

ANALYTICAL REPORT

Job Number: 200-6938-1

SDG Number: WC01

Job Description: LPRSA - Phase I Removal Action

For:

ARCADIS U.S. Inc
2300 Eastlake Avenue, East
Suite 140
Seattle, WA 98102

Attention: Ms. Shannon Dunn



Approved for release.
Kirk F Young
Project Manager I
9/23/2011 5:30 PM

Kirk F Young
Project Manager I
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09/23/2011

cc: Mr. Joe Houser
Mr. Don Reed
Mr. Ryan Shatt

The test results in this report relate only to sample(s) as received by the laboratory. These test results were derived under a quality system that adheres to the requirements of NELAC. Pursuant to NELAC, this report may not be produced in full without written approval from the laboratory

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CASE NARRATIVE

Client: ARCADIS U.S. Inc

Project: LPRSA - Phase I Removal Action

Report Number: WC01 (200-6938-1)

Enclosed is the data set for the referenced project work. With the exceptions noted as flags or footnotes, standard analytical protocols were followed in performing the analytical work and the applied control limits were met. Calibration and calibration verification were assessed on an analyte specific basis. Initial calibration and continuing calibration criteria may not have been met in all instances.

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

All holding times were met and proper preservation noted for the methods of analysis.

Manual integration was employed in deriving certain of the analytical results.

Positive instrument responses in the analysis of samples and quality controls were evaluated to the established method detection limit (MDL).

This is an abbreviated report. A more formal report will be issued in a CLP-like format, with supportive documentation and further narrative discussion.

METHOD SUMMARY

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1
Sdg Number: WC01

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Low/Medium Volatiles	TAL BUR	SOM01.2 SOM01.2/VOA	
TCLP Extraction	TAL BUR		SW846 1311
Volatile Sample Preservation, TCLP Leachate	TAL BUR		SOM01.2 SOM01.2/VOA_PR
Semivolatiles	TAL BUR	SOM01.2 SOM01.2/SV	
TCLP Extraction	TAL BUR		SW846 1311
Continuous Liquid-Liquid Extraction of Water Samples	TAL BUR		SOM01.2 SOM01.2SV_CLLE
Pesticides	TAL BUR	SOM01.2 SOM01.2/Pest	
TCLP Extraction	TAL BUR		SW846 1311
Separatory Funnel Extraction of Water Samples	TAL BUR		SOM01.2 SOM01.2Pes_SFE
Florisil Cleanup	TAL BUR		SOM01.2 SOM01.2/FLCU
ISM01.2 Mercury	TAL BUR	ISM01.2 ISM01.2/HG	
TCLP Extraction	TAL BUR		SW846 1311
Preparation, ISM01.2 Mercury (EPA 7470A)	TAL BUR		ISM01.2 ISM01.2/HG
ISM01.2 Metals (ICP)	TAL BUR	ISM01.2 ISM01.2/ICP	
TCLP Extraction	TAL BUR		SW846 1311
Preparation, ISM01.2 Metals ICP (EPA 200.7)	TAL BUR		ISM01.2 ISM01.2/ICP
Matrix: Water			
Low/Medium Volatiles	TAL BUR	SOM01.2 SOM01.2/VOA	
Volatile sample preservation, Field Preserved Water	TAL BUR		SOM01.2 SOM01.2/VOA_PR

Lab References:

TAL BUR = TestAmerica Burlington

Method References:

ISM01.2 = U.S. Environmental Protection Agency

SOM01.2 = U.S. Environmental Protection Agency

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

METHOD / ANALYST SUMMARY

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1

Sdg Number: WC01

Method	Analyst	Analyst ID
SOM01.2 SOM01.2/VOA	Phillips, Mark T	MTP
SOM01.2 SOM01.2/SV	Bissonette, Donald J	DJB
SOM01.2 SOM01.2/Pest	Hammond, Ryan J	RJH
ISM01.2 ISM01.2/HG	Sachs, Austin L	ALS
ISM01.2 ISM01.2/ICP	Lyons, Benjamin	BL

SAMPLE SUMMARY

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1

Sdg Number: WC01

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
200-6938-1	PRR1WC-CS01	Solid	09/09/2011 1130	09/10/2011 1000
200-6938-1MS	PRR1WC-CS01	Solid	09/09/2011 1130	09/10/2011 1000
200-6938-1MSD	PRR1WC-CS01	Solid	09/09/2011 1130	09/10/2011 1000
200-6938-1DU	PRR1WC-CS01	Solid	09/09/2011 1130	09/10/2011 1000
200-6938-2	PRR1WC-CS02	Solid	09/09/2011 1145	09/10/2011 1000
200-6938-5STOBLK	VHBLK01	Water	09/09/2011 0000	09/10/2011 1000

SAMPLE RESULTS

Analytical Data

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1

Sdg Number: WC01

Client Sample ID: PRR1WC-CS01

Lab Sample ID: 200-6938-1

Date Sampled: 09/09/2011 1130

Client Matrix: Solid

Date Received: 09/10/2011 1000

SOM01.2/VOA Low/Medium Volatiles-TCLP

Analysis Method: SOM01.2/VOA	Analysis Batch: 200-25624	Instrument ID: M.i
Prep Method: SOM01.2/VOA_PR	Prep Batch: N/A	Lab File ID: mhata09.d
Dilution: 1.0	Leach Batch: 200-25428	Initial Weight/Volume: 5 mL
Analysis Date: 09/21/2011 1220		Final Weight/Volume: 5 mL
Prep Date: 09/21/2011 1220		
Leach Date: 09/19/2011 1107		

Analyte	DryWt Corrected: N	Result (ug/L)	Qualifier	RL
Vinyl chloride		5.0	U	5.0
1,1-Dichloroethene		5.0	U	5.0
2-Butanone		10	U	10
Chloroform		5.0	U	5.0
Carbon tetrachloride		5.0	U	5.0
Benzene		5.0	U	5.0
1,2-Dichloroethane		5.0	U	5.0
Trichloroethene		5.0	U	5.0
Tetrachloroethene		5.0	U	5.0
Chlorobenzene		5.0	U	5.0
1,4-Dichlorobenzene		5.0	U	5.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Vinyl chloride-d3	105		65 - 131
Chloroethane-d5	108		71 - 131
1,1-Dichloroethene-d2	72		55 - 104
2-Butanone-d5	156	*	49 - 155
Chloroform-d	89		78 - 121
1,2-Dichloroethane-d4	93		78 - 129
Benzene-d6	89		77 - 124
1,2-Dichloropropane-d6	86		79 - 124
Toluene-d8	89		77 - 121
trans-1,3-Dichloropropene-d4	94		73 - 121
2-Hexanone-d5	188	*	28 - 135
1,4-Dioxane-d8	95		50 - 150
1,1,2,2-Tetrachloroethane-d2	91		73 - 125
1,2-Dichlorobenzene-d4	91		80 - 131

Analytical Data

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1

Sdg Number: WC01

Client Sample ID: PRR1WC-CS02

Lab Sample ID: 200-6938-2

Date Sampled: 09/09/2011 1145

Client Matrix: Solid

Date Received: 09/10/2011 1000

SOM01.2/VOA Low/Medium Volatiles-TCLP

Analysis Method: SOM01.2/VOA	Analysis Batch: 200-25624	Instrument ID: M.i
Prep Method: SOM01.2/VOA_PR	Prep Batch: N/A	Lab File ID: mhata08.d
Dilution: 1.0	Leach Batch: 200-25428	Initial Weight/Volume: 5 mL
Analysis Date: 09/21/2011 1152		Final Weight/Volume: 5 mL
Prep Date: 09/21/2011 1152		
Leach Date: 09/19/2011 1107		

Analyte	DryWt Corrected: N	Result (ug/L)	Qualifier	RL
Vinyl chloride		5.0	U	5.0
1,1-Dichloroethene		5.0	U	5.0
2-Butanone		3.7	J B	10
Chloroform		5.0	U	5.0
Carbon tetrachloride		5.0	U	5.0
Benzene		5.0	U	5.0
1,2-Dichloroethane		5.0	U	5.0
Trichloroethene		5.0	U	5.0
Tetrachloroethene		5.0	U	5.0
Chlorobenzene		6.3		5.0
1,4-Dichlorobenzene		5.0	U	5.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Vinyl chloride-d3	102		65 - 131
Chloroethane-d5	101		71 - 131
1,1-Dichloroethene-d2	70		55 - 104
2-Butanone-d5	92		49 - 155
Chloroform-d	88		78 - 121
1,2-Dichloroethane-d4	91		78 - 129
Benzene-d6	86		77 - 124
1,2-Dichloropropane-d6	83		79 - 124
Toluene-d8	86		77 - 121
trans-1,3-Dichloropropene-d4	92		73 - 121
2-Hexanone-d5	107		28 - 135
1,4-Dioxane-d8	102		50 - 150
1,1,2,2-Tetrachloroethane-d2	88		73 - 125
1,2-Dichlorobenzene-d4	89		80 - 131

Analytical Data

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1

Sdg Number: WC01

Client Sample ID: VHBLK01

Lab Sample ID: 200-6938-5STOBLK

Date Sampled: 09/09/2011 0000

Client Matrix: Water

Date Received: 09/10/2011 1000

SOM01.2/VOA Low/Medium Volatiles

Analysis Method: SOM01.2/VOA Analysis Batch: 200-25624 Instrument ID: M.i
Prep Method: SOM01.2/VOA_PR Prep Batch: N/A Lab File ID: mhata16.d
Dilution: 1.0 Initial Weight/Volume: 5 mL
Analysis Date: 09/21/2011 1532 Final Weight/Volume: 5 mL
Prep Date: 09/21/2011 1532

Analyte	Result (ug/L)	Qualifier	RL
Vinyl chloride	5.0	U	5.0
1,1-Dichloroethene	5.0	U	5.0
2-Butanone	10	U	10
Chloroform	5.0	U	5.0
Carbon tetrachloride	5.0	U	5.0
Benzene	5.0	U	5.0
1,2-Dichloroethane	5.0	U	5.0
Trichloroethene	0.31	J B	5.0
Tetrachloroethene	5.0	U	5.0
Chlorobenzene	5.0	U	5.0
1,4-Dichlorobenzene	5.0	U	5.0

