

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

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TestAmerica Job ID: 580-76892-1

Client Project/Site: Portland Harbor Pre-Remedial Design  
Revision: 2

For:  
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Authorized for release by:  
7/23/2018 5:21:17 PM

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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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# Case Narrative

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

TestAmerica Job ID: 580-76892-1

**Job ID: 580-76892-1**

**Laboratory: TestAmerica Seattle**

**Narrative**

## CASE NARRATIVE

**Client: AECOM**

**Project: Portland Harbor Pre-Remedial Design**

**Report Number: 580-76892-1**

### **REVISION 2: JULY 23, 2018**

This revision was required to have the final, signed COC from the Seattle laboratory added to the report and TS @ 70 deg. C added to the EDD.

### **REVISION 1: June 12, 2018**

This revision was required to include both Total Solids @ 104 deg.C and Total Solids @ 70 deg.C.

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**

Eighteen samples were received on 4/27/2018 3:31 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 5 coolers at receipt time were 7.3° C, 7.4° C, 7.7° C, 9.2° C and 10.7° 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**

**Samples PDI-SG-B321-BL1 (580-76892-1), PDI-SG-B322-BL1 (580-76892-2), PDI-SG-B325-BL1 (580-76892-3), PDI-SG-B327-BL1 (580-76892-4), PDI-SG-B394-BL1 (580-76892-5), PDI-SG-B401-BL1 (580-76892-6), PDI-SG-B308-BL1 (580-76892-7), PDI-SG-B313-BL1 (580-76892-8), PDI-SG-B313-BL1-D (580-76892-9), PDI-SG-B270-BL1 (580-76892-10), PDI-SG-B276-BL1 (580-76892-11), PDI-SG-B287-BL1 (580-76892-12), PDI-SG-B295-BL1 (580-76892-13) and PDI-SG-B311-BL1 (580-76892-18) were analyzed for diesel and extended range organics in accordance with Method NWTPH-Dx. The samples were prepared on 05/07/2018 and analyzed on 05/08/2018 and 05/09/2018.**

#2 Diesel (C10-C24) exceeded the RPD limit for the duplicate of sample PDI-SG-B321-BL1DU (580-76892-1). Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits.

Continuing calibration verification (CCV) standard associated with batch 580-273278 recovered outside %Drift acceptance criteria for

# Case Narrative

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

TestAmerica Job ID: 580-76892-1

## Job ID: 580-76892-1 (Continued)

### Laboratory: TestAmerica Seattle (Continued)

o-Terphenyl surrogate. The %Recovery is within acceptance criteria for the surrogate in the CCV and associated samples; therefore, the data are qualified and reported. PDI-SG-B321-BL1 (580-76892-1), PDI-SG-B322-BL1 (580-76892-2), PDI-SG-B325-BL1 (580-76892-3), PDI-SG-B327-BL1 (580-76892-4), PDI-SG-B394-BL1 (580-76892-5), PDI-SG-B401-BL1 (580-76892-6), (CCV 580-273278/12), (LCS 580-273095/2-A), (LCSD 580-273095/3-A), (MB 580-273095/1-A) and (580-76892-F-1-B DU).

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

### DIESEL AND MOTOR OIL RANGE ORGANICS - Rinse Blank

Samples PDI-SG-RB-042318-1730 (580-76892-14), PDI-SG-RB-VV-180423-1700 (580-76892-15), PDI-SG-RB-180426-1755 (580-76892-16) and PDI-SG-RB-VVSS-042618-1750 (580-76892-17) were analyzed for diesel and motor oil range organics in accordance with Method NWTPH-Dx. The samples were prepared on 04/30/2018 and analyzed on 05/02/2018.

Continuing calibration verification (CCV) standard associated with batch 580-272686 recovered outside %Drift acceptance criteria for o-Terphenyl surrogate. The %Recovery is within acceptance criteria for the surrogate in the CCV and associated samples; therefore, the data are qualified and reported. PDI-SG-RB-042318-1730 (580-76892-14), PDI-SG-RB-VV-180423-1700 (580-76892-15), PDI-SG-RB-180426-1755 (580-76892-16), PDI-SG-RB-VVSS-042618-1750 (580-76892-17), (CCV 580-272686/21), (CCV 580-272686/32), (CCV 580-272686/36), (LCS 580-272589/2-A), (LCSD 580-272589/3-A), and (MB 580-272589/1-A).

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

### METALS (ICPMS)

Samples PDI-SG-B321-BL1 (580-76892-1), PDI-SG-B322-BL1 (580-76892-2), PDI-SG-B325-BL1 (580-76892-3), PDI-SG-B327-BL1 (580-76892-4), PDI-SG-B394-BL1 (580-76892-5), PDI-SG-B401-BL1 (580-76892-6), PDI-SG-B308-BL1 (580-76892-7), PDI-SG-B313-BL1 (580-76892-8), PDI-SG-B313-BL1-D (580-76892-9), PDI-SG-B270-BL1 (580-76892-10), PDI-SG-B276-BL1 (580-76892-11), PDI-SG-B287-BL1 (580-76892-12), PDI-SG-B295-BL1 (580-76892-13) and PDI-SG-B311-BL1 (580-76892-18) were analyzed for Metals (ICPMS) in accordance with 6020A\_LL. The samples were prepared on 05/09/2018 and analyzed on 05/11/2018.

Copper failed the recovery criteria high for the MS of sample PDI-SG-B321-BL1MS (580-76892-1) in batch 580-273721. Copper failed the recovery criteria high for the MSD of sample PDI-SG-B321-BL1MSD (580-76892-1) in batch 580-273721. Arsenic, Cadmium, Lead and Zinc exceeded the RPD limit.

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

### TOTAL MERCURY

Samples PDI-SG-B321-BL1 (580-76892-1), PDI-SG-B322-BL1 (580-76892-2), PDI-SG-B325-BL1 (580-76892-3), PDI-SG-B327-BL1 (580-76892-4), PDI-SG-B394-BL1 (580-76892-5), PDI-SG-B401-BL1 (580-76892-6), PDI-SG-B308-BL1 (580-76892-7), PDI-SG-B313-BL1 (580-76892-8), PDI-SG-B313-BL1-D (580-76892-9), PDI-SG-B270-BL1 (580-76892-10), PDI-SG-B276-BL1 (580-76892-11), PDI-SG-B287-BL1 (580-76892-12), PDI-SG-B295-BL1 (580-76892-13) and PDI-SG-B311-BL1 (580-76892-18) were analyzed for total mercury in accordance with EPA SW-846 Method 7471A. The samples were prepared and analyzed on 05/16/2018.

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

### METALS (ICPMS) - Rinse Blank

Samples PDI-SG-RB-042318-1730 (580-76892-14), PDI-SG-RB-VV-180423-1700 (580-76892-15), PDI-SG-RB-180426-1755 (580-76892-16) and PDI-SG-RB-VVSS-042618-1750 (580-76892-17) were analyzed for Metals (ICPMS) in accordance with 6020A\_LL. The samples were prepared on 05/04/2018 and analyzed on 05/04/2018 and 05/08/2018.

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

### TOTAL MERCURY - Rinse Blank

Samples PDI-SG-RB-042318-1730 (580-76892-14), PDI-SG-RB-VV-180423-1700 (580-76892-15), PDI-SG-RB-180426-1755 (580-76892-16) and PDI-SG-RB-VVSS-042618-1750 (580-76892-17) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 05/14/2018.

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

# Case Narrative

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

TestAmerica Job ID: 580-76892-1

## Job ID: 580-76892-1 (Continued)

### Laboratory: TestAmerica Seattle (Continued)

#### **TOTAL ORGANIC CARBON**

Samples PDI-SG-B321-BL1 (580-76892-1), PDI-SG-B322-BL1 (580-76892-2), PDI-SG-B325-BL1 (580-76892-3), PDI-SG-B327-BL1 (580-76892-4), PDI-SG-B394-BL1 (580-76892-5), PDI-SG-B401-BL1 (580-76892-6), PDI-SG-B308-BL1 (580-76892-7), PDI-SG-B313-BL1 (580-76892-8), PDI-SG-B313-BL1-D (580-76892-9), PDI-SG-B270-BL1 (580-76892-10), PDI-SG-B276-BL1 (580-76892-11), PDI-SG-B287-BL1 (580-76892-12), PDI-SG-B295-BL1 (580-76892-13) and PDI-SG-B311-BL1 (580-76892-18) were analyzed for total organic carbon in accordance with EPA SW-846 Method 9060. The samples were analyzed on 05/07/2018.

Total Organic Carbon - Duplicates was detected in method blank MB 580-273204/3 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.

#### **TOTAL ORGANIC CARBON - Rinse Blank**

Samples PDI-SG-RB-042318-1730 (580-76892-14), PDI-SG-RB-VV-180423-1700 (580-76892-15), PDI-SG-RB-180426-1755 (580-76892-16) and PDI-SG-RB-VVSS-042618-1750 (580-76892-17) were analyzed for total organic carbon in accordance with SM 5310B. The samples were analyzed on 05/08/2018.

Total Organic Carbon was detected in method blank MB 580-273361/20 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. Refer to the QC report for details.

Total Organic Carbon failed the recovery criteria low for the MS of sample PDI-SG-RB-VV-180423-1700MS (580-76892-15) in batch 580-273361. Total Organic Carbon failed the recovery criteria low for the MSD of sample PDI-SG-RB-VV-180423-1700MSD (580-76892-15) in batch 580-273361.

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

#### **GRAIN SIZE**

Samples PDI-SG-B321-BL1 (580-76892-1), PDI-SG-B322-BL1 (580-76892-2), PDI-SG-B325-BL1 (580-76892-3), PDI-SG-B327-BL1 (580-76892-4), PDI-SG-B394-BL1 (580-76892-5), PDI-SG-B401-BL1 (580-76892-6), PDI-SG-B308-BL1 (580-76892-7), PDI-SG-B313-BL1 (580-76892-8), PDI-SG-B270-BL1 (580-76892-10), PDI-SG-B276-BL1 (580-76892-11), PDI-SG-B287-BL1 (580-76892-12), PDI-SG-B295-BL1 (580-76892-13) and PDI-SG-B311-BL1 (580-76892-18) were analyzed for grain size in accordance with ASTM D7928/D6913. The samples were analyzed on 05/15/2018.

Medium Sand exceeded the RPD limit for the duplicate of sample 580-76830-18. Medium Sand exceeded the RPD limit for the duplicate of sample PDI-SG-B322-BL1DU (580-76892-2). Refer to the QC report for details.

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

#### **PERCENT SOLIDS**

Samples PDI-SG-B321-BL1 (580-76892-1), PDI-SG-B322-BL1 (580-76892-2), PDI-SG-B325-BL1 (580-76892-3), PDI-SG-B327-BL1 (580-76892-4), PDI-SG-B394-BL1 (580-76892-5), PDI-SG-B401-BL1 (580-76892-6), PDI-SG-B308-BL1 (580-76892-7), PDI-SG-B313-BL1 (580-76892-8), PDI-SG-B313-BL1-D (580-76892-9), PDI-SG-B270-BL1 (580-76892-10), PDI-SG-B276-BL1 (580-76892-11), PDI-SG-B287-BL1 (580-76892-12), PDI-SG-B295-BL1 (580-76892-13) and PDI-SG-B311-BL1 (580-76892-18) were analyzed for percent solids in accordance with ASTM D2216. The samples were analyzed on 04/30/2018.

