

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

TestAmerica Job ID: 580-78527-5

Client Project/Site: Portland Harbor Pre-Remedial Design
Revision: 1

For:

AECOM
1111 Third Ave
Suite 1600
Seattle, Washington 98101

Attn: Amy Dahl

M. Elaine Walker

Authorized for release by:
12/13/2018 2:25:28 PM

Elaine Walker, Project Manager II
(253)248-4972
elaine.walker@testamericainc.com

LINKS

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www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-78527-5

Job ID: 580-78527-5

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE

Client: AECOM

Project: Portland Harbor Pre-Remedial Design

Report Number: 580-78527-5

REVISION 1: DECEMBER 12, 2018

This revision was required because the Plasticity was incorrectly calculated using un-rounded numbers rather than rounded.

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) resulting from a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are an unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes within the calibration range of the instrument or that reduces the interferences thereby enabling the quantification of target analytes.

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

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

Twenty-six samples were received on 7/2/2018 2:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 6 coolers at receipt time were 0.1° C, 0.2° C, 0.6° C, 1.7° C, 2.3° C and 3.2° C.

The following samples were activated by the client for Atterberg Limits on PDI-SG-B439 (580-78527-5), PDI-SG-B440 (580-78527-6), PDI-SG-B449 (580-78527-10), PDI-SG-B444 (580-78527-12), PDI-SG-B452 (580-78527-20), PDI-SG-B459 (580-78527-22), PDI-SG-B460 (580-78527-23), and PDI-SG-B461 (580-78527-24), and this report contains results for this analysis only, performed at TestAmerica Burlington.

The following sample was canceled by the client for Atterberg Limits on 8/23/18: PDI-SG-B461 (580-78527-24).

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS

Samples PDI-SG-B439 (580-78527-5), PDI-SG-B440 (580-78527-6), PDI-SG-B449 (580-78527-10), PDI-SG-B444 (580-78527-12), PDI-SG-B452 (580-78527-20), PDI-SG-B459 (580-78527-22) and PDI-SG-B460 (580-78527-23) were analyzed for Liquid Limit, Plastic Limit and Plasticity Index of Soils in accordance with ASTM D4318. The samples were analyzed on 08/21/2018, 08/24/2018 and 08/29/2018.

The following sample is not amenable to Liquid Limits, Plastic Limits, and Plasticity Index determination due to the physical properties of the sample: PDI-SG-B449 (580-78527-10). Values of zero, zero, and NP have been reported respectively for each determination.

The following sample is not amenable to Liquid Limits, Plastic Limits, and Plasticity Index determination due to the physical properties of the sample: PDI-SG-B444 (580-78527-12). Values of zero, zero, and NP have been reported respectively for each determination.

The following sample is not amenable to Liquid Limits, Plastic Limits, and Plasticity Index determination due to the physical properties of the sample: PDI-SG-B452 (580-78527-20). Values of zero, zero, and NP have been reported respectively for each determination.

Case Narrative

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-78527-5

Job ID: 580-78527-5 (Continued)

Laboratory: TestAmerica Seattle (Continued)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

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Definitions/Glossary

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-78527-5

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-78527-5

Client Sample ID: PDI-SG-B439

Lab Sample ID: 580-78527-5

Date Collected: 06/29/18 11:51

Matrix: Solid

Date Received: 07/02/18 14:30

Method: D4318 - Liquid Limit, Plastic Limit and Plasticity Index of Soils

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Liquid Limit	54				NONE			08/24/18 15:43	1
Plastic Limit	33				NONE			08/24/18 15:43	1
Plasticity Index	21				NONE			08/24/18 15:43	1

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Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-78527-5

Client Sample ID: PDI-SG-B440

Lab Sample ID: 580-78527-6

Date Collected: 06/29/18 14:12

Matrix: Solid

Date Received: 07/02/18 14:30

Method: D4318 - Liquid Limit, Plastic Limit and Plasticity Index of Soils

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Liquid Limit	70				NONE			08/29/18 16:53	1
Plastic Limit	46				NONE			08/29/18 16:53	1
Plasticity Index	24				NONE			08/29/18 16:53	1

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Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-78527-5