Surrogate	%Rec	Qualifier	Acceptance Limits
Vinyl chloride-d3	103		65 - 131
Chloroethane-d5	103		71 - 131
1,1-Dichloroethene-d2	71		55 - 104
2-Butanone-d5	85		49 - 155
Chloroform-d	88		78 - 121
1,2-Dichloroethane-d4	88		78 - 129
Benzene-d6	88		77 - 124
1,2-Dichloropropane-d6	85		79 - 124
Toluene-d8	87		77 - 121
trans-1,3-Dichloropropene-d4	89		73 - 121
2-Hexanone-d5	87		28 - 135
1,4-Dioxane-d8	89		50 - 150
1,1,2,2-Tetrachloroethane-d2	84		73 - 125
1,2-Dichlorobenzene-d4	87		80 - 131

Analytical Data

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1

Sdg Number: WC01

Client Sample ID: PRR1WC-CS01

Lab Sample ID: 200-6938-1

Date Sampled: 09/09/2011 1130

Client Matrix: Solid

Date Received: 09/10/2011 1000

SOM01.2/SV Semivolatiles-TCLP

Analysis Method: SOM01.2/SV	Analysis Batch: 200-25620	Instrument ID: R.i
Prep Method: SOM01.2SV_CLLE	Prep Batch: 200-25303	Lab File ID: rjhzd07.d
Dilution: 1.0	Leach Batch: 200-25203	Initial Weight/Volume: 200 mL
Analysis Date: 09/21/2011 1113		Final Weight/Volume: 1000 uL
Prep Date: 09/15/2011 1947		Injection Volume: 2 uL
Leach Date: 09/14/2011 1730		

Analyte	DryWt Corrected: N	Result (ug/L)	Qualifier	RL
Pyridine		25	U	25
2-Methylphenol		25	U	25
4-Methylphenol		25	U	25
Hexachloroethane		25	U	25
Nitrobenzene		25	U	25
Hexachlorobutadiene		25	U	25
2,4,6-Trichlorophenol		25	U	25
2,4,5-Trichlorophenol		25	U	25
2,4-Dinitrotoluene		25	U	25
Pentachlorophenol		2.7	J	50
Total Cresols		25	U	25

Surrogate	%Rec	Qualifier	Acceptance Limits
Phenol-d5	79		39 - 106
Bis(2-chloroethyl)ether-d8	73		40 - 105
2-Chlorophenol-d4	75		41 - 106
4-Methylphenol-d8	102		25 - 111
Nitrobenzene-d5	81		43 - 108
2-Nitrophenol-d4	82		40 - 108
2,4-Dichlorophenol-d3	84		37 - 105
4-Chloroaniline-d4	74		1 - 145
Dimethylphthalate-d6	78		47 - 114
Acenaphthylene-d8	81		41 - 107
4-Nitrophenol-d4	61		33 - 116
Fluorene-d10	71		42 - 111
4,6-Dinitro-2-methylphenol-d2	93		22 - 104
Anthracene-d10	84		44 - 110
Pyrene-d10	91		52 - 119
Benzo(a)pyrene-d12	80		32 - 121

Analytical Data

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1

Sdg Number: WC01

Client Sample ID: PRR1WC-CS02

Lab Sample ID: 200-6938-2

Date Sampled: 09/09/2011 1145

Client Matrix: Solid

Date Received: 09/10/2011 1000

SOM01.2/SV Semivolatiles-TCLP

Analysis Method: SOM01.2/SV	Analysis Batch: 200-25620	Instrument ID: R.i
Prep Method: SOM01.2SV_CLLE	Prep Batch: 200-25303	Lab File ID: rjhzd10.d
Dilution: 1.0	Leach Batch: 200-25203	Initial Weight/Volume: 200 mL
Analysis Date: 09/21/2011 1301		Final Weight/Volume: 1000 uL
Prep Date: 09/15/2011 1947		Injection Volume: 2 uL
Leach Date: 09/14/2011 1730		

Analyte	DryWt Corrected: N	Result (ug/L)	Qualifier	RL
Pyridine		7.9	J	25
2-Methylphenol		25	U	25
4-Methylphenol		25	U	25
Hexachloroethane		25	U	25
Nitrobenzene		25	U	25
Hexachlorobutadiene		25	U	25
2,4,6-Trichlorophenol		25	U	25
2,4,5-Trichlorophenol		25	U	25
2,4-Dinitrotoluene		25	U	25
Pentachlorophenol		50	U	50
Total Cresols		25	U	25

Surrogate	%Rec	Qualifier	Acceptance Limits
Phenol-d5	80		39 - 106
Bis(2-chloroethyl)ether-d8	78		40 - 105
2-Chlorophenol-d4	78		41 - 106
4-Methylphenol-d8	112	*	25 - 111
Nitrobenzene-d5	86		43 - 108
2-Nitrophenol-d4	88		40 - 108
2,4-Dichlorophenol-d3	92		37 - 105
4-Chloroaniline-d4	98		1 - 145
Dimethylphthalate-d6	86		47 - 114
Acenaphthylene-d8	89		41 - 107
4-Nitrophenol-d4	63		33 - 116
Fluorene-d10	79		42 - 111
4,6-Dinitro-2-methylphenol-d2	76		22 - 104
Anthracene-d10	94		44 - 110
Pyrene-d10	100		52 - 119
Benzo(a)pyrene-d12	91		32 - 121

Analytical Data

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1

Sdg Number: WC01

Client Sample ID: PRR1WC-CS01

Lab Sample ID: 200-6938-1

Date Sampled: 09/09/2011 1130

Client Matrix: Solid

Date Received: 09/10/2011 1000

SOM01.2/Pest Pesticides-TCLP

Analysis Method:	SOM01.2/Pest	Analysis Batch:	200-25634	Instrument ID:	0911.i
Prep Method:	SOM01.2Pes_SFE	Prep Batch:	200-25305	Initial Weight/Volume:	1050 mL
Dilution:	1.0	Leach Batch:	200-25203	Final Weight/Volume:	10000 uL
Analysis Date:	09/17/2011 0057			Injection Volume:	1 uL
Prep Date:	09/15/2011 2038			Result Type:	PRIMARY
Leach Date:	09/14/2011 1730				

Analyte	DryWt Corrected: N	Result (ug/L)	Qualifier	RL
gamma-BHC (Lindane)		0.035	J P	0.048
Heptachlor		0.048	U	0.048
Heptachlor epoxide		0.048	U	0.048
Endrin		0.095	U	0.095
Methoxychlor		0.48	U	0.48
Toxaphene		4.8	U	4.8
Chlordane (technical)		0.48	U	0.48

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	116		30 - 150
Tetrachloro-m-xylene	111		30 - 150

Analytical Data

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1

Sdg Number: WC01

Client Sample ID: PRR1WC-CS01

Lab Sample ID: 200-6938-1

Date Sampled: 09/09/2011 1130

Client Matrix: Solid

Date Received: 09/10/2011 1000

SOM01.2/Pest Pesticides-TCLP

Analysis Method:	SOM01.2/Pest	Analysis Batch:	200-25634	Instrument ID:	0911.i
Prep Method:	SOM01.2Pes_SFE	Prep Batch:	200-25305	Initial Weight/Volume:	1050 mL
Dilution:	1.0	Leach Batch:	200-25203	Final Weight/Volume:	10000 uL
Analysis Date:	09/17/2011 0057			Injection Volume:	1 uL
Prep Date:	09/15/2011 2038			Result Type:	SECONDARY
Leach Date:	09/14/2011 1730				

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	117		30 - 150
Tetrachloro-m-xylene	111		30 - 150

Analytical Data

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1

Sdg Number: WC01

Client Sample ID: PRR1WC-CS02

Lab Sample ID: 200-6938-2

Date Sampled: 09/09/2011 1145

Client Matrix: Solid

Date Received: 09/10/2011 1000

SOM01.2/Pest Pesticides-TCLP

Analysis Method:	SOM01.2/Pest	Analysis Batch:	200-25634	Instrument ID:	0911.i
Prep Method:	SOM01.2Pes_SFE	Prep Batch:	200-25305	Initial Weight/Volume:	1050 mL
Dilution:	1.0	Leach Batch:	200-25203	Final Weight/Volume:	10000 uL
Analysis Date:	09/17/2011 0254			Injection Volume:	1 uL
Prep Date:	09/15/2011 2038			Result Type:	PRIMARY
Leach Date:	09/14/2011 1730				

Analyte	DryWt Corrected: N	Result (ug/L)	Qualifier	RL
gamma-BHC (Lindane)		0.066	P	0.048
Heptachlor		0.024	J P	0.048
Heptachlor epoxide		0.048	U	0.048
Endrin		0.095	U	0.095
Methoxychlor		0.48	U	0.48
Toxaphene		4.8	U	4.8
Chlordane (technical)		0.48	U	0.48

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	105		30 - 150
Tetrachloro-m-xylene	109		30 - 150

Analytical Data

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1

Sdg Number: WC01

Client Sample ID: PRR1WC-CS02

Lab Sample ID: 200-6938-2

Date Sampled: 09/09/2011 1145

Client Matrix: Solid

Date Received: 09/10/2011 1000

SOM01.2/Pest Pesticides-TCLP

Analysis Method:	SOM01.2/Pest	Analysis Batch:	200-25634	Instrument ID:	0911.i
Prep Method:	SOM01.2Pes_SFE	Prep Batch:	200-25305	Initial Weight/Volume:	1050 mL
Dilution:	1.0	Leach Batch:	200-25203	Final Weight/Volume:	10000 uL
Analysis Date:	09/17/2011 0254			Injection Volume:	1 uL
Prep Date:	09/15/2011 2038			Result Type:	SECONDARY
Leach Date:	09/14/2011 1730				

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	108		30 - 150
Tetrachloro-m-xylene	110		30 - 150

Analytical Data

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1

Sdg Number: WC01

Client Sample ID: PRR1WC-CS01

Lab Sample ID: 200-6938-1

Date Sampled: 09/09/2011 1130

Client Matrix: Solid

Date Received: 09/10/2011 1000

ISM01.2/HG ISM01.2 Mercury-TCLP

Analysis Method: ISM01.2/HG Analysis Batch: 200-25527 Instrument ID: MEPCV3 II
Prep Method: ISM01.2/HG Prep Batch: 200-25418 Lab File ID: 092011BB.PRN
Dilution: 1.0 Leach Batch: 200-25203 Initial Weight/Volume: 50 mL
Analysis Date: 09/20/2011 1502 Final Weight/Volume: 50 mL
Prep Date: 09/19/2011 0930
Leach Date: 09/14/2011 1730

Analyte	DryWt Corrected: N	Result (ug/L)	Qualifier	MDLE	RL
Mercury		0.097	J	0.084	0.20