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: 580-76892-1

## 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.
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.

### Metals

Qualifier	Qualifier Description
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.
F4	MS/MSD RPD exceeds control limits due to sample size difference.

### 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.
F1	MS and/or MSD Recovery is outside acceptance limits.

### Geotechnical

Qualifier	Qualifier Description
F3	Duplicate RPD exceeds the control limit

## 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: 580-76892-1

**Client Sample ID: PDI-SG-B321-BL1**

**Lab Sample ID: 580-76892-1**

**Date Collected: 04/26/18 10:13**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	27000	B	2000	44	mg/Kg			05/07/18 14:58	1
Total Solids	44.7		0.1	0.1	%			04/30/18 16:47	1
Total Solids @ 70°C	41		0.10	0.10	%			05/15/18 09:21	1

## Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	11.6				%			05/15/18 09:21	1
Coarse Sand	0.1				%			05/15/18 09:21	1
Fine Sand	19.1				%			05/15/18 09:21	1
Gravel	0.0				%			05/15/18 09:21	1
Medium Sand	0.3				%			05/15/18 09:21	1
Silt	69.1				%			05/15/18 09:21	1

# Client Sample Results

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B321-BL1**

**Lab Sample ID: 580-76892-1**

Date Collected: 04/26/18 10:13

Matrix: Solid

Date Received: 04/27/18 15:31

Percent Solids: 44.7

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	66	J	100	26	mg/Kg	☼	05/07/18 09:59	05/08/18 21:53	1
Motor Oil (>C24-C36)	380		100	37	mg/Kg	☼	05/07/18 09:59	05/08/18 21:53	1
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>o-Terphenyl</i>	82		50 - 150				05/07/18 09:59	05/08/18 21:53	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.5	F2	0.31	0.062	mg/Kg	☼	05/09/18 14:09	05/11/18 12:17	5
Cadmium	0.18	J F2	0.25	0.048	mg/Kg	☼	05/09/18 14:09	05/11/18 12:17	5
Copper	43	F1	0.62	0.14	mg/Kg	☼	05/09/18 14:09	05/11/18 12:17	5
Lead	9.9	F2	0.31	0.030	mg/Kg	☼	05/09/18 14:09	05/11/18 12:17	5
Zinc	100	F2	3.1	1.0	mg/Kg	☼	05/09/18 14:09	05/11/18 12:17	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.059		0.041	0.012	mg/Kg	☼	05/16/18 08:59	05/16/18 16:21	1

# Client Sample Results

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B322-BL1**

**Lab Sample ID: 580-76892-2**

**Date Collected: 04/26/18 11:03**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	33000	B	2000	44	mg/Kg			05/07/18 15:23	1
Total Solids	39.2		0.1	0.1	%			04/30/18 16:47	1
Total Solids @ 70°C	38		0.10	0.10	%			05/30/18 10:09	1

## Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	16.1				%			05/15/18 10:57	1
Coarse Sand	0.0				%			05/15/18 10:57	1
Fine Sand	11.1				%			05/15/18 10:57	1
Gravel	0.0				%			05/15/18 10:57	1
Medium Sand	0.3				%			05/15/18 10:57	1
Silt	72.6				%			05/15/18 10:57	1

# Client Sample Results

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B322-BL1**

**Lab Sample ID: 580-76892-2**

Date Collected: 04/26/18 11:03

Matrix: Solid

Date Received: 04/27/18 15:31

Percent Solids: 39.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	37	J	120	29	mg/Kg	☼	05/07/18 09:59	05/08/18 22:36	1
Motor Oil (>C24-C36)	190		120	42	mg/Kg	☼	05/07/18 09:59	05/08/18 22:36	1
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>o-Terphenyl</i>	75		50 - 150				05/07/18 09:59	05/08/18 22:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.5		0.40	0.080	mg/Kg	☼	05/09/18 14:09	05/11/18 13:32	5
Cadmium	0.16	J	0.32	0.062	mg/Kg	☼	05/09/18 14:09	05/11/18 13:32	5
Copper	41		0.80	0.18	mg/Kg	☼	05/09/18 14:09	05/11/18 13:32	5
Lead	9.5		0.40	0.039	mg/Kg	☼	05/09/18 14:09	05/11/18 13:32	5
Zinc	95		4.0	1.3	mg/Kg	☼	05/09/18 14:09	05/11/18 13:32	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.044	J	0.074	0.022	mg/Kg	☼	05/16/18 08:59	05/16/18 16:30	1

# Client Sample Results

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B325-BL1**

**Lab Sample ID: 580-76892-3**

**Date Collected: 04/26/18 12:20**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	31000	B	2000	44	mg/Kg			05/07/18 15:28	1
Total Solids	38.5		0.1	0.1	%			04/30/18 16:47	1
Total Solids @ 70°C	36		0.10	0.10	%			05/30/18 10:09	1

## Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	14.3				%			05/15/18 10:57	1
Coarse Sand	0.2				%			05/15/18 10:57	1
Fine Sand	10.8				%			05/15/18 10:57	1
Gravel	0.0				%			05/15/18 10:57	1
Medium Sand	0.3				%			05/15/18 10:57	1
Silt	74.4				%			05/15/18 10:57	1

# Client Sample Results

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B325-BL1**

**Lab Sample ID: 580-76892-3**

Date Collected: 04/26/18 12:20

Matrix: Solid

Date Received: 04/27/18 15:31

Percent Solids: 38.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	40	J	130	31	mg/Kg	☼	05/07/18 09:59	05/08/18 22:58	1
Motor Oil (>C24-C36)	270		130	44	mg/Kg	☼	05/07/18 09:59	05/08/18 22:58	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>o-Terphenyl</i>	76		50 - 150				05/07/18 09:59	05/08/18 22:58	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.4		0.50	0.10	mg/Kg	☼	05/09/18 14:09	05/11/18 13:35	5
Cadmium	0.16	J	0.40	0.078	mg/Kg	☼	05/09/18 14:09	05/11/18 13:35	5
Copper	42		1.0	0.22	mg/Kg	☼	05/09/18 14:09	05/11/18 13:35	5
Lead	9.6		0.50	0.048	mg/Kg	☼	05/09/18 14:09	05/11/18 13:35	5
Zinc	98		5.0	1.6	mg/Kg	☼	05/09/18 14:09	05/11/18 13:35	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.040	J	0.063	0.019	mg/Kg	☼	05/16/18 08:59	05/16/18 16:32	1

# Client Sample Results

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B327-BL1**

**Lab Sample ID: 580-76892-4**

**Date Collected: 04/26/18 13:10**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	44000	B	2000	44	mg/Kg			05/07/18 16:05	1
Total Solids	36.1		0.1	0.1	%			04/30/18 16:47	1
Total Solids @ 70°C	33		0.10	0.10	%			05/30/18 10:09	1

## Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	15.3				%			05/15/18 10:57	1
Coarse Sand	0.2				%			05/15/18 10:57	1
Fine Sand	8.4				%			05/15/18 10:57	1
Gravel	0.6				%			05/15/18 10:57	1
Medium Sand	0.6				%			05/15/18 10:57	1
Silt	75.0				%			05/15/18 10:57	1

# Client Sample Results

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B327-BL1**

**Lab Sample ID: 580-76892-4**

Date Collected: 04/26/18 13:10

Matrix: Solid

Date Received: 04/27/18 15:31

Percent Solids: 36.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	74	J	130	32	mg/Kg	☼	05/07/18 09:59	05/08/18 23:19	1
Motor Oil (>C24-C36)	380		130	45	mg/Kg	☼	05/07/18 09:59	05/08/18 23:19	1
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>o-Terphenyl</i>	97		50 - 150				05/07/18 09:59	05/08/18 23:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.9		0.36	0.072	mg/Kg	☼	05/09/18 14:09	05/11/18 13:39	5
Cadmium	0.20	J	0.29	0.055	mg/Kg	☼	05/09/18 14:09	05/11/18 13:39	5
Copper	44		0.72	0.16	mg/Kg	☼	05/09/18 14:09	05/11/18 13:39	5
Lead	12		0.36	0.034	mg/Kg	☼	05/09/18 14:09	05/11/18 13:39	5
Zinc	100		3.6	1.2	mg/Kg	☼	05/09/18 14:09	05/11/18 13:39	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.071		0.064	0.019	mg/Kg	☼	05/16/18 08:59	05/16/18 16:35	1

# Client Sample Results

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B394-BL1**

**Lab Sample ID: 580-76892-5**

**Date Collected: 04/26/18 14:27**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	16000	B	2000	44	mg/Kg			05/07/18 16:11	1
Total Solids	51.0		0.1	0.1	%			04/30/18 16:47	1
Total Solids @ 70°C	50		0.10	0.10	%			05/30/18 10:09	1

## Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	5.4				%			05/15/18 10:57	1
Coarse Sand	0.0				%			05/15/18 10:57	1
Fine Sand	53.6				%			05/15/18 10:57	1
Gravel	0.0				%			05/15/18 10:57	1
Medium Sand	0.3				%			05/15/18 10:57	1
Silt	40.7				%			05/15/18 10:57	1

# Client Sample Results

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B394-BL1**

**Lab Sample ID: 580-76892-5**

Date Collected: 04/26/18 14:27

Matrix: Solid

Date Received: 04/27/18 15:31

Percent Solids: 51.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	23	J	93	23	mg/Kg	☼	05/07/18 09:59	05/08/18 23:40	1
Motor Oil (>C24-C36)	170		93	33	mg/Kg	☼	05/07/18 09:59	05/08/18 23:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	83		50 - 150				05/07/18 09:59	05/08/18 23:40	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.3		0.26	0.051	mg/Kg	☼	05/09/18 14:09	05/11/18 13:42	5
Cadmium	0.14	J	0.21	0.040	mg/Kg	☼	05/09/18 14:09	05/11/18 13:42	5
Copper	30		0.51	0.11	mg/Kg	☼	05/09/18 14:09	05/11/18 13:42	5
Lead	8.2		0.26	0.025	mg/Kg	☼	05/09/18 14:09	05/11/18 13:42	5
Zinc	87		2.6	0.83	mg/Kg	☼	05/09/18 14:09	05/11/18 13:42	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.093		0.043	0.013	mg/Kg	☼	05/16/18 08:59	05/16/18 16:42	1

# Client Sample Results

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B401-BL1**

**Lab Sample ID: 580-76892-6**

**Date Collected: 04/26/18 15:49**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	14000	B	2000	44	mg/Kg			05/07/18 16:16	1
Total Solids	53.7		0.1	0.1	%			04/30/18 16:47	1
Total Solids @ 70°C	56		0.10	0.10	%			05/30/18 10:09	1

## Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	5.5				%			05/15/18 10:57	1
Coarse Sand	0.0				%			05/15/18 10:57	1
Fine Sand	61.9				%			05/15/18 10:57	1
Gravel	0.0				%			05/15/18 10:57	1
Medium Sand	0.2				%			05/15/18 10:57	1
Silt	32.4				%			05/15/18 10:57	1