Client Sample ID: PDI-SG-B449

Lab Sample ID: 580-78527-10

Date Collected: 06/30/18 15:38

Matrix: Solid

Date Received: 07/02/18 14:30

Method: D4318 - Liquid Limit, Plastic Limit and Plasticity Index of Soils

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Liquid Limit	0				NONE			08/24/18 15:43	1
Plastic Limit	0				NONE			08/24/18 15:43	1
Plasticity Index	NP				NONE			08/24/18 15:43	1

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Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-78527-5

Client Sample ID: PDI-SG-B444

Lab Sample ID: 580-78527-12

Date Collected: 06/30/18 11:10

Matrix: Solid

Date Received: 07/02/18 14:30

Method: D4318 - Liquid Limit, Plastic Limit and Plasticity Index of Soils

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Liquid Limit	0				NONE			08/29/18 16:53	1
Plastic Limit	0				NONE			08/29/18 16:53	1
Plasticity Index	NP				NONE			08/29/18 16:53	1

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Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-78527-5

Client Sample ID: PDI-SG-B452

Lab Sample ID: 580-78527-20

Date Collected: 07/01/18 15:13

Matrix: Solid

Date Received: 07/02/18 14:30

Method: D4318 - Liquid Limit, Plastic Limit and Plasticity Index of Soils

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Liquid Limit	0				NONE			08/24/18 15:43	1
Plastic Limit	0				NONE			08/24/18 15:43	1
Plasticity Index	NP				NONE			08/24/18 15:43	1

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Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-78527-5

Client Sample ID: PDI-SG-B459

Lab Sample ID: 580-78527-22

Date Collected: 07/01/18 12:20

Matrix: Solid

Date Received: 07/02/18 14:30

Method: D4318 - Liquid Limit, Plastic Limit and Plasticity Index of Soils

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Liquid Limit	54				NONE			08/21/18 14:59	1
Plastic Limit	38				NONE			08/21/18 14:59	1
Plasticity Index	16				NONE			08/21/18 14:59	1

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Client Sample Results

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-78527-5

Client Sample ID: PDI-SG-B460

Lab Sample ID: 580-78527-23

Date Collected: 07/01/18 11:15

Matrix: Solid

Date Received: 07/02/18 14:30

Method: D4318 - Liquid Limit, Plastic Limit and Plasticity Index of Soils

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Liquid Limit	80				NONE			08/21/18 14:59	1
Plastic Limit	42				NONE			08/21/18 14:59	1
Plasticity Index	38				NONE			08/21/18 14:59	1

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Lab Chronicle

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-78527-5

Client Sample ID: PDI-SG-B439

Date Collected: 06/29/18 11:51

Date Received: 07/02/18 14:30

Lab Sample ID: 580-78527-5

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D4318		1	133288	08/24/18 15:43	MAP	TAL BUR

Client Sample ID: PDI-SG-B440

Date Collected: 06/29/18 14:12

Date Received: 07/02/18 14:30

Lab Sample ID: 580-78527-6

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D4318		1	133288	08/29/18 16:53	MAP	TAL BUR

Client Sample ID: PDI-SG-B449

Date Collected: 06/30/18 15:38

Date Received: 07/02/18 14:30

Lab Sample ID: 580-78527-10

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D4318		1	133288	08/24/18 15:43	MAP	TAL BUR

Client Sample ID: PDI-SG-B444

Date Collected: 06/30/18 11:10

Date Received: 07/02/18 14:30

Lab Sample ID: 580-78527-12

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D4318		1	133288	08/29/18 16:53	MAP	TAL BUR

Client Sample ID: PDI-SG-B452

Date Collected: 07/01/18 15:13

Date Received: 07/02/18 14:30

Lab Sample ID: 580-78527-20

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D4318		1	133288	08/24/18 15:43	MAP	TAL BUR

Client Sample ID: PDI-SG-B459

Date Collected: 07/01/18 12:20

Date Received: 07/02/18 14:30

Lab Sample ID: 580-78527-22

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D4318		1	133138	08/21/18 14:59	MAP	TAL BUR

TestAmerica Seattle

Lab Chronicle

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-78527-5

Client Sample ID: PDI-SG-B460

Lab Sample ID: 580-78527-23

Date Collected: 07/01/18 11:15

Matrix: Solid

Date Received: 07/02/18 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D4318		1	133138	08/21/18 14:59	MAP	TAL BUR

