

QUALITY CONTROL DATA

Project: WA Lead - 110322

Pace Project No.: 258292

QC Batch:	MPRP/2306	Analysis Method:	EPA 6010
QC Batch Method:	EPA 3010	Analysis Description:	6010 MET
Associated Lab Samples: 258292016, 258292017, 258292018, 258292019			

METHOD BLANK: 76373 Matrix: Water

Associated Lab Samples: 258292016, 258292017, 258292018, 258292019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lead	ug/L	ND	10.0	07/01/11 14:18	

LABORATORY CONTROL SAMPLE: 76374

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	ug/L	500	541	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 76375 76376

Parameter	Units	258288001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Lead	ug/L	0.25 mg/L	500	500	772	768	105	104	75-125	.4	

QUALITY CONTROL DATA

Project: WA Lead - 110322

Pace Project No.: 258292

QC Batch: MPRP/2308 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 258292016, 258292017, 258292018, 258292019

METHOD BLANK: 76381 Matrix: Water

Associated Lab Samples: 258292016, 258292017, 258292018, 258292019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lead, Dissolved	ug/L	ND	10.0	07/05/11 12:17	

LABORATORY CONTROL SAMPLE: 76382

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead, Dissolved	ug/L	500	502	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 76383 76384

Parameter	Units	258292016 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Lead, Dissolved	ug/L	ND	500	500	514	497	103	99	75-125	3	

QUALITY CONTROL DATA

Project: WA Lead - 110322

Pace Project No.: 258292

QC Batch: ICPM/27111 Analysis Method: EPA 6020
QC Batch Method: EPA 6020 Analysis Description: 6020 MET
Associated Lab Samples: 258292016, 258292017, 258292018, 258292019

METHOD BLANK: 1012583 Matrix: Water

Associated Lab Samples: 258292016, 258292017, 258292018, 258292019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lead	ug/L	ND	0.20	07/16/11 14:55	

LABORATORY CONTROL SAMPLE: 1012584

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	ug/L	80	158	198	80-120	

MATRIX SPIKE SAMPLE: 1012587

Parameter	Units	60102218001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Lead	ug/L	1.2	80	79.0	97	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1013519 1013520

Parameter	Units	9297753002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Lead	ug/L	6.3	80	80	172	175	207	211	75-125	2	

QUALITY CONTROL DATA

Project: WA Lead - 110322

Pace Project No.: 258292

QC Batch: ICPM/27109 Analysis Method: EPA 6020
QC Batch Method: EPA 6020 Analysis Description: 6020 MET Dissolved
Associated Lab Samples: 258292016, 258292017, 258292018, 258292019

METHOD BLANK: 1012574 Matrix: Water

Associated Lab Samples: 258292016, 258292017, 258292018, 258292019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lead, Dissolved	ug/L	ND	0.10	07/15/11 16:26	

LABORATORY CONTROL SAMPLE: 1012575

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead, Dissolved	ug/L	80	76.6	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1012576 1012577

Parameter	Units	10163189004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Lead, Dissolved	ug/L	ND	80	80	76.2	77.9	95	97	70-130	2	

QUALITY CONTROL DATA

Project: WA Lead - 110322

Pace Project No.: 258292

QC Batch:	PMST/1725	Analysis Method:	ASTM D2974-87
QC Batch Method:	ASTM D2974-87	Analysis Description:	Dry Weight/Percent Moisture
Associated Lab Samples:	258292001, 258292002, 258292003, 258292004, 258292005, 258292006, 258292007, 258292008, 258292009, 258292010, 258292011, 258292012, 258292013, 258292014, 258292015		

SAMPLE DUPLICATE: 76099

Parameter	Units	258296001 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	3.7	3.8	4	

SAMPLE DUPLICATE: 76100

Parameter	Units	258297001 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	9.8	9.4	4	

QUALIFIERS

Project: WA Lead - 110322

Pace Project No.: 258292

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel Clean-Up

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

PASI-S Pace Analytical Services - Seattle

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

D4 Sample was diluted due to the presence of high levels of target analytes.