# Client Sample Results

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B401-BL1**

**Lab Sample ID: 580-76892-6**

Date Collected: 04/26/18 15:49

Matrix: Solid

Date Received: 04/27/18 15:31

Percent Solids: 53.7

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	45	J	86	21	mg/Kg	☼	05/07/18 09:59	05/09/18 00:01	1
Motor Oil (>C24-C36)	210		86	30	mg/Kg	☼	05/07/18 09:59	05/09/18 00:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	81		50 - 150				05/07/18 09:59	05/09/18 00:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.2		0.27	0.054	mg/Kg	☼	05/09/18 14:09	05/11/18 13:45	5
Cadmium	0.11	J	0.21	0.041	mg/Kg	☼	05/09/18 14:09	05/11/18 13:45	5
Copper	30		0.54	0.12	mg/Kg	☼	05/09/18 14:09	05/11/18 13:45	5
Lead	9.0		0.27	0.026	mg/Kg	☼	05/09/18 14:09	05/11/18 13:45	5
Zinc	90		2.7	0.86	mg/Kg	☼	05/09/18 14:09	05/11/18 13:45	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.044	J	0.045	0.013	mg/Kg	☼	05/16/18 08:59	05/16/18 16:44	1

# Client Sample Results

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B308-BL1**

**Lab Sample ID: 580-76892-7**

**Date Collected: 04/26/18 09:55**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	27000	B	2000	44	mg/Kg			05/07/18 16:22	1
Total Solids	28.0		0.1	0.1	%			04/30/18 16:47	1
Total Solids @ 70°C	30		0.10	0.10	%			05/30/18 10:09	1

## Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	29.0				%			05/15/18 10:57	1
Coarse Sand	0.1				%			05/15/18 10:57	1
Fine Sand	4.3				%			05/15/18 10:57	1
Gravel	0.0				%			05/15/18 10:57	1
Medium Sand	0.2				%			05/15/18 10:57	1
Silt	66.4				%			05/15/18 10:57	1

# Client Sample Results

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B308-BL1**

**Lab Sample ID: 580-76892-7**

Date Collected: 04/26/18 09:55

Matrix: Solid

Date Received: 04/27/18 15:31

Percent Solids: 28.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	44	J	170	41	mg/Kg	☼	05/07/18 09:59	05/09/18 00:43	1
Motor Oil (>C24-C36)	240		170	58	mg/Kg	☼	05/07/18 09:59	05/09/18 00:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	69		50 - 150				05/07/18 09:59	05/09/18 00:43	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	9.2		0.54	0.11	mg/Kg	☼	05/09/18 14:09	05/11/18 13:49	5
Cadmium	0.40	J	0.43	0.083	mg/Kg	☼	05/09/18 14:09	05/11/18 13:49	5
Copper	100		1.1	0.24	mg/Kg	☼	05/09/18 14:09	05/11/18 13:49	5
Lead	30		0.54	0.052	mg/Kg	☼	05/09/18 14:09	05/11/18 13:49	5
Zinc	250		5.4	1.7	mg/Kg	☼	05/09/18 14:09	05/11/18 13:49	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.17		0.073	0.022	mg/Kg	☼	05/16/18 08:59	05/16/18 16:47	1

# Client Sample Results

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B313-BL1**

**Lab Sample ID: 580-76892-8**

**Date Collected: 04/26/18 10:40**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	37000	B	2000	44	mg/Kg			05/07/18 16:27	1
Total Solids	33.3		0.1	0.1	%			04/30/18 16:47	1
Total Solids @ 70°C	35		0.10	0.10	%			05/30/18 10:09	1

## Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	17.4				%			05/15/18 10:57	1
Coarse Sand	0.1				%			05/15/18 10:57	1
Fine Sand	17.2				%			05/15/18 10:57	1
Gravel	0.6				%			05/15/18 10:57	1
Medium Sand	1.5				%			05/15/18 10:57	1
Silt	63.1				%			05/15/18 10:57	1

# Client Sample Results

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B313-BL1**

**Lab Sample ID: 580-76892-8**

Date Collected: 04/26/18 10:40

Matrix: Solid

Date Received: 04/27/18 15:31

Percent Solids: 33.3

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	66	J	140	35	mg/Kg	☼	05/07/18 09:59	05/09/18 01:04	1
Motor Oil (>C24-C36)	370		140	50	mg/Kg	☼	05/07/18 09:59	05/09/18 01:04	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>o-Terphenyl</i>	77		50 - 150				05/07/18 09:59	05/09/18 01:04	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	9.4		0.56	0.11	mg/Kg	☼	05/09/18 14:09	05/11/18 13:52	5
Cadmium	0.62		0.45	0.086	mg/Kg	☼	05/09/18 14:09	05/11/18 13:52	5
Copper	110		1.1	0.25	mg/Kg	☼	05/09/18 14:09	05/11/18 13:52	5
Lead	42		0.56	0.054	mg/Kg	☼	05/09/18 14:09	05/11/18 13:52	5
Zinc	270		5.6	1.8	mg/Kg	☼	05/09/18 14:09	05/11/18 13:52	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.21		0.063	0.019	mg/Kg	☼	05/16/18 08:59	05/16/18 16:49	1

# Client Sample Results

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B313-BL1-D**

**Lab Sample ID: 580-76892-9**

Date Collected: 04/26/18 10:40

Matrix: Solid

Date Received: 04/27/18 15:31

Percent Solids: 35.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	69	J	130	32	mg/Kg	☼	05/07/18 09:59	05/09/18 01:25	1
Motor Oil (>C24-C36)	320		130	45	mg/Kg	☼	05/07/18 09:59	05/09/18 01:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	81		50 - 150				05/07/18 09:59	05/09/18 01:25	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	8.8		0.41	0.082	mg/Kg	☼	05/09/18 14:09	05/11/18 13:56	5
Cadmium	0.62		0.33	0.063	mg/Kg	☼	05/09/18 14:09	05/11/18 13:56	5
Copper	100		0.82	0.18	mg/Kg	☼	05/09/18 14:09	05/11/18 13:56	5
Lead	43		0.41	0.039	mg/Kg	☼	05/09/18 14:09	05/11/18 13:56	5
Zinc	270		4.1	1.3	mg/Kg	☼	05/09/18 14:09	05/11/18 13:56	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20		0.062	0.018	mg/Kg	☼	05/16/18 08:59	05/16/18 16:51	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	40000	B	2000	44	mg/Kg			05/07/18 16:33	1
Total Solids	35.2		0.1	0.1	%			04/30/18 16:47	1
Total Solids @ 70°C	35		0.10	0.10	%			05/30/18 14:31	1

# Client Sample Results

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B270-BL1**

**Lab Sample ID: 580-76892-10**

**Date Collected: 04/26/18 13:00**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	18000	B	2000	44	mg/Kg			05/07/18 16:39	1
Total Solids	59.0		0.1	0.1	%			04/30/18 17:00	1
Total Solids @ 70°C	48		0.10	0.10	%			05/30/18 10:09	1

## Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	6.1				%			05/15/18 10:57	1
Coarse Sand	0.6				%			05/15/18 10:57	1
Fine Sand	64.7				%			05/15/18 10:57	1
Gravel	0.0				%			05/15/18 10:57	1
Medium Sand	1.4				%			05/15/18 10:57	1
Silt	27.2				%			05/15/18 10:57	1

# Client Sample Results

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B270-BL1**

**Lab Sample ID: 580-76892-10**

Date Collected: 04/26/18 13:00

Matrix: Solid

Date Received: 04/27/18 15:31

Percent Solids: 59.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	56	J	80	20	mg/Kg	☼	05/07/18 09:59	05/09/18 01:45	1
Motor Oil (>C24-C36)	350		80	28	mg/Kg	☼	05/07/18 09:59	05/09/18 01:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	81		50 - 150				05/07/18 09:59	05/09/18 01:45	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.5		0.27	0.054	mg/Kg	☼	05/09/18 14:09	05/11/18 13:59	5
Cadmium	0.17	J	0.22	0.042	mg/Kg	☼	05/09/18 14:09	05/11/18 13:59	5
Copper	34		0.54	0.12	mg/Kg	☼	05/09/18 14:09	05/11/18 13:59	5
Lead	11		0.27	0.026	mg/Kg	☼	05/09/18 14:09	05/11/18 13:59	5
Zinc	93		2.7	0.87	mg/Kg	☼	05/09/18 14:09	05/11/18 13:59	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.050		0.032	0.0095	mg/Kg	☼	05/16/18 08:59	05/16/18 16:54	1

# Client Sample Results

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B276-BL1**

**Lab Sample ID: 580-76892-11**

**Date Collected: 04/26/18 14:15**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	16000	B	2000	44	mg/Kg			05/07/18 16:44	1
Total Solids	53.0		0.1	0.1	%			04/30/18 17:00	1
Total Solids @ 70°C	49		0.10	0.10	%			05/30/18 10:09	1

## Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	9.7				%			05/15/18 10:57	1
Coarse Sand	0.0				%			05/15/18 10:57	1
Fine Sand	40.7				%			05/15/18 10:57	1
Gravel	0.0				%			05/15/18 10:57	1
Medium Sand	0.2				%			05/15/18 10:57	1
Silt	49.4				%			05/15/18 10:57	1

# Client Sample Results

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B276-BL1**

**Lab Sample ID: 580-76892-11**

Date Collected: 04/26/18 14:15

Matrix: Solid

Date Received: 04/27/18 15:31

Percent Solids: 53.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	38	J	90	22	mg/Kg	☼	05/07/18 09:59	05/09/18 02:06	1
Motor Oil (>C24-C36)	230		90	31	mg/Kg	☼	05/07/18 09:59	05/09/18 02:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	77		50 - 150				05/07/18 09:59	05/09/18 02:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.7		0.31	0.062	mg/Kg	☼	05/09/18 14:09	05/11/18 14:16	5
Cadmium	0.17	J	0.25	0.048	mg/Kg	☼	05/09/18 14:09	05/11/18 14:16	5
Copper	36		0.62	0.14	mg/Kg	☼	05/09/18 14:09	05/11/18 14:16	5
Lead	9.2		0.31	0.030	mg/Kg	☼	05/09/18 14:09	05/11/18 14:16	5
Zinc	94		3.1	1.0	mg/Kg	☼	05/09/18 14:09	05/11/18 14:16	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.039		0.037	0.011	mg/Kg	☼	05/16/18 08:59	05/16/18 16:56	1

# Client Sample Results

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B287-BL1**

**Lab Sample ID: 580-76892-12**

**Date Collected: 04/26/18 15:30**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	19000	B	2000	44	mg/Kg			05/07/18 16:50	1
Total Solids	50.2		0.1	0.1	%			04/30/18 17:00	1
Total Solids @ 70°C	43		0.10	0.10	%			05/30/18 10:09	1

## Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	8.2				%			05/15/18 10:57	1
Coarse Sand	0.0				%			05/15/18 10:57	1
Fine Sand	32.1				%			05/15/18 10:57	1
Gravel	0.0				%			05/15/18 10:57	1
Medium Sand	0.2				%			05/15/18 10:57	1
Silt	59.5				%			05/15/18 10:57	1

# Client Sample Results

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B287-BL1**

**Lab Sample ID: 580-76892-12**

Date Collected: 04/26/18 15:30

Matrix: Solid

Date Received: 04/27/18 15:31

Percent Solids: 50.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	51	J	93	23	mg/Kg	☼	05/07/18 09:59	05/09/18 02:27	1
Motor Oil (>C24-C36)	230		93	32	mg/Kg	☼	05/07/18 09:59	05/09/18 02:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	68		50 - 150				05/07/18 09:59	05/09/18 02:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.7		0.36	0.073	mg/Kg	☼	05/09/18 14:09	05/11/18 14:20	5
Cadmium	0.13	J	0.29	0.056	mg/Kg	☼	05/09/18 14:09	05/11/18 14:20	5
Copper	34		0.73	0.16	mg/Kg	☼	05/09/18 14:09	05/11/18 14:20	5
Lead	8.2		0.36	0.035	mg/Kg	☼	05/09/18 14:09	05/11/18 14:20	5
Zinc	86		3.6	1.2	mg/Kg	☼	05/09/18 14:09	05/11/18 14:20	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.045		0.039	0.012	mg/Kg	☼	05/16/18 08:59	05/16/18 16:58	1

