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: 580-78433-1
Client Project/Site: Portland Harbor Pre-Remedial Design

For:
AECOM
1111 Third Ave
Suite 1600
Seattle, Washington 98101

Attn: Amy Dahl

Authorized for release by:
7/26/2018 10:48:29 AM
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Designee for

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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.

Table of Contents

Job ID: 580-78433-1

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE
Client: AECOM
Project: Portland Harbor Pre-Remedial Design
Report Number: 580-78433-1

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
The sample was received on 6/27/2018 1:45 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was -2.1º C.

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

This report contains results of all analyses performed by TestAmerica Seattle.

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.

DIESEL AND EXTENDED RANGE ORGANICS
Sample PDI-SG-B194-BL1 (580-78433-1) was analyzed for diesel and extended range organics in accordance with Method NWTPH-Dx. The samples were prepared on 07/03/2018 and analyzed on 07/05/2018.

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

METALS (ICPMS)
Sample PDI-SG-B194-BL1 (580-78433-1) was analyzed for Metals (ICPMS) in accordance with 6020A_LL. The samples were prepared on 07/11/2018 and analyzed on 07/12/2018.

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

TOTAL MERCURY
Sample PDI-SG-B194-BL1 (580-78433-1) was analyzed for total mercury in accordance with EPA SW-846 Method 7471A. The samples were prepared and analyzed on 07/02/2018.

Mercury failed the recovery criteria low for the MS of sample PDI-SG-B194-BL1MS (580-78433-1) in batch 580-278019.

Mercury failed the recovery criteria low for the MSD of sample PDI-SG-B194-BL1MSD (580-78433-1) in batch 580-278019.

Job ID: 580-78433-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

Mercury exceeded the RPD limit for the duplicate of sample PDI-SG-B194-BL1DU (580-78433-1).

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

TOTAL ORGANIC CARBON

Sample PDI-SG-B194-BL1 (580-78433-1) was analyzed for total organic carbon in accordance with EPA SW-846 Method 9060. The samples were analyzed on 07/06/2018.

Total Organic Carbon - Duplicates was detected in method blank MB 580-278318/3 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

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

GRAIN SIZE

Sample PDI-SG-B194-BL1 (580-78433-1) was analyzed for grain size in accordance with ASTM D7928/D6913. The samples were analyzed on 07/05/2018.

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

PERCENT SOLIDS

Sample PDI-SG-B194-BL1 (580-78433-1) was analyzed for percent solids in accordance with ASTM D2216. The samples were analyzed on 07/10/2018.

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

TOTAL SOLIDS @ 70C

Sample PDI-SG-B194-BL1 (580-78433-1) was analyzed for Total Solids @ 70C. The samples were analyzed on 07/11/2018.

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: 580-78433-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
H	Sample was prepped or analyzed beyond the specified holding time

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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 ID: PDI-SG-B194-BL1

Date Collected: 06/01/18 10:20
Date Received: 06/27/18 13:45

Lab Sample ID: 580-78433-1

Matrix: Solid
Percent Solids: 71.5

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		63	16	mg/Kg	☼	07/03/18 09:32	07/05/18 17:46	1
Motor Oil (>C24-C36)	**29**	**J**	63	22	mg/Kg	☼	07/03/18 09:32	07/05/18 17:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*104*		*50 - 150*	*07/03/18 09:32*	*07/05/18 17:46*	*1*

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**4.5**		0.26	0.051	mg/Kg	☼	07/11/18 09:29	07/12/18 01:12	5
Cadmium	**0.11**	**J**	0.20	0.039	mg/Kg	☼	07/11/18 09:29	07/12/18 01:12	5
Copper	**14**		0.51	0.11	mg/Kg	☼	07/11/18 09:29	07/12/18 01:12	5
Lead	**6.5**		0.26	0.024	mg/Kg	☼	07/11/18 09:29	07/12/18 12:34	5
Zinc	**67**		2.6	0.82	mg/Kg	☼	07/11/18 09:29	07/12/18 01:12	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.024**	**J H F1**	0.034	0.010	mg/Kg	☼	07/02/18 12:48	07/02/18 14:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	**1500**	**J B**	2000	44	mg/Kg			07/06/18 14:51	1
Total Solids	**71.5**		0.1	0.1	%			07/10/18 15:35	1
Total Solids @ 70°C	**77**	**H**	0.10	0.10	%			07/11/18 08:10	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	**0.7**				%			07/05/18 13:11	1
Coarse Sand	**0.9**				%			07/05/18 13:11	1
Fine Sand	**49.5**				%			07/05/18 13:11	1
Gravel	**1.7**				%			07/05/18 13:11	1
Medium Sand	**45.5**				%			07/05/18 13:11	1
Silt	**1.6**				%			07/05/18 13:11	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-278009/1-A
Matrix: Solid
Analysis Batch: 278124