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WA Lead - 110322

Pace Project No.: 258292

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
258292001	KSL-1	EPA 3050	MPRP/2312	EPA 6010	ICP/2214
258292002	KSL-2	EPA 3050	MPRP/2312	EPA 6010	ICP/2214
258292003	KSL-3	EPA 3050	MPRP/2312	EPA 6010	ICP/2214
258292004	KSL-3b	EPA 3050	MPRP/2312	EPA 6010	ICP/2214
258292005	KSL-4	EPA 3050	MPRP/2312	EPA 6010	ICP/2214
258292006	KSL-5	EPA 3050	MPRP/2312	EPA 6010	ICP/2214
258292007	KSL-6	EPA 3050	MPRP/2312	EPA 6010	ICP/2214
258292008	KSL-7	EPA 3050	MPRP/2312	EPA 6010	ICP/2214
258292009	KSL-8	EPA 3050	MPRP/2312	EPA 6010	ICP/2214
258292010	KSL-9	EPA 3050	MPRP/2312	EPA 6010	ICP/2214
258292011	KSL-9b	EPA 3050	MPRP/2312	EPA 6010	ICP/2214
258292012	KSL-10	EPA 3050	MPRP/2312	EPA 6010	ICP/2214
258292013	KSL-11	EPA 3050	MPRP/2312	EPA 6010	ICP/2214
258292014	KSL-511	EPA 3050	MPRP/2312	EPA 6010	ICP/2214
258292015	KSL-BG	EPA 3050	MPRP/2312	EPA 6010	ICP/2214
258292012	KSL-10	EPA 3010	MPRP/2305	EPA 6010	ICP/2206
258292016	KSW-DWN	EPA 3010	MPRP/2306	EPA 6010	ICP/2208
258292017	KSW-UP	EPA 3010	MPRP/2306	EPA 6010	ICP/2208
258292018	KSW-GW	EPA 3010	MPRP/2306	EPA 6010	ICP/2208
258292019	KSW-51DWN	EPA 3010	MPRP/2306	EPA 6010	ICP/2208
258292016	KSW-DWN	EPA 3010	MPRP/2308	EPA 6010	ICP/2210
258292017	KSW-UP	EPA 3010	MPRP/2308	EPA 6010	ICP/2210
258292018	KSW-GW	EPA 3010	MPRP/2308	EPA 6010	ICP/2210
258292019	KSW-51DWN	EPA 3010	MPRP/2308	EPA 6010	ICP/2210
258292016	KSW-DWN	EPA 6020	ICPM/27111	EPA 6020	ICPM/11035
258292017	KSW-UP	EPA 6020	ICPM/27111	EPA 6020	ICPM/11035
258292018	KSW-GW	EPA 6020	ICPM/27111	EPA 6020	ICPM/11035
258292019	KSW-51DWN	EPA 6020	ICPM/27111	EPA 6020	ICPM/11035
258292016	KSW-DWN	EPA 6020	ICPM/27109	EPA 6020	ICPM/11024
258292017	KSW-UP	EPA 6020	ICPM/27109	EPA 6020	ICPM/11024
258292018	KSW-GW	EPA 6020	ICPM/27109	EPA 6020	ICPM/11024
258292019	KSW-51DWN	EPA 6020	ICPM/27109	EPA 6020	ICPM/11024
258292001	KSL-1	ASTM D2974-87	PMST/1725		
258292002	KSL-2	ASTM D2974-87	PMST/1725		
258292003	KSL-3	ASTM D2974-87	PMST/1725		
258292004	KSL-3b	ASTM D2974-87	PMST/1725		
258292005	KSL-4	ASTM D2974-87	PMST/1725		
258292006	KSL-5	ASTM D2974-87	PMST/1725		
258292007	KSL-6	ASTM D2974-87	PMST/1725		
258292008	KSL-7	ASTM D2974-87	PMST/1725		
258292009	KSL-8	ASTM D2974-87	PMST/1725		
258292010	KSL-9	ASTM D2974-87	PMST/1725		
258292011	KSL-9b	ASTM D2974-87	PMST/1725		
258292012	KSL-10	ASTM D2974-87	PMST/1725		
258292013	KSL-11	ASTM D2974-87	PMST/1725		
258292014	KSL-511	ASTM D2974-87	PMST/1725		

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WA Lead - 110322

Pace Project No.: 258292

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
258292015	KSL-BG	ASTM D2974-87	PMST/1725		

