

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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TestAmerica Job ID: 580-78325-1

Client Project/Site: Portland Harbor Pre-Remedial Design

For:

AECOM
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Attn: Karen Mixon



Authorized for release by:

7/26/2018 4:48:35 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: 580-78325-1

Job ID: 580-78325-1

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE **Client: AECOM** **Project: Portland Harbor Pre-Remedial Design** **Report Number: 580-78325-1**

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

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

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

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

RECEIPT

The six samples were received on 6/25/2018 3:05 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.0° C and 1.3° 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.

RECEIPT EXCEPTIONS

One or more containers for the following samples were received broken or leaking: PDI-SG-B285-BL1 (580-78325-2) and PDI-SG-B278-BL1 (580-78325-5). Sample 2 was received with cracked lid and was taped in lab. Sample 5 was received with broken lid and it was replaced in lab.

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-B274-BL1 (580-78325-1), PDI-SG-B285-BL1 (580-78325-2), PDI-SG-B272-BL1 (580-78325-3), PDI-SG-B281-BL1 (580-78325-4), PDI-SG-B278-BL1 (580-78325-5) and PDI-SG-B259-BL1 (580-78325-6) were analyzed for diesel and extended range organics in accordance with Method NWTPH-Dx. The samples were prepared on 06/27/2018 and analyzed on 06/29/2018.

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

METALS (ICPMS)

Samples PDI-SG-B274-BL1 (580-78325-1), PDI-SG-B285-BL1 (580-78325-2), PDI-SG-B272-BL1 (580-78325-3), PDI-SG-B281-BL1 (580-78325-4), PDI-SG-B278-BL1 (580-78325-5) and PDI-SG-B259-BL1 (580-78325-6) were analyzed for Metals (ICPMS) in accordance with 6020A_LL. The samples were prepared on 07/05/2018 and analyzed on 07/06/2018.

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: 580-78325-1

Job ID: 580-78325-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

TOTAL MERCURY

Samples PDI-SG-B274-BL1 (580-78325-1), PDI-SG-B285-BL1 (580-78325-2), PDI-SG-B272-BL1 (580-78325-3), PDI-SG-B281-BL1 (580-78325-4), PDI-SG-B278-BL1 (580-78325-5) and PDI-SG-B259-BL1 (580-78325-6) were analyzed for total mercury in accordance with EPA SW-846 Method 7471A. The samples were prepared and analyzed on 07/09/2018.

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

TOTAL ORGANIC CARBON

Samples PDI-SG-B274-BL1 (580-78325-1), PDI-SG-B285-BL1 (580-78325-2), PDI-SG-B272-BL1 (580-78325-3), PDI-SG-B281-BL1 (580-78325-4), PDI-SG-B278-BL1 (580-78325-5) and PDI-SG-B259-BL1 (580-78325-6) were analyzed for total organic carbon in accordance with EPA SW-846 Method 9060. The samples were analyzed on 07/03/2018.

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

GRAIN SIZE

Samples PDI-SG-B274-BL1 (580-78325-1), PDI-SG-B285-BL1 (580-78325-2), PDI-SG-B272-BL1 (580-78325-3), PDI-SG-B281-BL1 (580-78325-4), PDI-SG-B278-BL1 (580-78325-5) and PDI-SG-B259-BL1 (580-78325-6) were analyzed for grain size in accordance with ASTM D7928/D6913. The samples were analyzed on 06/27/2018.

Coarse Sand exceeded the RPD limit for the duplicate of sample PDI-SG-B274-BL1DU (580-78325-1).

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

PERCENT SOLIDS

Samples PDI-SG-B274-BL1 (580-78325-1), PDI-SG-B285-BL1 (580-78325-2), PDI-SG-B272-BL1 (580-78325-3), PDI-SG-B281-BL1 (580-78325-4), PDI-SG-B278-BL1 (580-78325-5) and PDI-SG-B259-BL1 (580-78325-6) were analyzed for percent solids in accordance with ASTM D2216. The samples were analyzed on 07/10/2018.

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

TOTAL SOLIDS @ 70C

Samples PDI-SG-B274-BL1 (580-78325-1), PDI-SG-B285-BL1 (580-78325-2), PDI-SG-B272-BL1 (580-78325-3), PDI-SG-B281-BL1 (580-78325-4), PDI-SG-B278-BL1 (580-78325-5) and PDI-SG-B259-BL1 (580-78325-6) were analyzed for Total Solids @ 70C. The samples were analyzed on 07/02/2018.

