

THE LEADER IN ENVIRONMENTAL TESTING

# **ANALYTICAL REPORT**

## TestAmerica Laboratories, Inc.

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## TestAmerica Job ID: 580-78604-1 Client Project/Site: Portland Harbor Pre-Remedial Design

For:

AECOM 1111 Third Ave Suite 1600 Seattle, Washington 98101

Attn: Amy Dahl

M. Elaine Walker

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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.



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## Job ID: 580-78604-1

#### Laboratory: TestAmerica Seattle

#### Narrative

## CASE NARRATIVE Client: AECOM Project: Portland Harbor Pre-Remedial Design Report Number: 580-78604-1

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 samples were received on 7/5/2018 3:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.3° C, 0.7° C and 2.2° C.

The following sample was activated for Manganese by 6020BLL analysis by the client on 7/10/2018: PDI-SG-B466 (580-78604-8). This analysis was not originally requested on the chain-of-custody (COC).

The following samples were activated by the client for TOC, Metals + Mn and Solids on 7/19/2018: PDI-SG-B458 (580-78604-1), PDI-SG-B470 (580-78604-2), PDI-SG-B469 (580-78604-3), PDI-SG-B456 (580-78604-4), PDI-SG-B462 (580-78604-5), PDI-SG-B463 (580-78604-6), PDI-SG-B463 (580-78604-6[MS]), PDI-SG-B463 (580-78604-6], PDI-SG-B463 (580-78604-6[MS]), PDI-SG-B463 (580-78604-8), PDI-SG-B468 (580-78604-9), PDI-SG-B429 (580-78604-10) and PDI-RB-VV-180703 (580-78604-11). These analyses were previously on hold.

The Client changed the sample ID for the RB from RB-VV-180703-1720 should be PDI-RB-VV-180703

This report contains results of the rinse blank sample only. All other analyses are currently on hold.

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.

#### SEMIVOLATILE ORGANIC COMPOUNDS (GC-MS)

Sample PDI-RB-VV-180703 (580-78604-11) was analyzed for semivolatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8270D. The sample was prepared on 07/08/2018 and analyzed on 07/12/2018.

Bis(2-ethylhexyl) phthalate failed the recovery criteria high for LCS 580-278382/2-A. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

The continuing calibration verification (CCV) associated with batch 580-278847 recovered above the upper control limit for Bis(2-ethylhexyl) phthalate. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: PDI-RB-VV-180703 (580-78604-11) and (CCVIS 580-278847/3).

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

# 1 2 3 4 5 6 7 8 9 10 11

# Job ID: 580-78604-1 (Continued)

## Laboratory: TestAmerica Seattle (Continued)

## SEMIVOLATILE ORGANIC COMPOUNDS - SELECTED ION MODE (SIM)

Sample PDI-RB-VV-180703 (580-78604-11) was analyzed for semivolatile organic compounds - Selected Ion Mode (SIM) in accordance with 8270D SIM. The sample was prepared on 07/08/2018 and analyzed on 07/12/2018.

The following sample ran outside the 12 hour tune window established by the injection of DFTPP. The clock exceedance was 24 minutes, but a closing CCV was evaluated after the sample injection which passed 20%D recovery criteria for all reporting targets and surrogates. Because the instrument run was verified to still be in tune by the passing CCVC, data is qualified and reported as secondary data. PDI-RB-VV-180703 (580-78604-11) and (CCVC 580-278760/29).

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

## ORGANOTINS BY GC/MS

Sample PDI-RB-VV-180703 (580-78604-11) was analyzed for organotins by GC/MS in accordance with the Krone Method. The sample was prepared on 07/08/2018 and analyzed on 07/12/2018.

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

## DIESEL AND MOTOR OIL RANGE ORGANICS

Sample PDI-RB-VV-180703 (580-78604-11) was analyzed for diesel and motor oil range organics in accordance with Method NWTPH-Dx. The sample was prepared on 07/16/2018 and analyzed on 07/18/2018.

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

#### METALS (ICPMS)

Sample PDI-RB-VV-180703 (580-78604-11) was analyzed for Metals (ICPMS) in accordance with 6020A\_LL. The sample was prepared on 07/09/2018 and analyzed on 07/10/2018.

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

#### TOTAL MERCURY

Sample PDI-RB-VV-180703 (580-78604-11) was analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The sample was prepared and analyzed on 07/09/2018.

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

#### **TOTAL ORGANIC CARBON**

Sample PDI-RB-VV-180703 (580-78604-11) was analyzed for total organic carbon in accordance with SM 5310B. The sample was 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

## Qualifiers

GC	MS	Semi	i V	DA
00		00111		

		4
Qualifier	Qualifier Description	
*	LCS or LCSD is outside acceptance limits.	5
Metals		•
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.	
General Che	emistry	
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.	8
Glossary		9
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)