Laboratory References:

TAL BUR = TestAmerica Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990



Accreditation/Certification Summary

Client: AECOM

TestAmerica Job ID: 580-78527-5

Project/Site: Portland Harbor Pre-Remedial Design

Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	17-024	01-19-19
ANAB	DoD ELAP		L2236	01-19-19
ANAB	ISO/IEC 17025		L2236	01-19-19
California	State Program	9	2901	11-05-19
Montana (UST)	State Program	8	N/A	04-30-20
Nevada	State Program	9	WA000502019-1	07-31-19
Oregon	NELAP	10	WA100007	11-05-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-19

Laboratory: TestAmerica Burlington

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
ANAB	DoD ELAP		L2336	02-25-20
Connecticut	State Program	1	PH-0751	09-30-19
DE Haz. Subst. Cleanup Act (HSCA)	State Program	3	NA	02-01-19
Florida	NELAP	4	E87467	06-30-19
Maine	State Program	1	VT00008	04-17-19
Minnesota	NELAP	5	050-999-436	12-31-18 *
New Hampshire	NELAP	1	2006	12-18-18 *
New Jersey	NELAP	2	VT972	06-30-19
New York	NELAP	2	10391	04-01-19
Pennsylvania	NELAP	3	68-00489	04-30-19
Rhode Island	State Program	1	LAO00298	12-30-18 *
US Fish & Wildlife	Federal		LE-058448-0	07-31-19
USDA	Federal		P330-11-00093	07-24-20
Vermont	State Program	1	VT-4000	12-31-18 *
Virginia	NELAP	3	460209	12-14-18 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

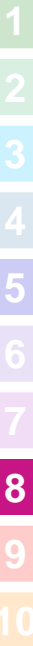
Sample Summary

Client: AECOM

TestAmerica Job ID: 580-78527-5

Project/Site: Portland Harbor Pre-Remedial Design

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-78527-5	PDI-SG-B439	Solid	06/29/18 11:51	07/02/18 14:30
580-78527-6	PDI-SG-B440	Solid	06/29/18 14:12	07/02/18 14:30
580-78527-10	PDI-SG-B449	Solid	06/30/18 15:38	07/02/18 14:30
580-78527-12	PDI-SG-B444	Solid	06/30/18 11:10	07/02/18 14:30
580-78527-20	PDI-SG-B452	Solid	07/01/18 15:13	07/02/18 14:30
580-78527-22	PDI-SG-B459	Solid	07/01/18 12:20	07/02/18 14:30
580-78527-23	PDI-SG-B460	Solid	07/01/18 11:15	07/02/18 14:30



**SURFACE SEDIMENT
CHAIN OF CUSTODY**

TestAmerica-Seattle
5755-8th-Street-East
Tacoma, WA 98424-1317
PH: 253-922-2310 Fax: 253-922-5047

Client Contact
AECOM
1111 3rd Ave Suite 1600
Seattle, WA 98101
Phone: (206) 438-2700 Fax: 1+(866) 495-2288
Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling
Portland, OR
Project #: 60566335 Study: Surface Sediment
Sample Type: D/U

Project Contact: Amy Dahl / Chelsey Cook
Tel: (206) 438-2261 / (206) 438-2010

Analysis Turnaround Time

Calendar (C) or Work Days (W)

21 days

Other ASAP

COC No: 1 of 3 pages

Carrier: Courier

Site Contact: Jennifer Ray
Laboratory Contact: Elaine Walker

6020B, 7471A

TPH Diesel, Metals, Mercury, N/TPH-Ds,

PCDD/Fs 1613B

Grain size ASTM D7928/D6913

Total organic carbon, Total solids 9060

Archive Archive -20 C

PAHs, BEHP, Tributyltin, 8270-SIM, 8270-

LT, Kron/Linger

Sample Specific Notes:



580-78527 Chain of Custody

Sample Disposal
 Return To Client Disposal By Lab Archive For 12 Months

Relinquished by: *[Signature]*
Company: AECOM
Date/Time: 7/2/18 1257

Relinquished by: *[Signature]*
Company: M.E.
Date/Time: 7/2/18 1430

Relinquished by: *[Signature]*
Company: *[Signature]*
Date/Time: 7/2/18 1430

Relinquished by: *[Signature]*
Company: M.E.
Date/Time: 7/2/18 1257

Relinquished by: *[Signature]*
Company: APOR
Date/Time: 7/2/18 1430

Received by: *[Signature]*

6/10, 6/7, 2/3, 2, 3, 0, 2



**SURFACE SEDIMENT
CHAIN OF CUSTODY**

TestAmerica-Seattle 5755-8th-Street-East Tacoma, WA 98424-1317 Ph: 253-922-2310 Fax: 253-922-5047		Project Contact: Amy Dahl / Chelsey Cook Tel: (206) 438-2261 / (206) 438-2010 Analysis Turnaround Time Calendar (C) or Work Days (W)		Site Contact: Jennifer Ray Laboratory Contact: Elaine-Walker Carrier: Courier		7/2/2018 COC No. 1 2 of 3 pages	
Client Contact 1111 3rd Ave Suite 1600 Seattle, WA 98101 Phone: (206) 438-2700 Fax: 1+(866) 495-5288 Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling Portland, OR Project #: 60566335 Study: Surface Sediment		Carrier: Courier		Carrier: Courier		Carrier: Courier	
Sample Type: D/U		Calendar (C) or Work Days (W)		Carrier: Courier		Carrier: Courier	
Sample Identification		Matrix		QC Sample		Sampler's Initials	
Sample Date		Sample Time		Total No. of Cont.		Fraction	
PDI-SG-B448		SS		MT		PCB Congeners 168A	
PDI-SG-B451		SS		AC		PCDD/Fs 1613B	
PDI-SG-B455		SS		AC		TPH Diesel, Metals, Mercury WTPH-Dx	
PDI-SG-B450		SS		SH		Grain size ASTM D7928/D6913	
PDI-SG-B454		SS		SH		Total organic carbon, Total solids 9660 (104C & 70C)	
PDI-SG-B453		SS		SH		Archive Archive - 20 C	
PDI-SG-B452		SS		SH		PAHs, BEHP, Tributyltin, 8270-SIM, 8270-	
PDI-SG-B457		SS		SH		L.L. Kron/Unger	
PDI-SG-B459		SS		AC		Aiterberg Limits ASTM D4318	
PDI-SG-B460		SS		MT		Sample Specific Notes:	
PDI-SG-B461		SS		MT		Sample Specific Notes:	
Container Type: WMG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, RC=Resin Column Preservative: HCl = Hydrochloric Acid, H3PO4 = Phosphoric Acid, HNO3 = Nitric Acid Fraction: D = Dissolved, PRT = Particulate, T = Total (unfiltered)		Matrix		QC Sample		Sampler's Initials	
Special Instructions/QC Requirements & Comments: Analyze samples for grain size ASAP, Hold (H) remaining analyses pending further instruction. Separate reports for each lab.		Matrix		QC Sample		Sampler's Initials	
Relinquished by: <i>[Signature]</i> Company: M.E.		Date/Time: 7/2/18 1257		Date/Time: 7/2/18 1257		Company: M.E.	
Relinquished by: <i>[Signature]</i> Company: M.E.		Date/Time: 7/2/18 1430		Date/Time: 7/2/18 1430		Company: TAPOR	
Relinquished by: <i>[Signature]</i> Company: M.E.		Date/Time: 7/2/18 1430		Date/Time: 7/2/18 1430		Company: TAPOR	