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: 580-78325-1

Qualifiers

GC Semi VOA

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

Metals

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

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time

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: 580-78325-1

Client Sample ID: PDI-SG-B274-BL1

Lab Sample ID: 580-78325-1

Date Collected: 06/24/18 13:30

Matrix: Solid

Date Received: 06/25/18 15:05

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	13000		2000	44	mg/Kg			07/03/18 15:50	1
Total Solids	59.0		0.1	0.1	%			07/10/18 15:35	1
Total Solids @ 70°C	55		0.10	0.10	%			07/02/18 08:00	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	8.5				%			06/27/18 14:05	1
Coarse Sand	0.2				%			06/27/18 14:05	1
Fine Sand	45.7				%			06/27/18 14:05	1
Gravel	0.0				%			06/27/18 14:05	1
Medium Sand	2.8				%			06/27/18 14:05	1
Silt	42.9				%			06/27/18 14:05	1

Client Sample Results

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

TestAmerica Job ID: 580-78325-1

Client Sample ID: PDI-SG-B274-BL1

Date Collected: 06/24/18 13:30

Date Received: 06/25/18 15:05

Lab Sample ID: 580-78325-1

Matrix: Solid

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)	44	J	62	15	mg/Kg	☼	06/27/18 09:35	06/29/18 14:14	1
Motor Oil (>C24-C36)	220		62	22	mg/Kg	☼	06/27/18 09:35	06/29/18 14:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	98		50 - 150				06/27/18 09:35	06/29/18 14:14	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.4		0.24	0.049	mg/Kg	☼	07/05/18 14:39	07/06/18 12:43	5
Cadmium	0.16	J	0.19	0.037	mg/Kg	☼	07/05/18 14:39	07/06/18 12:43	5
Copper	75		0.49	0.11	mg/Kg	☼	07/05/18 14:39	07/06/18 12:43	5
Lead	13		0.24	0.023	mg/Kg	☼	07/05/18 14:39	07/06/18 12:43	5
Zinc	100		2.4	0.78	mg/Kg	☼	07/05/18 14:39	07/06/18 12:43	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.092		0.038	0.011	mg/Kg	☼	07/09/18 10:55	07/09/18 18:28	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-78325-1

Client Sample ID: PDI-SG-B285-BL1

Lab Sample ID: 580-78325-2

Date Collected: 06/24/18 09:59

Matrix: Solid

Date Received: 06/25/18 15:05

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	15000		2000	44	mg/Kg			07/03/18 15:55	1
Total Solids	52.3		0.1	0.1	%			07/10/18 15:35	1
Total Solids @ 70°C	53	H	0.10	0.10	%			07/02/18 08:02	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	7.9				%			06/27/18 14:05	1
Coarse Sand	0.0				%			06/27/18 14:05	1
Fine Sand	12.1				%			06/27/18 14:05	1
Gravel	0.0				%			06/27/18 14:05	1
Medium Sand	0.1				%			06/27/18 14:05	1
Silt	79.9				%			06/27/18 14:05	1

Client Sample Results

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

TestAmerica Job ID: 580-78325-1

Client Sample ID: PDI-SG-B285-BL1

Date Collected: 06/24/18 09:59

Date Received: 06/25/18 15:05

Lab Sample ID: 580-78325-2

Matrix: Solid

Percent Solids: 52.3

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	49	J	75	19	mg/Kg	☼	06/27/18 09:35	06/29/18 14:54	1
Motor Oil (>C24-C36)	210		75	26	mg/Kg	☼	06/27/18 09:35	06/29/18 14:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	102		50 - 150				06/27/18 09:35	06/29/18 14:54	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.1		0.27	0.055	mg/Kg	☼	07/05/18 14:39	07/06/18 12:14	5
Cadmium	0.14	J	0.22	0.042	mg/Kg	☼	07/05/18 14:39	07/06/18 12:14	5
Copper	36		0.55	0.12	mg/Kg	☼	07/05/18 14:39	07/06/18 12:14	5
Lead	10		0.27	0.026	mg/Kg	☼	07/05/18 14:39	07/06/18 12:14	5
Zinc	82		2.7	0.88	mg/Kg	☼	07/05/18 14:39	07/06/18 12:14	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.051		0.049	0.015	mg/Kg	☼	07/09/18 10:55	07/09/18 18:37	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-78325-1