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 278009

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		07/03/18 09:32	07/05/18 13:59	1
Motor Oil (>C24-C36)	ND		50	18	mg/Kg		07/03/18 09:32	07/05/18 13:59	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*102*		*50 - 150*	*07/03/18 09:32*	*07/05/18 13:59*	*1*

Lab Sample ID: LCS 580-278009/2-A
Matrix: Solid
Analysis Batch: 278124

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 278009

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
#2 Diesel (C10-C24)			500	477		mg/Kg		95	70 - 125		
Motor Oil (>C24-C36)			500	486		mg/Kg		97	70 - 129		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*94*		*50 - 150*

Lab Sample ID: LCSD 580-278009/3-A
Matrix: Solid
Analysis Batch: 278124

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 278009

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)			500	495		mg/Kg		99	70 - 125	4	16
Motor Oil (>C24-C36)			500	510		mg/Kg		102	70 - 129	5	16

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*94*		*50 - 150*

Lab Sample ID: 580-78433-1 DU
Matrix: Solid
Analysis Batch: 278124

Client Sample ID: PDI-SG-B194-BL1
Prep Type: Total/NA
Prep Batch: 278009

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
#2 Diesel (C10-C24)	ND			ND		mg/Kg	☼			NC	35
Motor Oil (>C24-C36)	29	J		32.2	J	mg/Kg	☼			9	35

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
o-Terphenyl	*101*		*50 - 150*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 580-278638/19-A
Matrix: Solid
Analysis Batch: 278798

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 278638

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.25	0.050	mg/Kg		07/11/18 09:29	07/11/18 13:08	5

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 580-278638/19-A
Matrix: Solid
Analysis Batch: 278798

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 278638

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		0.20	0.039	mg/Kg		07/11/18 09:29	07/11/18 13:08	5
Copper	ND		0.50	0.11	mg/Kg		07/11/18 09:29	07/11/18 13:08	5
Lead	ND		0.25	0.024	mg/Kg		07/11/18 09:29	07/11/18 13:08	5
Zinc	ND		2.5	0.81	mg/Kg		07/11/18 09:29	07/11/18 13:08	5

Lab Sample ID: LCS 580-278638/20-A
Matrix: Solid
Analysis Batch: 278798

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 278638

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	200	199		mg/Kg		99	80 - 120
Cadmium	5.00	4.83		mg/Kg		97	80 - 120
Copper	25.0	25.1		mg/Kg		101	80 - 120
Lead	50.0	48.2		mg/Kg		96	80 - 120
Zinc	200	195		mg/Kg		98	80 - 120

Lab Sample ID: LCSD 580-278638/21-A
Matrix: Solid
Analysis Batch: 278798

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 278638

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	200	200		mg/Kg		100	80 - 120	1	20
Cadmium	5.00	5.24		mg/Kg		105	80 - 120	8	20
Copper	25.0	24.9		mg/Kg		99	80 - 120	1	20
Lead	50.0	48.1		mg/Kg		96	80 - 120	0	20
Zinc	200	195		mg/Kg		98	80 - 120	0	20

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 580-277932/11-A
Matrix: Solid
Analysis Batch: 278019

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 277932

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.030	0.0090	mg/Kg		07/02/18 12:48	07/02/18 14:43	1

Lab Sample ID: LCS 580-277932/12-A
Matrix: Solid
Analysis Batch: 278019

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 277932

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.167	0.164		mg/Kg		99	80 - 120