ISM01.2/ICP ISM01.2 Metals (ICP)-TCLP

Analysis Method: ISM01.2/ICP Analysis Batch: 200-25458 Instrument ID: METICP7
Prep Method: ISM01.2/ICP Prep Batch: 200-25330 Lab File ID: 091611-05.ttx
Dilution: 1.0 Leach Batch: 200-25203 Initial Weight/Volume: 100 mL
Analysis Date: 09/17/2011 0645 Final Weight/Volume: 100 mL
Prep Date: 09/16/2011 0830
Leach Date: 09/14/2011 1730

Analyte	DryWt Corrected: N	Result (ug/L)	Qualifier	MDL	RL
Arsenic		10.0	U	2.9	10.0
Barium		155	J	13.0	200
Cadmium		1.0	J	0.63	5.0
Lead		2.6	J	2.3	10.0
Selenium		7.3	J	4.5	35.0
Silver		10.0	U N	1.6	10.0

Analysis Method: ISM01.2/ICP Analysis Batch: 200-25526 Instrument ID: METICP7
Prep Method: ISM01.2/ICP Prep Batch: 200-25330 Lab File ID: 091911-05.ttx
Dilution: 50 Leach Batch: 200-25203 Initial Weight/Volume: 100 mL
Analysis Date: 09/19/2011 2047 Final Weight/Volume: 100 mL
Prep Date: 09/16/2011 0830
Leach Date: 09/14/2011 1730

Analyte	DryWt Corrected: N	Result (ug/L)	Qualifier	MDL	RL
Chromium		7830		24.5	500

Analytical Data

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1

Sdg Number: WC01

Client Sample ID: PRR1WC-CS02

Lab Sample ID: 200-6938-2

Date Sampled: 09/09/2011 1145

Client Matrix: Solid

Date Received: 09/10/2011 1000

ISM01.2/HG ISM01.2 Mercury-TCLP

Analysis Method:	ISM01.2/HG	Analysis Batch:	200-25527	Instrument ID:	MEPCV3 II
Prep Method:	ISM01.2/HG	Prep Batch:	200-25418	Lab File ID:	092011BB.PRN
Dilution:	1.0	Leach Batch:	200-25203	Initial Weight/Volume:	50 mL
Analysis Date:	09/20/2011 1508			Final Weight/Volume:	50 mL
Prep Date:	09/19/2011 0955				
Leach Date:	09/14/2011 1730				

Analyte	DryWt Corrected: N	Result (ug/L)	Qualifier	MDLE	RL
Mercury		0.20	U	0.084	0.20

ISM01.2/ICP ISM01.2 Metals (ICP)-TCLP

Analysis Method:	ISM01.2/ICP	Analysis Batch:	200-25458	Instrument ID:	METICP7
Prep Method:	ISM01.2/ICP	Prep Batch:	200-25330	Lab File ID:	091611-05.ttx
Dilution:	1.0	Leach Batch:	200-25203	Initial Weight/Volume:	100 mL
Analysis Date:	09/17/2011 0718			Final Weight/Volume:	100 mL
Prep Date:	09/16/2011 0830				
Leach Date:	09/14/2011 1730				

Analyte	DryWt Corrected: N	Result (ug/L)	Qualifier	MDL	RL
Arsenic		5.5	J	2.9	10.0
Barium		287		13.0	200
Cadmium		1.0	J	0.63	5.0
Chromium		34.4		0.49	10.0
Lead		14.3		2.3	10.0
Selenium		35.0	U	4.5	35.0
Silver		10.0	U N	1.6	10.0

DATA REPORTING QUALIFIERS

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1

Sdg Number: WC01

Lab Section	Qualifier	Description
GC/MS VOA		
	U	Analyzed for but not detected.
	J	Indicates an estimated value.
	*	Surrogate exceeds the control limit
	B	The analyte was found in an associated blank, as well as in the sample.
GC/MS Semi VOA		
	U	Analyzed for but not detected.
	E	Compound concentration exceeds the upper level of the calibration range of the instrument for that specific analysis.
	J	Indicates an estimated value.
	*	Surrogate exceeds the control limit
GC Semi VOA		
	U	Analyzed for but not detected.
	J	Indicates an estimated value.
	P	The % Difference between columns is greater than 25%.
Metals		
	U	Indicates analyzed for but not detected.
	J	Sample result is greater than the MDL but below the CRDL
	N	Spiked sample recovery is not within control limits.

QUALITY CONTROL RESULTS

Quality Control Results

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1

Sdg Number: WC01

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Prep Batch: 200-25428					
MB 200-25428/5-A	Method Blank	P	Solid	1311	
200-6938-1	PRR1WC-CS01	P	Solid	1311	
200-6938-1MS	Matrix Spike	P	Solid	1311	
200-6938-1MSD	Matrix Spike Duplicate	P	Solid	1311	
200-6938-2	PRR1WC-CS02	P	Solid	1311	
Analysis Batch:200-25624					
MB 200-25428/5-A	Method Blank	P	Solid	SOM01.2/VOA	
200-6938-1	PRR1WC-CS01	P	Solid	SOM01.2/VOA	
200-6938-1MS	Matrix Spike	P	Solid	SOM01.2/VOA	
200-6938-1MSD	Matrix Spike Duplicate	P	Solid	SOM01.2/VOA	
200-6938-2	PRR1WC-CS02	P	Solid	SOM01.2/VOA	
200-6938-5STOBLK	VHBLK01	T	Water	SOM01.2/VOA	
Report Basis					
P = TCLP					
T = Total					
GC/MS Semi VOA					
Prep Batch: 200-25203					
200-6938-1	PRR1WC-CS01	P	Solid	1311	
200-6938-1MS	Matrix Spike	P	Solid	1311	
200-6938-1MSD	Matrix Spike Duplicate	P	Solid	1311	
200-6938-2	PRR1WC-CS02	P	Solid	1311	
Prep Batch: 200-25303					
MB 200-25303/1-A	Method Blank	T	Water	SOM01.2SV_CLL	
200-6938-1	PRR1WC-CS01	P	Solid	SOM01.2SV_CLL	200-25203
200-6938-1MS	Matrix Spike	P	Solid	SOM01.2SV_CLL	200-25203
200-6938-1MSD	Matrix Spike Duplicate	P	Solid	SOM01.2SV_CLL	200-25203
200-6938-2	PRR1WC-CS02	P	Solid	SOM01.2SV_CLL	200-25203
Analysis Batch:200-25620					
MB 200-25303/1-A	Method Blank	T	Water	SOM01.2/SV	200-25303
200-6938-1	PRR1WC-CS01	P	Solid	SOM01.2/SV	200-25303
200-6938-1MS	Matrix Spike	P	Solid	SOM01.2/SV	200-25303
200-6938-1MSD	Matrix Spike Duplicate	P	Solid	SOM01.2/SV	200-25303
200-6938-2	PRR1WC-CS02	P	Solid	SOM01.2/SV	200-25303
Report Basis					
P = TCLP					
T = Total					

TestAmerica Burlington

Quality Control Results

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1

Sdg Number: WC01

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC Semi VOA					
Prep Batch: 200-25203					
200-6938-1	PRR1WC-CS01	P	Solid	1311	
200-6938-1MS	Matrix Spike	P	Solid	1311	
200-6938-1MSD	Matrix Spike Duplicate	P	Solid	1311	
200-6938-2	PRR1WC-CS02	P	Solid	1311	
Prep Batch: 200-25305					
LCS 200-25305/2-C	Lab Control Sample	T	Water	SOM01.2Pes_SF	
MB 200-25305/1-C	Method Blank	T	Water	SOM01.2Pes_SF	
200-6938-1	PRR1WC-CS01	P	Solid	SOM01.2Pes_SF	200-25203
200-6938-1MS	Matrix Spike	P	Solid	SOM01.2Pes_SF	200-25203
200-6938-1MSD	Matrix Spike Duplicate	P	Solid	SOM01.2Pes_SF	200-25203
200-6938-2	PRR1WC-CS02	P	Solid	SOM01.2Pes_SF	200-25203
Analysis Batch:200-25634					
LCS 200-25305/2-C	Lab Control Sample	T	Water	SOM01.2/Pest	200-25305
MB 200-25305/1-C	Method Blank	T	Water	SOM01.2/Pest	200-25305
200-6938-1	PRR1WC-CS01	P	Solid	SOM01.2/Pest	200-25305
200-6938-1MS	Matrix Spike	P	Solid	SOM01.2/Pest	200-25305
200-6938-1MSD	Matrix Spike Duplicate	P	Solid	SOM01.2/Pest	200-25305
200-6938-2	PRR1WC-CS02	P	Solid	SOM01.2/Pest	200-25305

Report Basis

P = TCLP

T = Total

Quality Control Results

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1

Sdg Number: WC01

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 200-25203					
200-6938-1	PRR1WC-CS01	P	Solid	1311	
200-6938-1DU	Duplicate	P	Solid	1311	
200-6938-1DUDL	Duplicate	P	Solid	1311	
200-6938-1MS	Matrix Spike	P	Solid	1311	
200-6938-1MSDL	Matrix Spike	P	Solid	1311	
200-6938-2	PRR1WC-CS02	P	Solid	1311	
Prep Batch: 200-25330					
LCS 200-25330/2-A	Lab Control Sample	T	Water	ISM01.2/ICP	
MB 200-25330/3-A	Method Blank	T	Water	ISM01.2/ICP	
200-6938-1	PRR1WC-CS01	P	Solid	ISM01.2/ICP	200-25203
200-6938-1DU	Duplicate	P	Solid	ISM01.2/ICP	200-25203
200-6938-1DUDL	Duplicate	P	Solid	ISM01.2/ICP	200-25203
200-6938-1MS	Matrix Spike	P	Solid	ISM01.2/ICP	200-25203
200-6938-1MSDL	Matrix Spike	P	Solid	ISM01.2/ICP	200-25203
200-6938-2	PRR1WC-CS02	P	Solid	ISM01.2/ICP	200-25203
Prep Batch: 200-25418					
200-6938-1	PRR1WC-CS01	P	Solid	ISM01.2/HG	200-25203
200-6938-1DU	Duplicate	P	Solid	ISM01.2/HG	200-25203
200-6938-1MS	Matrix Spike	P	Solid	ISM01.2/HG	200-25203
200-6938-2	PRR1WC-CS02	P	Solid	ISM01.2/HG	200-25203
Analysis Batch:200-25458					
LCS 200-25330/2-A	Lab Control Sample	T	Water	ISM01.2/ICP	200-25330
MB 200-25330/3-A	Method Blank	T	Water	ISM01.2/ICP	200-25330
200-6938-1	PRR1WC-CS01	P	Solid	ISM01.2/ICP	200-25330
200-6938-1DU	Duplicate	P	Solid	ISM01.2/ICP	200-25330
200-6938-1MS	Matrix Spike	P	Solid	ISM01.2/ICP	200-25330
200-6938-1MSDL	Matrix Spike	P	Solid	ISM01.2/ICP	200-25330
200-6938-2	PRR1WC-CS02	P	Solid	ISM01.2/ICP	200-25330
Analysis Batch:200-25526					
200-6938-1	PRR1WC-CS01	P	Solid	ISM01.2/ICP	200-25330
200-6938-1DUDL	Duplicate	P	Solid	ISM01.2/ICP	200-25330
200-6938-1MSDL	Matrix Spike	P	Solid	ISM01.2/ICP	200-25330
Analysis Batch:200-25527					
MB 200-25418/12-A	Method Blank	T	Solid	ISM01.2/HG	
200-6938-1	PRR1WC-CS01	P	Solid	ISM01.2/HG	200-25418
200-6938-1DU	Duplicate	P	Solid	ISM01.2/HG	200-25418
200-6938-1MS	Matrix Spike	P	Solid	ISM01.2/HG	200-25418
200-6938-2	PRR1WC-CS02	P	Solid	ISM01.2/HG	200-25418