Client Sample ID: PDI-SG-B272-BL1

Lab Sample ID: 580-78325-3

Date Collected: 06/24/18 15:17

Matrix: Solid

Date Received: 06/25/18 15:05

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	13000		2000	44	mg/Kg			07/03/18 16:01	1
Total Solids	55.2		0.1	0.1	%			07/10/18 15:35	1
Total Solids @ 70°C	58	H	0.10	0.10	%			07/02/18 08:03	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	5.5				%			06/27/18 14:05	1
Coarse Sand	0.2				%			06/27/18 14:05	1
Fine Sand	43.3				%			06/27/18 14:05	1
Gravel	0.0				%			06/27/18 14:05	1
Medium Sand	15.1				%			06/27/18 14:05	1
Silt	35.9				%			06/27/18 14:05	1

Client Sample Results

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

TestAmerica Job ID: 580-78325-1

Client Sample ID: PDI-SG-B272-BL1

Date Collected: 06/24/18 15:17

Date Received: 06/25/18 15:05

Lab Sample ID: 580-78325-3

Matrix: Solid

Percent Solids: 55.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	76		76	19	mg/Kg	☼	06/27/18 09:35	06/29/18 15:14	1
Motor Oil (>C24-C36)	240		76	27	mg/Kg	☼	06/27/18 09:35	06/29/18 15:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	101		50 - 150				06/27/18 09:35	06/29/18 15:14	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.4		0.26	0.052	mg/Kg	☼	07/05/18 14:39	07/06/18 12:18	5
Cadmium	0.15	J	0.21	0.040	mg/Kg	☼	07/05/18 14:39	07/06/18 12:18	5
Copper	72		0.52	0.11	mg/Kg	☼	07/05/18 14:39	07/06/18 12:18	5
Lead	10		0.26	0.025	mg/Kg	☼	07/05/18 14:39	07/06/18 12:18	5
Zinc	110		2.6	0.83	mg/Kg	☼	07/05/18 14:39	07/06/18 12:18	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.053		0.037	0.011	mg/Kg	☼	07/09/18 10:55	07/09/18 18:39	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-78325-1

Client Sample ID: PDI-SG-B281-BL1

Lab Sample ID: 580-78325-4

Date Collected: 06/24/18 10:49

Matrix: Solid

Date Received: 06/25/18 15:05

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	16000		2000	44	mg/Kg			07/03/18 16:06	1
Total Solids	50.1		0.1	0.1	%			07/10/18 15:35	1
Total Solids @ 70°C	52	H	0.10	0.10	%			07/02/18 08:04	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	8.5				%			06/27/18 14:05	1
Coarse Sand	0.0				%			06/27/18 14:05	1
Fine Sand	39.9				%			06/27/18 14:05	1
Gravel	0.0				%			06/27/18 14:05	1
Medium Sand	1.5				%			06/27/18 14:05	1
Silt	50.1				%			06/27/18 14:05	1

Client Sample Results

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

TestAmerica Job ID: 580-78325-1

Client Sample ID: PDI-SG-B281-BL1

Date Collected: 06/24/18 10:49

Date Received: 06/25/18 15:05

Lab Sample ID: 580-78325-4

Matrix: Solid

Percent Solids: 50.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	52	J	93	23	mg/Kg	☼	06/27/18 09:35	06/29/18 15:34	1
Motor Oil (>C24-C36)	250		93	32	mg/Kg	☼	06/27/18 09:35	06/29/18 15:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	100		50 - 150				06/27/18 09:35	06/29/18 15:34	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	6.1		0.33	0.066	mg/Kg	☼	07/05/18 14:39	07/06/18 12:23	5
Cadmium	0.17	J	0.26	0.051	mg/Kg	☼	07/05/18 14:39	07/06/18 12:23	5
Copper	65		0.66	0.14	mg/Kg	☼	07/05/18 14:39	07/06/18 12:23	5
Lead	13		0.33	0.032	mg/Kg	☼	07/05/18 14:39	07/06/18 12:23	5
Zinc	110		3.3	1.1	mg/Kg	☼	07/05/18 14:39	07/06/18 12:23	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.063		0.044	0.013	mg/Kg	☼	07/09/18 10:55	07/09/18 18:41	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-78325-1