Lab Sample ID: LCSD 580-277932/13-A
Matrix: Solid
Analysis Batch: 278019

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 277932

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.167	0.156		mg/Kg		94	80 - 120	5	20

Method: 7471A - Mercury (CVAA) (Continued)

Lab Sample ID: 580-78433-1 MS
Matrix: Solid
Analysis Batch: 278019

Client Sample ID: PDI-SG-B194-BL1
Prep Type: Total/NA
Prep Batch: 277932

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.024	J H F1	0.201	0.180	F1	mg/Kg	☼	78	80 - 120

Lab Sample ID: 580-78433-1 MSD
Matrix: Solid
Analysis Batch: 278019

Client Sample ID: PDI-SG-B194-BL1
Prep Type: Total/NA
Prep Batch: 277932

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.024	J H F1	0.178	0.154	F1	mg/Kg	☼	73	80 - 120	16	20

Lab Sample ID: 580-78433-1 DU
Matrix: Solid
Analysis Batch: 278019

Client Sample ID: PDI-SG-B194-BL1
Prep Type: Total/NA
Prep Batch: 277932

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Mercury	0.024	J H F1	0.0354	F5	mg/Kg	☼	39	20

Method: 9060_PSEP - TOC (Puget Sound)

Lab Sample ID: MB 580-278318/3
Matrix: Solid
Analysis Batch: 278318

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	198	J	2000	44	mg/Kg			07/06/18 14:11	1

Lab Sample ID: LCS 580-278318/4
Matrix: Solid
Analysis Batch: 278318

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	4270	4690		mg/Kg		110	68 - 149

Lab Sample ID: LCSD 580-278318/5
Matrix: Solid
Analysis Batch: 278318

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	4270	4540		mg/Kg		106	68 - 149	3	32

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-78433-1 DU
Matrix: Solid
Analysis Batch: 278582

Client Sample ID: PDI-SG-B194-BL1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Solids	71.5		71.3		%		0.3	20

Lab Chronicle

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

TestAmerica Job ID: 580-78433-1

Client Sample ID: PDI-SG-B194-BL1

Lab Sample ID: 580-78433-1

Date Collected: 06/01/18 10:20

Matrix: Solid

Date Received: 06/27/18 13:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	278318	07/06/18 14:51	Z1T	TAL SEA
Total/NA	Analysis	D 2216		1	278582	07/10/18 15:35	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	279454	07/11/18 08:10	A1K	TAL SEA
Total/NA	Analysis	D7928/D6913		1	278174	07/05/18 13:11	KAB	TAL SEA

Client Sample ID: PDI-SG-B194-BL1

Lab Sample ID: 580-78433-1

Date Collected: 06/01/18 10:20

Matrix: Solid

Date Received: 06/27/18 13:45

Percent Solids: 71.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			278009	07/03/18 09:32	SPS	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	278124	07/05/18 17:46	CJ	TAL SEA
Total/NA	Prep	3050B			278638	07/11/18 09:29	T1H	TAL SEA
Total/NA	Analysis	6020B		5	278798	07/12/18 01:12	FCW	TAL SEA
Total/NA	Prep	3050B			278638	07/11/18 09:29	T1H	TAL SEA
Total/NA	Analysis	6020B		5	278867	07/12/18 12:34	FCW	TAL SEA
Total/NA	Prep	7471A			277932	07/02/18 12:48	CJB	TAL SEA
Total/NA	Analysis	7471A		1	278019	07/02/18 14:49	FCW	TAL SEA

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: AECOM
TestAmerica Job ID: 580-78433-1
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	07-31-18
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-19

Sample Summary

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

TestAmerica Job ID: 580-78433-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-78433-1	PDI-SG-B194-BL1	Solid	06/01/18 10:20	06/27/18 13:45

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**	**Date: 6/27/18** **Carrier: Courier**	**COC No: 5** **1 of 1 page(s)**
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: Surface Sediment Sample Type: SRS	[x] 21 days [ ] Other _____			

Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	PCB Congeners 1668A	PCDD/Fs 1613B	TPH Diesel, Metals, Mercury, NWTPH-Dx, 6020B, 7471A	Grain size ASTM D7928/D6913	Total organic carbon, Total solids 9060	Archive Archive -20 C	Sample Specific Notes:
PDI-SG-B194-BL1	6/1/2018	10:20	SS		MM	6		x	x	x	x	x	x	Sample frozen 6/1/18 @ 17:41