Limit of Quantitation (DoD/DOE) LOQ

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

Toxicity Equivalent Factor (Dioxin) TEF

Toxicity Equivalent Quotient (Dioxin) TEQ

## **Client Sample Results**

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

### Client Sample ID: PDI-RB-VV-180703 Date Collected: 07/03/18 17:20 Date Received: 07/05/18 14:59

Method: 8270D SIM - Sem	ivolatile Organi	c Compou	nds (GC/MS	SIM)		_			
Analyte	Result	Qualifier	RL	MDL	Unit	<u>D</u>	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.096	0.017	ug/L		07/08/18 13:07	07/12/18 03:04	1
2-Methylnaphthalene	ND		0.096	0.019	ug/L		07/08/18 13:07	07/12/18 03:04	1
Acenaphthylene	ND		0.19	0.042	ug/L		07/08/18 13:07	07/12/18 03:04	1
Acenaphthene	ND		0.096	0.0058	ug/L		07/08/18 13:07	07/12/18 03:04	1
Fluorene	ND		0.096	0.012	ug/L		07/08/18 13:07	07/12/18 03:04	1
Phenanthrene	ND		0.096	0.018	ug/L		07/08/18 13:07	07/12/18 03:04	1
Anthracene	ND		0.096	0.0067	ug/L		07/08/18 13:07	07/12/18 03:04	1
Fluoranthene	ND		0.096	0.012	ug/L		07/08/18 13:07	07/12/18 03:04	1
Pyrene	ND		0.096	0.0086	ug/L		07/08/18 13:07	07/12/18 03:04	1
Benzo[a]anthracene	ND		0.096	0.0058	ug/L		07/08/18 13:07	07/12/18 03:04	1
Chrysene	ND		0.096	0.0058	ug/L		07/08/18 13:07	07/12/18 03:04	1
Benzo[b]fluoranthene	ND		0.096	0.0058	ug/L		07/08/18 13:07	07/12/18 03:04	1
Benzo[k]fluoranthene	ND		0.096	0.012	ug/L		07/08/18 13:07	07/12/18 03:04	1
Benzo[a]pyrene	ND		0.096	0.034	ug/L		07/08/18 13:07	07/12/18 03:04	1
Indeno[1,2,3-cd]pyrene	ND		0.096	0.0058	ug/L		07/08/18 13:07	07/12/18 03:04	1
Dibenz(a,h)anthracene	ND		0.096	0.0058	ug/L		07/08/18 13:07	07/12/18 03:04	1
Benzo[g,h,i]perylene	ND		0.19	0.073	ug/L		07/08/18 13:07	07/12/18 03:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	95		54 - 120				07/08/18 13:07	07/12/18 03:04	1
Method: 8270D - Semivola	atile Organic Co	mpounds	(GC/MS)						
Analyte	Result	Qualifier	ŔL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND	*	14	6.0	ua/L		07/08/18 13:07	07/12/18 17:49	1

()								
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	96		55 - 126			07/08/18 13:07	07/12/18 17:49	1
Method: Organotins - Org	anotins, PSEP	(GC/MS)						
Analyte	Result	Qualifier	RL	MDL Un	nit D	Prepared	Analyzed	Dil Fac
Tributyltin	ND		0.35	0.053 ug	/L	07/08/18 15:32	07/12/18 23:22	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Tripentyltin	128		10 - 142			07/08/18 15:32	07/12/18 23:22	1

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

Analyte	Result Q	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.11	0.066	mg/L		07/16/18 13:31	07/18/18 19:53	1
Motor Oil (>C24-C36)	ND		0.36	0.098	mg/L		07/16/18 13:31	07/18/18 19:53	1
Surrogate	%Recovery Q	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	86		50 - 150				07/16/18 13:31	07/18/18 19:53	1

Method: 6020B - Metals (IC	P/MS) - Total F	Recoverab	le						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00021	J	0.0010	0.00020	mg/L		07/09/18 14:21	07/10/18 14:52	1
Cadmium	ND		0.00040	0.00010	mg/L		07/09/18 14:21	07/10/18 14:52	1
Copper	ND		0.0020	0.00060	mg/L		07/09/18 14:21	07/10/18 14:52	1
Lead	ND		0.00080	0.00020	mg/L		07/09/18 14:21	07/10/18 14:52	1
Zinc	ND		0.0070	0.0019	mg/L		07/09/18 14:21	07/10/18 14:52	1
Manganese	0.0011	J	0.0020	0.00046	mg/L		07/09/18 14:21	07/10/18 14:52	1

**TestAmerica Seattle** 

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Matrix: Water

# **Client Sample Results**

TestAmerica Job ID: 580-78604-1

Matrix: Water

Lab Sample ID: 580-78604-11

## Project/Site: Portland Harbor Pre-Remedial Design Client Sample ID: PDI-RB-VV-180703 Date Collected: 07/03/18 17:20

## Date Received: 07/05/18 14:59

Client: AECOM

Method: 7470A - Mercury (CVAA) Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00030	0.00015	mg/L		07/09/18 11:46	07/09/18 16:40	1
General Chemistry Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.37	J	1.0	0.19	mg/L			07/11/18 19:13	1

Lab Sample ID: MB 580-278382/1-A

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

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

Matrix: Water													Prep Type	e: Tot	al/NA
Analysis Batch: 278847													Prep Bat	ch: 2	78382
-		MB	MB												
Analyte	Re	sult	Qualifier		RL	I	MDL	Unit		D	Pi	repared	Analyze	d	Dil Fac
Bis(2-ethylhexyl) phthalate		ND			15		6.3	ug/L		_	07/0	8/18 13:07	07/12/18 16	6:34	1
		ΜВ	MB												
Surrogate	%Reco	very	Qualifier	Limit	s						PI	repared	Analyze	d	Dil Fac
Terphenyl-d14 (Surr)		101		55 - 12	26						07/0	8/18 13:07	07/12/18 10	5:34	1
Lab Sample ID: LCS 580-2	78382/2-A								Cli	ent	Sar	nple ID:	Lab Cont	rol Sa	ample
Matrix: Water													Prep Type	e: Tot	tal/NA
Analysis Batch: 278847													Prep Bat	ch: 2	78382
				Spike		LCS	LCS	;					%Rec.		
Analyte				Added		Result	Qua	lifier	Unit		D	%Rec	Limits		
Bis(2-ethylhexyl) phthalate				2.00		ND	*		ug/L			163	20 - 150		
	LCS	LCS	;												
Surrogate	%Recovery	Qua	lifier	Limits											
Terphenyl-d14 (Surr)	97			55 - 126											
Lab Sample ID: LCSD 580-	278382/3-A							C	lient S	am	ple	ID: Lab	Control S	ampl	e Dup
Matrix: Water											÷		Prep Type	: Tot	al/NA
Analysis Batch: 278847													Prep Bat	ch: 2	78382
-				Spike		LCSD	LCS	D					%Rec.		RPD
Analyte				Added		Result	Qua	lifier	Unit		D	%Rec	Limits	RPD	Limit
Bis(2-ethylhexyl) phthalate				2.00		ND			ug/L			149	20 - 150	9	35
	LCSD	LCS	SD												
Surrogate	%Recovery	Qua	lifier	Limits											
Terphenyl-d14 (Surr)	100			55 - 126											