Client Sample ID: PDI-SG-B278-BL1

Lab Sample ID: 580-78325-5

Date Collected: 06/24/18 12:36

Matrix: Solid

Date Received: 06/25/18 15:05

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	17000		2000	44	mg/Kg			07/03/18 16:17	1
Total Solids	47.9		0.1	0.1	%			07/10/18 15:35	1
Total Solids @ 70°C	49	H	0.10	0.10	%			07/02/18 08:05	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	8.8				%			06/27/18 14:05	1
Coarse Sand	0.2				%			06/27/18 14:05	1
Fine Sand	37.5				%			06/27/18 14:05	1
Gravel	0.0				%			06/27/18 14:05	1
Medium Sand	1.3				%			06/27/18 14:05	1
Silt	52.1				%			06/27/18 14:05	1

Client Sample Results

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

TestAmerica Job ID: 580-78325-1

Client Sample ID: PDI-SG-B278-BL1

Date Collected: 06/24/18 12:36

Date Received: 06/25/18 15:05

Lab Sample ID: 580-78325-5

Matrix: Solid

Percent Solids: 47.9

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	65	J	78	19	mg/Kg	☼	06/27/18 09:35	06/29/18 15:54	1
Motor Oil (>C24-C36)	440		78	27	mg/Kg	☼	06/27/18 09:35	06/29/18 15:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	75		50 - 150				06/27/18 09:35	06/29/18 15:54	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.1		0.35	0.071	mg/Kg	☼	07/05/18 14:39	07/06/18 12:27	5
Cadmium	0.16	J	0.28	0.054	mg/Kg	☼	07/05/18 14:39	07/06/18 12:27	5
Copper	58		0.71	0.16	mg/Kg	☼	07/05/18 14:39	07/06/18 12:27	5
Lead	12		0.35	0.034	mg/Kg	☼	07/05/18 14:39	07/06/18 12:27	5
Zinc	110		3.5	1.1	mg/Kg	☼	07/05/18 14:39	07/06/18 12:27	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.065		0.048	0.014	mg/Kg	☼	07/09/18 10:55	07/09/18 18:59	1

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-78325-1

Client Sample ID: PDI-SG-B259-BL1

Lab Sample ID: 580-78325-6

Date Collected: 06/22/18 16:17

Matrix: Solid

Date Received: 06/25/18 15:05

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	16000		2000	44	mg/Kg			07/03/18 16:23	1
Total Solids	52.9		0.1	0.1	%			07/10/18 15:35	1
Total Solids @ 70°C	53	H	0.10	0.10	%			07/02/18 08:06	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	9.7				%			06/27/18 14:05	1
Coarse Sand	0.1				%			06/27/18 14:05	1
Fine Sand	29.3				%			06/27/18 14:05	1
Gravel	0.0				%			06/27/18 14:05	1
Medium Sand	14.5				%			06/27/18 14:05	1
Silt	46.4				%			06/27/18 14:05	1

Client Sample Results

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

TestAmerica Job ID: 580-78325-1

Client Sample ID: PDI-SG-B259-BL1

Date Collected: 06/22/18 16:17

Date Received: 06/25/18 15:05

Lab Sample ID: 580-78325-6

Matrix: Solid

Percent Solids: 52.9

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	310		76	19	mg/Kg	☼	06/27/18 09:35	06/29/18 16:14	1
Motor Oil (>C24-C36)	940		76	27	mg/Kg	☼	06/27/18 09:35	06/29/18 16:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	89		50 - 150				06/27/18 09:35	06/29/18 16:14	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	11		0.37	0.075	mg/Kg	☼	07/05/18 14:39	07/06/18 12:31	5
Cadmium	0.30		0.30	0.058	mg/Kg	☼	07/05/18 14:39	07/06/18 12:31	5
Copper	510		0.75	0.16	mg/Kg	☼	07/05/18 14:39	07/06/18 12:31	5
Lead	38		0.37	0.036	mg/Kg	☼	07/05/18 14:39	07/06/18 12:31	5
Zinc	340		3.7	1.2	mg/Kg	☼	07/05/18 14:39	07/06/18 12:31	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.13		0.050	0.015	mg/Kg	☼	07/09/18 10:55	07/09/18 19:11	1

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-78325-1

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

Lab Sample ID: MB 580-277489/1-A

Matrix: Solid

Analysis Batch: 277769

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 277489

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		06/27/18 09:35	06/29/18 10:34	1
Motor Oil (>C24-C36)	ND		50	18	mg/Kg		06/27/18 09:35	06/29/18 10:34	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	104		50 - 150				06/27/18 09:35	06/29/18 10:34	1