# Client Sample Results

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B295-BL1**

**Lab Sample ID: 580-76892-13**

**Date Collected: 04/26/18 16:15**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	17000	B	2000	44	mg/Kg			05/07/18 16:56	1
Total Solids	52.2		0.1	0.1	%			04/30/18 17:00	1
Total Solids @ 70°C	45		0.10	0.10	%			05/30/18 10:09	1

## Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	10.9				%			05/15/18 10:57	1
Coarse Sand	0.0				%			05/15/18 10:57	1
Fine Sand	28.7				%			05/15/18 10:57	1
Gravel	0.0				%			05/15/18 10:57	1
Medium Sand	0.1				%			05/15/18 10:57	1
Silt	60.3				%			05/15/18 10:57	1

# Client Sample Results

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B295-BL1**

**Lab Sample ID: 580-76892-13**

Date Collected: 04/26/18 16:15

Matrix: Solid

Date Received: 04/27/18 15:31

Percent Solids: 52.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	44	J	90	22	mg/Kg	☼	05/07/18 09:59	05/09/18 02:48	1
Motor Oil (>C24-C36)	220		90	32	mg/Kg	☼	05/07/18 09:59	05/09/18 02:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	72		50 - 150				05/07/18 09:59	05/09/18 02:48	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.6		0.25	0.050	mg/Kg	☼	05/09/18 14:09	05/11/18 14:23	5
Cadmium	0.13	J	0.20	0.038	mg/Kg	☼	05/09/18 14:09	05/11/18 14:23	5
Copper	34		0.50	0.11	mg/Kg	☼	05/09/18 14:09	05/11/18 14:23	5
Lead	8.3		0.25	0.024	mg/Kg	☼	05/09/18 14:09	05/11/18 14:23	5
Zinc	85		2.5	0.80	mg/Kg	☼	05/09/18 14:09	05/11/18 14:23	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.044		0.042	0.012	mg/Kg	☼	05/16/18 08:59	05/16/18 17:01	1

# Client Sample Results

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-RB-042318-1730**

**Lab Sample ID: 580-76892-14**

**Date Collected: 04/23/18 17:30**

**Matrix: Water**

**Date Received: 04/27/18 15:31**

**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		0.12	0.069	mg/L		04/30/18 15:06	05/02/18 03:41	1
Motor Oil (>C24-C36)	ND		0.37	0.10	mg/L		04/30/18 15:06	05/02/18 03:41	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>o-Terphenyl</i>	89		50 - 150				04/30/18 15:06	05/02/18 03:41	1

**Method: 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010	0.00020	mg/L		05/04/18 10:57	05/04/18 18:22	1
Cadmium	ND		0.00040	0.00010	mg/L		05/04/18 10:57	05/08/18 11:13	1
Copper	ND		0.0020	0.00060	mg/L		05/04/18 10:57	05/04/18 18:22	1
Lead	ND		0.00080	0.00020	mg/L		05/04/18 10:57	05/04/18 18:22	1
Zinc	ND		0.0070	0.0019	mg/L		05/04/18 10:57	05/04/18 18:22	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00030	0.00015	mg/L		05/14/18 09:31	05/14/18 13:35	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Organic Carbon</b>	<b>0.37</b>	<b>J B</b>	1.0	0.19	mg/L			05/08/18 15:41	1

# Client Sample Results

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-RB-VV-180423-1700**

**Lab Sample ID: 580-76892-15**

**Date Collected: 04/23/18 17:00**

**Matrix: Water**

**Date Received: 04/27/18 15:31**

**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		0.12	0.070	mg/L		04/30/18 15:06	05/02/18 04:03	1
Motor Oil (>C24-C36)	ND		0.37	0.10	mg/L		04/30/18 15:06	05/02/18 04:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	71		50 - 150				04/30/18 15:06	05/02/18 04:03	1

**Method: 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010	0.00020	mg/L		05/04/18 10:57	05/04/18 18:26	1
Cadmium	ND		0.00040	0.00010	mg/L		05/04/18 10:57	05/08/18 11:17	1
Copper	ND		0.0020	0.00060	mg/L		05/04/18 10:57	05/04/18 18:26	1
Lead	ND		0.00080	0.00020	mg/L		05/04/18 10:57	05/04/18 18:26	1
Zinc	ND		0.0070	0.0019	mg/L		05/04/18 10:57	05/04/18 18:26	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00030	0.00015	mg/L		05/14/18 09:31	05/14/18 13:37	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Organic Carbon</b>	<b>0.48</b>	<b>J F1 B</b>	1.0	0.19	mg/L			05/08/18 15:41	1

# Client Sample Results

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-RB-180426-1755**

**Lab Sample ID: 580-76892-16**

**Date Collected: 04/26/18 17:55**

**Matrix: Water**

**Date Received: 04/27/18 15:31**

**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		0.11	0.065	mg/L		04/30/18 15:06	05/02/18 04:26	1
Motor Oil (>C24-C36)	ND		0.35	0.097	mg/L		04/30/18 15:06	05/02/18 04:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	83		50 - 150				04/30/18 15:06	05/02/18 04:26	1

**Method: 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010	0.00020	mg/L		05/04/18 10:57	05/04/18 18:29	1
Cadmium	ND		0.00040	0.00010	mg/L		05/04/18 10:57	05/08/18 11:21	1
Copper	ND		0.0020	0.00060	mg/L		05/04/18 10:57	05/04/18 18:29	1
Lead	ND		0.00080	0.00020	mg/L		05/04/18 10:57	05/04/18 18:29	1
Zinc	ND		0.0070	0.0019	mg/L		05/04/18 10:57	05/04/18 18:29	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00030	0.00015	mg/L		05/14/18 09:31	05/14/18 13:39	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Organic Carbon</b>	<b>0.55</b>	<b>J B</b>	1.0	0.19	mg/L			05/08/18 15:41	1

# Client Sample Results

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-RB-VVSS-042618-1750**

**Lab Sample ID: 580-76892-17**

**Date Collected: 04/26/18 17:50**

**Matrix: Water**

**Date Received: 04/27/18 15:31**

**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		0.12	0.068	mg/L		04/30/18 15:06	05/02/18 05:10	1
Motor Oil (>C24-C36)	ND		0.37	0.10	mg/L		04/30/18 15:06	05/02/18 05:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	90		50 - 150				04/30/18 15:06	05/02/18 05:10	1

**Method: 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010	0.00020	mg/L		05/04/18 10:57	05/04/18 18:32	1
Cadmium	ND		0.00040	0.00010	mg/L		05/04/18 10:57	05/08/18 11:25	1
Copper	ND		0.0020	0.00060	mg/L		05/04/18 10:57	05/04/18 18:32	1
Lead	ND		0.00080	0.00020	mg/L		05/04/18 10:57	05/04/18 18:32	1
<b>Zinc</b>	<b>0.0019</b>	<b>J</b>	0.0070	0.0019	mg/L		05/04/18 10:57	05/04/18 18:32	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00030	0.00015	mg/L		05/14/18 09:31	05/14/18 13:42	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Organic Carbon</b>	<b>0.28</b>	<b>J B</b>	1.0	0.19	mg/L			05/08/18 15:41	1

# Client Sample Results

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B311-BL1**

**Lab Sample ID: 580-76892-18**

**Date Collected: 04/26/18 17:00**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	5400	B	2000	44	mg/Kg			05/07/18 17:08	1
Total Solids	75.5		0.1	0.1	%			04/30/18 17:00	1
Total Solids @ 70°C	72		0.10	0.10	%			05/30/18 10:09	1

## Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	4.0				%			05/15/18 10:57	1
Coarse Sand	0.9				%			05/15/18 10:57	1
Fine Sand	53.9				%			05/15/18 10:57	1
Gravel	0.0				%			05/15/18 10:57	1
Medium Sand	32.1				%			05/15/18 10:57	1
Silt	9.2				%			05/15/18 10:57	1

# Client Sample Results

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B311-BL1**

**Lab Sample ID: 580-76892-18**

**Date Collected: 04/26/18 17:00**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

**Percent Solids: 75.5**

**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		61	15	mg/Kg	☼	05/07/18 09:59	05/09/18 03:08	1
<b>Motor Oil (&gt;C24-C36)</b>	<b>110</b>		61	21	mg/Kg	☼	05/07/18 09:59	05/09/18 03:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	82		50 - 150				05/07/18 09:59	05/09/18 03:08	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.21		0.18	0.037	mg/Kg	☼	05/09/18 14:10	05/11/18 12:13	5
Cadmium	ND		0.15	0.028	mg/Kg	☼	05/09/18 14:10	05/11/18 12:13	5
Copper	2.2		0.37	0.081	mg/Kg	☼	05/09/18 14:10	05/11/18 12:13	5
Lead	0.13	J	0.18	0.018	mg/Kg	☼	05/09/18 14:10	05/11/18 12:13	5
Zinc	2.3		1.8	0.59	mg/Kg	☼	05/09/18 14:10	05/11/18 12:13	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.023	J	0.026	0.0077	mg/Kg	☼	05/16/18 08:59	05/16/18 17:03	1

# QC Sample Results

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

TestAmerica Job ID: 580-76892-1

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

**Lab Sample ID: MB 580-272589/1-A**  
**Matrix: Water**  
**Analysis Batch: 272686**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 272589**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.11	0.065	mg/L		04/30/18 15:06	05/01/18 21:04	1
Motor Oil (>C24-C36)	ND		0.35	0.096	mg/L		04/30/18 15:06	05/01/18 21:04	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	85		50 - 150				04/30/18 15:06	05/01/18 21:04	1

**Lab Sample ID: LCS 580-272589/2-A**  
**Matrix: Water**  
**Analysis Batch: 272686**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 272589**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits		
#2 Diesel (C10-C24)	2.00	1.39		mg/L		70	59 - 112		
Motor Oil (>C24-C36)	2.00	1.55		mg/L		77	64 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
<i>o</i> -Terphenyl	84		50 - 150						

**Lab Sample ID: LCSD 580-272589/3-A**  
**Matrix: Water**  
**Analysis Batch: 272686**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 272589**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	2.00	1.34		mg/L		67	59 - 112	4	16
Motor Oil (>C24-C36)	2.00	1.53		mg/L		76	64 - 120	1	17
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	87		50 - 150						

**Lab Sample ID: MB 580-273095/1-A**  
**Matrix: Solid**  
**Analysis Batch: 273278**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 273095**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		05/07/18 09:59	05/08/18 20:49	1
Motor Oil (>C24-C36)	ND		50	18	mg/Kg		05/07/18 09:59	05/08/18 20:49	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	98		50 - 150				05/07/18 09:59	05/08/18 20:49	1

**Lab Sample ID: MB 580-273095/1-A**  
**Matrix: Solid**  
**Analysis Batch: 273480**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 273095**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		05/07/18 09:59	05/10/18 16:17	1
Motor Oil (>C24-C36)	ND		50	18	mg/Kg		05/07/18 09:59	05/10/18 16:17	1

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-76892-1

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

**Lab Sample ID: MB 580-273095/1-A**  
**Matrix: Solid**  
**Analysis Batch: 273480**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 273095**

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	85		50 - 150	05/07/18 09:59	05/10/18 16:17	1