TestAmerica-Seattle		SURFACE SEDIMENT CHAIN OF CUSTODY													
5755-8th-Street-East Tacoma, WA 98424-1317 Ph: 253-922-2310 Fax: 253-922-5047		Project Contact: Amy Dahl / Chelsey Cook Tel: (206) 438-2261 / (206) 438-2010				Site Contact: Jennifer Ray Laboratory Contact: Elaine-Walker				7/2/2018		COC No. 1			
Client Contact		Analysis Turnaround Time				Carrier: Courier				1 of 3 pages					
AECOM 1111 3rd Ave Suite 1600 Seattle, WA 98101 Phone (206) 438-2700 Fax 1-(866)-495-5288 Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling Portland, OR Project #: 60566335 Study: Surface Sediment Sample Type: D/U		Calendar (C) or Work Days (W) <input type="checkbox"/> 21 days <input checked="" type="checkbox"/> Other _ASAP_____				PCB Containers 166KA PCDD/Fs 1613B FPH Diesel, Metals, Mercury, NWT/PH-Dx, 6020B, 7471A Grain size ASTM D7928/D6913 Total organic carbon, Total solids 9060 (104C & 70C) Archive Archive -20 C PAHs, BEHP, Tributyltin, 8270-SIM, 8270-LL, Kron/Unger									
Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	PCB Containers 166KA	PCDD/Fs 1613B	FPH Diesel, Metals, Mercury, NWT/PH-Dx, 6020B, 7471A	Grain size ASTM D7928/D6913	Total organic carbon, Total solids 9060 (104C & 70C)	Archive Archive -20 C	PAHs, BEHP, Tributyltin, 8270-SIM, 8270-LL, Kron/Unger	Sample Specific Notes:
PDI-SG-B434	6/29/2018	11:36	SS		MT	7		H	H	H	x	H	H	H	
PDI-SG-B435	6/29/2018	13:43	SS		MT	7		H	H	H	x	H	H	H	
PDI-SG-B441	6/29/2018	15:20	SS		MT	7		H	H	H	x	H	H	H	
PDI-SG-B442	6/29/2018	16:22	SS		MT	7		H	H	H	x	H	H	H	
PDI-SG-B439	6/29/2018	11:51	SS		SH	7		H	H	H	x	H	H	H	
PDI-SG-B440	6/29/2018	14:12	SS		SH	7		H	H	H	x	H	H	H	
PDI-SG-B445	6/29/2018	16:35	SS		SH	7		H	H	H	x	H	H	H	
PDI-SG-B446	6/30/2018	11:36	SS		SH	7		H	H	H	x	H	H	H	
PDI-SG-B447	6/30/2018	14:02	SS		SH	7		H	H	H	x	H	H	H	
PDI-SG-B449	6/30/2018	15:38	SS		MT	7		H	H	H	x	H	H	H	
PDI-SG-B443	6/30/2018	10:21	SS		MT	7		H	H	H	x	H	H	H	
PDI-SG-B444	6/30/2018	15:20	SS		MT	7		H	H	H	x	H	H	H	



Container Type: WMG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, RC=Resin Column
 Preservative: HCl = Hydrochloric Acid, H3PO4 = Phosphoric Acid, HNO3 = Nitric Acid
 Fraction: D = Dissolved, PRT = Particulate, T = Total (unfiltered)

Sample Disposal
 Return To Client Disposal By Lab Archive For 12 Months

Special Instructions/QC Requirements & Comments:
 Analyze samples for grain size ASAP, Hold (H) remaining analyses pending further instruction.
 Separate reports for each lab.

6, 01, 67, 203, 02, 302

Relinquished by: <i>[Signature]</i>	Company: AECOM	Date/Time: 7/2/18 / 1257	Received by: <i>[Signature]</i>	Company: M-E	Date/Time: 7/2/18 / 1257
Relinquished by: <i>[Signature]</i>	Company: M-E	Date/Time: 7/2/18 / 1430	Received by: <i>[Signature]</i>	Company: TAPOR	Date/Time: 7/2/18 / 1430
Relinquished by: <i>[Signature]</i>	Company: TAPOR	Date/Time: 7/2/18 / 1800	Received by: <i>[Signature]</i>	Company: TAPOR	Date/Time: 7/3/18 / 0945

IR5 0.3/0.3
 1.8/1.8
 12/13/2018 (Rev. 1)