RMC

Laboratory Services Request Form

258292

I. CLIENT INFORMATION				SEND REQUESTS TO:	
Client Name: <u>RMC</u>				Pace Analytical	
Client Address: <u>8138 South State Street, Ste. 2A, Midvale Ut 84047</u>				Services, Inc.	
Client Phone: <u>801 255 2626</u>				940 So Harney	
Client Fax: <u>801 255 3266</u>				Seattle, Wa 98108	
II. ACCOUNT INFORMATION				Andy Brownfield (206) 767-5060 sales contact Katie Rockman Phone: 303-522-9706	
Account Name: _____					
Sample Questions: <u>Jim Fricke/ Todd Leeds 801 255 2626</u>					
TAT: _____					
P.O. No: <u>Kalaloch</u>					
III. REPORT INSTRUCTIONS					
Report Results To: <u>TODD LEEDS - RMC (todd@rmc-ut.com)</u>					
Report Address: <u>TODD LEEDS - RMC, 8138 S. STATE ST., STE 2A, MIDVALE UT 84047</u>					
Please Forward Results By: US Mail (X) Fed Ex () Fax () Email (X) <u>Todd@rmc-ut.com</u>					
Services Requested below are required no later than _____ (date)					
IV. TYPE OF SERVICE REQUESTED					
Please analyze the enclosed environmental samples for:					
Lab Use Only	Field Sample No./Description	Sampling Date & Time	No. of Cont.	Analysis Requested	
	KSL-1	6/27/11, 11:25a	1	Total Lead (6010C)	
	KSL-2	11:40a	1		
	KSL-3	11:50am	1		
	KSL-3b	11:50am	1		
	KSL-4	12:00pm	1		
	KSL-5	12:05pm	1		
	KSL-6	12:15pm	1		
	KSL-7	12:20pm	1		
	KSL-8	12:40pm	1		
	KSL-9	12:45pm	1		
notes:	KSL-9b	12:50pm			
V. CHAIN OF CUSTODY RECORD					
Dispatched by: _____		Date: _____	Time: _____	Courier Co. Name _____	
Relinquished by: <u>[Signature]</u>		Date: <u>6/28/11</u>	Time: <u>2pm</u>	Airbill # _____	
Received by: <u>Typhie Swany/PACE</u>		Date: <u>6/28/11</u>	Time: <u>1400</u>	Custody Seal Intact? _____	
Received for lab by: _____		Date: _____	Time: _____	Yes _____ No _____	

Received with ice at 2.1°C.

RMC

Laboratory Services Request Form

258292

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Client Name: <u>RMC</u>				Pace Analytical	
Client Address: <u>8138 South State Street, Ste. 2A, Midvale Ut 84047</u>				Services, Inc.	
Client Phone: <u>801 255 2626</u>				940 So Harney	
Client Fax: <u>801 255 3266</u>				Seattle, Wa 98108	
II. ACCOUNT INFORMATION				Andy Brownfield (206) 767-5060 sales contact Katie Rockman Phone: 303-522-9706	
Account Name: _____					
Sample Questions: <u>Jim Fricke/ Todd Leeds 801 255 2626</u>					
TAT: _____					
P.O. No: <u>Kalaloch</u>					
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Report Address: <u>TODD LEEDS - RMC, 8138 S. STATE ST., STE 2A, MIDVALE UT 84047</u>					
Please Forward Results By: US Mail (X) Fed Ex () Fax () Email (X) <u>Todd@rmc-ut.com</u>					
Services Requested below are required no later than _____ (date)					
IV. TYPE OF SERVICE REQUESTED					
Please analyze the enclosed environmental samples for:					
Lab Use	Field Sample	Sampling	No.	Analysis	
Only	No./Description	Date & Time	of	Requested	
Lab No.			Cont.		
	<u>KSL-10 *</u>	<u>6/27/11, 12:55pm</u>	<u>1</u>	<u>Total Pb 6010 C 1311</u>	
	<u>KSL-11</u>	<u>1:05pm</u>	<u>1</u>	<u>✓</u>	
	<u>KSL-511</u>	<u>1:10pm</u>	<u>1</u>	<u>✓</u>	
	<u>KSL-BG</u>	<u>1:30pm</u>	<u>1</u>	<u>✓</u>	
<u>Run TCLP on these sample only</u>					
notes: _____					
V. CHAIN OF CUSTODY RECORD					
Dispatched by: <u>[Signature]</u>		Date <u>6/28/11</u>	Time <u>2pm</u>	Courier Co. Name	
Relinquished by: <u>[Signature]</u>		Date	Time	Airbill #	
Received by: <u>Jeffrey Swag / PACE</u>		Date <u>6/28/11</u>	Time <u>1400</u>	Custody Seal Intact?	
Received for lab by:		Date	Time	Yes No	