TestAmerica Burlington

Quality Control Results

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1

Sdg Number: WC01

QC Association Summary

<u>Lab Sample ID</u>	<u>Client Sample ID</u>	<u>Report Basis</u>	<u>Client Matrix</u>	<u>Method</u>	<u>Prep Batch</u>
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Report Basis

P = TCLP

T = Total

Quality Control Results

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1

Sdg Number: WC01

Surrogate Recovery Report

SOM01.2/VOA Low/Medium Volatiles

Client Matrix: Solid TCLP

Lab Sample ID	Client Sample ID	VCL %Rec	CLA %Rec	DCE %Rec	BUT %Rec	CLF %Rec	DCA %Rec	BEN %Rec	DPA %Rec
200-6938-1	PRR1WC-CS01	105	108	72	156*	89	93	89	86
200-6938-2	PRR1WC-CS02	102	101	70	92	88	91	86	83
MB 200-25428/5-A		113	113	79	106	99	102	98	94
200-6938-1 MS	PRR1WC-CS01 MS	112	98	102	181*	99	96	100	102
200-6938-1 MSD	PRR1WC-CS01 MSD	113	97	100	181*	99	102	102	103

Surrogate	Acceptance Limits
VCL = Vinyl chloride-d3	65-131
CLA = Chloroethane-d5	71-131
DCE = 1,1-Dichloroethene-d2	55-104
BUT = 2-Butanone-d5	49-155
CLF = Chloroform-d	78-121
DCA = 1,2-Dichloroethane-d4	78-129
BEN = Benzene-d6	77-124
DPA = 1,2-Dichloropropane-d6	79-124

Quality Control Results

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1
Sdg Number: WC01

Surrogate Recovery Report

SOM01.2/VOA Low/Medium Volatiles

Client Matrix: Solid TCLP

Lab Sample ID	Client Sample ID	TOL %Rec	TDP %Rec	HEX %Rec	DXE %Rec	TCA %Rec	DCZ %Rec
200-6938-1	PRR1WC-CS01	89	94	188*	95	91	91
200-6938-2	PRR1WC-CS02	86	92	107	102	88	89
MB 200-25428/5-A		99	104	126	117	101	100
200-6938-1 MS	PRR1WC-CS01 MS	101	106	242*	108	102	99
200-6938-1 MSD	PRR1WC-CS01 MSD	102	105	243*	115	103	98

Surrogate	Acceptance Limits
TOL = Toluene-d8	77-121
TDP = trans-1,3-Dichloropropene-d4	73-121
HEX = 2-Hexanone-d5	28-135
DXE = 1,4-Dioxane-d8	50-150
TCA = 1,1,2,2-Tetrachloroethane-d2	73-125
DCZ = 1,2-Dichlorobenzene-d4	80-131

Quality Control Results

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1

Sdg Number: WC01

Surrogate Recovery Report

SOM01.2/VOA Low/Medium Volatiles

Client Matrix: Water

Lab Sample ID	Client Sample ID	VCL %Rec	CLA %Rec	DCE %Rec	BUT %Rec	CLF %Rec	DCA %Rec	BEN %Rec	DPA %Rec
200-6938-5	VHBLK01	103	103	71	85	88	88	88	85

Surrogate	Acceptance Limits
VCL = Vinyl chloride-d3	65-131
CLA = Chloroethane-d5	71-131
DCE = 1,1-Dichloroethene-d2	55-104
BUT = 2-Butanone-d5	49-155
CLF = Chloroform-d	78-121
DCA = 1,2-Dichloroethane-d4	78-129
BEN = Benzene-d6	77-124
DPA = 1,2-Dichloropropane-d6	79-124

Quality Control Results

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1

Sdg Number: WC01

Surrogate Recovery Report

SOM01.2/VOA Low/Medium Volatiles

Client Matrix: Water

Lab Sample ID	Client Sample ID	TOL %Rec	TDP %Rec	HEX %Rec	DXE %Rec	TCA %Rec	DCZ %Rec
200-6938-5	VHBLK01	87	89	87	89	84	87

Surrogate	Acceptance Limits
TOL = Toluene-d8	77-121
TDP = trans-1,3-Dichloropropene-d4	73-121
HEX = 2-Hexanone-d5	28-135
DXE = 1,4-Dioxane-d8	50-150
TCA = 1,1,2,2-Tetrachloroethane-d2	73-125
DCZ = 1,2-Dichlorobenzene-d4	80-131

Quality Control Results

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1

Sdg Number: WC01

Surrogate Recovery Report

SOM01.2/SV Semivolatiles

Client Matrix: Solid TCLP

Lab Sample ID	Client Sample ID	PHL %Rec	BCE %Rec	2CP %Rec	4MP %Rec	NBZ %Rec	2NP %Rec	DCP %Rec	4CA %Rec
200-6938-1	PRR1WC-CS01	79	73	75	102	81	82	84	74
200-6938-2	PRR1WC-CS02	80	78	78	112*	86	88	92	98
MB 200-25303/1-A		74	76	73	98	83	83	80	88
200-6938-1 MS	PRR1WC-CS01 MS	86	86	83	117*	92	92	92	74
200-6938-1 MSD	PRR1WC-CS01 MSD	71	80	70	97	85	85	82	69

Surrogate	Acceptance Limits
PHL = Phenol-d5	39-106
BCE = Bis(2-chloroethyl)ether-d8	40-105
2CP = 2-Chlorophenol-d4	41-106
4MP = 4-Methylphenol-d8	25-111
NBZ = Nitrobenzene-d5	43-108
2NP = 2-Nitrophenol-d4	40-108
DCP = 2,4-Dichlorophenol-d3	37-105
4CA = 4-Chloroaniline-d4	1-145

Quality Control Results

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1

Sdg Number: WC01

Surrogate Recovery Report

SOM01.2/SV Semivolatiles

Client Matrix: Solid TCLP

Lab Sample ID	Client Sample ID	DMP %Rec	ACY %Rec	4NP %Rec	FLR %Rec	NMP %Rec	ANC %Rec	PYR %Rec	BAP %Rec
200-6938-1	PRR1WC-CS01	78	81	61	71	93	84	91	80
200-6938-2	PRR1WC-CS02	86	89	63	79	76	94	100	91
MB 200-25303/1-A		80	87	75	71	88	89	88	85
200-6938-1 MS	PRR1WC-CS01 MS	86	92	55	77	97	95	93	90
200-6938-1 MSD	PRR1WC-CS01 MSD	80	86	65	74	95	89	90	84

Surrogate	Acceptance Limits
DMP = Dimethylphthalate-d6	47-114
ACY = Acenaphthylene-d8	41-107
4NP = 4-Nitrophenol-d4	33-116
FLR = Fluorene-d10	42-111
NMP = 4,6-Dinitro-2-methylphenol-d2	22-104
ANC = Anthracene-d10	44-110
PYR = Pyrene-d10	52-119
BAP = Benzo(a)pyrene-d12	32-121

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1
Sdg Number: WC01

Surrogate Recovery Report

SOM01.2/Pest Pesticides

Client Matrix: Solid TCLP

Lab Sample ID	Client Sample ID	DCB1 %Rec	DCB2 %Rec	TCX1 %Rec	TCX2 %Rec
200-6938-1	PRR1WC-CS01	117	116	111	111
200-6938-2	PRR1WC-CS02	108	105	110	109
MB 200-25305/1-C		120	123	110	105
LCS 200-25305/2-C		112	116	101	102
200-6938-1 MS	PRR1WC-CS01 MS	115	116	110	104
200-6938-1 MSD	PRR1WC-CS01 MSD	106	109	99	101

Surrogate	Acceptance Limits
DCB = Decachlorobiphenyl	30-150
TCX = Tetrachloro-m-xylene	30-150

Quality Control Results

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1
Sdg Number: WC01

Method Blank - Batch: 200-25624

**Method: SOM01.2/VOA
Preparation: SOM01.2/VOA_PR
TCLP**

Lab Sample ID: MB 200-25428/5-A
Client Matrix: Solid
Dilution: 1.0
Analysis Date: 09/21/2011 0944
Prep Date: 09/21/2011 0944
Leach Date: 09/19/2011 1107

Analysis Batch: 200-25624
Prep Batch: N/A
Leach Batch: 200-25428
Units: ug/L

Instrument ID: M.i
Lab File ID: mhta05.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	RL
Vinyl chloride	5.0	U	5.0
1,1-Dichloroethene	5.0	U	5.0
2-Butanone	2.5	J	10
Chloroform	5.0	U	5.0
Carbon tetrachloride	5.0	U	5.0
Benzene	5.0	U	5.0
1,2-Dichloroethane	5.0	U	5.0
Trichloroethene	0.19	J	5.0
Tetrachloroethene	0.089	J	5.0
Chlorobenzene	5.0	U	5.0
1,4-Dichlorobenzene	5.0	U	5.0

Surrogate	% Rec	Acceptance Limits
Vinyl chloride-d3	113	65 - 131
Chloroethane-d5	113	71 - 131
1,1-Dichloroethene-d2	79	55 - 104
2-Butanone-d5	106	49 - 155
Chloroform-d	99	78 - 121
1,2-Dichloroethane-d4	102	78 - 129
Benzene-d6	98	77 - 124
1,2-Dichloropropane-d6	94	79 - 124
Toluene-d8	99	77 - 121
trans-1,3-Dichloropropene-d4	104	73 - 121
2-Hexanone-d5	126	28 - 135
1,4-Dioxane-d8	117	50 - 150
1,1,2,2-Tetrachloroethane-d2	101	73 - 125
1,2-Dichlorobenzene-d4	100	80 - 131