**Lab Sample ID: LCS 580-273095/2-A**  
**Matrix: Solid**  
**Analysis Batch: 273278**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 273095**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	500	513		mg/Kg		103	70 - 125
Motor Oil (>C24-C36)	500	497		mg/Kg		99	70 - 119

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	87		50 - 150

**Lab Sample ID: LCSD 580-273095/3-A**  
**Matrix: Solid**  
**Analysis Batch: 273278**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 273095**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	500	482		mg/Kg		96	70 - 125	6	16
Motor Oil (>C24-C36)	500	466		mg/Kg		93	70 - 119	6	16

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	86		50 - 150

**Lab Sample ID: 580-76892-1 DU**  
**Matrix: Solid**  
**Analysis Batch: 273278**

**Client Sample ID: PDI-SG-B321-BL1**  
**Prep Type: Total/NA**  
**Prep Batch: 273095**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
#2 Diesel (C10-C24)	66	J	44.0	J F5	mg/Kg	☼	40	35
Motor Oil (>C24-C36)	380		266		mg/Kg	☼	35	35

Surrogate	DU %Recovery	DU Qualifier	Limits
<i>o</i> -Terphenyl	75		50 - 150

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

**Lab Sample ID: MB 580-273426/18-A**  
**Matrix: Solid**  
**Analysis Batch: 273721**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 273426**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.25	0.050	mg/Kg		05/09/18 14:10	05/11/18 12:03	5
Cadmium	ND		0.20	0.039	mg/Kg		05/09/18 14:10	05/11/18 12:03	5
Copper	ND		0.50	0.11	mg/Kg		05/09/18 14:10	05/11/18 12:03	5
Lead	ND		0.25	0.024	mg/Kg		05/09/18 14:10	05/11/18 12:03	5
Zinc	ND		2.5	0.81	mg/Kg		05/09/18 14:10	05/11/18 12:03	5

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-76892-1

**Lab Sample ID: LCS 580-273426/19-A**  
**Matrix: Solid**  
**Analysis Batch: 273721**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 273426**  
**%Rec.**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	200	208		mg/Kg		104	80 - 120
Cadmium	5.00	5.27		mg/Kg		105	80 - 120
Copper	25.0	26.1		mg/Kg		105	80 - 120
Lead	50.0	51.2		mg/Kg		102	80 - 120
Zinc	200	206		mg/Kg		103	80 - 120

**Lab Sample ID: LCSD 580-273426/20-A**  
**Matrix: Solid**  
**Analysis Batch: 273721**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 273426**  
**%Rec.**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	200	201		mg/Kg		101	80 - 120	3	20
Cadmium	5.00	5.16		mg/Kg		103	80 - 120	2	20
Copper	25.0	25.3		mg/Kg		101	80 - 120	3	20
Lead	50.0	51.3		mg/Kg		103	80 - 120	0	20
Zinc	200	200		mg/Kg		100	80 - 120	3	20

**Lab Sample ID: 580-76892-1 MS**  
**Matrix: Solid**  
**Analysis Batch: 273721**

**Client Sample ID: PDI-SG-B321-BL1**  
**Prep Type: Total/NA**  
**Prep Batch: 273426**  
**%Rec.**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Arsenic	5.5	F2	310	347		mg/Kg	☼	110	80 - 120
Cadmium	0.18	J F2	7.76	8.91		mg/Kg	☼	112	80 - 120
Copper	43	F1	38.8	92.3	F1	mg/Kg	☼	127	80 - 120
Lead	9.9	F2	77.6	93.4		mg/Kg	☼	108	80 - 120
Zinc	100	F2	310	453		mg/Kg	☼	113	80 - 120

**Lab Sample ID: 580-76892-1 MSD**  
**Matrix: Solid**  
**Analysis Batch: 273721**

**Client Sample ID: PDI-SG-B321-BL1**  
**Prep Type: Total/NA**  
**Prep Batch: 273426**  
**%Rec.**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	5.5	F2	232	251	F4	mg/Kg	☼	106	80 - 120	32	20
Cadmium	0.18	J F2	5.80	6.10	F4	mg/Kg	☼	102	80 - 120	38	20
Copper	43	F1	29.0	78.8	F1	mg/Kg	☼	124	80 - 120	16	20
Lead	9.9	F2	58.0	70.7	F4	mg/Kg	☼	105	80 - 120	28	20
Zinc	100	F2	232	360	F4	mg/Kg	☼	111	80 - 120	23	20

**Lab Sample ID: 580-76892-1 DU**  
**Matrix: Solid**  
**Analysis Batch: 273721**

**Client Sample ID: PDI-SG-B321-BL1**  
**Prep Type: Total/NA**  
**Prep Batch: 273426**  
**%Rec.**

Analyte	Sample Result	Sample Qualifier	Spike Added	DU Result	DU Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	5.5	F2	310	4.94		mg/Kg	☼			10	20
Cadmium	0.18	J F2	7.76	0.201	J	mg/Kg	☼			9	20
Copper	43	F1	38.8	37.4		mg/Kg	☼			14	20
Lead	9.9	F2	77.6	9.31		mg/Kg	☼			6	20
Zinc	100	F2	310	91.3		mg/Kg	☼			11	20

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-76892-1

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

**Lab Sample ID: MB 580-272992/20-A**  
**Matrix: Water**  
**Analysis Batch: 273087**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 272992**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010	0.00020	mg/L		05/04/18 10:57	05/04/18 16:56	1
Copper	ND		0.0020	0.00060	mg/L		05/04/18 10:57	05/04/18 16:56	1
Lead	ND		0.00080	0.00020	mg/L		05/04/18 10:57	05/04/18 16:56	1
Zinc	ND		0.0070	0.0019	mg/L		05/04/18 10:57	05/04/18 16:56	1

**Lab Sample ID: MB 580-272992/20-A**  
**Matrix: Water**  
**Analysis Batch: 273351**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 272992**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		0.00040	0.00010	mg/L		05/04/18 10:57	05/08/18 10:23	1

**Lab Sample ID: LCS 580-272992/21-A**  
**Matrix: Water**  
**Analysis Batch: 273087**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 272992**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	4.00	3.94		mg/L		98	80 - 120
Copper	0.500	0.500		mg/L		100	80 - 120
Lead	1.00	0.962		mg/L		96	80 - 120
Zinc	4.00	3.91		mg/L		98	80 - 120

**Lab Sample ID: LCS 580-272992/21-A**  
**Matrix: Water**  
**Analysis Batch: 273351**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 272992**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.100	0.0871		mg/L		87	80 - 120

**Lab Sample ID: LCSD 580-272992/22-A**  
**Matrix: Water**  
**Analysis Batch: 273087**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total Recoverable**  
**Prep Batch: 272992**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	4.00	3.92		mg/L		98	80 - 120	0	20
Copper	0.500	0.505		mg/L		101	80 - 120	1	20
Lead	1.00	0.960		mg/L		96	80 - 120	0	20
Zinc	4.00	3.96		mg/L		99	80 - 120	1	20

**Lab Sample ID: LCSD 580-272992/22-A**  
**Matrix: Water**  
**Analysis Batch: 273351**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total Recoverable**  
**Prep Batch: 272992**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cadmium	0.100	0.0894		mg/L		89	80 - 120	3	20

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-76892-1

## Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 580-273724/14-A  
Matrix: Water  
Analysis Batch: 273813

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 273724

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00030	0.00015	mg/L		05/14/18 09:31	05/14/18 13:05	1

Lab Sample ID: LCS 580-273724/15-A  
Matrix: Water  
Analysis Batch: 273813

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 273724

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	0.00200	0.00208		mg/L		104	80 - 120

Lab Sample ID: LCSD 580-273724/16-A  
Matrix: Water  
Analysis Batch: 273813

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA  
Prep Batch: 273724

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Mercury	0.00200	0.00194		mg/L		97	80 - 120	7	20

## Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 580-273930/22-A  
Matrix: Solid  
Analysis Batch: 274055

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 273930

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.030	0.0090	mg/Kg		05/16/18 08:59	05/16/18 16:14	1

Lab Sample ID: LCS 580-273930/23-A  
Matrix: Solid  
Analysis Batch: 274055

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 273930

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	0.167	0.166		mg/Kg		100	80 - 120

Lab Sample ID: LCSD 580-273930/24-A  
Matrix: Solid  
Analysis Batch: 274055

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA  
Prep Batch: 273930

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Mercury	0.167	0.159		mg/Kg		96	80 - 120	4	20

Lab Sample ID: 580-76892-1 MS  
Matrix: Solid  
Analysis Batch: 274055

Client Sample ID: PDI-SG-B321-BL1  
Prep Type: Total/NA  
Prep Batch: 273930

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Mercury	0.059		0.303	0.408		mg/Kg	☼	115	80 - 120

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-76892-1

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

**Lab Sample ID: 580-76892-1 MSD**  
**Matrix: Solid**  
**Analysis Batch: 274055**

**Client Sample ID: PDI-SG-B321-BL1**  
**Prep Type: Total/NA**  
**Prep Batch: 273930**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.059		0.332	0.429		mg/Kg	☼	111	80 - 120	5	20

**Lab Sample ID: 580-76892-1 DU**  
**Matrix: Solid**  
**Analysis Batch: 274055**

**Client Sample ID: PDI-SG-B321-BL1**  
**Prep Type: Total/NA**  
**Prep Batch: 273930**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Mercury	0.059		0.0582		mg/Kg	☼	2	20

## Method: 9060\_PSEP - TOC (Puget Sound)

**Lab Sample ID: MB 580-273204/3**  
**Matrix: Solid**  
**Analysis Batch: 273204**

**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	99.3	J	2000	44	mg/Kg			05/07/18 12:42	1

**Lab Sample ID: LCS 580-273204/4**  
**Matrix: Solid**  
**Analysis Batch: 273204**

**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	4620	6450		mg/Kg		140	68 - 149

**Lab Sample ID: LCSD 580-273204/5**  
**Matrix: Solid**  
**Analysis Batch: 273204**

**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	4620	6140		mg/Kg		133	68 - 149	5	32

**Lab Sample ID: 580-76892-1 MS**  
**Matrix: Solid**  
**Analysis Batch: 273204**

**Client Sample ID: PDI-SG-B321-BL1**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	27000	B	120000	135000		mg/Kg		90	68 - 149

**Lab Sample ID: 580-76892-1 MSD**  
**Matrix: Solid**  
**Analysis Batch: 273204**

**Client Sample ID: PDI-SG-B321-BL1**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	27000	B	120000	140000		mg/Kg		94	68 - 149	4	32

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-76892-1

## Method: 9060\_PSEP - TOC (Puget Sound) (Continued)

**Lab Sample ID: 580-76892-1 DU**  
**Matrix: Solid**  
**Analysis Batch: 273204**

**Client Sample ID: PDI-SG-B321-BL1**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon - Duplicates	27000	B	26900		mg/Kg		0.9	50

**Lab Sample ID: 580-76892-1 TRL**  
**Matrix: Solid**  
**Analysis Batch: 273204**

**Client Sample ID: PDI-SG-B321-BL1**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	TRL Result	TRL Qualifier	Unit	D	RSD	RSD Limit
Total Organic Carbon - Duplicates	27000	B	27000		mg/Kg		0.5	20