Received with ice at 2.PC

RMC

Laboratory Services Request Form

258292

I. CLIENT INFORMATION				SEND REQUESTS TO:	
Client Name: <u>RMC</u>				Pace Analytical	
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P.O. No: <u>Kalaloch</u>					
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Report Address: <u>TODD LEEDS - RMC, 8138 S. STATE ST., STE 2A, MIDVALE UT 84047</u>					
Please Forward Results By: US Mail (X) Fed Ex () Fax () Email (X) <u>Todd@rmc-ut.com</u>					
Services Requested below are required no later than _____ (date)					
IV. TYPE OF SERVICE REQUESTED					
Please analyze the enclosed environmental samples for:					
Lab Use	Field Sample	Sampling	No.	Analysis	
Only	No./Description	Date & Time	of	Requested	
Lab No.			Cont.		
	KSW-DWN	6/27/11 10:05am	1	Filter run Total & Dissolved	
	KSW-UP	11:15pm	1	Lead - uranium method	
	KSW-GW	1:45pm	1	6020 or 200.8	
	KSW-51DWN	1:10pm	1	-Lowest possible detection limit method	
notes:					
V. CHAIN OF CUSTODY RECORD					
Dispatched by: <u>[Signature]</u>		Date <u>6/28/11</u>	Time _____	Courier Co. Name _____	
Relinquished by: <u>[Signature]</u>		Date <u>6/28/11</u>	Time <u>2pm</u>	Airbill # _____	
Received by: <u>Kyotki Sway / PACE</u>		Date <u>6/28/11</u>	Time <u>400</u>	Custody Seal Intact?	
Received for lab by: _____		Date _____	Time _____	Yes _____ No _____	

received with ice at 2.1°C.

RMC

CLIENT:

1 of 3

COC ID#



258292

zip lock

Sample Line Item	VG9H	AG1H	AG1U	BG1H	BP1U	BP2U	BP3U	BP2N	BP2S	WGFU	WGKU	Comments
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												Trip Blank? N ₂

AG1H	1 liter HCL amber glass		BP2S	500mL H2SO4 plastic	JGFU	4oz unpreserved amber wide
AG1U	1liter unpreserved amber glass		BP2U	500mL unpreserved plastic	R	terra core kit
AG2S	500mL H2SO4 amber glass		BP2Z	500mL NaOH, Zn Ac	U	Summa Can
AG2U	500mL unpreserved amber glass		BP3C	250mL NaOH plastic	VG9H	40mL HCL clear vial
AG3S	250mL H2SO4 amber glass		BP3N	250mL HNO3 plastic	VG9T	40mL Na Thio. clear vial
BG1H	1 liter HCL clear glass		BP3S	250mL H2SO4 plastic	VG9U	40mL unpreserved clear vial
BG1U	1 liter unpreserved glass		BP3U	250mL unpreserved plastic	VG9W	40mL glass vial preweighted (EPA 5035)
BP1N	1 liter HNO3 plastic		DG9B	40mL Na Bisulfate amber vial	VSG	Headspace septa vial & HCL
BP1S	1 liter H2SO4 plastic		DG9H	40mL HCL amber vial	WG9U	4oz clear soil jar
BP1U	1 liter unpreserved plastic		DG9M	40mL MeOH clear vial	WGFX	4oz wide jar w/hexane wipe
BP1Z	1 liter NaOH, Zn, Ac		DG9T	40mL Na Thio amber vial	ZPLC	Ziploc Bag
BP2N	500mL HNO3 plastic		DG9U	40mL unpreserved amber vial		
BP2O	500mL NaOH plastic		I	Wipe/Swab		

Sample Container Count



258292

CLIENT: RMC

COC PAGE 2 of 3
COC ID# _____

Ziploc

Sample Line Item	VG9H	AG1H	AG1U	BG1H	BP1U	BP2U	BP3U	BP2N	BP2S	WG9U	WG9U	WG9U	Comments
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													Trip Blank? <i>No</i>