Quality Control Results

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1
Sdg Number: WC01

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 200-25624**

**Method: SOM01.2/VOA
Preparation: SOM01.2/VOA_PR
TCLP**

MS Lab Sample ID: 200-6938-1
Client Matrix: Solid
Dilution: 1.0
Analysis Date: 09/21/2011 1410
Prep Date: 09/21/2011 1410
Leach Date: 09/19/2011 1107

Analysis Batch: 200-25624
Prep Batch: N/A
Leach Batch: 200-25428

Instrument ID: M.i
Lab File ID: mhata13.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

MSD Lab Sample ID: 200-6938-1
Client Matrix: Solid
Dilution: 1.0
Analysis Date: 09/21/2011 1437
Prep Date: 09/21/2011 1437
Leach Date: 09/19/2011 1107

Analysis Batch: 200-25624
Prep Batch: N/A
Leach Batch: 200-25428

Instrument ID: M.i
Lab File ID: mhata14.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Vinyl chloride	135	133	75 - 125	2	15		
1,1-Dichloroethene	106	103	61 - 145	3	14		
2-Butanone	111	109	75 - 125	2	15	B	B
Chloroform	100	99	75 - 125	1	15		
Carbon tetrachloride	108	103	75 - 125	5	15		
Benzene	107	107	76 - 127	0	11		
1,2-Dichloroethane	108	105	75 - 125	4	15		
Trichloroethene	108	107	71 - 120	0	14	B	B
Tetrachloroethene	109	107	75 - 125	2	15	B	B
Chlorobenzene	107	105	75 - 130	1	13		
1,4-Dichlorobenzene	103	101	75 - 125	2	15		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits	
Vinyl chloride-d3	112	113	65 - 131	
Chloroethane-d5	98	97	71 - 131	
1,1-Dichloroethene-d2	102	100	55 - 104	
2-Butanone-d5	181	181	*	49 - 155
Chloroform-d	99	99	78 - 121	
1,2-Dichloroethane-d4	96	102	78 - 129	
Benzene-d6	100	102	77 - 124	
1,2-Dichloropropane-d6	102	103	79 - 124	
Toluene-d8	101	102	77 - 121	
trans-1,3-Dichloropropene-d4	106	105	73 - 121	
2-Hexanone-d5	242	243	*	28 - 135
1,4-Dioxane-d8	108	115	50 - 150	
1,1,2,2-Tetrachloroethane-d2	102	103	73 - 125	
1,2-Dichlorobenzene-d4	99	98	80 - 131	

Quality Control Results

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1
Sdg Number: WC01

Method Blank - Batch: 200-25303

Method: SOM01.2/SV
Preparation: SOM01.2SV_CLLE

Lab Sample ID: MB 200-25303/1-A
Client Matrix: Water
Dilution: 1.0
Analysis Date: 09/21/2011 1037
Prep Date: 09/15/2011 1947
Leach Date: N/A

Analysis Batch: 200-25620
Prep Batch: 200-25303
Leach Batch: N/A
Units: ug/L

Instrument ID: R.i
Lab File ID: rjhzd06.d
Initial Weight/Volume: 200 mL
Final Weight/Volume: 1000 uL
Injection Volume: 2 uL

Analyte	Result	Qual	RL
Pyridine	25	U	25
2-Methylphenol	25	U	25
4-Methylphenol	25	U	25
Hexachloroethane	25	U	25
Nitrobenzene	25	U	25
Hexachlorobutadiene	25	U	25
2,4,6-Trichlorophenol	25	U	25
2,4,5-Trichlorophenol	25	U	25
2,4-Dinitrotoluene	25	U	25
Pentachlorophenol	50	U	50
Total Cresols	25	U	25

Surrogate	% Rec	Acceptance Limits
Phenol-d5	74	39 - 106
Bis(2-chloroethyl)ether-d8	76	40 - 105
2-Chlorophenol-d4	73	41 - 106
4-Methylphenol-d8	98	25 - 111
Nitrobenzene-d5	83	43 - 108
2-Nitrophenol-d4	83	40 - 108
2,4-Dichlorophenol-d3	80	37 - 105
4-Chloroaniline-d4	88	1 - 145
Dimethylphthalate-d6	80	47 - 114
Acenaphthylene-d8	87	41 - 107
4-Nitrophenol-d4	75	33 - 116
Fluorene-d10	71	42 - 111
4,6-Dinitro-2-methylphenol-d2	88	22 - 104
Anthracene-d10	89	44 - 110
Pyrene-d10	88	52 - 119
Benzo(a)pyrene-d12	85	32 - 121

Quality Control Results

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1
Sdg Number: WC01

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 200-25303**

**Method: SOM01.2/SV
Preparation: SOM01.2SV_CLLE
TCLP**

MS Lab Sample ID: 200-6938-1
Client Matrix: Solid
Dilution: 1.0
Analysis Date: 09/21/2011 1149
Prep Date: 09/15/2011 1947
Leach Date: 09/14/2011 1730

Analysis Batch: 200-25620
Prep Batch: 200-25303
Leach Batch: 200-25203

Instrument ID: R.i
Lab File ID: rjhzd08.d
Initial Weight/Volume: 200 mL
Final Weight/Volume: 1000 uL
Injection Volume: 2 uL

MSD Lab Sample ID: 200-6938-1
Client Matrix: Solid
Dilution: 1.0
Analysis Date: 09/21/2011 1225
Prep Date: 09/15/2011 1947
Leach Date: 09/14/2011 1730

Analysis Batch: 200-25620
Prep Batch: 200-25303
Leach Batch: 200-25203

Instrument ID: R.i
Lab File ID: rjhzd09.d
Initial Weight/Volume: 200 mL
Final Weight/Volume: 1000 uL
Injection Volume: 2 uL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Pyridine	80	83	30 - 120	3	40		
2-Methylphenol	108	90	30 - 120	18	40		
Hexachloroethane	75	69	50 - 120	8	40		
Nitrobenzene	93	87	50 - 120	7	40		
Hexachlorobutadiene	74	68	50 - 120	9	40		
2,4,6-Trichlorophenol	99	92	30 - 120	6	40		
2,4,5-Trichlorophenol	102	97	30 - 120	5	40		
2,4-Dinitrotoluene	76	80	24 - 96	4	38		
Pentachlorophenol	96	87	9 - 103	10	50		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
Phenol-d5	86	71	39 - 106
Bis(2-chloroethyl)ether-d8	86	80	40 - 105
2-Chlorophenol-d4	83	70	41 - 106
4-Methylphenol-d8	117	* 97	25 - 111
Nitrobenzene-d5	92	85	43 - 108
2-Nitrophenol-d4	92	85	40 - 108
2,4-Dichlorophenol-d3	92	82	37 - 105
4-Chloroaniline-d4	74	69	1 - 145
Dimethylphthalate-d6	86	80	47 - 114
Acenaphthylene-d8	92	86	41 - 107
4-Nitrophenol-d4	55	65	33 - 116
Fluorene-d10	77	74	42 - 111
4,6-Dinitro-2-methylphenol-d2	97	95	22 - 104
Anthracene-d10	95	89	44 - 110
Pyrene-d10	93	90	52 - 119
Benzo(a)pyrene-d12	90	84	32 - 121

Quality Control Results

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1
Sdg Number: WC01

Method Blank - Batch: 200-25305

**Method: SOM01.2/Pest
Preparation: SOM01.2Pes_SFE**

Lab Sample ID: MB 200-25305/1-C
Client Matrix: Water
Dilution: 1.0
Analysis Date: 09/17/2011 0011
Prep Date: 09/15/2011 2038
Leach Date: N/A

Analysis Batch: 200-25634
Prep Batch: 200-25305
Leach Batch: N/A
Units: ug/L

Instrument ID: 0911.i
Lab File ID: 16se111339-r011.d
Initial Weight/Volume: 1000 mL
Final Weight/Volume: 10000 uL
Injection Volume: 1 uL
Column ID: PRIMARY

Analyte	Result	Qual	RL
gamma-BHC (Lindane)	0.050	U	0.050
Heptachlor	0.050	U	0.050
Heptachlor epoxide	0.050	U	0.050
Endrin	0.10	U	0.10
Methoxychlor	0.50	U	0.50
Toxaphene	5.0	U	5.0
Chlordane (technical)	0.50	U	0.50

Surrogate	% Rec	Acceptance Limits
Decachlorobiphenyl	120	30 - 150
Tetrachloro-m-xylene	105	30 - 150

Surrogate	% Rec	Acceptance Limits
Decachlorobiphenyl	123	30 - 150
Tetrachloro-m-xylene	110	30 - 150

Lab Control Sample - Batch: 200-25305

**Method: SOM01.2/Pest
Preparation: SOM01.2Pes_SFE**

Lab Sample ID: LCS 200-25305/2-C
Client Matrix: Water
Dilution: 1.0
Analysis Date: 09/17/2011 0034
Prep Date: 09/15/2011 2038
Leach Date: N/A

Analysis Batch: 200-25634
Prep Batch: 200-25305
Leach Batch: N/A
Units: ug/L

Instrument ID: 0911.i
Lab File ID: 16se111339-r021.d
Initial Weight/Volume: 1000 mL
Final Weight/Volume: 10000 uL
Injection Volume: 1 uL
Column ID: PRIMARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
gamma-BHC (Lindane)	0.0500	0.047	93	50 - 120	J
Heptachlor epoxide	0.0500	0.052	103	50 - 150	
Endrin	0.100	0.11	107	50 - 120	

Surrogate	% Rec	Acceptance Limits
Decachlorobiphenyl	112	30 - 150
Tetrachloro-m-xylene	101	30 - 150

Surrogate	% Rec	Acceptance Limits
Decachlorobiphenyl	116	30 - 150
Tetrachloro-m-xylene	102	30 - 150

Quality Control Results

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1
Sdg Number: WC01

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 200-25305**

**Method: SOM01.2/Pest
Preparation: SOM01.2Pes_SFE
TCLP**

MS Lab Sample ID: 200-6938-1
Client Matrix: Solid
Dilution: 1.0
Analysis Date: 09/17/2011 0144
Prep Date: 09/15/2011 2038
Leach Date: 09/14/2011 1730

Analysis Batch: 200-25634
Prep Batch: 200-25305
Leach Batch: 200-25203

Instrument ID: 0911.i
Lab File ID: 16se111339-r051.d
Initial Weight/Volume: 1045 mL
Final Weight/Volume: 10000 uL
Injection Volume: 1 uL
Column ID: PRIMARY

