/10	0941	YES X NO O		680-61757.	Temps (°C): 0.9, 1.0, 1.2, 1.3

TAL8240-680 (1207)

Serial Number U32431

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 - PCB - 3Q10	J017210	IL
TAL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
GM Rinaldi	4503869001	
CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
GM Rinaldi	314-674-3312	314-674-8808
CLIENT NAME	CLIENT E-MAIL	
Solutia, Inc.	gmrina@solutia.com	
CLIENT ADDRESS		
575 Maryville Center Dr. St. Louis, MO 63141		
COMPANY CONTRACTING THIS WORK (if applicable)		

MATRIX TYPE (COMPOSITE (C) OR GRAB (G) INDICATE): AQUEOUS (WATER) | SOLID OR SEMISOLID | AIR | NONAQUEOUS LIQUID (OIL, SOLVENT, ...)

REQUIRED ANALYSIS: Total PCB 680

PRESERVATIVE: none

PAGE 28 OF 29

STANDARD REPORT DELIVERY: X

DATE DUE

EXPEDITED REPORT DELIVERY (SURCHARGE): O

DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	AQUEOUS (WATER)	NUMBER OF CONTAINERS SUBMITTED	REMARKS
9/30/10	1516	PMA - MW 25 - 0910	X	2	
9/30/10	1516	PMA - MW 26 - EB - 0910	X	2	

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Stephen Curtis	9/30/10	1600						
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
Jessica Womack	10/08/10	0941	YES X NO O		680-61757	

Login Sample Receipt Check List

Client: Solutia Inc.

Job Number: 680-61757-1
SDG Number: KPM039

Login Number: 61757
Creator: Hornsby, Jess
List Number: 1

List Source: TestAmerica Savannah

Question	T / F/ NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	4 coolers rec'd on ice
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.9, 1.0, 1.2, 1.3 C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	False	Received 1 broken liter for MW-1M
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

MJW CORPORATION
Radiation Consulting Professionals

November 23, 2010

Mr. Duane T. Kreuger
Geotechnology, Inc.
11816 Lackland Road Suite 150
St. Louis, MO63146

Dear Mr. Kreuger:

The data reported by Test America Laboratories under SDG KPM039 has been reviewed for quality assurance validation. Data was reported for PCB's for 14 samples as requested by Geotechnology, Inc. The 14 samples listed below were validated by MJW. The data in this report has either been approved for use or approved with qualification.

- PMA-MW-5M (Lab ID: 680-61757-1)
- PMA-MW-4D (Lab ID: 680-61757-2)
- PMA-MW-4S (Lab ID: 680-61757-3)
- PMA-MW-6D (Lab ID: 680-61757-4)
- PMA-MW-3M (Lab ID: 680-61757-5)
- PMA-MW-3S (Lab ID: 680-61757-6)
- PMA-MW-1M (Lab ID: 680-61757-7)
- PMA-MW-1S (Lab ID: 680-61757-8)
- PMA-MW-1S MS (Lab ID: 680-61757-8 MS)
- PMA-MW-1S MSD (Lab ID: 680-61757-8 MSD)
- PMA-MW-2M (Lab ID: 680-61757-9)
- PMA-MW-2M AD (Lab ID: 680-61757-10 FD)
- PMA-MW-2S (Lab ID: 680-61757-11)
- PMA-MW-2S EB (Lab ID: 680-61757-12 EB)

If you have any questions concerning this data validation report, please contact me at 585-344-7197.

Very truly yours,

MJW Corporation Inc.

Annette Guilds
Senior Scientist

Approved by:

David A. Dooley, Ph.D., CHP
President, MJW Corporation Inc.

University Park, 1900 Sweet Home Road
Amherst, NY 14228-3359
Voice: (716) 631.8291 Fax: (716) 631.5631 Toll Free: 1 (888) MJW.CORP www.mjwcorp.com

Summary Data Qualifiers

Summary of Sample Data Qualifiers

SDG # KPM039 Site Name Solutia W.G. Krummrich Plant (PCB Site)

Client ID	Lab ID	Matrix	Monochlorobiphenyl	
PMA-MW-1M-0910	680-61757-7	Water	J	
PMA-MW-2M-0910	680-61757-9	Water	J	
PMA-MW-2S-EB-0910	680-61757-12	Water	UJ	

Data Outlier Forms

Calibration Quality Control

Samples Affected	Matrix	Analyte	Detector/Problem	Qualifier
PMA-MW-1M-0910	Water	Monochlorobiphenyl	CCAL >30% D	J
PMA-MW-2M-0910	Water	Monochlorobiphenyl	CCAL >30% D	J
PMA-MW-2S-EB-0910	Water	Monochlorobiphenyl	CCAL >30% D	UJ

DVP-4 Attachment 5

CLP DATA ASSESSMENT

Functional Guidelines for Evaluating Organic Analysis

CASE NO.: _____ SDG NO.: KPM039 LABORATORY: Test America
SITE: Solutia W.G. Krummrich Plant (PCB Site)

DATA ASSESSMENT

The current SOP No. HW-6 (Revision 11), June 1996 for CLP Organics Review and Preliminary Review has been applied.