AG1H	1 liter HCL amber glass		BP2S	500mL H2SO4 plastic	JGFU	4oz unpreserved amber wide
AG1U	1 liter unpreserved amber glass		BP2U	500mL unpreserved plastic	R	terra core kit
AG2S	500mL H2SO4 amber glass		BP2Z	500mL NaOH, Zn Ac	U	Summa Can
AG2U	500mL unpreserved amber glass		BP3C	250mL NaOH plastic	VG9H	40mL HCL clear vial
AG3S	250mL H2SO4 amber glass		BP3N	250mL HNO3 plastic	VG9T	40mL Na Thio. clear vial
BG1H	1 liter HCL clear glass		BP3S	250mL H2SO4 plastic	VG9U	40mL unpreserved clear vial
BG1U	1 liter unpreserved glass		BP3U	250mL unpreserved plastic	VG9W	40mL glass vial preweighted (EPA 5035)
BP1N	1 liter HNO3 plastic		DG9B	40mL Na Bisulfate amber vial	VSG	Headspace septa vial & HCL
BP1S	1 liter H2SO4 plastic		DG9H	40mL HCL amber vial	WG9U	4oz clear soil jar
BP1U	1 liter unpreserved plastic		DG9M	40mL MeOH clear vial	WGFX	4oz wide jar w/hexane wipe
BP1Z	1 liter NaOH, Zn, Ac		DG9T	40mL Na Thio amber vial	ZPLC	Ziploc Bag
BP2N	500mL HNO3 plastic		DG9U	40mL unpreserved amber vial		
BP2O	500mL NaOH plastic		I	Wipe/Swab		

Sample Container Count

CLIENT: RMC

Face Analytical
www.faceanalytical.com

COC PAGE 3 of 3

COC ID# _____

258292

Sample Line Item	VG9H	AG1H	AG1U	BG1H	BP1U	BP2U	BP3U	BP2N	BP2S	WG9U	WGKU	Comments
1						1						
2						1						
3						1*						Roads KGW-DWN on bottle @ Limited Volume.
4						1						
5												
6												
7												
8												
9												
10												
11												No
12												Trip Blank?

AG1H	1 liter HCL amber glass		BP2S	500mL H2SO4 plastic	JGFU	4oz unpreserved amber wide
AG1U	1 liter unpreserved amber glass		BP2U	500mL unpreserved plastic	R	terra core kit
AG2S	500mL H2SO4 amber glass		BP2Z	500mL NaOH, Zn Ac	U	Summa Can
AG2U	500mL unpreserved amber glass		BP3C	250mL NaOH plastic	VG9H	40mL HCL clear vial
AG3S	250mL H2SO4 amber glass		BP3N	250mL HNO3 plastic	VG9T	40mL Na Thio. clear vial
BG1H	1 liter HCL clear glass		BP3S	250mL H2SO4 plastic	VG9U	40mL unpreserved clear vial
BG1U	1 liter unpreserved glass		BP3U	250mL unpreserved plastic	VG9W	40mL glass vial preweighted (EPA 5035)
BP1N	1 liter HNO3 plastic		DG9B	40mL Na Bisulfate amber vial	VSG	Headspace septa vial & HCL
BP1S	1 liter H2SO4 plastic		DG9H	40mL HCL amber vial	WG9U	4oz clear soil jar
BP1U	1 liter unpreserved plastic		DG9M	40mL MeOH clear vial	WGFX	4oz wide jar w/hexane wipe
BP1Z	1 liter NaOH, Zn, Ac		DG9T	40mL Na Thio amber vial	ZPLC	Ziploc Bag
BP2N	500mL HNO3 plastic		DG9U	40mL unpreserved amber vial		
BP2O	500mL NaOH plastic		I	Wipe/Swab		



Sample Condition Upon Receipt

Client Name: RMC Project # 258292

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☒ Client ☐ Commercial ☐ Pace Other _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☐ Yes ☒ No Seals intact: ☐ Yes ☐ No

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other _____ Temp. Blank: Yes ☒ No

Thermometer Used 132013 or 101731952 or 226099 Type of Ice: Wet Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temperature 20.1°C

Biological Tissue is Frozen: Yes ☐ No ☐

Date and Initials of person examining contents: NJS 6/28/11

Temp should be above freezing $\leq 6^{\circ}\text{C}$

Comments:

Chain of Custody Present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody Filled Out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody Relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler Name & Signature on COC:	☐ Yes ☒ No ☐ N/A	4.
Samples Arrived within Hold Time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time Analysis (<72hr):	☐ Yes ☒ No ☐ N/A	6.
Rush Turn Around Time Requested:	☐ Yes ☒ No ☐ N/A	7.
Follow Up / Hold Analysis Requested:	☐ Yes ☒ No ☐ N/A	8.
Sufficient Volume:	☒ Yes ☒ No ☐ N/A	9. Limited volume (~150m) for KGW-DON.
Correct Containers Used:	☒ Yes ☐ No ☐ N/A	10.
-Pace Containers Used:	☐ Yes ☒ No ☐ N/A	
Containers Intact:	☒ Yes ☐ No ☐ N/A	11.
Filtered volume received for Dissolved tests	☐ Yes ☒ No ☐ N/A	12. Need to filter in lab.
Sample Labels match COC:	☒ Yes ☐ No ☐ N/A	13. 'KGW-DON' reads 'KSW-GW' on coc.
-Includes date/time/ID/Analysis Matrix: <u>Soil, Water</u>		
All containers needing preservation have been checked:	☒ Yes ☐ No ☐ N/A	14. All water bottles received unpreserved. Samples split and preserved in lab.
All containers needing preservation are found to be in compliance with EPA recommendation	☐ Yes ☒ No ☐ N/A	
Exceptions: VOA, coliform, TOC, O&G		Initial when completed: <u>NJS 6/28/11</u> Lot # of added preservative: <u>1140030</u>
Samples checked for dechlorination:	☐ Yes ☐ No ☒ N/A	15.
Headspace in VOA Vials (>6mm):	☐ Yes ☐ No ☒ N/A	16.
Trip Blanks Present:	☐ Yes ☒ No ☐ N/A	17.
Trip Blank Custody Seals Present	☐ Yes ☐ No ☒ N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

Appendix C

Data Validation Report



Memorandum

July 21, 2011

To: Todd Leeds
From: Daniel Dean
Re: Quality Assurance Review Summary for Kalaloch Firing Range EE/CA Data Package

Soil, surface water and shallow groundwater sampling was conducted at the Kalaloch Firing Range site (Site) during June 2011 with the purpose of providing data for the preparation of an Engineering Evaluation/Cost Analysis report (EE/CA). Fifteen soil samples, three surface water samples and one shallow groundwater sample were collected by Resource Management Consultants, Inc. on June 27, 2011. The samples were submitted under chain-of-custody to Pace Analytical Services, Inc. in Seattle, Washington, for analysis of lead.

The results of the quality assurance review indicate that, overall, the analytical data are of good quality and acceptable for use based on the following:

- Samples were collected in accordance with the Sampling and Analysis Plan;
- All sample preservation requirements and holding times were met;
- No contaminants were detected for any method blank results reported in the laboratory data package;
- All reported Laboratory Control Sample results were within control limits;
- Reported laboratory duplicate results were within control limits;
- Matrix spike/matrix spike duplicate results were reported within applicable recovery limits; and
- Relative percent differences (RPD) for field duplicate sample pairs were within the acceptable ranges.

Appendix D
SMMS Stabilization



Provides state of the art
stabilization technology
along with hazardous
waste management
solutions to industrial
clients throughout the
World.



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Services



- Soil Stabilization
- Hazardous Waste Site Clean Up
- Generator Waste Management
- Waste Transportation and Disposal

ADT SMMS Stabilization

- **We can take** heavy metals in soil, sludge or sediment and stabilized for 30 to 60 percent less than conventional means.
- **We can perform the work with** little increase in weight or volume.
- **We can** treated not just one heavy metal type but multiple types, simultaneously.
- **We can allow** you to be certain of cost, scheduling, analytical results, and treatment longevity.

What is ADT Stabilization?

A body of scientific knowledge combined with field experience applied in ambient conditions to convert heavy metals from leachable (toxic) metallic and oxide forms into environmentally stable mineral and other chemical forms.

Not all stabilization are created equal

Other forms of stabilization like pozzolonic (Silica based) essentially encapsulates heavy metals. True ionic or anionic change (treatment) never takes place.

There are a number of variations on the market but fail in consistency, restrictive in application, and do not evoke a true chemical change.