MSD Lab Sample ID: 200-6938-1
Client Matrix: Solid
Dilution: 1.0
Analysis Date: 09/17/2011 0120
Prep Date: 09/15/2011 2038
Leach Date: 09/14/2011 1730

Analysis Batch: 200-25634
Prep Batch: 200-25305
Leach Batch: 200-25203

Instrument ID: 0911.i
Lab File ID: 16se111339-r041.d
Initial Weight/Volume: 1055 mL
Final Weight/Volume: 10000 uL
Injection Volume: 1 uL
Column ID: PRIMARY

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
gamma-BHC (Lindane)	107	92	56 - 123	16	15		
Heptachlor	101	95	40 - 131	16	20		
Heptachlor epoxide	106	90	40 - 130	16	20		
Endrin	121	105	56 - 121	14	21		
Methoxychlor	115	101	40 - 130	13	20		
Surrogate		MS % Rec	MSD % Rec			Acceptance Limits	
Decachlorobiphenyl		115	106			30 - 150	
Tetrachloro-m-xylene		104	99			30 - 150	
Surrogate		MS % Rec	MSD % Rec			Acceptance Limits	
Decachlorobiphenyl		116	109			30 - 150	
Tetrachloro-m-xylene		110	101			30 - 150	

Quality Control Results

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1
Sdg Number: WC01

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 200-25305**

**Method: SOM01.2/Pest
Preparation: SOM01.2Pes_SFE
TCLP**

MS Lab Sample ID: 200-6938-1
Client Matrix: Solid
Dilution: 1.0
Analysis Date: 09/17/2011 0230
Prep Date: 09/15/2011 2038
Leach Date: 09/14/2011 1730

Analysis Batch: 200-25634
Prep Batch: 200-25305
Leach Batch: 200-25203

Instrument ID: 0911.i
Lab File ID: 16se111339-r071.d
Initial Weight/Volume: 1055 mL
Final Weight/Volume: 10000 uL
Injection Volume: 1 uL
Column ID: PRIMARY

MSD Lab Sample ID: 200-6938-1
Client Matrix: Solid
Dilution: 1.0
Analysis Date: 09/17/2011 0207
Prep Date: 09/15/2011 2038
Leach Date: 09/14/2011 1730

Analysis Batch: 200-25634
Prep Batch: 200-25305
Leach Batch: 200-25203

Instrument ID: 0911.i
Lab File ID: 16se111339-r061.d
Initial Weight/Volume: 1050 mL
Final Weight/Volume: 10000 uL
Injection Volume: 1 uL
Column ID: PRIMARY

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Toxaphene	110	106	40 - 130	4	30		
Chlordane (technical)	121	121	40 - 130	1	30		

Quality Control Results

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1
Sdg Number: WC01

Matrix Spike - Batch: 200-25418

**Method: ISM01.2/HG
Preparation: ISM01.2/HG
TCLP**

Lab Sample ID: 200-6938-1
Client Matrix: Solid
Dilution: 1.0
Analysis Date: 09/20/2011 1506
Prep Date: 09/19/2011 0930
Leach Date: 09/14/2011 1730

Analysis Batch: 200-25527
Prep Batch: 200-25418
Leach Batch: 200-25203
Units: ug/L

Instrument ID: MEPCV3 II
Lab File ID: 092011BB.PRN
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.097 J	10.0	8.2	81	75 - 125	

Duplicate - Batch: 200-25418

**Method: ISM01.2/HG
Preparation: ISM01.2/HG
TCLP**

Lab Sample ID: 200-6938-1
Client Matrix: Solid
Dilution: 1.0
Analysis Date: 09/20/2011 1504
Prep Date: 09/19/2011 0930
Leach Date: 09/14/2011 1730

Analysis Batch: 200-25527
Prep Batch: 200-25418
Leach Batch: 200-25203
Units: ug/L

Instrument ID: MEPCV3 II
Lab File ID: 092011BB.PRN
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Mercury	0.097 J	0.20	200	0.20	U

Quality Control Results

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1
Sdg Number: WC01

Method Blank - Batch: 200-25527

Method: ISM01.2/HG
Preparation: N/A

Lab Sample ID: MB 200-25418/12-A
Client Matrix: Solid
Dilution: 1.0
Analysis Date: 09/20/2011 1500
Prep Date: N/A
Leach Date: N/A

Analysis Batch: 200-25527
Prep Batch: N/A
Leach Batch: N/A
Units: ug/L

Instrument ID: MEPCV3 II
Lab File ID: 092011BB.PRN
Initial Weight/Volume:
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDLE	RL
Mercury	0.20	U	0.084	0.20

Quality Control Results

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1

Sdg Number: WC01

Method Blank - Batch: 200-25330

Method: ISM01.2/ICP
Preparation: ISM01.2/ICP

Lab Sample ID: MB 200-25330/3-A
Client Matrix: Water
Dilution: 1.0
Analysis Date: 09/17/2011 0639
Prep Date: 09/16/2011 0830
Leach Date: N/A

Analysis Batch: 200-25458
Prep Batch: 200-25330
Leach Batch: N/A
Units: ug/L

Instrument ID: METICP7
Lab File ID: 091611-05.ttx
Initial Weight/Volume: 100 mL
Final Weight/Volume: 100 mL

Analyte	Result	Qual	MDL	RL
Arsenic	3.4	J	2.9	10.0
Barium	200	U	13.0	200
Cadmium	5.0	U	0.63	5.0
Chromium	10.0	U	0.49	10.0
Lead	10.0	U	2.3	10.0
Selenium	35.0	U	4.5	35.0
Silver	10.0	U	1.6	10.0

Lab Control Sample - Batch: 200-25330

Method: ISM01.2/ICP
Preparation: ISM01.2/ICP

Lab Sample ID: LCS 200-25330/2-A
Client Matrix: Water
Dilution: 1.0
Analysis Date: 09/17/2011 0634
Prep Date: 09/16/2011 0830
Leach Date: N/A

Analysis Batch: 200-25458
Prep Batch: 200-25330
Leach Batch: N/A
Units: ug/L

Instrument ID: METICP7
Lab File ID: 091611-05.ttx
Initial Weight/Volume: 100 mL
Final Weight/Volume: 100 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Arsenic	20.0	20.1	101	70 - 130	
Barium	400	432	108	70 - 130	
Cadmium	10.0	10.9	109	70 - 130	
Chromium	20.0	22.0	110	70 - 130	
Lead	20.0	22.0	110	70 - 130	
Selenium	70.0	76.2	109	70 - 130	
Silver	20.0	21.5	107	70 - 130	

Quality Control Results

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1
Sdg Number: WC01

Matrix Spike - Batch: 200-25330

Lab Sample ID: 200-6938-1
Client Matrix: Solid
Dilution: 1.0
Analysis Date: 09/17/2011 0707
Prep Date: 09/16/2011 0830
Leach Date: 09/14/2011 1730

Analysis Batch: 200-25458
Prep Batch: 200-25330
Leach Batch: 200-25203
Units: ug/L

Method: ISM01.2/ICP
Preparation: ISM01.2/ICP
TCLP
Instrument ID: METICP7
Lab File ID: 091611-05.ttx
Initial Weight/Volume: 100 mL
Final Weight/Volume: 100 mL

Analyte	Sample	Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Arsenic	10.0	U	1000	1060	106	75 - 125	
Barium	155	J	2000	2090	97	75 - 125	
Cadmium	1.0	J	50.0	60.5	119	75 - 125	
Lead	2.6	J	500	524	104	75 - 125	
Selenium	7.3	J	2000	2180	108	75 - 125	
Silver	10.0	U	500	303	61	75 - 125	N

Matrix Spike - Batch: 200-25330

Lab Sample ID: 200-6938-1DL
Client Matrix: Solid
Dilution: 50
Analysis Date: 09/19/2011 2103
Prep Date: 09/16/2011 0830
Leach Date: 09/14/2011 1730

Analysis Batch: 200-25526
Prep Batch: 200-25330
Leach Batch: 200-25203
Units: ug/L
Run Type: DL

Method: ISM01.2/ICP
Preparation: ISM01.2/ICP
TCLP
Instrument ID: METICP7
Lab File ID: 091911-05.ttx
Initial Weight/Volume: 100 mL
Final Weight/Volume: 100 mL

Analyte	Sample	Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Chromium	7830		200	7890	30		

Quality Control Results

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1
Sdg Number: WC01

Duplicate - Batch: 200-25330

**Method: ISM01.2/ICP
Preparation: ISM01.2/ICP
TCLP**

Lab Sample ID: 200-6938-1
Client Matrix: Solid
Dilution: 1.0
Analysis Date: 09/17/2011 0702
Prep Date: 09/16/2011 0830
Leach Date: 09/14/2011 1730

Analysis Batch: 200-25458
Prep Batch: 200-25330
Leach Batch: 200-25203
Units: ug/L

Instrument ID: METICP7
Lab File ID: 091611-05.ttx
Initial Weight/Volume: 100 mL
Final Weight/Volume: 100 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Arsenic	10.0 U	10.0			U
Barium	155 J	163	5	200	J
Cadmium	1.0 J	1.1	8	5.0	J
Lead	2.6 J	2.5	1	10.0	J
Selenium	7.3 J	8.3	12	35.0	J
Silver	10.0 U	10.0			U

Duplicate - Batch: 200-25330

**Method: ISM01.2/ICP
Preparation: ISM01.2/ICP
TCLP**

Lab Sample ID: 200-6938-1DL
Client Matrix: Solid
Dilution: 50
Analysis Date: 09/19/2011 2058
Prep Date: 09/16/2011 0830
Leach Date: 09/14/2011 1730

Analysis Batch: 200-25526
Prep Batch: 200-25330
Leach Batch: 200-25203
Units: ug/L
Run Type: DL

Instrument ID: METICP7
Lab File ID: 091911-05.ttx
Initial Weight/Volume: 100 mL
Final Weight/Volume: 100 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Chromium	7830	8540	9		

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 200-6938-1

SDG Number: WC01

Login Number: 6938

List Source: TestAmerica Burlington

List Number: 1

Creator: Marion, Greg T

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	170032, 170004
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.5, 3.2 °C, IR GUN ID 96/CF=0
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?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
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	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	Check done at department level if required.