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 [X] Disposal By Lab [X] Archive For 12 Months

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

Keep samples frozen upon receipt

Relinquished by:	Company: AECOM	Date/Time: 6/27/18 1252	Received by: Jessica Morgan	Company: ME (TA Cour	Date/Time: 6/27/18 1252
Relinquished by: Jessica Morgan	Company: ME TA Courl	Date/Time: 6/27/18 1345	Received by: for Steve Gonzalez	Company: TA POR	Date/Time: 6/27/18 1345
Relinquished by: for Steve Gonzalez	Company: TA Bots	Date/Time: 6/27/18 1750	Received by:	Company: TA Sea	Date/Time: 6/28/18 0930

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Walker, Elaine M	Carrier Tracking No(s):	COC No: 580-56754.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: elaine.walker@testamericainc.com	State of Origin: Oregon	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 580-78433-1
Address: 880 Riverside Parkway, ,	Due Date Requested: 7/16/2018			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Portland Harbor Pre-Remedial Design	Project #: 58012120			
Site:	SSOW#:			

Analysis Requested

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, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/HRMS_Sox_P (MOD) Full List w/o Totals	AutoOP/ PH Frozen Archive Container billed @ $0.	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
PDI-SG-B194-BL1 (580-78433-1)	6/1/18	10:20 Pacific		Solid			X	X	2	

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/tests/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 complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		6/25/18 1730	DAQR		6-29-18 900	TASLC
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: -18.2

Ver: 09/20/2016

7/26/2018

Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-78433-1

Login Number: 78433
List Number: 1
Creator: Presley, Kim A

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.		
The cooler's custody seal, if present, is intact.		
Sample custody seals, if present, are intact.		
The cooler or samples do not appear to have been compromised or tampered with.		
Samples were received on ice.		
Cooler Temperature is acceptable.		
Cooler Temperature is recorded.		
COC is present.		
COC is filled out in ink and legible.		
COC is filled out with all pertinent information.		
Is the Field Sampler's name present on COC?		
There are no discrepancies between the containers received and the COC.		
Samples are received within Holding Time (excluding tests with immediate HTs)		
Sample containers have legible labels.		
Containers are not broken or leaking.		
Sample collection date/times are provided.		
Appropriate sample containers are used.		
Sample bottles are completely filled.		
Sample Preservation Verified.		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs		
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").		
Multiphasic samples are not present.		
Samples do not require splitting or compositing.		
Residual Chlorine Checked.		

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sa 
580-78433 Field Sheet

Job:_____

Tracking # 4423075059 (1 SO (PO) FO / UPS / Other _____

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations. File in the job folder with the COC.

Notes:_____

Therm. ID: **AK-2 / AK-3 / (AK-5) / AK-6 / HACCP / Other**____

Ice_____ Wet_____ Gel _____ Other Dry ice

Cooler Custody Seal: Seal

Sample Custody Seal: —

Cooler ID: /

Temp: Observed -18.2

From: Temp Blank ☐ Sample ☐

NCM Filed: Yes ☐ No ☐

	Yes	No	NA
Perchlorate has headspace?	☐	☐	☑
Alkalinity has no headspace?	☐	☐	☑
CoC is complete w/o discrepancies?	☑	☐	☐
Samples received within holding time?	☑	☐	☐
Sample preservatives verified?	☐	☐	☑
Cooler compromised/tampered with?	☐	☑	☐
Samples compromised/tampered with?	☐	☑	☐
Samples w/o discrepancies?	☑	☐	☐
Sample containers have legible labels?	☑	☐	☐
Containers are not broken or leaking?	☑	☐	☐
Sample date/times are provided.	☑	☐	☐
Appropriate containers are used?	☑	☐	☐
Sample bottles are completely filled?	☑	☐	☐
Zero headspace?*	☐	☐	☑
Multiphasic samples are not present?	☐	☐	☑
Sample temp OK?	☑	☐	☐
Sample out of temp?	☐	☑	☐

Initials: AW Date: 6/29/18 Time_____

*Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

FIOC