TestAmerica-Seattle		SURFACE SEDIMENT CHAIN OF CUSTODY														
5755-8th-Street-East Tacoma, WA 98424-1317 Ph: 253-922-2310 Fax: 253-922-5047		Project Contact: Amy Dahl / Chelsey Cook Tel: (206) 438-2261 / (206) 438-2010				Site Contact: Jennifer Ray Laboratory Contact: Elaine-Walker				7/2/2018		COC No: 1 2 of 3 pages				
Client Contact		Analysis Turnaround Time		Calendar (C) or Work Days (W)		Carrier: Courier										
AECOM 1111 3rd Ave Suite 1600 Seattle, WA 98101 Phone: (206) 438-2700 Fax: 1+(866) 495-5288 Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling Portland, OR Project #: 60566335 Study: Surface Sediment Sample Type: DAU		<input type="checkbox"/> 21 days <input checked="" type="checkbox"/> Other ASAP _____														
Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	PCB Congeners, 166&A	PCDD/Fs, 1613B	TPH, Diesel, Metals, Mercury, NWTPH-DX, 602&B, 7471A	Grain size ASTM D7928/D6913	Total organic carbon, Total solids 9860 (DMC & TOC)	Archive Archive -20 C	PAHs, BEHP, Tributyltin, 8270, SIM, 8270, L.L., Kron/Linger	Atterberg Limits ASTM D4318	Sample Specific Notes:
PDI-SG-B448	6/30/2018	12:08	SS		MT	7		H	H	H	x	H	H	H		
PDI-SG-B451	6/30/2018	14:45	SS		AC	7		H	H	H	x	H	H	H		
PDI-SG-B455	6/30/2018	15:55	SS		AC	7		H	H	H	x	H	H	H		
PDI-SG-B450	7/1/2018	10:30	SS		SH	7		H	H	H	x	H	H	H		
PDI-SG-B454	7/1/2018	13:45	SS		SH	7		H	H	H	x	H	H	H		
PDI-SG-B453	7/1/2018	11:41	SS		SH	7		H	H	H	x	H	H	H		
PDI-SG-B453-D	7/1/2018	11:41	SS		SH	6		H	H	H		H	H	H		
PDI-SG-B452	7/1/2018	15:13	SS		SH	7		H	H	H	x	H	H	H		
PDI-SG-B457	7/1/2018	15:30	SS	MS/MSD	AC	13		H	H	H	x	H	H	H		
PDI-SG-B459	7/1/2018	12:20	SS		AC	8		H	H	H	x	H	H	H	H	
PDI-SG-B460	7/1/2018	11:15	SS		MT	8		H	H	H	x	H	H	H	H	
PDI-SG-B461	7/1/2018	10:00	SS		MT	8		H	H	H	x	H	H	H	H	
Container Type: WMG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, RC=Resin Column																
Preservative: HCl = Hydrochloric Acid, H3PO4 = Phosphoric Acid, HNO3 = Nitric Acid																
Fraction: D = Dissolved, PRT = Particulate, T = Total (unfiltered)																
Sample Disposal <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For 12 Months																
Special Instructions/QC Requirements & Comments: Analyze samples for grain size ASAP, Hold (H) remaining analyses pending further instruction. Separate reports for each lab.																
Relinquished by: <i>[Signature]</i>	Company: <i>Becon</i>	Date/Time: <i>7/2/18 1257</i>	Received by: <i>[Signature]</i>				Company: <i>M-E</i>	Date/Time: <i>7/2/18 1257</i>								
Relinquished by: <i>[Signature]</i>	Company: <i>M-E</i>	Date/Time: <i>7/2/18 1430</i>	Received by: <i>[Signature]</i>				Company: <i>TAPOR</i>	Date/Time: <i>7/2/18 1430</i>								
Relinquished by: <i>[Signature]</i>	Company: <i>TAPOR</i>	Date/Time: <i>7/2/18 1800</i>	Received by: <i>[Signature]</i>				Company: <i>TAPOR</i>	Date/Time: <i>7-3-18 0945</i>								

(*)

Revised 7/25/27

LABORATORY
 5725 9th Street NW
 Lincoln, WA 99342-1517
 Fax: 253-622-2288

Client Contact:
 ABCOM
 1111 3rd Ave Suite 100
 Seattle, WA 98101
 Phone: (206) 439-2700 Fax: (206) 439-2028
 Project Name: Federal Nuclear Pro-Security Design
 Development and Construction Sampling
 Portland, OR
 Project #: 6026035 Recd: Surface Sediment
 Sample Type: 297

Project Contact: Amy Reid / Quality Check
 Tel: (206) 439-2028 / (206) 439-2018
 Analyte Turnaround Time:
 Calendar (C) or Work Days (W)
 21 days
 Other, ASAP