Young, Kirk

From: Gandhi, Kevin [Kavin.Gandhi@arcadis-us.com]
Sent: Saturday, September 10, 2011 10:47 AM
To: Young, Kirk
Cc: Shatt, Ryan
Subject: Tierra - Waste Characterization QAPP Sampling
Attachments: TA_Burlington_SDG WC01.pdf; TA_Burlington_COC-WC01_090911.pdf

Kirk,

As part of the Passaic River RA Waste Characterization QAPP (WCQAPP), we collected 2 waste characterization soil samples and shipped to Test America Burlington.

The following 2 samples were collected:

- PRR1WC-CS01
- PRR1WC-CS02

Please find attached the SDG (WC01) and the COCs for these samples.

One other thing to **NOTE** is that, it appears that the hyphen in the Sample Ids may not be right and we were wondering if you can correct this when you log the samples so that there is no future discrepancy with data. In the SDG and COCs, I have the sample Ids as PRR1WCCS-01 but they should actually be PRR1WC-CS01. The hyphen needs to precede "CS" and not "01". Can you please make this change while logging both the samples.

The Sample IDs should be

- PRR1WC-CS01
- PRR1WC-CS02

The samples were delivered this morning.

Let us know if you have any questions.

Thanks,
Kavin.

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ANALYTICAL REPORT

Job Number: 200-6938-2

SDG Number: WC01

Job Description: LPRSA - Phase I Removal Action

For:

ARCADIS U.S. Inc
2300 Eastlake Avenue, East
Suite 140
Seattle, WA 98102

Attention: Ms. Shannon Dunn



Approved for release.
Kirk F Young
Project Manager I
9/23/2011 2:56 PM

Kirk F Young
Project Manager I
kirk.young@testamericainc.com
09/23/2011

cc: Mr. Joe Houser
Mr. Don Reed
Mr. Ryan Shatt

The test results in this report relate only to sample(s) as received by the laboratory. These test results were derived under a quality system that adheres to the requirements of NELAC. Pursuant to NELAC, this report may not be produced in full without written approval from the laboratory

TestAmerica Laboratories, Inc.

TestAmerica Burlington 30 Community Drive, Suite 11, South Burlington, VT 05403
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CASE NARRATIVE

Client: ARCADIS U.S. Inc

Project: LPRSA - Phase I Removal Action

Report Number: WC01 (200-6938-2)

Enclosed is the data set for the referenced project work. With the exceptions noted as flags or footnotes, standard analytical protocols were followed in performing the analytical work and the applied control limits were met. Calibration and calibration verification were assessed on an analyte specific basis. Initial calibration and continuing calibration criteria may not have been met in all instances.

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

Manual integration was employed in deriving certain of the analytical results.

For the Method 8151A analysis, positive instrument responses in the analysis of samples and quality controls were evaluated to the established method detection limit (MDL).

This is an abbreviated report. A more formal report will be issued in a CLP-like format, with supportive documentation and further narrative discussion.

METHOD SUMMARY

Client: ARCADIS U.S. Inc

Job Number: 200-6938-2
Sdg Number: WC01

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Herbicides (GC)	TAL BUR	SW846 8151A	
TCLP Extraction	TAL BUR		SW846 1311
Extraction (Herbicides)	TAL BUR		SW846 8151A
Paint Filter	TAL BUR	SW846 9095A	

Lab References:

TAL BUR = TestAmerica Burlington

Method References:

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

METHOD / ANALYST SUMMARY

Client: ARCADIS U.S. Inc

Job Number: 200-6938-2

Sdg Number: WC01

Method	Analyst	Analyst ID
SW846 8151A	Hammond, Ryan J	RJH
SW846 9095A	Tam, Michelle N	MNT

SAMPLE SUMMARY

Client: ARCADIS U.S. Inc

Job Number: 200-6938-2
Sdg Number: WC01

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
200-6938-1	PRR1WC-CS01	Solid	09/09/2011 1130	09/10/2011 1000
200-6938-1MS	PRR1WC-CS01	Solid	09/09/2011 1130	09/10/2011 1000
200-6938-1MSD	PRR1WC-CS01	Solid	09/09/2011 1130	09/10/2011 1000
200-6938-2	PRR1WC-CS02	Solid	09/09/2011 1145	09/10/2011 1000

SAMPLE RESULTS

Analytical Data

Client: ARCADIS U.S. Inc

Job Number: 200-6938-2
Sdg Number: WC01

Client Sample ID: PRR1WC-CS01

Lab Sample ID: 200-6938-1
Client Matrix: Solid

Date Sampled: 09/09/2011 1130
Date Received: 09/10/2011 1000

8151A Herbicides (GC)-TCLP

Analysis Method:	8151A	Analysis Batch:	200-25592	Instrument ID:	5005.i
Prep Method:	8151A	Prep Batch:	200-25324	Initial Weight/Volume:	1050 mL
Dilution:	1.0	Leach Batch:	200-25203	Final Weight/Volume:	10000 uL
Analysis Date:	09/20/2011 1701			Injection Volume:	1 uL
Prep Date:	09/16/2011 0913			Result Type:	PRIMARY
Leach Date:	09/14/2011 1730				

Analyte	DryWt Corrected: N	Result (ug/L)	Qualifier	MDL	RL
2,4-D		1.4	B	0.012	0.46
Silvex (2,4,5-TP)		0.10	J p B	0.00053	0.18
Surrogate		%Rec	Qualifier	Acceptance Limits	
2,4-Dichlorophenylacetic acid		102		60 - 130	

Analytical Data

Client: ARCADIS U.S. Inc

Job Number: 200-6938-2

Sdg Number: WC01

Client Sample ID: PRR1WC-CS01

Lab Sample ID: 200-6938-1

Date Sampled: 09/09/2011 1130

Client Matrix: Solid

Date Received: 09/10/2011 1000

8151A Herbicides (GC)-TCLP

Analysis Method:	8151A	Analysis Batch:	200-25592	Instrument ID:	5005.i
Prep Method:	8151A	Prep Batch:	200-25324	Initial Weight/Volume:	1050 mL
Dilution:	1.0	Leach Batch:	200-25203	Final Weight/Volume:	10000 uL
Analysis Date:	09/20/2011 1701			Injection Volume:	1 uL
Prep Date:	09/16/2011 0913			Result Type:	SECONDARY
Leach Date:	09/14/2011 1730				

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4-Dichlorophenylacetic acid	101		60 - 130

Analytical Data

Client: ARCADIS U.S. Inc

Job Number: 200-6938-2
Sdg Number: WC01

Client Sample ID: PRR1WC-CS02

Lab Sample ID: 200-6938-2
Client Matrix: Solid

Date Sampled: 09/09/2011 1145
Date Received: 09/10/2011 1000

8151A Herbicides (GC)-TCLP

Analysis Method:	8151A	Analysis Batch:	200-25592	Instrument ID:	5005.i
Prep Method:	8151A	Prep Batch:	200-25324	Initial Weight/Volume:	1030 mL
Dilution:	1.0	Leach Batch:	200-25203	Final Weight/Volume:	10000 uL
Analysis Date:	09/20/2011 1839			Injection Volume:	1 uL
Prep Date:	09/16/2011 0913			Result Type:	PRIMARY
Leach Date:	09/14/2011 1730				

Analyte	DryWt Corrected: N	Result (ug/L)	Qualifier	MDL	RL
2,4-D		0.19	J p B	0.013	0.47
Silvex (2,4,5-TP)		0.098	J p B	0.00054	0.18
Surrogate		%Rec	Qualifier	Acceptance Limits	
2,4-Dichlorophenylacetic acid		108		60 - 130	

Analytical Data

Client: ARCADIS U.S. Inc

Job Number: 200-6938-2

Sdg Number: WC01

Client Sample ID: PRR1WC-CS02

Lab Sample ID: 200-6938-2

Date Sampled: 09/09/2011 1145

Client Matrix: Solid

Date Received: 09/10/2011 1000

8151A Herbicides (GC)-TCLP

Analysis Method:	8151A	Analysis Batch:	200-25592	Instrument ID:	5005.i
Prep Method:	8151A	Prep Batch:	200-25324	Initial Weight/Volume:	1030 mL
Dilution:	1.0	Leach Batch:	200-25203	Final Weight/Volume:	10000 uL
Analysis Date:	09/20/2011 1839			Injection Volume:	1 uL
Prep Date:	09/16/2011 0913			Result Type:	SECONDARY
Leach Date:	09/14/2011 1730				

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4-Dichlorophenylacetic acid	102		60 - 130

Analytical Data

Client: ARCADIS U.S. Inc

Job Number: 200-6938-2

Sdg Number: WC01

General Chemistry

Client Sample ID: PRR1WC-CS01

Lab Sample ID: 200-6938-1

Date Sampled: 09/09/2011 1130

Client Matrix: Solid

Date Received: 09/10/2011 1000

Analyte	Result	Qual	Units	Dil	Method
Free Liquid	Absent		mL/100g	1.0	9095A
	Analysis Batch: 200-25077	Analysis Date: 09/12/2011 1815			DryWt Corrected: N

Analytical Data

Client: ARCADIS U.S. Inc

Job Number: 200-6938-2

Sdg Number: WC01

General Chemistry

Client Sample ID: PRR1WC-CS02

Lab Sample ID: 200-6938-2

Date Sampled: 09/09/2011 1145

Client Matrix: Solid

Date Received: 09/10/2011 1000

Analyte	Result	Qual	Units	Dil	Method
Free Liquid	Absent		mL/100g	1.0	9095A
	Analysis Batch: 200-25077	Analysis Date: 09/12/2011 1815			DryWt Corrected: N

DATA REPORTING QUALIFIERS

Client: ARCADIS U.S. Inc

Job Number: 200-6938-2

Sdg Number: WC01

Lab Section	Qualifier	Description
GC Semi VOA		
	B	Compound was found in the blank and sample.
	F	MS/MSD Recovery or RPD exceeds the control limits
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
	p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.