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

#### Lab Sample ID: MB 580-278382/1-A Matrix: Water Analysis Batch: 278760

## Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 278382

I	IB MB							
Analyte Res	ult Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND	0.10	0.018	ug/L		07/08/18 13:07	07/12/18 01:50	1
2-Methylnaphthalene	ND	0.10	0.020	ug/L		07/08/18 13:07	07/12/18 01:50	1
Acenaphthylene	ND	0.20	0.044	ug/L		07/08/18 13:07	07/12/18 01:50	1
Acenaphthene	١D	0.10	0.0060	ug/L		07/08/18 13:07	07/12/18 01:50	1
Fluorene	ND	0.10	0.013	ug/L		07/08/18 13:07	07/12/18 01:50	1
Phenanthrene	ND	0.10	0.019	ug/L		07/08/18 13:07	07/12/18 01:50	1
Anthracene	١D	0.10	0.0070	ug/L		07/08/18 13:07	07/12/18 01:50	1
Fluoranthene	ND	0.10	0.013	ug/L		07/08/18 13:07	07/12/18 01:50	1
Pyrene	ND	0.10	0.0090	ug/L		07/08/18 13:07	07/12/18 01:50	1
Benzo[a]anthracene	١D	0.10	0.0060	ug/L		07/08/18 13:07	07/12/18 01:50	1
Chrysene	ND	0.10	0.0060	ug/L		07/08/18 13:07	07/12/18 01:50	1
Benzo[b]fluoranthene	ND	0.10	0.0060	ug/L		07/08/18 13:07	07/12/18 01:50	1
Benzo[k]fluoranthene	١D	0.10	0.013	ug/L		07/08/18 13:07	07/12/18 01:50	1
Benzo[a]pyrene	ND	0.10	0.035	ug/L		07/08/18 13:07	07/12/18 01:50	1
Indeno[1,2,3-cd]pyrene	ND	0.10	0.0060	ug/L		07/08/18 13:07	07/12/18 01:50	1

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

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Lab Sample ID: MB 580-278 Matrix: Water	382/1-A						Client Sam	ple ID: Method Prep Type: To	d Blank otal/NA
Analysis Batch: 278760								Prep Batch:	278382
	МВ	МВ						Trop Datom	
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenz(a,h)anthracene	ND		0.10	0.0060	ug/L		07/08/18 13:07	7 07/12/18 01:50	1
Benzo[g,h,i]perylene	ND		0.20	0.076	ug/L		07/08/18 13:07	07/12/18 01:50	1
	MB	MB							
Surrogate	%Recoverv	Qualifier	l imits				Prenared	Analyzed	Dil Fac
Terphenvl-d14		Quanner	<u>54 - 120</u>				07/08/18 13:07	7 07/12/18 01:50	
Lab Sample ID: LCS 580-27	8382/2-A					Clien	t Sample ID:	Lab Control	Sample
Matrix: Water								Prep Type: To	otal/NA
Analysis Batch: 278760								Prep Batch:	278382
			Spike	LCS LC	S			%Rec.	
Analyte			Added	Result Qu	alifier	Unit	D %Rec	Limits	
Naphthalene			2.00	1.63		ug/L	81	58 - 120	
2-Methylnaphthalene			2.00	1.54		ug/L	77	53 - 120	
Acenaphthylene			2.00	1.75		ug/L	88	33 - 130	
Acenaphthene			2.00	1.63		ug/L	81	64 - 120	
Fluorene			2.00	1.80		ug/L	90	67 - 120	
Phenanthrene			2.00	1.71		ug/L	86	69 - 120	
Anthracene			2.00	1.81		ug/L	91	46 - 127	
luoranthene			2.00	2.09		ug/L	105	72 - 120	
_			2.00	2.06		ug/L	103	57 - 133	
Syrene						ua/l	107	70 - 120	
<sup>3</sup> yrene Benzo[a]anthracene			2.00	2.14		ug/L			
Syrene Benzo[a]anthracene Chrysene			2.00 2.00	2.14 1.93		ug/L	97	65 - 120	
Pyrene Benzo[a]anthracene Chrysene Benzo[b]fluoranthene			2.00 2.00 2.00	2.14 1.93 2.18		ug/L ug/L	97 109	65 <sub>-</sub> 120 57 - 132	
Syrene Benzo[a]anthracene Chrysene Benzo[b]fluoranthene Benzo[k]fluoranthene			2.00 2.00 2.00 2.00	2.14 1.93 2.18 1.80		ug/L ug/L ug/L	97 109 90	65 - 120 57 - 132 61 - 132	
Pyrene Benzo[a]anthracene Chrysene Benzo[b]fluoranthene Benzo[k]fluoranthene Benzo[a]pyrene			2.00 2.00 2.00 2.00 2.00	2.14 1.93 2.18 1.80 1.80		ug/L ug/L ug/L ug/L	97 109 90 90	65 - 120 57 - 132 61 - 132 23 - 141	
Pyrene Benzo[a]anthracene Chrysene Benzo[b]fluoranthene Benzo[k]fluoranthene Benzo[a]pyrene ndeno[1,2,3-cd]pyrene			2.00 2.00 2.00 2.00 2.00 2.00 2.00	2.14 1.93 2.18 1.80 1.80 2.09		ug/L ug/L ug/L ug/L ug/L ug/L	97 109 90 90 104	65 - 120 57 - 132 61 - 132 23 - 141 53 - 133	
Pyrene Benzo[a]anthracene Chrysene Benzo[b]fluoranthene Benzo[k]fluoranthene Benzo[a]pyrene ndeno[1,2,3-cd]pyrene Dibenz(a,h)anthracene			2.00 2.00 2.00 2.00 2.00 2.00 2.00 2.00	2.14 1.93 2.18 1.80 1.80 2.09 2.06		ug/L ug/L ug/L ug/L ug/L ug/L	97 109 90 90 104 103	65 - 120 57 - 132 61 - 132 23 - 141 53 - 133 57 - 132	