CHAIN OF CUSTODY
 Site Contact: Jennifer Day
 Laboratory Contact: Helen Walker
 Date/Time: 7/22/18 12:57
 Page: 3 of 3

Sample Date	Sample Time	Matrix	QC Sample	Sample's Initials	Total No. of Cont.
6/29/2018	11:58	SS	MT	MT	7
6/29/2018	12:43	SS	MT	MT	7
6/29/2018	15:20	SS	MT	MT	7
6/29/2018	16:21	SS	MT	MT	7
6/29/2018	11:51	SS	SH	SH	7
6/29/2018	14:12	SS	SH	SH	7
6/29/2018	16:25	SS	SH	SH	7
6/29/2018	11:26	SS	SH	SH	7
6/29/2018	14:53	SS	SH	SH	7
6/29/2018	15:28	SS	MT	MT	7
6/29/2018	19:21	SS	MT	MT	7
6/29/2018	16:30	SS	MT	MT	7

Special Instructions: Report results & Comments
 Analyze samples for metals also ASAP, Hold (H) remaining analyses pending further instruction.
 Reportable reports for each lab.

ANALYZE SAMPLE PDI-SG-B441 FOR METALS (60208), TOC (9060,10447), AND GRAIN SIZE (ASTM D7178/06915) ON RUSH TRN.

Company: **TRC** Date/Time: **7/25/18 12:57**
 Company: **TRC** Date/Time: **7/25/18 12:57**

Analyst: **[Signature]**
 Recv'd By: **[Signature]**

602 14M
 Sample 1435

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10

Chain of Custody record



580-78527 Chain of Custody



THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab) Client Contact: Walker, Elaine M Shipping/Receiving: elaine.walker@testamericainc.com Company: TestAmerica Laboratories, Inc. Address: 30 Community Drive, Suite 11, South Burlington, VT, 05403 Phone: 802-660-1990(Tel) 802-660-1919(Fax) Email: Project Name: Portland Harbor Pre-Remedial Design Site:		Lab PIV: Walker, Elaine M E-Mail: elaine.walker@testamericainc.com State or Origin: Oregon Accreditations Required (See note):	
Due Date Requested: 7/19/2018 TAT Requested (days):		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:	
PO #: WO #: Project #: 58012120 SSOW#:		Analysis Requested:	
Sample Identification - Client ID (Lab ID)		Total Number of Containers:	
PDI-SG-B459 (580-78527-22)	Sample Date: 7/11/18 Sample Time: 12:20 Pacific	Sample Type (C=Comp, G=grab): Solid	Matrix (W=Water, S=Solid, O=Other): Solid
PDI-SG-B460 (580-78527-23)	Sample Date: 7/11/18 Sample Time: 11:15 Pacific	Sample Type (C=Comp, G=grab): Solid	Matrix (W=Water, S=Solid, O=Other): Solid
PDI-SG-B461 (580-78527-24)	Sample Date: 7/11/18 Sample Time: 10:00 Pacific	Sample Type (C=Comp, G=grab): Solid	Matrix (W=Water, S=Solid, O=Other): Solid
Special Instructions/Note:		Special Instructions/Note:	
Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.			
Possible Hazard Identification Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify)			
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		Special Instructions/QC Requirements:	
Empty Kit Relinquished by:		Method of Shipment:	
Relinquished by: [Signature] Date: 7/18/18 1030		Received by: [Signature] Date/Time:	
Relinquished by: [Signature] Date/Time:		Received by: [Signature] Date/Time:	
Relinquished by: [Signature] Date/Time:		Received by: [Signature] Date/Time:	
Custody Seals Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Custody Seal No.:	
Colder Temperature(s) °C and Other Remarks:		7/6/18 1030	