All data were found to be valid and acceptable except those analytes that have been rejected, "R" (unusable). Due to various QC problems some analytes may have been qualified with a "J" (estimated), "N" (presumptive evidence for the presence of the material), "U" (non-detect), or "JN" (presumptive evidence for the presence of the material at an estimated value) flag. All action is detailed on the attached sheets.

The "R" flag means that the associated value is unusable. In other words, significant data bias is evident and the reported analyte concentration is unreliable.

Reviewer's Signature: Annette Guild Date: 11/23/2010

MJW Approval: Lou Henry Date: 11/23/2010

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following action was taken in the samples and analytes shown due to excessive holding time.

- No action necessary.

2. SURROGATES:

All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below.

- No action necessary.

3. MATRIX SPIKE/SPIKE DUPLICATE, MS/MSD:

The MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD may be used in conjunction with other QC criteria for additional qualification of data.

4. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, trip, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. If the concentration of the analyte is less than 5 times the blank contaminant level (10 times for common contaminants), the analytes are qualified as non-detects, "U". The following analytes in the sample shown were qualified with "U" for these reasons:

A) Method blank contamination:

No action necessary.

B) Field or rinse blank contamination:

No action necessary.

C) Trip blank contamination:

No action necessary.

5. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is (BFB) Bromofluorobenzene and for semi-volatiles Decafluorotriphenyl-phosphine (DFTPP).

If the mass calibration is in error, all associated data will be classified as unusable "R".

No action necessary.

6. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Response Factor GC/MS:

The response factor measures the instrument's response to specific chemical compounds. The response factor for the Target Compound List (TCL) must be ≥ 0.05 in both initial and continuing calibrations. A value < 0.05 indicates a serious detection and quantitation problem (poor sensitivity). Analytes detected in the sample will be qualified as estimated, "J". All non-detects for that compound will be rejected "R".

No action necessary.

7. CALIBRATION:

B) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD must be < 30% and %D must be < 25%. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and non-detects are flagged "UJ". If %RSD and %D grossly exceed QC criteria, non-detects data may be qualified "R".

For the PEST/PCB fraction, if %RSD exceeds 20% for all analytes except for the two surrogates (which must not exceed 30% RSD), qualify all associated positive results "J" and non-detects "UJ".

The following analytes in the sample shown were qualified for %RSD and %D:

Continuing calibration-PCB's: Monochlorobiphenyl had a %D>30 on analysis date 10/16/10. All samples associated with this calibration date have been qualified J/UJ.

8. INTERNAL STANDARDS PERFORMANCE GC/MS:

Internal standards (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must not vary by more than a factor of 2 (-50% to +100%) from the associated continuing calibration standard. The retention time of the internal standard must not vary more than ±30 seconds from the associated continuing calibration standard. If the area count is outside the (-50% to +100%) range of the associated standard, all of the positive results for compounds quantitated using that IS are qualified as estimated, "J", and all non-detects as "UJ", or "R" if there is a severe loss of sensitivity.

If an internal standard retention time varies by more than 30 seconds, the reviewer will use professional judgment to determine either partial or total rejection of the data for that sample fraction.

No action necessary.

9. COMPOUND IDENTIFICATION:

A) Volatile and Semi-Volatile Fractions:

TCL compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound and have an ion spectra which has a ratio of the primary and secondary m/e intensities within 20% of that in the standard compound. For the tentatively identified compounds (TIC) the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

No action necessary.

B) Pesticide Fraction:

The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10ng/ml in the final sample extract.

N/A

10. CONTRACT PROBLEMS NON-COMPLIANCE: None

11. FIELD DOCUMENTATION: None

12. OTHER PROBLEMS: None

13. This package contains reextractions, reanalyses or dilutions. Upon reviewing the QA results, the following Form 1(s) are identified to be used.

none

DVP-4 Attachment 6

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

DPO: [ ] Action [ ] FYI

CASE/SAS NO.: _____ **LABORATORY:** Test America

SDG NO.: KPM039 **DATA USER:** Geotechnology, Inc.

SOW: _____ **REVIEW COMPLETION DATE:** 11/23/2010

NO. OF SAMPLES: 14 **WATER** _____ **SOIL** _____ **OTHER**

REVIEWER: [ ] **ESD** [ ] **ESAT** [X] **OTHER, CONTRACTOR** MJW Corporation, Inc.