Lab Sample ID: LCS 580-277489/2-A

Matrix: Solid

Analysis Batch: 277769

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 277489

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits		
#2 Diesel (C10-C24)	500	471		mg/Kg		94	70 - 125		
Motor Oil (>C24-C36)	500	484		mg/Kg		97	70 - 129		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
o-Terphenyl	98		50 - 150						

Lab Sample ID: LCSD 580-277489/3-A

Matrix: Solid

Analysis Batch: 277769

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 277489

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	500	458		mg/Kg		92	70 - 125	3	16
Motor Oil (>C24-C36)	500	496		mg/Kg		99	70 - 129	2	16
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-Terphenyl	101		50 - 150						

Lab Sample ID: 580-78325-1 DU

Matrix: Solid

Analysis Batch: 277769

Client Sample ID: PDI-SG-B274-BL1

Prep Type: Total/NA

Prep Batch: 277489

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
#2 Diesel (C10-C24)	44	J	54.7	J	mg/Kg	☼	23	35
Motor Oil (>C24-C36)	220		249		mg/Kg	☼	11	35
Surrogate	DU %Recovery	DU Qualifier	Limits					
o-Terphenyl	104		50 - 150					

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 580-278186/22-A

Matrix: Solid

Analysis Batch: 278394

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 278186

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.25	0.050	mg/Kg		07/05/18 14:39	07/06/18 10:29	5

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-78325-1

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

Lab Sample ID: MB 580-278186/22-A

Matrix: Solid

Analysis Batch: 278394

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 278186

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		0.20	0.039	mg/Kg		07/05/18 14:39	07/06/18 10:29	5
Copper	ND		0.50	0.11	mg/Kg		07/05/18 14:39	07/06/18 10:29	5
Lead	ND		0.25	0.024	mg/Kg		07/05/18 14:39	07/06/18 10:29	5
Zinc	ND		2.5	0.81	mg/Kg		07/05/18 14:39	07/06/18 10:29	5

Lab Sample ID: LCS 580-278186/23-A

Matrix: Solid

Analysis Batch: 278394

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 278186

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	200	201		mg/Kg		100	80 - 120
Cadmium	5.00	5.38		mg/Kg		108	80 - 120
Copper	25.0	26.0		mg/Kg		104	80 - 120
Lead	50.0	49.6		mg/Kg		99	80 - 120
Zinc	200	196		mg/Kg		98	80 - 120

Lab Sample ID: LCSD 580-278186/24-A

Matrix: Solid

Analysis Batch: 278394

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 278186

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	200	200		mg/Kg		100	80 - 120	0	20
Cadmium	5.00	5.16		mg/Kg		103	80 - 120	4	20
Copper	25.0	25.8		mg/Kg		103	80 - 120	1	20
Lead	50.0	50.1		mg/Kg		100	80 - 120	1	20
Zinc	200	203		mg/Kg		102	80 - 120	4	20

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 580-278415/22-A

Matrix: Solid

Analysis Batch: 278507

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 278415

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.030	0.0090	mg/Kg		07/09/18 10:55	07/09/18 18:21	1

Lab Sample ID: LCS 580-278415/23-A

Matrix: Solid

Analysis Batch: 278507

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 278415

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.167	0.149		mg/Kg		89	80 - 120

Lab Sample ID: LCSD 580-278415/24-A

Matrix: Solid

Analysis Batch: 278507

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 278415

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.167	0.140		mg/Kg		84	80 - 120	6	20

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-78325-1

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

Lab Sample ID: 580-78325-1 MS
Matrix: Solid
Analysis Batch: 278507

Client Sample ID: PDI-SG-B274-BL1
Prep Type: Total/NA
Prep Batch: 278415

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.092		0.211	0.275		mg/Kg	✱	87	80 - 120

Lab Sample ID: 580-78325-1 MSD
Matrix: Solid
Analysis Batch: 278507

Client Sample ID: PDI-SG-B274-BL1
Prep Type: Total/NA
Prep Batch: 278415

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.092		0.221	0.276		mg/Kg	✱	84	80 - 120	1	20

Lab Sample ID: 580-78325-1 DU
Matrix: Solid
Analysis Batch: 278507

Client Sample ID: PDI-SG-B274-BL1
Prep Type: Total/NA
Prep Batch: 278415

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Mercury	0.092		0.0803		mg/Kg	✱	13	20