Chain of Custody Record



580-78527 Chain of Custody

Client Information (Sub Contract Lab) Client Contact: Walker, Elaine M Shipping/Receiving: Elaine Walker Company: TestAmerica Laboratories, Inc. Address: 30 Community Drive, Suite 11, South Burlington, VT, 05403 Phone: 802-660-1990 (Tel) 802-660-1919 (Fax) Email:		Lab PIV: Walker, Elaine M E-Mail: Elaine.Walker@testamericainc.com State of Origin: Oregon Accreditations Required (See note):		
Due Date Requested: 9/4/2018 TAT Requested (days):		Job #: 580-78527-5 Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:		
Project Name: Portland Harbor Pre-Remedial Design Site:		Analysis Requested:		
PO #: D4318 WO #:		Special Instructions/Note:		
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=wastewater, BT=Tissue, A=Air)
PDI-SG-B439 (580-78527-5)	6/29/18	11:51 Pacific	Solid	
PDI-SG-B449 (580-78527-10)	6/30/18	15:38 Pacific	Solid	
PDI-SG-B452 (580-78527-20)	7/1/18	15:13 Pacific	Solid	
Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.				
Possible Hazard Identification Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify)				
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For <input type="checkbox"/> Months				
Empty Kit Relinquished by:				
Relinquished by: B. Shaw Date/Time: 8.22.18 1415		Relinquished by: [Signature] Date/Time: 8/24/18 1030		
Relinquished by:		Relinquished by:		
Custody Seals Intact: Δ Yes Δ No		Cooler Temperature(s) °C and Other Remarks:		

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ORIGINATOR: TCMA (3) 922-2310
SHIP DATE: 22 AUG 18
SHIP TO: RECEIVING
ACTNGT: 24 60 13
CATTLE
AD: 989746/CAFE3210
3755 8TH ST E

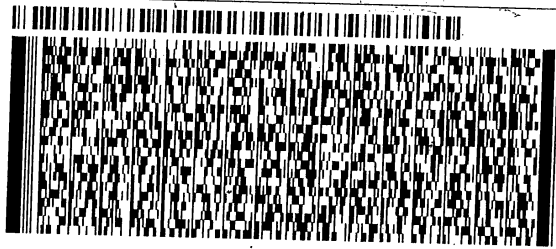
FIFE WA 98424
UNITED STATES US

BILL RECIPIENT

TO SHIPPING/RECEIVING
TESTAMERICA LABORATORIES, INC.
30 COMMUNITY DRIVE
SUITE 11
SOUTH BURLINGTON VT 05403

(802) 660-1990
PO: YES

REF: 6580-30339



FedEx
Express



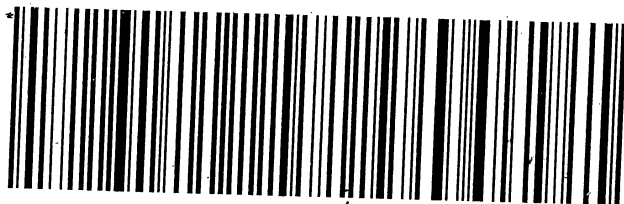
TRK# 4565 9892 7122
0201

THU - 23 AUG 10:30A
PRIORITY OVERNIGHT

XH BTVA

05403
VT-US BTV

Part # 159471-434 RIT2 EXP 03/19



Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-78527-5

Login Number: 78527

List Source: TestAmerica Seattle

List Number: 1

Creator: Antonson, Angeline D

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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	
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 containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-78527-5

Login Number: 78527

List Number: 2

Creator: Lavigne, Scott M

List Source: TestAmerica Burlington

List Creation: 07/06/18 11:21 AM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	Seal present with no number.
Sample custody seals, if present, are intact.	True	
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	2.4°C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	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.	N/A	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.



Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-78527-5

Login Number: 78527
List Number: 8
Creator: Hall, Samuel C

List Source: TestAmerica Burlington
List Creation: 08/24/18 12:10 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	478656
Sample custody seals, if present, are intact.	True	Not Present
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	0.5°C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	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.	N/A	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-78527-5

Login Number: 78527

List Number: 9

Creator: Johnson, Eleanor E

List Source: TestAmerica Burlington

List Creation: 08/25/18 11:31 AM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	478663
Sample custody seals, if present, are intact.	True	
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	2.1°C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	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.	N/A	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.



Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-78527-5

Login Number: 78527
List Number: 10
Creator: Hall, Samuel C

List Source: TestAmerica Burlington
List Creation: 08/25/18 11:45 AM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	478663
Sample custody seals, if present, are intact.	True	
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	2.1°C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	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.	N/A	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