	200	200	
Surrogate	%Recovery	Qualifier	Limits
Terphenyl-d14	98		54 - 120

#### Lab Sample ID: LCSD 580-278382/3-A Matrix: Water Analysis Batch: 278760

#### Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA Prep Batch: 278382

-	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Naphthalene	2.00	1.65		ug/L		82	58 - 120	1	23
2-Methylnaphthalene	2.00	1.55		ug/L		78	53 - 120	1	23
Acenaphthylene	2.00	1.77		ug/L		88	33 - 130	1	34
Acenaphthene	2.00	1.64		ug/L		82	64 - 120	0	20
Fluorene	2.00	1.77		ug/L		89	67 - 120	1	20
Phenanthrene	2.00	1.78		ug/L		89	69 - 120	4	21
Anthracene	2.00	1.83		ug/L		92	46 - 127	1	19
Fluoranthene	2.00	2.14		ug/L		107	72 - 120	2	21
Pyrene	2.00	2.10		ug/L		105	57 - 133	2	21
Benzo[a]anthracene	2.00	2.18		ug/L		109	70 - 120	2	17
Chrysene	2.00	1.97		ug/L		99	65 - 120	2	19

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

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## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: LCSD 580 Matrix: Water Analysis Batch: 278760	-278382/3-A				C	Client Sa	ample	ID: Lat	Control S Prep Tyj Prep Ba	Sample be: Tot atch: 27	Dup al/NA 78382
			Spike	LCSD	LCSD				%Rec.		RPD
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzo[b]fluoranthene			2.00	2.22		ug/L		111	57 - 132	2	25
Benzo[k]fluoranthene			2.00	1.90		ug/L		95	61 - 132	5	22
Benzo[a]pyrene			2.00	1.83		ug/L		91	23 - 141	1	35
Indeno[1,2,3-cd]pyrene			2.00	2.14		ug/L		107	53 - 133	2	25
Dibenz(a,h)anthracene			2.00	2.10		ug/L		105	57 - 132	2	24
Benzo[g,h,i]perylene			2.00	2.03		ug/L		101	52 - 129	3	24
	LCSD	LCSD									
Surrogate	%Recovery	Qualifier	Limits								
Terphenyl-d14	96		54 - 120								

## Method: Organotins - Organotins, PSEP (GC/MS)

Lab Sample ID: MB 580-27 Matrix: Water Analysis Batch: 278838	8385/1-A									Cli	ent Samp	ole ID: Me Prep Typ Prep Ba	ethod e: Tot tch: 2	Blank al/NA 78385
		MB	MB											
Analyte	Re	sult	Qualifier		RL	I	MDL	Unit	0	) F	repared	Analyz	ed	Dil Fac
Tributyltin		ND			0.30	0	.046	ug/L		07/0	08/18 15:32	07/12/18	13:18	1
		MB	МВ											
Surrogate	%Reco	very	Qualifier	Lin	nits					F	Prepared	Analyz	ed	Dil Fac
Tripentyltin		121		10.	. 142					07/0	08/18 15:32	07/12/18	13:18	1
Lab Sample ID: LCS 580-2 Matrix: Water Analysis Batch: 278838	78385/2-A								Clier	nt Sa	mple ID:	Lab Con Prep Typ Prep Ba	trol Sa be: Tot tch: 2	ample al/NA 78385
				Spike		LCS	LCS					%Rec.		
Analyte				Added		Result	Qua	lifier	Unit	D	%Rec	Limits		
Tributyltin				0.898		0.978			ug/L		109	11 - 150		
	LCS	LCS												
Surrogate	%Recovery	Qua	lifier	Limits										
Tripentyltin	103			10 - 142	_									
Lab Sample ID: LCSD 580- Matrix: Water Analysis Batch: 278838	278385/3-A							C	lient Sa	mple	ID: Lab	Control S Prep Typ Prep Ba	Sample be: Tot tch: 2	e Dup al/NA 78385
				Spike		LCSD	LCS	D				%Rec.		RPD
Analyte				Added		Result	Qua	lifier	Unit	D	%Rec	Limits	RPD	Limit
TributyItin				0.898		0.948			ug/L		106	11 - 150	3	35
	LCSD	LCS	D											
Surrogate	%Recovery	Qua	lifier	Limits										
Tripentyltin	103			10 - 142	_									

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

Lab Sample ID: MB 580-279132/1-A

Matrix: Water

Analysis Batch: 279315

# Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 279132 ac

	· · · · · · · · · · · · · · · · · · ·		
3 13:31	07/18/18 14:31	1	U
3 13:31	07/18/18 14:31	1	
ared	Analyzed	Dil Fac	8
3 13:31	07/18/18 14:31	1	
le ID:	Lab Control S	Sample	9
I	Prep Type: To Prep Batch: :	otal/NA 279132	
	%Rec.		
Rec	Limits		
89	50 - 120		
96	64 - 120		