Method: 9060_PSEP - TOC (Puget Sound)

Lab Sample ID: MB 580-278100/3
Matrix: Solid
Analysis Batch: 278100

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	ND		2000	44	mg/Kg			07/03/18 14:53	1

Lab Sample ID: LCS 580-278100/4
Matrix: Solid
Analysis Batch: 278100

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	4270	4000		mg/Kg		94	68 - 149

Lab Sample ID: LCSD 580-278100/5
Matrix: Solid
Analysis Batch: 278100

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	4270	3960		mg/Kg		93	68 - 149	1	32

Method: Moisture 70C - Percent Moisture, 70 C

Lab Sample ID: 580-78325-1 DU
Matrix: Solid
Analysis Batch: 279626

Client Sample ID: PDI-SG-B274-BL1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Solids @ 70°C	55		55		%		0.4	20

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-78325-1

Method: D7928/D6913 - ASTM D7928/D6913

Lab Sample ID: 580-78325-1 DU

Matrix: Solid

Analysis Batch: 277568

Client Sample ID: PDI-SG-B274-BL1

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Clay	8.5		7.8		%		9	20
Coarse Sand	0.2		0.0	F3	%		200	20
Fine Sand	45.7		44.9		%		2	20
Gravel	0.0		0.0		%		NC	20
Medium Sand	2.8		2.9		%		4	20
Silt	42.9		44.2		%		3	20

Lab Chronicle

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

TestAmerica Job ID: 580-78325-1

Client Sample ID: PDI-SG-B274-BL1

Date Collected: 06/24/18 13:30

Date Received: 06/25/18 15:05

Lab Sample ID: 580-78325-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	278100	07/03/18 15:50	Z1T	TAL SEA
Total/NA	Analysis	D 2216		1	278582	07/10/18 15:35	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	279626	07/02/18 08:00	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	277568	06/27/18 14:05	KAB	TAL SEA

Client Sample ID: PDI-SG-B274-BL1

Date Collected: 06/24/18 13:30

Date Received: 06/25/18 15:05

Lab Sample ID: 580-78325-1

Matrix: Solid

Percent Solids: 59.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			277489	06/27/18 09:35	BAH	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	277769	06/29/18 14:14	T1W	TAL SEA
Total/NA	Prep	3050B			278186	07/05/18 14:39	CJB	TAL SEA
Total/NA	Analysis	6020B		5	278394	07/06/18 12:43	FCW	TAL SEA
Total/NA	Prep	7471A			278415	07/09/18 10:55	T1H	TAL SEA
Total/NA	Analysis	7471A		1	278507	07/09/18 18:28	FCW	TAL SEA

Client Sample ID: PDI-SG-B285-BL1

Date Collected: 06/24/18 09:59

Date Received: 06/25/18 15:05

Lab Sample ID: 580-78325-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	278100	07/03/18 15:55	Z1T	TAL SEA
Total/NA	Analysis	D 2216		1	278582	07/10/18 15:35	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	279626	07/02/18 08:02	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	277568	06/27/18 14:05	KAB	TAL SEA

Client Sample ID: PDI-SG-B285-BL1

Date Collected: 06/24/18 09:59

Date Received: 06/25/18 15:05

Lab Sample ID: 580-78325-2

Matrix: Solid

Percent Solids: 52.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			277489	06/27/18 09:35	BAH	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	277769	06/29/18 14:54	T1W	TAL SEA
Total/NA	Prep	3050B			278186	07/05/18 14:39	CJB	TAL SEA
Total/NA	Analysis	6020B		5	278394	07/06/18 12:14	FCW	TAL SEA
Total/NA	Prep	7471A			278415	07/09/18 10:55	T1H	TAL SEA
Total/NA	Analysis	7471A		1	278507	07/09/18 18:37	FCW	TAL SEA

TestAmerica Seattle

Lab Chronicle

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

TestAmerica Job ID: 580-78325-1

Client Sample ID: PDI-SG-B272-BL1

Lab Sample ID: 580-78325-3

Date Collected: 06/24/18 15:17

Matrix: Solid

Date Received: 06/25/18 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	278100	07/03/18 16:01	Z1T	TAL SEA
Total/NA	Analysis	D 2216		1	278582	07/10/18 15:35	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	279626	07/02/18 08:03	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	277568	06/27/18 14:05	KAB	TAL SEA