Traditional stabilization techniques have been confined to off site treatment facilities and do not lend to complex waste types or small quantities.

Advantages

Cost

Performance

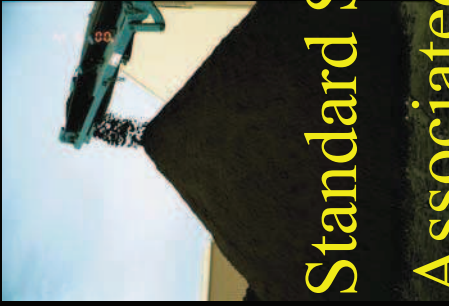
Range of Application

Consistency

Materials Handling

Compliance

Economics



Standard Stabilization Associated Costs

Purchase of bulk additives, bulk delivery and storage systems, purchase of large bulk handling equipment and systems, time to process contaminated material and additives, site labor and off site transportation and disposal fees.



SMMS Stabilization Associated Costs

Purchase of far less bulk additives, less bulk delivery and storage, singular purpose equipment systems, less site labor, and typically, due to longevity of treatment, far less and possibly no transportation and disposal costs.

Performance

mg/L TCLP

ARSENIC As	LEAD Pb	CHROME Cr	ZINC Zn
Woodtreating 30 ↓ <0.5	Smelters 130 ↓ 0.3	Mining 55* ↓ <0.2**	Mining 30 ↓ 0.15
Military 85 ↓ <0.01	Mining 125 ↓ <0.12	Plating 65* ↓ <0.05**	Anodizing 430 ↓ <0.4
Mining 110 ↓ <0.1	Scrapyards 170 ↓ <0.12	Metalworks 70* ↓ <0.05** *Cr ⁺⁶ * * Total Cr	Galvanizing 90 ↓ 0.2

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Range of Application

SMMS Stabilization can be applied in a variety of ways

- Stockpiled materials through mixing and re-stockpiled or cell placement
- Added to a materials process line prior to waste generation
- Applied in either liquid or solid form over large surfaces areas for tilling or penetration
- Applied in one or more phases addressing single or multiple environmental or health related issues.

Processing Flexibility

*Consistent
Performance under
any Condition*



- In conjunction with excavation
- Effectively treats debris & oversize materials
- Effective on large surface areas with minimal disturbance.
- Works on wet or dry material with varying pH
- Not effected by the presence of other contaminants (e.g. hydrocarbons)

Treated Material Characteristic's

- Sampled immediately for confirmation testing.
- Safely staged for later use as fill, and site re-contouring.
- Repeated handling without chemical breakdown.
- Never becomes monolithic
- Segmental staging based on contaminant type.
- Amenable to future re-processing



Material Handling Advantage



Contaminated media can be processed in a dry non-monolithic form to minimize disposal costs or with higher moisture content to minimize dust and enhance material handling characteristics

Operational Advantages

- Rapid mobilization and demobilization
- Conductance without interference to ongoing production or operations.
- Minimum space requirements
- Minimum labor
- Single event or phased project approach
- Minimum environmental disruption