-	N	MB N	ИВ										
Analyte	Res	ult G	Qualifier	RL		MDL	Unit	[	) Р	repared	Analyze	k	Dil Fac
#2 Diesel (C10-C24)	N	ND -		0.11	C	0.065	mg/L		07/1	6/18 13:31	07/18/18 14	:31	1
Motor Oil (>C24-C36)	١	ND		0.35	C	0.096	mg/L		07/1	6/18 13:31	07/18/18 14	:31	1
	Λ	ив л	ИВ										
Surrogate	%Recove	ery C	Qualifier	Limits					P	repared	Analyze	d	Dil Fac
o-Terphenyl	1	09		50 - 150					07/1	6/18 13:31	07/18/18 14	:31	1
Lab Sample ID: LCS 580-2	79132/2-A							Clie	nt Sa	mple ID:	Lab Conti	ol S	ample
Matrix: Water											Prep Type	: To	tal/NA
Analysis Batch: 279315											<b>Prep Bate</b>	ch: 2	79132
-				Spike	LCS	LCS	;				%Rec.		
Analyte				Added	Result	Qua	lifier	Unit	D	%Rec	Limits		
#2 Diesel (C10-C24)				2.00	1.79			mg/L		89	50 - 120		
Motor Oil (>C24-C36)				2.00	1.91			mg/L		96	64 - 120		
	LCS L	LCS											
Surrogate	%Recovery 0	Quali	fier	Limits									
o-Terphenyl	94			50 - 150									
Lab Sample ID: LCSD 580-	-279132/3-A						C	lient Sa	mple	ID: Lab	Control Sa	ampl	e Dup
Matrix: Water											Prep Type	: To	tal/NA
Analysis Batch: 279315											Prep Bate	ch: 2	79132
-				Spike	LCSD	LCS	D				%Rec.		RPD
Analyte				Added	Result	Qua	lifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)				2.00	1.95			mg/L		97	50 - 120	9	26
Motor Oil (>C24-C36)				2.00	2.10			mg/L		105	64 - 120	10	24

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
o-Terphenyl	103		50 - 150

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

Lab Sample ID: MB 580-27844 Matrix: Water Analysis Batch: 278636	48/14-A	мр					Client Samp Prep Type	le ID: Method : Total Recov Prep Batch: :	l Blank /erable 278448
Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010	0.00020	mg/L		07/09/18 14:21	07/10/18 13:41	1
Cadmium	ND		0.00040	0.00010	mg/L		07/09/18 14:21	07/10/18 13:41	1
Copper	ND		0.0020	0.00060	mg/L		07/09/18 14:21	07/10/18 13:41	1
Lead	ND		0.00080	0.00020	mg/L		07/09/18 14:21	07/10/18 13:41	1
Zinc	ND		0.0070	0.0019	mg/L		07/09/18 14:21	07/10/18 13:41	1
Manganese	ND		0.0020	0.00046	mg/L		07/09/18 14:21	07/10/18 13:41	1

LCS LCS

4.00

0.0928

0.510

0.994

3.85

0.968

**Result Qualifier** 

Unit

mg/L

mg/L

mg/L

mg/L

mg/L

mg/L

Spike

Added

4.00

0.100

0.500

1.00

4.00

1.00

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

Lab Sample ID: LCS 580-278448/15-A

**Matrix: Water** 

Analyte

Arsenic

Copper

Lead

Zinc

Cadmium

Manganese

Analysis Batch: 278636

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

%Rec.

Limits

80 - 120

80 - 120

80 - 120

80 - 120

80 - 120

80 - 120

D %Rec

100

93

102

99

96

97

**Client Sample ID: Lab Control Sample Dup** 

# **Client Sample ID: Lab Control Sample** Prep Type: Total Recoverable Prep Batch: 278448 6

# Lab Sample ID: LCSD 580-278448/16-A **Matrix: Water**

#### **Prep Type: Total Recoverable** Analysis Batch: 278636 Prep Batch: 278448 LCSD LCSD Spike %Rec. RPD Added **Result Qualifier** RPD Limit Analyte Unit D %Rec Limits 4.00 3.99 Arsenic mg/L 100 80 - 120 0 20 0.100 0.103 Cadmium mg/L 103 80 - 120 20 11 0.500 0.514 mg/L 103 80 - 120 20 Copper 1 Lead 1.00 0.992 mg/L 99 80 - 120 0 20 Zinc 4.00 3.94 mg/L 99 80 - 120 2 20 Manganese 1.00 0.995 mg/L 99 80 - 120 3 20

## Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 580-278 Matrix: Water Analysis Batch: 278507	419/6-А МВ	мв						Cli	ent Sam	ple ID: Mo Prep Typ Prep Ba	ethod I be: Tot tch: 27	3lank al/NA '8419
Analyte	Result	Qualifier		RL	MDL	Unit		DF	Prepared	Analvz	ed I	Dil Fac
Mercury	ND		0.0	0030 0.	00015	mg/L		07/0	09/18 11:46	07/09/18	16:33	1
Lab Sample ID: LCS 580-27	8419/7-A						Cli	ent Sa	mple ID:	Lab Con	trol Sa	mple
Matrix: Water										Prep Typ	e: Tot	al/NA
Analysis Batch: 278507										Prep Ba	tch: 27	8419
			Spike	LC	S LCS	;				%Rec.		
Analyte			Added	Resu	t Qua	lifier	Unit	D	%Rec	Limits		
Mercury			0.00200	0.0017	B		mg/L		89	80 - 120		
Lab Sample ID: LCSD 580-2 Matrix: Water Analysis Batch: 278507	78419/8-A					C	lient S	ample	ID: Lab	Control S Prep Typ Prep Ba	Sample be: Tot tch: 27	Dup al/NA 8419
			Spike	LCS	D LCS	D				%Rec.		RPD
Analyte			Added	Resu	t Qua	lifier	Unit	п	0/ Dee	1		
Mercury							Onit	U	%Rec	Limits	RPD	Limit
			0.00200	0.0017	6 <u>444</u>		mg/L		88 -	80 - 120	<b>RPD</b> 1	Limit 20
Lab Sample ID: 580-78604-1 Matrix: Water Analysis Batch: 278507	11 MS		0.00200	0.0017	<u>6</u>		mg/L	lient S	ample I	2: PDI-RE Prep Typ Prep Ba	RPD 1 6-VV-18 0e: Tota tch: 27	Limit 20 0703 al/NA 8419
Lab Sample ID: 580-78604-1 Matrix: Water Analysis Batch: 278507	1 MS Sample Sar	nple	0.00200 Spike	0.0017	5 MS		mg/L	lient S		2: PDI-RE Prep Typ Prep Ba %Rec.	RPD 1 3-VV-18 be: Tota tch: 27	Limit 20 30703 al/NA '8419
Lab Sample ID: 580-78604-1 Matrix: Water Analysis Batch: 278507 Analyte	1 MS Sample Sar Result Qua	nple alifier	0.00200 Spike Added	0.0017 M Resu	6 MS t Qua	lifier	mg/L C	lient S	sample II	2: PDI-RE Prep Typ Prep Ba %Rec. Limits	RPD 1 3-VV-18 be: Tot tch: 27	Limit 20 0703 al/NA '8419

