

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: 580-79019-3

Client Project/Site: Portland Harbor Pre-Remedial Design

For:

AECOM
1111 Third Ave
Suite 1600
Seattle, Washington 98101

Attn: Amy Dahl

M. Elaine Walker

Authorized for release by:
8/13/2018 4:26:53 PM

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

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
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: 580-79019-3

Job ID: 580-79019-3

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE

Client: AECOM

Project: Portland Harbor Pre-Remedial Design

Report Number: 580-79019-3

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

Six samples were received on 7/20/2018 1:17 PM; the samples arrived in good condition, properly preserved and, where required, on ice.

A sample container was provided to be archived frozen at the TestAmerica Sacramento laboratory pending potential additional analyses.

This report contains results of Atterberg Limits by Method D4318, performed by TestAmerica Burlington.

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 (Atterberg Limits)

Sample PDI-SC-S034-1.8to4 (580-79019-6) was analyzed for Liquid Limit, Plastic Limit and Plasticity Index of Soils in accordance with ASTM D4318. The sample was analyzed on 07/30/2018.

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

Definitions/Glossary

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

TestAmerica Job ID: 580-79019-3

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: 580-79019-3

Client Sample ID: PDI-SC-S034-1.8to4

Lab Sample ID: 580-79019-6

Date Collected: 07/19/18 11:50

Matrix: Solid

Date Received: 07/20/18 13:17

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Liquid Limit	60				NONE			07/30/18 20:35	1
Plastic Limit	34				NONE			07/30/18 20:35	1
Plasticity Index	26				NONE			07/30/18 20:35	1

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Lab Chronicle

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

TestAmerica Job ID: 580-79019-3

Client Sample ID: PDI-SC-S034-1.8to4

Lab Sample ID: 580-79019-6

Date Collected: 07/19/18 11:50

Matrix: Solid

Date Received: 07/20/18 13:17

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D4318		1	132312	07/30/18 20:35	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: 580-79019-3

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	11-05-18
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-05-18
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
Maine	State Program	1	VT00008	04-17-19
Minnesota	NELAP	5	050-999-436	12-31-18
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

Sample Summary

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

TestAmerica Job ID: 580-79019-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-79019-6	PDI-SC-S034-1.8to4	Solid	07/19/18 11:50	07/20/18 13:17

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**SUBSURFACE 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) 495-5288
Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling
Portland, OR
Project #: 60566335 Study: Subsurface Sediment
Sample Type:

Project Contact: Amy Dahl / Chelsey Cook
Tel: (206) 438-2261 / (206) 438-2010
Analysis Turnaround Time
Calendar (C) or Work Days (W) _ W _
 21 days
 Other _____

Site Contact: Jennifer Roy / Michaela McCaughey
Laboratory Contact: Elaine-Walker
Date: 7/20/18
Carrier: Courier

COC No. 1 _____ of _____ pages

Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	PC/D/Fs 1613B	Archive	Grain size ASTM D7928/D6913	PCB Aroclors, PAHs, Total Organic Carbon, Total Solids 8082A, 8270D-S1M1, 9060, 1603	Atterberg Limits ASTM D4318	Sample Specific Notes:
PDI-SC-S033 - 0 to 2	7/18/2018	17:40	SE		AF	4		x	x	x	x		
PDI-SC-S033 - 2 to 3	7/18/2018	17:45	SE		AF	4		x	x	x	x		
PDI-SC-S033 - 3 to 4	7/18/2018	17:50	SE		AF	4		x	x	x	x		
PDI-SC-S034 - 4 to 5.2	7/19/2018	11:55	SE		AF	4		x	x	x	x		
PDI-SC-S034 - 0 to 1.8	7/19/2018	11:45	SE		AF	4		x	x	x	x		
PDI-SC-S034 - 1.8 to 4	7/19/2018	11:50	SE		AF	5		x	x	x	x		
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- to 10													



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

Sample Disposal
 Return To Client Dispose By Lab Ship For 12 Months

Special Instructions/QC Requirements & Comments: **Separate reports for each lab**

Relinquished by: *[Signature]* Date/Time: 07/20/2018 1237 Company: AECOM
Relinquished by: *[Signature]* Date/Time: 7/20/18 1415 Company: M.E.
Relinquished by: *[Signature]* Date/Time: *[Blank]* Company: *[Blank]*