Comparison Summary

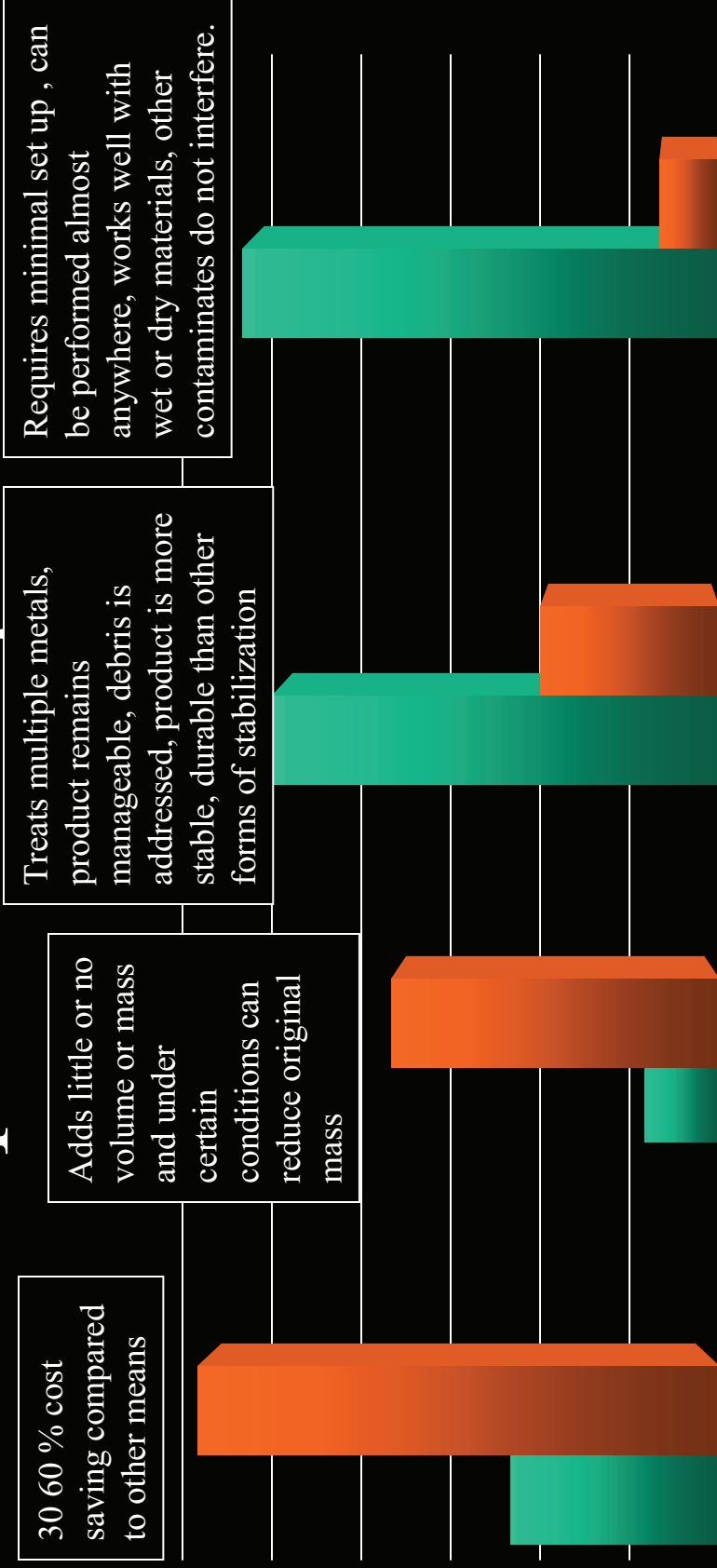
Pozzolan Technology

- Restricted to ex-situ processing
- Multiple handling steps
- Mass and volume increased by 15-40% or more
- Co-treatment problematic in most situations
- Limited disposition choices
- 7+ day “curing” period
- Concern about longevity and regulatory compliance
- Additional transportation and disposal costs

ADT SMMS Technology

- In-situ, ex situ, in-line options
- Single step processing
- Additives represent < 5% original mass
- Co-treatment of ionic and anionic metal species
- Range of disposition options
- Treatment is instantaneous
- Real and permanent treatment has occurred
- Significant reduction or elimination of additional transportation or disposal issues

Graphical Comparisons



Cost

Mass

Results

Limitations



ADT SMMS

Pozzolonic

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Why **ADT** Environmental Solutions

- **ADT** staff has treated, excavated, transported and disposed of over one and one half million tons of RCRA and state regulated waste without incident.
- **ADT's** staff has consistently completed large scale federal and state superfund projects and numerous private contracts safely, compliantly and within budget.
- **ADT** is knowledgeable in EPA, OSHA, and DOT aspects of compliance and protocols.

Solutions

- Address short and long term environmental and human health issues.
- Work with local leaders to develop cost effective alternatives to high cost clean up.
- Minimize disturbance to ecosystems and wildlife habitats.
- Immediate corrective actions.
- Minimal federal involvement.

What it Takes to Make it all Work

- Awareness of the regulatory goals for each waste type.
- Good material characterization.
- Ability to achieve consistent results for small and large scale or complex projects.
- “Turnkey” project experience and approach.
- Skilled, knowledgeable personnel.

Getting Started

1. Owner . . . provides soil composition data & representative samples
2. Owner . . . provides info on site characteristics and conditions
3. Owner . . . specifies performance objectives
4. ADT . . . performs bench scale simulation and analyzes treated samples
5. ADT . . . provides duplicate samples for verification testing
6. ADT . . . provides written reports/proposal for evaluation and discussion



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