QC ITEM	VOA	BNA	PCB		
HOLDING TIMES	N/A	N/A	O		
GC-MS PERFORMANCE	N/A	N/A	O		
INITIAL CALIBRATIONS	N/A	N/A	O		
CONTINUING CALIBRATIONS	N/A	N/A	X		
FIELD BLANKS (F = N/A)	N/A	N/A	O		
LABORATORY BLANKS	N/A	N/A	O		
SURROGATES	N/A	N/A	O		
MATRIX SPIKE/DUPLICATES	N/A	N/A	O		
QC SAMPLES (LCS, PVS)	N/A	N/A	O		
INTERNAL STANDARDS	N/A	N/A	O		
COMPOUND IDENTIFICATION	N/A	N/A	O		
COMPOUND QUANTITATION	N/A	N/A	O		
SYSTEM PERFORMANCE	N/A	N/A	O		
OVERALL ASSESSMENT	N/A	N/A	O		

O = No problems or minor problems that do not affect data usability.
X = No more than about 5% of the data points are qualified as either estimated or unusable.
M = More than about 5% of the data points are qualified as either estimated or unusable.
Z = More than about 5% of the data points are qualified as unusable.

DPO ACTION ITEMS: _____

AREAS OF CONCERN: _____

DVP-4 Attachment 7

DATA REJECTION SUMMARY

DATA REJECTION SUMMARY

Type of Review: Level IV **Date:** 11/23/2010 **SDG No.:** KPM039
Site Name: Solutia W.G. Krummrich Plant (PCB Site) **Lab Name:** Test America
Reviewer's Initials: AG **Number of Samples:** 14

Analytes Rejected Due to Exceeding Review Criteria For:

	No. of Compounds/No. of Fractions (Samples)								
	Surrogates	Holding Time	Calibration	Contamination	ID	Internal Standards	Other	Total # of Samples	Total # Rejected/Total # in All Samples
VOA(33)									/ = %
ACID(14)									/ = %
B/N(50)									/ = %
PEST(21)									/ = %
PCB(7)									/ = %

NOTE: ASTERISK (*) INDICATES ADDITIONAL EXCEEDANCES OF REVIEW CRITERIA.

Analytes Estimated Due to Exceeding Review Criteria For:

	No. of Compounds/No. of Fractions (Samples)								
	Surrogates	Holding Time	Calibration	Contamination	ID	Internal Standards	Other	Total # of Samples	Total # Estimated/Total # in All Samples
VOA(33)									/ = %
ACID(14)									%
B/N(50)									%
PEST(21)									/ = %
PCB(7)			Monochlorobiphenyl					14	3 / 140 = 2.14 %

NOTE: ASTERISK (*) INDICATES ADDITIONAL EXCEEDANCES OF REVIEW CRITERIA.

DVP-4 Attachment 8

Acronyms and Data Qualifiers

Acronyms and Data Qualifiers

Acronyms

BFB - bromofluorobenzene
BHC - benzene hexachloride
BNA - base neutral acid
CCS - contract compliance screening
CLASS - Contract Laboratory Analytical Services Support
CLP - Contract Laboratory Program
CRQL - Contract Required Quantitation Limit
%D - percent difference
DCB -decachlorobiphenyl
DDD - dichlorodiphenyldichloroethane
DDE - dichlorodiphenylethane
DDT - dichlorodiphenyltrichloroethane
GC - gas chromatography
GC/EC - gas chromatograph/electron capture detector
GC/MS - gas chromatograph/mass spectrometer
GPC - gel permeation chromatography
IS - internal standard
kg - kilogram
µg - microgram
MAGIC - Mainframe Access Graphical Interface with CARD
MS - matrix spike
MSD - matrix spike duplicate
l - liter
ml - mililiter
PCB - polychlorinated biphenyl
PE - performance evaluation
PEM - Performance Evaluation Mixture
QC - quality control
RAS - Routine Analytical Services
RIC - reconstructed ion chromatogram
RPD - relative percent difference
RRF - relative response factor
RRF - average relative response factor (from initial calibration)
RRT - relative retention time
RSD - relative standard deviation
RT - retention time

RSCC - Regional Sample Control Center
SDG - sample delivery group
SMC - system monitoring compound
SOP - standard operating procedure
SOW - Statement of Work
SVOA - semivolatile organic analysis
TCL - Target Compound List
TCLP - Toxicity Characteristics Leachate Procedure
TCX -tetrachloro-m-xylene
TIC - tentatively identified compound
TPO - technical project officer
VOA - volatile organic analysis
VTSR - validated time of sample receipt

Data Qualifiers

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

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.