## Method: D 2216 - Percent Moisture

**Lab Sample ID: 580-76892-18 DU**  
**Matrix: Solid**  
**Analysis Batch: 272608**

**Client Sample ID: PDI-SG-B311-BL1**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Solids	75.5		76.8		%		2	20

## Method: Moisture 70C - Percent Moisture, 70 C

**Lab Sample ID: 580-76892-2 DU**  
**Matrix: Solid**  
**Analysis Batch: 274962**

**Client Sample ID: PDI-SG-B322-BL1**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Solids @ 70°C	38		38		%		0.4	20

## Method: SM 5310B - Organic Carbon, Total (TOC)

**Lab Sample ID: MB 580-273361/20**  
**Matrix: Water**  
**Analysis Batch: 273361**

**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	0.335	J	1.0	0.19	mg/L			05/08/18 15:41	1

**Lab Sample ID: LCS 580-273361/21**  
**Matrix: Water**  
**Analysis Batch: 273361**

**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	10.0	9.39		mg/L		94	85 - 115

TestAmerica Seattle

# QC Sample Results

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

TestAmerica Job ID: 580-76892-1

## Method: SM 5310B - Organic Carbon, Total (TOC) (Continued)

**Lab Sample ID: 580-76892-15 MS**  
**Matrix: Water**  
**Analysis Batch: 273361**

**Client Sample ID: PDI-SG-RB-VV-180423-1700**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	0.48	J F1 B	10.0	8.49	F1	mg/L		80	85 - 115

**Lab Sample ID: 580-76892-15 MSD**  
**Matrix: Water**  
**Analysis Batch: 273361**

**Client Sample ID: PDI-SG-RB-VV-180423-1700**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	0.48	J F1 B	10.0	8.64	F1	mg/L		82	85 - 115	2	20

**Lab Sample ID: 580-76892-15 DU**  
**Matrix: Water**  
**Analysis Batch: 273361**

**Client Sample ID: PDI-SG-RB-VV-180423-1700**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon	0.48	J F1 B	0.450	J	mg/L		7	20

## Method: D7928/D6913 - ASTM D7928/D6913

**Lab Sample ID: 580-76892-2 DU**  
**Matrix: Solid**  
**Analysis Batch: 273853**

**Client Sample ID: PDI-SG-B322-BL1**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Clay	16.1		14.2		%		13	20
Coarse Sand	0.0		0.0		%		NC	20
Fine Sand	11.1		11.5		%		4	20
Gravel	0.0		0.0		%		NC	20
Medium Sand	0.3		0.2	F3	%		40	20
Silt	72.6		74.1		%		2	20

# Lab Chronicle

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B321-BL1**

**Lab Sample ID: 580-76892-1**

**Date Collected: 04/26/18 10:13**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	273204	05/07/18 14:58	MP	TAL SEA
Total/NA	Analysis	D 2216		1	272608	04/30/18 16:47	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	274962	05/15/18 09:21	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	273830	05/15/18 09:21	HJM	TAL SEA

**Client Sample ID: PDI-SG-B321-BL1**

**Lab Sample ID: 580-76892-1**

**Date Collected: 04/26/18 10:13**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

**Percent Solids: 44.7**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			273095	05/07/18 09:59	TTN	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	273278	05/08/18 21:53	ADB	TAL SEA
Total/NA	Prep	3050B			273426	05/09/18 14:09	ASJ	TAL SEA
Total/NA	Analysis	6020B		5	273721	05/11/18 12:17	FCW	TAL SEA
Total/NA	Prep	7471A			273930	05/16/18 08:59	ASJ	TAL SEA
Total/NA	Analysis	7471A		1	274055	05/16/18 16:21	FCW	TAL SEA

**Client Sample ID: PDI-SG-B322-BL1**

**Lab Sample ID: 580-76892-2**

**Date Collected: 04/26/18 11:03**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	273204	05/07/18 15:23	MP	TAL SEA
Total/NA	Analysis	D 2216		1	272608	04/30/18 16:47	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	274962	05/30/18 10:09	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	273853	05/15/18 10:57	HJM	TAL SEA

**Client Sample ID: PDI-SG-B322-BL1**

**Lab Sample ID: 580-76892-2**

**Date Collected: 04/26/18 11:03**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

**Percent Solids: 39.2**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			273095	05/07/18 09:59	TTN	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	273278	05/08/18 22:36	ADB	TAL SEA
Total/NA	Prep	3050B			273426	05/09/18 14:09	ASJ	TAL SEA
Total/NA	Analysis	6020B		5	273721	05/11/18 13:32	FCW	TAL SEA
Total/NA	Prep	7471A			273930	05/16/18 08:59	ASJ	TAL SEA
Total/NA	Analysis	7471A		1	274055	05/16/18 16:30	FCW	TAL SEA

# Lab Chronicle

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B325-BL1**

**Lab Sample ID: 580-76892-3**

**Date Collected: 04/26/18 12:20**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	273204	05/07/18 15:28	MP	TAL SEA
Total/NA	Analysis	D 2216		1	272608	04/30/18 16:47	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	274962	05/30/18 10:09	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	273853	05/15/18 10:57	HJM	TAL SEA

**Client Sample ID: PDI-SG-B325-BL1**

**Lab Sample ID: 580-76892-3**

**Date Collected: 04/26/18 12:20**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

**Percent Solids: 38.5**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			273095	05/07/18 09:59	TTN	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	273278	05/08/18 22:58	ADB	TAL SEA
Total/NA	Prep	3050B			273426	05/09/18 14:09	ASJ	TAL SEA
Total/NA	Analysis	6020B		5	273721	05/11/18 13:35	FCW	TAL SEA
Total/NA	Prep	7471A			273930	05/16/18 08:59	ASJ	TAL SEA
Total/NA	Analysis	7471A		1	274055	05/16/18 16:32	FCW	TAL SEA

**Client Sample ID: PDI-SG-B327-BL1**

**Lab Sample ID: 580-76892-4**

**Date Collected: 04/26/18 13:10**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	273204	05/07/18 16:05	MP	TAL SEA
Total/NA	Analysis	D 2216		1	272608	04/30/18 16:47	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	274962	05/30/18 10:09	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	273853	05/15/18 10:57	HJM	TAL SEA

**Client Sample ID: PDI-SG-B327-BL1**

**Lab Sample ID: 580-76892-4**

**Date Collected: 04/26/18 13:10**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

**Percent Solids: 36.1**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			273095	05/07/18 09:59	TTN	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	273278	05/08/18 23:19	ADB	TAL SEA
Total/NA	Prep	3050B			273426	05/09/18 14:09	ASJ	TAL SEA
Total/NA	Analysis	6020B		5	273721	05/11/18 13:39	FCW	TAL SEA
Total/NA	Prep	7471A			273930	05/16/18 08:59	ASJ	TAL SEA
Total/NA	Analysis	7471A		1	274055	05/16/18 16:35	FCW	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B394-BL1**

**Lab Sample ID: 580-76892-5**

**Date Collected: 04/26/18 14:27**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	273204	05/07/18 16:11	MP	TAL SEA
Total/NA	Analysis	D 2216		1	272608	04/30/18 16:47	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	274962	05/30/18 10:09	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	273853	05/15/18 10:57	HJM	TAL SEA

**Client Sample ID: PDI-SG-B394-BL1**

**Lab Sample ID: 580-76892-5**

**Date Collected: 04/26/18 14:27**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

**Percent Solids: 51.0**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			273095	05/07/18 09:59	TTN	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	273278	05/08/18 23:40	ADB	TAL SEA
Total/NA	Prep	3050B			273426	05/09/18 14:09	ASJ	TAL SEA
Total/NA	Analysis	6020B		5	273721	05/11/18 13:42	FCW	TAL SEA
Total/NA	Prep	7471A			273930	05/16/18 08:59	ASJ	TAL SEA
Total/NA	Analysis	7471A		1	274055	05/16/18 16:42	FCW	TAL SEA

**Client Sample ID: PDI-SG-B401-BL1**

**Lab Sample ID: 580-76892-6**

**Date Collected: 04/26/18 15:49**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	273204	05/07/18 16:16	MP	TAL SEA
Total/NA	Analysis	D 2216		1	272608	04/30/18 16:47	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	274962	05/30/18 10:09	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	273853	05/15/18 10:57	HJM	TAL SEA

**Client Sample ID: PDI-SG-B401-BL1**

**Lab Sample ID: 580-76892-6**

**Date Collected: 04/26/18 15:49**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

**Percent Solids: 53.7**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			273095	05/07/18 09:59	TTN	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	273278	05/09/18 00:01	ADB	TAL SEA
Total/NA	Prep	3050B			273426	05/09/18 14:09	ASJ	TAL SEA
Total/NA	Analysis	6020B		5	273721	05/11/18 13:45	FCW	TAL SEA
Total/NA	Prep	7471A			273930	05/16/18 08:59	ASJ	TAL SEA
Total/NA	Analysis	7471A		1	274055	05/16/18 16:44	FCW	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B308-BL1**

**Lab Sample ID: 580-76892-7**

**Date Collected: 04/26/18 09:55**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	273204	05/07/18 16:22	MP	TAL SEA
Total/NA	Analysis	D 2216		1	272608	04/30/18 16:47	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	274962	05/30/18 10:09	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	273853	05/15/18 10:57	HJM	TAL SEA

**Client Sample ID: PDI-SG-B308-BL1**

**Lab Sample ID: 580-76892-7**

**Date Collected: 04/26/18 09:55**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

**Percent Solids: 28.0**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			273095	05/07/18 09:59	TTN	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	273278	05/09/18 00:43	ADB	TAL SEA
Total/NA	Prep	3050B			273426	05/09/18 14:09	ASJ	TAL SEA
Total/NA	Analysis	6020B		5	273721	05/11/18 13:49	FCW	TAL SEA
Total/NA	Prep	7471A			273930	05/16/18 08:59	ASJ	TAL SEA
Total/NA	Analysis	7471A		1	274055	05/16/18 16:47	FCW	TAL SEA

**Client Sample ID: PDI-SG-B313-BL1**

**Lab Sample ID: 580-76892-8**

**Date Collected: 04/26/18 10:40**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	273204	05/07/18 16:27	MP	TAL SEA
Total/NA	Analysis	D 2216		1	272608	04/30/18 16:47	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	274962	05/30/18 10:09	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	273853	05/15/18 10:57	HJM	TAL SEA

**Client Sample ID: PDI-SG-B313-BL1**

**Lab Sample ID: 580-76892-8**

**Date Collected: 04/26/18 10:40**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

**Percent Solids: 33.3**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			273095	05/07/18 09:59	TTN	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	273278	05/09/18 01:04	ADB	TAL SEA
Total/NA	Prep	3050B			273426	05/09/18 14:09	ASJ	TAL SEA
Total/NA	Analysis	6020B		5	273721	05/11/18 13:52	FCW	TAL SEA
Total/NA	Prep	7471A			273930	05/16/18 08:59	ASJ	TAL SEA
Total/NA	Analysis	7471A		1	274055	05/16/18 16:49	FCW	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B313-BL1-D**

**Lab Sample ID: 580-76892-9**

**Date Collected: 04/26/18 10:40**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	273204	05/07/18 16:33	MP	TAL SEA
Total/NA	Analysis	D 2216		1	272608	04/30/18 16:47	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	275000	05/30/18 14:31	BAH	TAL SEA