Received by: *[Signature]* Date/Time: 7/20/18 1237 Company: M.E.
Received by: *[Signature]* Date/Time: 7/20/18 1415 Company: M.E.
Received by: *[Signature]* Date/Time: *[Blank]* Company: *[Blank]*

5-1



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

**SUBSURFACE SEDIMENT
 CHAIN OF CUSTODY**

Client Contact: 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: Subsurface Sediment
 Sample Type:

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

Site Contact: Jennifer Ray / Michaela McCoog
 Laboratory Contact: Elaine-Walker

Date: 7/20/18
 Carrier: Courier

COC No: 1
 1 of 1 pages

Analysis Turnaround Time
 Calendar (C) or Work Days (W) W

21 days
 Other _____

PCDD/Fs 1613B
 Aroclor
 Grain size: ASTM D7928/06913
 PCB Aroclors, PAHs, Total Organic Carbon, Total Solids 8082A, 8270D-SIM, 9060, 160.3
 Afterberg Limits ASTM D4318

Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	PCDD/Fs 1613B	Aroclor	Grain size: ASTM D7928/06913	PCB Aroclors, PAHs, Total Organic Carbon, Total Solids 8082A, 8270D-SIM, 9060, 160.3	Afterberg Limits ASTM D4318	Sample Specific Notes:
PDI-SC-S033 - 0 to 2	7/18/2018	17:40	SE		AF	4	x	x	x	x		
PDI-SC-S033 - 2 to 3	7/18/2018	17:45	SE		AF	4	x	x	x	x		
PDI-SC-S033 - 3 to 4	7/18/2018	17:50	SE		AF	4	x	x	x	x		
PDI-SC-S034 - 4 to 5.2	7/19/2018	11:55	SE		AF	4	x	x	x	x		
PDI-SC-S034 - 0 to 1.8	7/19/2018	11:45	SE		AF	4	x	x	x	x		
PDI-SC-S034 - 1.8 to 4	7/19/2018	11:50	SE		AF	5	x	x	x	x	x	
- to												
- to												
- to												
- to												
- to												



580-79019 Chain of Custody

Container Type: WMG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, RC=Resin Co
 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: **Separate reports for each lab**

5-1

Relinquished by: <i>[Signature]</i>	Company: AECOM	Date/Time: 07/20/2018 1237	Received by: <i>[Signature]</i>	Company: M.E.	Date/Time: 7/20/18 1237
Relinquished by: <i>[Signature]</i>	Company: M.E.	Date/Time: 7/20/18 1415	Received by: <i>[Signature]</i>	Company: TAPOR	Date/Time: 7/20/18 1415
Relinquished by: <i>[Signature]</i>	Company: TAPOR	Date/Time: 7/20/18 1700	Received by: <i>[Signature]</i>	Company: TAPOR	Date/Time: 7-21-18 1600

IR5 = 0.8/0.8

FedEx® Saturday Delivery

10/04 MWL

Part # 15

RT 876
FZ

12:00
7260
07.21
C

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTS

ORIGIN ID: BNDA (503) 906-9240
SAMPLE CONTROL
TESTAMERICA PORTLAND
8920 SW GERINI DR
BUILDING 7
BEAVERTON, OR 970087145
UNITED STATES US

SHIP DATE: 20 JUL 18
ACTWGT: 11.35 LB
CAD: 0996922/CAFE3210

BILL RECIPIENT

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

(802) 860-1980
REF: S580-29798

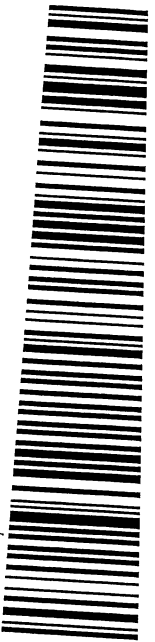


SATURDAY 12:00P
PRIORITY OVERNIGHT

TRK# 4423 0750 7260
0201

XO BTVA

05403
VT-US BTV



Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-79019-3

Login Number: 79019

List Source: TestAmerica Seattle

List Number: 1

Creator: Rogers, Angeline D

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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.	N/A	
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	



Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-79019-3

Login Number: 79019
List Number: 2
Creator: Mohn, Taylor J

List Source: TestAmerica Burlington
List Creation: 07/21/18 11:17 AM

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.	N/A	Not present
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	2.9°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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