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

## Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 580-78604-	11 <b>MSD</b>						CI	ient S	ample	ID: PDI-RI	B-VV-1	80703
Matrix: Water										Prep Ty	pe: Tot	al/NA
Analysis Batch: 278507										Prep Ba	atch: 2	78419
	Sample	Sample	Ð	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifi	er	Added	Result	Qualifie	r Unit	D	%Rec	Limits	RPD	Limit
Mercury	ND		(	0.00200	0.00179		mg/L		90	80 - 120	4	20
Lab Sample ID: 580-78604-	11 DU						CI	ient S	ample	ID: PDI-RI	B-VV-1	80703
Matrix: Water									1.1	Prep Ty	pe: Tot	al/NA
Analysis Batch: 278507										Prep Ba	atch: 2	78419
-	Sample	Sample	Ð		DU	DU						RPD
Analyte	Result	Qualifi	er		Result	Qualifie	r Unit	D			RPD	Limit
Mercury	ND				NE		mg/L				NC	20
Method: SM 5310B - Org	ganic Ca	rbon,	Total	(TOC)								
Lab Sample ID: MB 580-278	3801/3							Clie	ent San	nple ID: M	ethod	Blank
Matrix: Water										Prep Ty	pe: Tot	al/NA
Analysis Batch: 278801												
		MB M	В									
Analyte	Re	esult Q	ualifier		RL	MDL Uni	t	D P	repared	Analy	zed	Dil Fac
Total Organic Carbon		ND			1.0	0.19 mg	Ľ			07/11/18	19:13	1
Lab Sample ID: LCS 580-27	/8801/4						Clie	ent Sa	mple IC	): Lab Coi	ntrol Sa	ample
Matrix: Water									-	Prep Ty	pe: Tot	al/NA
Analysis Batch: 278801											-	
-				0	1.00	1.00				0/ Dee		

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Total Organic Carbon	 10.0	9.47		mg/L	_	95	85 - 115	 

5 6

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

TestAmerica Job ID: 580-78604-1

# 1 2 3 4 5 6 7 8 9 10 11 11

Client Sample ID: PDI-RB-VV-180703 Date Collected: 07/03/18 17:20 Date Received: 07/05/18 14:59

Lab Sample ID: 580-78604-11 Matrix: Water

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			278382	07/08/18 13:07	JSM	TAL SEA
Total/NA	Analysis	8270D		1	278847	07/12/18 17:49	T1W	TAL SEA
Total/NA	Prep	3520C			278382	07/08/18 13:07	JSM	TAL SEA
Total/NA	Analysis	8270D SIM		1	278760	07/12/18 03:04	ERB	TAL SEA
Total/NA	Prep	Organotin			278385	07/08/18 15:32	JSM	TAL SEA
Total/NA	Analysis	Organotins		1	278838	07/12/18 23:22	TL1	TAL SEA
Total/NA	Prep	3510C			279132	07/16/18 13:31	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	279315	07/18/18 19:53	W1T	TAL SEA
Total Recoverable	Prep	3005A			278448	07/09/18 14:21	CJB	TAL SEA
Total Recoverable	Analysis	6020B		1	278636	07/10/18 14:52	FCW	TAL SEA
Total/NA	Prep	7470A			278419	07/09/18 11:46	CJB	TAL SEA
Total/NA	Analysis	7470A		1	278507	07/09/18 16:40	FCW	TAL SEA
Total/NA	Analysis	SM 5310B		1	278801	07/11/18 19:13	ASJ	TAL SEA

#### Laboratory References:

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

# Accreditation/Certification Summary

Client: AECOM Project/Site: Portland Harbor Pre-Remedial Design TestAmerica Job ID: 580-78604-1

# 1 2 3 4 5 6 7 8 9 10 11 12

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

# Sample Summary

TestAmerica Job ID: 580-78604-1

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

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-78604-11	PDI-RB-VV-180703	Water	07/03/18 17:20	07/05/18 14:59