**Client Sample ID: PDI-SG-B313-BL1-D**

**Lab Sample ID: 580-76892-9**

**Date Collected: 04/26/18 10:40**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

**Percent Solids: 35.2**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			273095	05/07/18 09:59	TTN	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	273278	05/09/18 01:25	ADB	TAL SEA
Total/NA	Prep	3050B			273426	05/09/18 14:09	ASJ	TAL SEA
Total/NA	Analysis	6020B		5	273721	05/11/18 13:56	FCW	TAL SEA
Total/NA	Prep	7471A			273930	05/16/18 08:59	ASJ	TAL SEA
Total/NA	Analysis	7471A		1	274055	05/16/18 16:51	FCW	TAL SEA

**Client Sample ID: PDI-SG-B270-BL1**

**Lab Sample ID: 580-76892-10**

**Date Collected: 04/26/18 13:00**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	273204	05/07/18 16:39	MP	TAL SEA
Total/NA	Analysis	D 2216		1	272608	04/30/18 17:00	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	274962	05/30/18 10:09	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	273853	05/15/18 10:57	HJM	TAL SEA

**Client Sample ID: PDI-SG-B270-BL1**

**Lab Sample ID: 580-76892-10**

**Date Collected: 04/26/18 13:00**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

**Percent Solids: 59.0**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			273095	05/07/18 09:59	TTN	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	273278	05/09/18 01:45	ADB	TAL SEA
Total/NA	Prep	3050B			273426	05/09/18 14:09	ASJ	TAL SEA
Total/NA	Analysis	6020B		5	273721	05/11/18 13:59	FCW	TAL SEA
Total/NA	Prep	7471A			273930	05/16/18 08:59	ASJ	TAL SEA
Total/NA	Analysis	7471A		1	274055	05/16/18 16:54	FCW	TAL SEA

# Lab Chronicle

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B276-BL1**

**Lab Sample ID: 580-76892-11**

**Date Collected: 04/26/18 14:15**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	273204	05/07/18 16:44	MP	TAL SEA
Total/NA	Analysis	D 2216		1	272608	04/30/18 17:00	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	274962	05/30/18 10:09	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	273853	05/15/18 10:57	HJM	TAL SEA

**Client Sample ID: PDI-SG-B276-BL1**

**Lab Sample ID: 580-76892-11**

**Date Collected: 04/26/18 14:15**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

**Percent Solids: 53.0**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			273095	05/07/18 09:59	TTN	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	273278	05/09/18 02:06	ADB	TAL SEA
Total/NA	Prep	3050B			273426	05/09/18 14:09	ASJ	TAL SEA
Total/NA	Analysis	6020B		5	273721	05/11/18 14:16	FCW	TAL SEA
Total/NA	Prep	7471A			273930	05/16/18 08:59	ASJ	TAL SEA
Total/NA	Analysis	7471A		1	274055	05/16/18 16:56	FCW	TAL SEA

**Client Sample ID: PDI-SG-B287-BL1**

**Lab Sample ID: 580-76892-12**

**Date Collected: 04/26/18 15:30**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	273204	05/07/18 16:50	MP	TAL SEA
Total/NA	Analysis	D 2216		1	272608	04/30/18 17:00	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	274962	05/30/18 10:09	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	273853	05/15/18 10:57	HJM	TAL SEA

**Client Sample ID: PDI-SG-B287-BL1**

**Lab Sample ID: 580-76892-12**

**Date Collected: 04/26/18 15:30**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

**Percent Solids: 50.2**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			273095	05/07/18 09:59	TTN	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	273278	05/09/18 02:27	ADB	TAL SEA
Total/NA	Prep	3050B			273426	05/09/18 14:09	ASJ	TAL SEA
Total/NA	Analysis	6020B		5	273721	05/11/18 14:20	FCW	TAL SEA
Total/NA	Prep	7471A			273930	05/16/18 08:59	ASJ	TAL SEA
Total/NA	Analysis	7471A		1	274055	05/16/18 16:58	FCW	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B295-BL1**

**Lab Sample ID: 580-76892-13**

**Date Collected: 04/26/18 16:15**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	273204	05/07/18 16:56	MP	TAL SEA
Total/NA	Analysis	D 2216		1	272608	04/30/18 17:00	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	274962	05/30/18 10:09	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	273853	05/15/18 10:57	HJM	TAL SEA

**Client Sample ID: PDI-SG-B295-BL1**

**Lab Sample ID: 580-76892-13**

**Date Collected: 04/26/18 16:15**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

**Percent Solids: 52.2**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			273095	05/07/18 09:59	TTN	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	273278	05/09/18 02:48	ADB	TAL SEA
Total/NA	Prep	3050B			273426	05/09/18 14:09	ASJ	TAL SEA
Total/NA	Analysis	6020B		5	273721	05/11/18 14:23	FCW	TAL SEA
Total/NA	Prep	7471A			273930	05/16/18 08:59	ASJ	TAL SEA
Total/NA	Analysis	7471A		1	274055	05/16/18 17:01	FCW	TAL SEA

**Client Sample ID: PDI-SG-RB-042318-1730**

**Lab Sample ID: 580-76892-14**

**Date Collected: 04/23/18 17:30**

**Matrix: Water**

**Date Received: 04/27/18 15:31**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			272589	04/30/18 15:06	APR	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	272686	05/02/18 03:41	ADB	TAL SEA
Total Recoverable	Prep	3005A			272992	05/04/18 10:57	ASJ	TAL SEA
Total Recoverable	Analysis	6020B		1	273351	05/08/18 11:13	FCW	TAL SEA
Total Recoverable	Prep	3005A			272992	05/04/18 10:57	ASJ	TAL SEA
Total Recoverable	Analysis	6020B		1	273087	05/04/18 18:22	FCW	TAL SEA
Total/NA	Prep	7470A			273724	05/14/18 09:31	ASJ	TAL SEA
Total/NA	Analysis	7470A		1	273813	05/14/18 13:35	FCW	TAL SEA
Total/NA	Analysis	SM 5310B		1	273361	05/08/18 15:41	MP	TAL SEA

**Client Sample ID: PDI-SG-RB-VV-180423-1700**

**Lab Sample ID: 580-76892-15**

**Date Collected: 04/23/18 17:00**

**Matrix: Water**

**Date Received: 04/27/18 15:31**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			272589	04/30/18 15:06	APR	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	272686	05/02/18 04:03	ADB	TAL SEA
Total Recoverable	Prep	3005A			272992	05/04/18 10:57	ASJ	TAL SEA
Total Recoverable	Analysis	6020B		1	273351	05/08/18 11:17	FCW	TAL SEA
Total Recoverable	Prep	3005A			272992	05/04/18 10:57	ASJ	TAL SEA
Total Recoverable	Analysis	6020B		1	273087	05/04/18 18:26	FCW	TAL SEA

TestAmerica Seattle

# Lab Chronicle

Client: AECOM

TestAmerica Job ID: 580-76892-1

Project/Site: Portland Harbor Pre-Remedial Design

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			273724	05/14/18 09:31	ASJ	TAL SEA
Total/NA	Analysis	7470A		1	273813	05/14/18 13:37	FCW	TAL SEA
Total/NA	Analysis	SM 5310B		1	273361	05/08/18 15:41	MP	TAL SEA

**Client Sample ID: PDI-SG-RB-180426-1755**

**Lab Sample ID: 580-76892-16**

**Date Collected: 04/26/18 17:55**

**Matrix: Water**

**Date Received: 04/27/18 15:31**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			272589	04/30/18 15:06	APR	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	272686	05/02/18 04:26	ADB	TAL SEA
Total Recoverable	Prep	3005A			272992	05/04/18 10:57	ASJ	TAL SEA
Total Recoverable	Analysis	6020B		1	273351	05/08/18 11:21	FCW	TAL SEA
Total Recoverable	Prep	3005A			272992	05/04/18 10:57	ASJ	TAL SEA
Total Recoverable	Analysis	6020B		1	273087	05/04/18 18:29	FCW	TAL SEA
Total/NA	Prep	7470A			273724	05/14/18 09:31	ASJ	TAL SEA
Total/NA	Analysis	7470A		1	273813	05/14/18 13:39	FCW	TAL SEA
Total/NA	Analysis	SM 5310B		1	273361	05/08/18 15:41	MP	TAL SEA

**Client Sample ID: PDI-SG-RB-VVSS-042618-1750**

**Lab Sample ID: 580-76892-17**

**Date Collected: 04/26/18 17:50**

**Matrix: Water**

**Date Received: 04/27/18 15:31**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			272589	04/30/18 15:06	APR	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	272686	05/02/18 05:10	ADB	TAL SEA
Total Recoverable	Prep	3005A			272992	05/04/18 10:57	ASJ	TAL SEA
Total Recoverable	Analysis	6020B		1	273351	05/08/18 11:25	FCW	TAL SEA
Total Recoverable	Prep	3005A			272992	05/04/18 10:57	ASJ	TAL SEA
Total Recoverable	Analysis	6020B		1	273087	05/04/18 18:32	FCW	TAL SEA
Total/NA	Prep	7470A			273724	05/14/18 09:31	ASJ	TAL SEA
Total/NA	Analysis	7470A		1	273813	05/14/18 13:42	FCW	TAL SEA
Total/NA	Analysis	SM 5310B		1	273361	05/08/18 15:41	MP	TAL SEA

**Client Sample ID: PDI-SG-B311-BL1**

**Lab Sample ID: 580-76892-18**

**Date Collected: 04/26/18 17:00**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	273204	05/07/18 17:08	MP	TAL SEA
Total/NA	Analysis	D 2216		1	272608	04/30/18 17:00	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	274962	05/30/18 10:09	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	273853	05/15/18 10:57	HJM	TAL SEA

TestAmerica Seattle

# Lab Chronicle

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

TestAmerica Job ID: 580-76892-1

**Client Sample ID: PDI-SG-B311-BL1**

**Lab Sample ID: 580-76892-18**

**Date Collected: 04/26/18 17:00**

**Matrix: Solid**

**Date Received: 04/27/18 15:31**

**Percent Solids: 75.5**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			273095	05/07/18 09:59	TTN	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	273278	05/09/18 03:08	ADB	TAL SEA
Total/NA	Prep	3050B			273426	05/09/18 14:10	ASJ	TAL SEA
Total/NA	Analysis	6020B		5	273721	05/11/18 12:13	FCW	TAL SEA
Total/NA	Prep	7471A			273930	05/16/18 08:59	ASJ	TAL SEA
Total/NA	Analysis	7471A		1	274055	05/16/18 17:03	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: 580-76892-1

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: 580-76892-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-76892-1	PDI-SG-B321-BL1	Solid	04/26/18 10:13	04/27/18 15:31
580-76892-2	PDI-SG-B322-BL1	Solid	04/26/18 11:03	04/27/18 15:31
580-76892-3	PDI-SG-B325-BL1	Solid	04/26/18 12:20	04/27/18 15:31
580-76892-4	PDI-SG-B327-BL1	Solid	04/26/18 13:10	04/27/18 15:31
580-76892-5	PDI-SG-B394-BL1	Solid	04/26/18 14:27	04/27/18 15:31
580-76892-6	PDI-SG-B401-BL1	Solid	04/26/18 15:49	04/27/18 15:31
580-76892-7	PDI-SG-B308-BL1	Solid	04/26/18 09:55	04/27/18 15:31
580-76892-8	PDI-SG-B313-BL1	Solid	04/26/18 10:40	04/27/18 15:31
580-76892-9	PDI-SG-B313-BL1-D	Solid	04/26/18 10:40	04/27/18 15:31
580-76892-10	PDI-SG-B270-BL1	Solid	04/26/18 13:00	04/27/18 15:31
580-76892-11	PDI-SG-B276-BL1	Solid	04/26/18 14:15	04/27/18 15:31
580-76892-12	PDI-SG-B287-BL1	Solid	04/26/18 15:30	04/27/18 15:31
580-76892-13	PDI-SG-B295-BL1	Solid	04/26/18 16:15	04/27/18 15:31
580-76892-14	PDI-SG-RB-042318-1730	Water	04/23/18 17:30	04/27/18 15:31
580-76892-15	PDI-SG-RB-VV-180423-1700	Water	04/23/18 17:00	04/27/18 15:31
580-76892-16	PDI-SG-RB-180426-1755	Water	04/26/18 17:55	04/27/18 15:31
580-76892-17	PDI-SG-RB-VVSS-042618-1750	Water	04/26/18 17:50	04/27/18 15:31
580-76892-18	PDI-SG-B311-BL1	Solid	04/26/18 17:00	04/27/18 15:31