Client Sample ID: PDI-SG-B272-BL1

Lab Sample ID: 580-78325-3

Date Collected: 06/24/18 15:17

Matrix: Solid

Date Received: 06/25/18 15:05

Percent Solids: 55.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			277489	06/27/18 09:35	BAH	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	277769	06/29/18 15:14	T1W	TAL SEA
Total/NA	Prep	3050B			278186	07/05/18 14:39	CJB	TAL SEA
Total/NA	Analysis	6020B		5	278394	07/06/18 12:18	FCW	TAL SEA
Total/NA	Prep	7471A			278415	07/09/18 10:55	T1H	TAL SEA
Total/NA	Analysis	7471A		1	278507	07/09/18 18:39	FCW	TAL SEA

Client Sample ID: PDI-SG-B281-BL1

Lab Sample ID: 580-78325-4

Date Collected: 06/24/18 10:49

Matrix: Solid

Date Received: 06/25/18 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	278100	07/03/18 16:06	Z1T	TAL SEA
Total/NA	Analysis	D 2216		1	278582	07/10/18 15:35	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	279626	07/02/18 08:04	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	277568	06/27/18 14:05	KAB	TAL SEA

Client Sample ID: PDI-SG-B281-BL1

Lab Sample ID: 580-78325-4

Date Collected: 06/24/18 10:49

Matrix: Solid

Date Received: 06/25/18 15:05

Percent Solids: 50.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			277489	06/27/18 09:35	BAH	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	277769	06/29/18 15:34	T1W	TAL SEA
Total/NA	Prep	3050B			278186	07/05/18 14:39	CJB	TAL SEA
Total/NA	Analysis	6020B		5	278394	07/06/18 12:23	FCW	TAL SEA
Total/NA	Prep	7471A			278415	07/09/18 10:55	T1H	TAL SEA
Total/NA	Analysis	7471A		1	278507	07/09/18 18:41	FCW	TAL SEA

TestAmerica Seattle

Lab Chronicle

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

TestAmerica Job ID: 580-78325-1

Client Sample ID: PDI-SG-B278-BL1

Lab Sample ID: 580-78325-5

Date Collected: 06/24/18 12:36

Matrix: Solid

Date Received: 06/25/18 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	278100	07/03/18 16:17	Z1T	TAL SEA
Total/NA	Analysis	D 2216		1	278582	07/10/18 15:35	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	279626	07/02/18 08:05	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	277568	06/27/18 14:05	KAB	TAL SEA

Client Sample ID: PDI-SG-B278-BL1

Lab Sample ID: 580-78325-5

Date Collected: 06/24/18 12:36

Matrix: Solid

Date Received: 06/25/18 15:05

Percent Solids: 47.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			277489	06/27/18 09:35	BAH	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	277769	06/29/18 15:54	T1W	TAL SEA
Total/NA	Prep	3050B			278186	07/05/18 14:39	CJB	TAL SEA
Total/NA	Analysis	6020B		5	278394	07/06/18 12:27	FCW	TAL SEA
Total/NA	Prep	7471A			278415	07/09/18 10:55	T1H	TAL SEA
Total/NA	Analysis	7471A		1	278507	07/09/18 18:59	FCW	TAL SEA

Client Sample ID: PDI-SG-B259-BL1

Lab Sample ID: 580-78325-6

Date Collected: 06/22/18 16:17

Matrix: Solid

Date Received: 06/25/18 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	278100	07/03/18 16:23	Z1T	TAL SEA
Total/NA	Analysis	D 2216		1	278582	07/10/18 15:35	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	279626	07/02/18 08:06	HJM	TAL SEA
Total/NA	Analysis	D7928/D6913		1	277568	06/27/18 14:05	KAB	TAL SEA

Client Sample ID: PDI-SG-B259-BL1

Lab Sample ID: 580-78325-6

Date Collected: 06/22/18 16:17

Matrix: Solid

Date Received: 06/25/18 15:05

Percent Solids: 52.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			277489	06/27/18 09:35	BAH	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	277769	06/29/18 16:14	T1W	TAL SEA
Total/NA	Prep	3050B			278186	07/05/18 14:39	CJB	TAL SEA
Total/NA	Analysis	6020B		5	278394	07/06/18 12:31	FCW	TAL SEA
Total/NA	Prep	7471A			278415	07/09/18 10:55	T1H	TAL SEA
Total/NA	Analysis	7471A		1	278507	07/09/18 19:11	FCW	TAL SEA