580-78604

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TestAmerica-Seattle	1						SU	RF	ACI	E SF	DIN	MEN	T				*****		-	500	-7000	4 0110				
Tacoma, WA 98424-1317																										
Ph: 253-922-2310 Fax: 253-922-5047		UNAIN OF CUSIODY																								
Client Contact		Project	Site Contact: Jennifer Ray														5/2018	COC No: 1								
AECOM		Laboratory Contact: Elaine-Walker									Carri	er: Coi	irier	1		<del></del>	loflpages									
Control WA 02101								270				ă	-													
Phone: (206) 438-2700 Eax: 1+(866) 495-5288	Calcidar (C) of work Days (w)									ā.	1	9960		M, 8		1	1	Hd.	89							
Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling	21 days								Halwn	£169	el solids		8270-SI	1318	×		LWN 41	as SM53		_	nger					
Portland, OR		Conter ASAP (sediments only)								cary	28/D	Totz		ţî,	0 W	1991		fercu	arbe		1-6	ne/U				
Project #: 60566335 Study: Surface Sediment	]		_					83		Mer	D79	bon,	20 0	ibut	AST	the rs	6138	N.S.	l y	SIM	827	Kro				
Sample Type: D/U http://www.shareshareshareshareshareshareshareshare								ners 16	6138	. Metals I A	ASTM	nìc car 0C)	rchive .	HP, Tr Unger	Limits	Conge	0/Fs 1	I, Meta	ł Orga	Is 8270	tP EPA	utyltin				
Sample Identification	Sample Date	Sample Time	Matrix	QC Sample Initia		impler's Total No. Initials of Cont.		PCB Conge	PCDD/Fs 1	TPH Diesel 60208, 7471	Grain size Total orga r104C & 7		Archive A	PAHs, BE LL, Kron/	Atterberg	WQ - PCB	WQ - PCD	TPH Diese 6020B, 747	WQ - Tota	HA9 - ØW	WQ - BEH	WQ - Trib		Sample Specific Notes:		
PDI-SG-B458	7/2/2018	11:00	SS		AC	7	$\square$	н	11	н	x	н	н	н							Γ					
PDI-SG-B470	7/2/2018	15:20	SS		AC	B	Π	н	н	н	x	н	н	н	H			İ			1					
PDI-SG-B469	7/2/2018	16:30	SS	1	AC	8		н	н	н	x	н	H	н	Н						<u> </u>					
- PDI-SG-B456	7/2/2018	10 19	SS	SH	7	$\square$	н	н	н	x	н	н	н													
PDI-SG-B462	7/2/2018	11.56	\$\$	Γ	SH	8	$\square$	н	н	н	x	н	н	н	H										+	
PDI-SG-B463	7/2/2018	12:58	SS	MS/MSD	SH	14		મ	н	н	x	н	R	н	H											
PDI-SG-B464	7/2/2018	14-39	<b>S</b> S		SH	8	$\square$	н	н	н	x	н	н	R	н											
PDI-SG-B466	7/2/2018	15:34	ss		SH	8	Π	н	н	x*	x*	x*	н	н	н									, , , , , , , , , , , , , , , , , , ,		
PDI-SG-B468	7/2/2018	14.02/4	: £7ss		SH	8		H	н	н	x	н	H	H	н											
PDI-SG-B429	7/3/2018	10:15	SS		SH	7		Н	н	H	x	H	н	H												
RB-VV-180703-1720	7/3/2018	17:20	W		SH	14										x	x	x	x	x	x	x				
		L,,,		]	L		Ц																			
Container Type: WMG=Wide Mouth Glass Jar, P=HDPE,	PP=Polypre	opylene, A	G≕amber g	ilass, G=gla	ss, RC=Res	sin Column																				
Preservative: HCI = Hydrochloric Acid, H3PO4 = Phosph	oric Acid, H	INO3 = Nit	ric Acid				_	6 a	la Dias						]											
Fraction: 17 - 1955onveu, FKT - Furniculate, 1 - 10tal (anjinere	a)						ľ	Sampi	Return	To Cli	ent		lispo	sal Bv .	Lab		rch	ive For	12 M	onths						
Special Instructions/QC Requirements & Comments: Separate reports for each lab.	bu) and TO	C (9060 @	1040 8 70	C) ASAD D.				odont										-		~	~	~		·····		
H - Hold analyses pending further instruction.	iy), and i C	c (5566 @	1040 @ 10			these take	prece	CUCHI	Over 1	61 M A M M	ing rua	ា មូរងរ	1 3120	A	esieq	uester	I MOMI	F.	D x	t,	Ľ	0L	) <sup>0</sup>	۵ <i>S</i>		
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Relinquistic Article Art	Company:	. <i>E</i> ·		Date/Time:	18	1500	)	Receive	el of	Ŋ	1	2	U	12	2			Compa	ny: F	$\mathcal{V}$	$\mathcal{O}_{\mathcal{L}}$	2		Date Time	д	
Relinquisheady.	Company:	TAOR HISIIS ITOO						Receive	eiged by fait Company: Detertifie B. fait SFR TO 7/1/1/8								7/6/18 0930									
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						I	Paç	ge 1	7 of	21					- (	.9/	-1	1,9	w/2	5				7/31/:	201	