QUALITY CONTROL RESULTS

Quality Control Results

Client: ARCADIS U.S. Inc

Job Number: 200-6938-2

Sdg Number: WC01

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC Semi VOA					
Prep Batch: 200-25203					
200-6938-1	PRR1WC-CS01	P	Solid	1311	
200-6938-1MS	Matrix Spike	P	Solid	1311	
200-6938-1MSD	Matrix Spike Duplicate	P	Solid	1311	
200-6938-2	PRR1WC-CS02	P	Solid	1311	
Prep Batch: 200-25324					
LCS 200-25324/2-A	Lab Control Sample	T	Water	8151A	
MB 200-25324/1-A	Method Blank	T	Water	8151A	
200-6938-1	PRR1WC-CS01	P	Solid	8151A	200-25203
200-6938-1MS	Matrix Spike	P	Solid	8151A	200-25203
200-6938-1MSD	Matrix Spike Duplicate	P	Solid	8151A	200-25203
200-6938-2	PRR1WC-CS02	P	Solid	8151A	200-25203
Analysis Batch:200-25592					
LCS 200-25324/2-A	Lab Control Sample	T	Water	8151A	200-25324
MB 200-25324/1-A	Method Blank	T	Water	8151A	200-25324
200-6938-1	PRR1WC-CS01	P	Solid	8151A	200-25324
200-6938-1MS	Matrix Spike	P	Solid	8151A	200-25324
200-6938-1MSD	Matrix Spike Duplicate	P	Solid	8151A	200-25324
200-6938-2	PRR1WC-CS02	P	Solid	8151A	200-25324

Report Basis

P = TCLP

T = Total

General Chemistry

Analysis Batch:200-25077					
200-6938-1	PRR1WC-CS01	T	Solid	9095A	
200-6938-2	PRR1WC-CS02	T	Solid	9095A	

Report Basis

T = Total

Client: ARCADIS U.S. Inc

Job Number: 200-6938-2

Sdg Number: WC01

Surrogate Recovery Report

8151A Herbicides (GC)

Client Matrix: Solid TCLP

Lab Sample ID	Client Sample ID	DCPA1 %Rec	DCPA2 %Rec
200-6938-1	PRR1WC-CS01	101	102
200-6938-2	PRR1WC-CS02	102	108
MB 200-25324/1-A		101	100
LCS 200-25324/2-A		88	89
200-6938-1 MS	PRR1WC-CS01 MS	107	107
200-6938-1 MSD	PRR1WC-CS01 MSD	95	98

Surrogate	Acceptance Limits
DCPA = 2,4-Dichlorophenylacetic acid	60-130

Quality Control Results

Client: ARCADIS U.S. Inc

Job Number: 200-6938-2
Sdg Number: WC01

Method Blank - Batch: 200-25324

**Method: 8151A
Preparation: 8151A**

Lab Sample ID: MB 200-25324/1-A
Client Matrix: Water
Dilution: 1.0
Analysis Date: 09/20/2011 1555
Prep Date: 09/16/2011 0913
Leach Date: N/A

Analysis Batch: 200-25592
Prep Batch: 200-25324
Leach Batch: N/A
Units: ug/L

Instrument ID: 5005.i
Lab File ID: 20se111331-r051.d
Initial Weight/Volume: 1050 mL
Final Weight/Volume: 10000 uL
Injection Volume: 1 uL
Column ID: PRIMARY

Analyte	Result	Qual	MDL	RL
2,4-D	0.0501	J	0.012	0.46
Silvex (2,4,5-TP)	0.00346	J	0.00053	0.18
Surrogate	% Rec		Acceptance Limits	
2,4-Dichlorophenylacetic acid	101		60 - 130	
Surrogate	% Rec		Acceptance Limits	
2,4-Dichlorophenylacetic acid	100		60 - 130	

Lab Control Sample - Batch: 200-25324

**Method: 8151A
Preparation: 8151A**

Lab Sample ID: LCS 200-25324/2-A
Client Matrix: Water
Dilution: 1.0
Analysis Date: 09/20/2011 1628
Prep Date: 09/16/2011 0913
Leach Date: N/A

Analysis Batch: 200-25592
Prep Batch: 200-25324
Leach Batch: N/A
Units: ug/L

Instrument ID: 5005.i
Lab File ID: 20se111331-r061.d
Initial Weight/Volume: 1000 mL
Final Weight/Volume: 10000 uL
Injection Volume: 1 uL
Column ID: PRIMARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
2,4-D	8.00	6.59	82	70 - 135	
Silvex (2,4,5-TP)	0.800	0.708	89	65 - 145	
Surrogate	% Rec			Acceptance Limits	
2,4-Dichlorophenylacetic acid	89			60 - 130	
Surrogate	% Rec			Acceptance Limits	
2,4-Dichlorophenylacetic acid	88			60 - 130	

Quality Control Results

Client: ARCADIS U.S. Inc

Job Number: 200-6938-2
Sdg Number: WC01

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 200-25324**

**Method: 8151A
Preparation: 8151A
TCLP**

MS Lab Sample ID: 200-6938-1
Client Matrix: Solid
Dilution: 1.0
Analysis Date: 09/20/2011 1806
Prep Date: 09/16/2011 0913
Leach Date: 09/14/2011 1730

Analysis Batch: 200-25592
Prep Batch: 200-25324
Leach Batch: 200-25203

Instrument ID: 5005.i
Lab File ID: 20se111331-r091.d
Initial Weight/Volume: 1040 mL
Final Weight/Volume: 10000 uL
Injection Volume: 1 uL
Column ID: PRIMARY

MSD Lab Sample ID: 200-6938-1
Client Matrix: Solid
Dilution: 1.0
Analysis Date: 09/20/2011 1733
Prep Date: 09/16/2011 0913
Leach Date: 09/14/2011 1730

Analysis Batch: 200-25592
Prep Batch: 200-25324
Leach Batch: 200-25203

Instrument ID: 5005.i
Lab File ID: 20se111331-r081.d
Initial Weight/Volume: 1060 mL
Final Weight/Volume: 10000 uL
Injection Volume: 1 uL
Column ID: PRIMARY

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
2,4-D	83	68	70 - 135	17	30		F
Silvex (2,4,5-TP)	90	76	65 - 145	16	30	p	p
Surrogate	MS % Rec		MSD % Rec	Acceptance Limits			
2,4-Dichlorophenylacetic acid	107		98	60 - 130			
Surrogate	MS % Rec		MSD % Rec	Acceptance Limits			
2,4-Dichlorophenylacetic acid	107		95	60 - 130			

**CHAIN OF CUSTODY & LABORATORY
 ANALYSIS REQUEST FORM**

Lab Work Order #

PROJ. NO. B0009966.0002.70004		PROJECT NAME Waste Characterization Quality Assurance Project Plan - Phase 1 Removal Action														SDG NUMBER WCD1		COC Number								
SAMPLERS:		Requested Analyses																								
SAMPLE ID	DATE	TIME	MATRIX	Composite/Grab	# Containers	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Remarks
PRR1WCCS-01	9/9/2011	11:30	Soil	Composite	14	X	X	X	X	X	X															MS/MSD (Note No MS/MSD for Paint Filter Test)
PRR1WCCS-02	9/9/2011	11:45	Soil	Composite	6	X	X	X	X	X	X															
Requested Analyses		Special Instructions/Comments:										<input type="checkbox"/> Special QA/QC Instructions														
1) TCLP VOCs		Special Instructions/Comments:										<input type="checkbox"/> Special QA/QC Instructions														
2) TCLP SVOCs																										
3) TCLP Pesticides																										
4) TCLP Chlorinated Herbicides																										
5) TCLP Metals																										
6) Paint Filter Test		Lab Name: Test America - Burlington, VT										Cooler packed with ice			Sample Receipt:											
7)		Shipping Tracking #										Cooler custody seal intact			Condition/Cooler Temp: 2.5, 3.2°C											
8)		Relinquished by:		DATE	TIME	Received by:		Relinquished by:		DATE	TIME	Received by:														
9)		Kavin Gandhi		9/9/2011	1800	TASUR																				
10)		Kadi				Kadi																				
11)		Relinquished by:		DATE	TIME	Received by:		Relinquished by:		DATE	TIME	Received by:														
12)		Relinquished by:		DATE	TIME	Received by:		Relinquished by:		DATE	TIME	Received by:														
13)		Relinquished by:		DATE	TIME	Received by:		Relinquished by:		DATE	TIME	Received by:														
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FedEx Retrieval Copy

1 From Date: 1/29/10
 Sender's FedEx Account Number: 126157021
 Sender's Name: Kevin Gandhi
 Phone: 602 860 0590
 Company: Alchadis
 Address: 8 South River Rd
 City: Gilbert
 State: AZ ZIP: 85112

2 Your Internal Billing Reference: 60009766.000270004
 Phone: 302 600 1370

3 To Recipient's Name: FedEx America
 Company: FedEx America
 Address: 70 Community Dr
 City: South Babylon
 State: NY ZIP: 11771

4 Express Package Service: *To most locations. NOTE: Service order has changed. Please select carefully.

5 Packaging: *Declared value limit \$500.
 06 FedEx Envelope* 02 FedEx Pak* 03 FedEx Tube 04 Other
 01 Next Business Day
 02 Next Business Day
 03 Next Business Day
 04 Next Business Day
 05 Next Business Day
 06 Next Business Day

6 Special Handling and Delivery Signature Options
 03 SATURDAY DELIVERY
 04 Direct Signature
 05 Indirect Signature
 06 Signature Required
 07 Signature Required
 08 Signature Required
 09 Signature Required
 10 Signature Required
 11 Signature Required
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 100 Signature Required

7 Payment Bill to: Sender's System 2 Recipient 3 Third Party 4 Credit Card 5 Cash/Check
 Obtain resp. Acct. No.

8 Total Packages: 1 Total Weight: 2.5 lbs
 Credit Card Auth.

9 Your liability is limited to \$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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8769-0212777

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 200-6938-2

SDG Number: WC01

Login Number: 6938

List Source: TestAmerica Burlington

List Number: 1

Creator: Marion, Greg T

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	170032, 170004
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.5, 3.2 °C, IR GUN ID 96/CF=0
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?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
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	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	Check done at department level if required.

Young, Kirk

From: Gandhi, Kevin [Kavin.Gandhi@arcadis-us.com]
Sent: Saturday, September 10, 2011 10:47 AM
To: Young, Kirk
Cc: Shatt, Ryan
Subject: Tierra - Waste Characterization QAPP Sampling
Attachments: TA_Burlington_SDG WC01.pdf; TA_Burlington_COC-WC01_090911.pdf

Kirk,

As part of the Passaic River RA Waste Characterization QAPP (WCQAPP), we collected 2 waste characterization soil samples and shipped to Test America Burlington.

The following 2 samples were collected:

- PRR1WC-CS01
- PRR1WC-CS02

Please find attached the SDG (WC01) and the COCs for these samples.

One other thing to **NOTE** is that, it appears that the hyphen in the Sample Ids may not be right and we were wondering if you can correct this when you log the samples so that there is no future discrepancy with data. In the SDG and COCs, I have the sample Ids as PRR1WCCS-01 but they should actually be PRR1WC-CS01. The hyphen needs to precede "CS" and not "01". Can you please make this change while logging both the samples.

The Sample IDs should be

- PRR1WC-CS01
- PRR1WC-CS02

The samples were delivered this morning.

Let us know if you have any questions.

Thanks,
Kavin.

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