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

**Client Contact**

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

**Site Contact:** Jennifer Ray  
 Laboratory Contact: Elaine-Walker

**Carrier:** Courier

**COC No.:** 4/27/2018

1 of 2 COCs

**Analysis Turnaround Time**  
 Calendar (C) or Work Days (W)  
 21 days  
 Other \_\_\_\_\_

**Project Name:** Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling  
 Portland, OR  
 Project #: 60566335 Study: Surface Sediment

Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction										Sample Specific Notes:				
							PCB Congeners 168A	PCDD/Fs 161B	TPH Diesel, Metals, Mercury WTPH-Dx 6020B, 7471A	Grain size ASTM D7928/D6913	Total organic carbon, Total solids 9060	Archive Archive - 20 C									
PDI-SG-B321-BL1	4/26/2018	10:13	SE		TP	6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
PDI-SG-B322-BL1	4/26/2018	11:03	SE		TP	6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
PDI-SG-B325-BL1	4/26/2018	12:20	SE		TP	6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
PDI-SG-B327-BL1	4/26/2018	13:10	SE		TP	6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
PDI-SG-B394-BL1	4/26/2018	14:27	SE		TP	6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
PDI-SG-B401-BL1	4/26/2018	15:49	SE		TP	6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
PDI-SG-B308-BL1	4/26/2018	9:55	SE		AM	6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
PDI-SG-B313-BL1	4/26/2018	10:40	SE		AM	6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
PDI-SG-B313-BL1-D	4/26/2018	10:40	SE		AM	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
PDI-SG-B270-BL1	4/26/2018	13:00	SE		AM	6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
PDI-SG-B276-BL1	4/26/2018	14:15	SE		AM	6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
PDI-SG-B287-BL1	4/26/2018	15:30	SE		AM	6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	



580-76892 Chain of Custody

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

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

7.4, 10.7, 9.2, 7.3, 7.7

**Relinquished by:** [Signature] Company: M E Date/Time: 4/27/18 / 1305  
**Relinquished by:** [Signature] Company: M E Date/Time: 4/27-18 / 1430  
**Relinquished by:** [Signature] Company: M E Date/Time: 4/27/18 / 1430

**Received by:** [Signature] Company: M E Date/Time: 4-27-18 / 1430  
**Received by:** [Signature] Company: TAPOR Date/Time: 4/27/18 / 1430  
**Received by:** [Signature] Company: M E Date/Time: 4-27-18 / 1430



# SURFACE SEDIMENT CHAIN OF CUSTODY

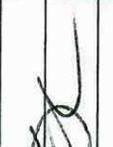
TestAmerica-Seattle 5755-8th-Street-East Tacoma, WA 98424-1317 Ph: 253-922-2310 Fax: 253-922-5047	Project Contact: Amy Dahl / Chelsea Cook Tel: (206) 438-2261 / (206) 438-2010 Analysis Turnaround Time Calendar (C) or Work Days (W) 21 days <input checked="" type="checkbox"/> Calendar <input type="checkbox"/> Other	Site Contact: Jennifer Ray Laboratory Contact: Elaine Walker	4/25/2018 2 of 2 COCs
Client Contact 1111 3rd Ave Suite 1600 Seattle, WA 98101 Phone: (206) 438-2700 Fax: 1(866) 495-3288 Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling Portland, OR Project #: 60566333 Study: Surface Sediment		Carrier: Courier WQ - Total Organic Carbon SWS310B WQ - Metals, Mercury 6020B, 7470 WQ - TPH Diesel NWTPH-Dx WQ - PCDD/Fs 1613B WQ - PCB Congeners 1668A Archive Archive -20 C Total organic carbon, Total solids 9060 Grain size ASTM D7928/D6913 TPH Diesel, Metals, Mercury NWTPH-Dx 6020B, 7470 PCDD/Fs 1613B PCB Congeners 1668A	

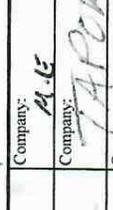
Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction										Sample Specific Notes			
							PCB Congeners 1668A	PCDD/Fs 1613B	TPH Diesel, Metals, Mercury NWTPH-Dx	6020B, 7470	Grain size ASTM D7928/D6913	Total organic carbon, Total solids 9060	Archive Archive -20 C	WQ - PCB Congeners 1668A	WQ - PCDD/Fs 1613B	WQ - TPH Diesel NWTPH-Dx		WQ - Metals, Mercury 6020B, 7470	WQ - Total Organic Carbon SWS310B	
PDI-SG-B295-BL1	4/26/2018	16:15	SE		AM	6	X	X	X	X	X	X	X	X	X	X	X	X	X	
PDI-SG-B311-BL1	4/26/2018	17:00	SE		AM	6	X	X	X	X	X	X	X	X	X	X	X	X	X	
PDI-SG-RB-042318-1730	4/23/2018	17:30	W		ED	8														
PDI-SG-RB-VV-180423-1700	4/23/2018	17:00	W		NM	8														
PDI-SG-RB-180426-1755	4/26/2018	17:55	W		TP	8	X	X	X	X	X	X	X	X	X	X	X	X	X	
PDI-SG-RB-VVSS-042618-1750	4/26/2018	17:50	W		AM	8	X	X	X	X	X	X	X	X	X	X	X	X	X	

Return To Client  
 Disposal By Lab  
 Archive For 12 Months

Container Type: W/MG=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)

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

Relinquished by:  Date/Time: 4/27/18/1305  
 Relinquished by: M.E. Date/Time: 4/27/18/1305  
 Relinquished by:  Date/Time: 4/27/18/1305

Received by:  Company: M.E. Date/Time: 4/27/18/1305  
 Received by:  Company: TAPER Date/Time: 4/27/18/1305  
 Received by:  Company: Date/Time:

7.4, 10.7, 5.7, 7.3, 7.7



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				4/27/2018		COC No: _____			
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				Laboratory Contact: Elaine-Walker				Carrier: Courier		1 of 2 COCs			
Analysis Turnaround Time		Calendar (C) or Work Days (W)													
<input checked="" type="checkbox"/> 21 days		<input type="checkbox"/> 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, NWTPEH-Dx, 602/B, 7471A	Grain size ASTM D7928/D6913	Total organic carbon, Total solids 9860	Archive Archive -20 C	Sample Specific Notes:	
PDI-SG-B321-BL1	4/26/2018	10:13	SE		TP	6		X	X	X	X	X	X		
PDI-SG-B322-BL1	4/26/2018	11:03	SE		TP	6		X	X	X	X	X	X		
PDI-SG-B325-BL1	4/26/2018	12:20	SE		TP	6		X	X	X	X	X	X		
PDI-SG-B327-BL1	4/26/2018	13:10	SE		TP	6		X	X	X	X	X	X		
PDI-SG-B394-BL1	4/26/2018	14:27	SE		TP	6		X	X	X	X	X	X		
PDI-SG-B401-BL1	4/26/2018	15:49	SE		TP	6		X	X	X	X	X	X		
PDI-SG-B308-BL1	4/26/2018	9:55	SE		AM	6		X	X	X	X	X	X		
PDI-SG-B313-BL1	4/26/2018	10:40	SE		AM	6		X	X	X	X	X	X		
PDI-SG-B313-BL1-D	4/26/2018	10:40	SE		AM	5		X	X	X		X	X		
PDI-SG-B270-BL1	4/26/2018	13:00	SE		AM	6		X	X	X	X	X	X		
PDI-SG-B276-BL1	4/26/2018	14:15	SE		AM	6		X	X	X	X	X	X		
PDI-SG-B287-BL1	4/26/2018	15:30	SE		AM	6		X	X	X	X	X	X		
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: Separate reports for each lab															
7.4, 10.7, 9.2, 7.3, 7.7															
Relinquished by:	Company: AECOM	Date/Time: 4/27/18 1305	Received by:			Company: ME	Date/Time: 4-27-18 1505								
Relinquished by:	Company: ME	Date/Time: 4-27-18 1430	Received by:			Company: TAPOR	Date/Time: 4/27/18 1305								
Relinquished by:	Company: TAPOR	Date/Time: 4/27/18 1400	Received by:			Company: TASE2	Date/Time: 4-28-18 1430								

IR4=-0.2/-0.4,

<b>TestAmerica-Seattle</b> 5755-8th-Street-East Tacoma, WA 98424-1317 Ph: 253-922-2310 Fax: 253-922-5047		<b>SURFACE SEDIMENT CHAIN OF CUSTODY</b>										4/25/2018 COC No: 2 of 2 COCs	
<b>Client Contact</b> 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		<b>Project Contact: Amy Dahl / Chelsey Cook</b> Tel: (206) 438-2261 / (206) 438-2010 <b>Analysis Turnaround Time</b> Calendar (C) or Work Days (W) <input checked="" type="checkbox"/> 21 days <input type="checkbox"/> Other _____			<b>Site Contact: Jennifer Ray</b> Laboratory Contact: Elaine-Walker				Carrier: Courier				

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 9660	Archive Archive -20 C	WQ - PCB Congeners 1668A	WQ - PCDD/Fs 1613B	WQ - TPH Diesel NWTPH-Dx	WQ - Metals, Mercury 6020B, 7470	WQ - Total Organic Carbon SMI510B	Sample Specific Notes:
PDI-SG-B295-BL1	4/26/2018	16:15	SE		AM	6		X	X	X	X	X	X						
PDI-SG-B311-BL1	4/26/2018	17:00	SE		AM	6		X	X	X	X	X	X						
PDI-SG-RB-042318-1730	4/23/2018	17:30	W		ED	8								X	X	X	X	X	
PDI-SG-RB-VV-180423-1700	4/23/2018	17:00	W		NM	8								X	X	X	X	X	
PDI-SG-RB-180426-1755	4/26/2018	17:55	W		TP	8								X	X	X	X	X	
PDI-SG-RB-VVSS-042618-1750	4/26/2018	17:50	W		AM	8								X	X	X	X	X	

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:  
 Separate reports for each lab

7.4, 10.7, 5.7, 7.3, 7.7

Relinquished by:	Company: AECOM	Date/Time: 4/27/18 11305	Received by:	Company: M.G	Date/Time: 4-27-18/1305
Relinquished by:	Company: M.G	Date/Time: 4-27-18/1305	Received by:	Company: TAPER	Date/Time: 4/27/18 1420
Relinquished by:	Company: TADA	Date/Time: 4/27/18 1700	Received by:	Company: TASEJ	Date/Time: 4-27-18 1111

# Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-76892-1

**Login Number: 76892**

**List Source: TestAmerica Seattle**

**List Number: 1**

**Creator: O'Connell, Jason I**

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.	False	Cooler temperature outside required temperature criteria.
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	