Laboratory References:

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

TestAmerica Seattle

Accreditation/Certification Summary

Client: AECOM

TestAmerica Job ID: 580-78325-1

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: 580-78325-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-78325-1	PDI-SG-B274-BL1	Solid	06/24/18 13:30	06/25/18 15:05
580-78325-2	PDI-SG-B285-BL1	Solid	06/24/18 09:59	06/25/18 15:05
580-78325-3	PDI-SG-B272-BL1	Solid	06/24/18 15:17	06/25/18 15:05
580-78325-4	PDI-SG-B281-BL1	Solid	06/24/18 10:49	06/25/18 15:05
580-78325-5	PDI-SG-B278-BL1	Solid	06/24/18 12:36	06/25/18 15:05
580-78325-6	PDI-SG-B259-BL1	Solid	06/22/18 16:17	06/25/18 15:05



580-78325 Chain of Custody

SURFACE SEDIMENT

CHAIN OF CUSTODY

TestAmerica-Seattle 5755-8th-Street-East Tacoma, WA 98424-1317 Ph: 253-922-2310 Fax: 253-922-5047		Client Contact AECOM 1111 3rd Ave Suite 1600 Seattle, WA 98101 Phone: (206) 438-2700 Fax: 1+(866) 495-5288 Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling Portland, OR Project #: 60566335 Study: Surface Sediment Sample Type: SRS		Project Contact: Amy Dahl / Chelsea Cook Tel: (206) 438-2261 / (206) 438-2010 Analysis Turnaround Time Calendar (C) or Work Days (W) ☒ 21 days ☐ Other _____		Site Contact: Jennifer Ray / Michaela McCoig Laboratory Contact: Elaine-Walker Date: 6/25/18 Carrier: Courier COC No. 1 of 1 COCs													
Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	PCB Congeners 168A	PCDD/Fs 1613B	TPH Diesel, Metals, Mercury NWTPH-Dx, 6020B, 7471A	Grain size ASTM D7928/D6913	Total organic carbon, Total solids 9060 (104C & 70C)	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 SMS310B	Sample Specific Notes:
PDI-SG-B274-BL1	6/24/2018	13:30	SS		MM	6		X	X	X	X	X	X						
PDI-SG-B285-BL1	6/24/2018	9:59	SS		MM	6		X	X	X	X	X	X						
PDI-SG-B272-BL1	6/24/2018	15:17	SS		MM	6		X	X	X	X	X	X						
PDI-SG-B281-BL1	6/24/2018	10:49	SS		MM	6		X	X	X	X	X	X						
PDI-SG-B278-BL1	6/24/2018	12:36	SS		MM	6		X	X	X	X	X	X						
PDI-SG-B259-BL1	6/22/2018	16:17	SS		MM	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, PXT = 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.																			
Relinquished by: <i>[Signature]</i>	Company: AECOM	Date/Time: 6/25/18 1227	Received by: <i>[Signature]</i>	Company: M.E.	Date/Time: 6/25/18 1227														
Relinquished by: <i>[Signature]</i>	Company: M.E.	Date/Time: 6/25/18 1505	Received by: <i>[Signature]</i>	Company: TAPOR	Date/Time: 6/25/18 1505														
Relinquished by: <i>[Signature]</i>	Company:	Date/Time:	Received by:	Company:	Date/Time:														

160,163

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



10
11
12

$$5 = 4.9/4.9$$

Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-78325-1

Login Number: 78325

List Source: TestAmerica Seattle

List Number: 1

Creator: O'Connell, Jason I

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



580-78325 Field Sheet

Job: _____

Tracking # 4423 0750 5782 SO / PO / FO / UPS / Other _____

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

Notes: received sample #5
with cracked lid. Taped it.
Mb 6/27/18
→ received sample #2
with broken lid. replaced
it. Mb 6/27/18

Therm. ID: AK-2 / AK-3 / AK-5 / AK-6 / HACCP / Other _____

Ice X Wet X Gel _____ Other _____

Cooler Custody Seal: Seal

Sample Custody Seal: -

Cooler ID: -

Temp: Observed 2.8

From: Temp Blank ☐ Sample ☒

NCM Filed: Yes ☐ No ☐

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

Initials: Mb Date: 6/27/18 Time: 915

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

F2F
High Res
boxed