7/31/2018

	580-78604 Chain of Custody		7/SDATA KOV No. 1	irrier Coarier of rouse		BOIESI I-HILLAN	00-1°F 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	iciarages A zlebi A zl	0 - YC 05 - 9' - YC 05 - 9' - 7014 - 7014	T 40 W T 40 W W W Sample Specific Notes:									AN Addad malues 21 12	A A A A A A A A A A A A A A A A A A A			V Imbian Exe da da statuta	the ASAP. 0,7,7,2,0,7	Company: 1 Date: 1 .	Company Company Company	Campady: The LINE Defections (2000)	8 / 0,8 m/cs	7107 2105	1-1,9 w/cs	2 3 4 5 6 7 8 9 10
	URFACE SEDIMENT	CHAIN OF CUSTODY	filte Contact: Jennifer Ray		-0.11	0906 *P)	۲. (105 אונים, מגדון אונים, מגדוק אונים, מצויק אונים, אונים,	AReal are dir dir dir dir dir dir dir dir dir dir	202 Course 202 Course in a second course 202 Course in a sec				H H X H H	R H H X H H		H H H H		H B H K X H H B	и и и х х и и				Semple Dispose/ Cetum To Clent Y envised But an	scedent over remaining rush grain size analyses reque	Received by	Received of the I we I was	Received by Que La La	о́ ч	ICG 20.	1	11 12 21/22/2
	ŝ	C	tecy Cook S	1-2010 L	4				Sampler's Total No. Initials of Cont.	AC 7	<b>GO</b> YC	AC 🚱	2 HS	¥ Ø	SH 14	SH &	SH 8	SH B	SFI 7	SH 14		- AC-Nessin Column		th TAT for these take pro	1. 110 2U	× 1500	9 Ital		1		TE E
86.04			act: Amy Dahl / Che	438-2261 / (206) 431	ysis I irraround Tin or Wed Date Aby	A DECEMBER NO. 10	ediments only)		ntrix QC Sample	52	SS	SS	SS	55	SS MS/MSD	22	22	52	~		nhar afane. Contre-	cid cid		A 70C) ASAP. Run	Date/Time:	T ST	112	1 1 chiated	Per ALLS	Sad OFY	11
80-7			Project Cont	Tet: (206)	Calendar ( C )	1) dava	Other_ASAP_(8		Sample Time M	00-11	8 15:20	g 16·30	8 10 19	9 11.56	s 12:58	14-39	5 15:34	1402/6:35	10:15	17.20	montene. A Galer	HNO3 - Nitric A		)C (9860 @ 104C	5	į.	COL	a):05 a	oleg 4	R	ole Red
Q,					+			韵	Sample Date	1/2/201	72/201	12/201	102/2/1	1/2/201	1/2/2011	7/2/2011	7/2/11	7/2/2018	3102/6/2	10/201	PE. PP=Polyo	phorie Acid	(ered)	onty), and T(	And the	Comparty	Ł	ۍ کړ	r R	E C	Ser
	TestAmerica-Sentile 5755-8th-Siree-East	Iscorta, WA 98424-1317 Phi: 253-972-2316 Fax: 253-922-5647	Client Cortact	ALCON 1111 2rd Aux 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 Printer # 60566735 Sundar Sandar Sadarman	Sample Type: DAU TOTAL TAY TO TAY TO TAY	Sample Identification	PARTY CONTRACTOR STATES AND	PDI-SG-B470 TOTAL STATE	PDI-SG-B469	PDI-SG-B456	PDI-SQ-B462	· · · · · · · · · · · · · · · · · · ·	PDF-SG-B464	PDI-SG-B466	NATIONAL SCHOOL SOLD STATES	A DISCONTRACTOR OF A DISCONT	H.DRB-VV-180703-1720 45 71 22	Container Type: WithGe Mouth Class Arr. P-HDF	Preservative: HCI = Hydrochlonic Acid, H3PO4 = Phos	a receiver, s supported, f.s. f. f. furnerardie, s 1 blad famfig.	Special Instructions/QC Requirements & Comments: Separate reports for each tab. X <sup>-</sup> Analyze for grain size, metatis (60208 analytes H - Hold analyses pending further instruction,	Reinquisited by San Day	Relinquinted M. R. N.	Relinquisible of the second of	++ + Metals	Prov Prior	Sileit XXX	changed

Revised CUL

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## Login Sample Receipt Checklist

### Client: AECOM

#### Login Number: 78604 List Number: 1 Creator: O'Connell, Jason I

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	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	

Job Number: 580-78604-1

List Source: TestAmerica Seattle

## Presley, Kim

From:	Dahl, Amy <amy.dahl@aecom.com></amy.dahl@aecom.com>
Sent:	Sunday, July 22, 2018 3:25 PM
То:	Presley, Kim
Cc:	Walker, M Elaine; Cook, Chelsey; Ray, Jennifer
Subject:	changes for rinsate blanks
Attachments:	SampleLoginAck_580-78853-1 [Std_Tal_Login_Ack].pdf; COC 580-78853
	(201807171049).pdf

### -External Email-

Hi Kim, we need to change the sample IDs and add manganese to the metals list to match those special rush sediment samples for the following rinsate blanks:

580-78527-26 (PDI-SG-RB-<u>20</u>180630 should be PDI-RB-VV-180630) 580-78604-11 (RB-VV-180703<u>-1720</u> should be PDI-RB-VV-180703) 580-78853-1 (PDI-RB-VV-<u>20</u>180713 should be PDI-RB-VV-180713

Jennifer, can you make sure the field team is using the proper nomenclature for rinsate blanks:

PDI-RB-VV-YYMMDD (only include time if more than one blank is collected in a day)

Thank you,

### PRIVILEGED AND CONFIDENTIAL / JOINT DEFENSE COMMUNICATION / ATTORNEY CLIENT WORK PRODUCT

Amy Dahl, PhD Chemist, Environment, Pacific Northwest D +1-206-438-2261 amy.dahl@aecom.com

AECOM 1111 Third Avenue, Suite 1600 Seattle, WA 98101, United States T +1-206-438-2700 aecom.com

From: Presley, Kim [mailto:kim.presley@testamericainc.com]
Sent: Friday, July 20, 2018 9:25 AM
To: Dahl, Amy; Cook, Chelsey
Subject: TestAmerica Seattle sample confirmation files from 580-78853-1 Portland Harbor Pre-Remedial Design

Hello,

Attached please find the Seattle sample confirmation files for job 580-78853-1; Portland Harbor Pre-Remedial Design

Please feel free to contact me or your PM Elaine Walker if you have any questions.

Thank you.

5 6

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Please let us know if we met your expectations by rating the service you received from TestAmerica on this project by visiting our website at: <u>Project Feedback</u>

**KIM A PRESLEY** Project Manager Assistant

# TestAmerica Seattle

THE LEADER IN ENVIRONMENTAL TESTING

Tel: 253.922.2310 www.testamericainc.com

Reference: [251596] Attachments: 2