TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

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TestAmerica Job ID: 580-78109-1
Client Project/Site: Portland Harbor Pre-Remedial Design

For:
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Attn: Karen Mixon

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Authorized for release by:
7/9/2018 3:33:39 PM

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Job ID: 580-78109-1

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE
Client: AECOM
Project: Portland Harbor Pre-Remedial Design
Report Number: 580-78109-1

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

Fifteen samples were received on 6/15/2018 12:20 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were -3.4º C, -1.3º C and -0.2º 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-B208-BL1 (580-78109-1), PDI-SG-B389-BL1 (580-78109-2), PDI-SG-B391-BL1 (580-78109-3), PDI-SG-B392-BL1 (580-78109-4), PDI-SG-B428-BL1 (580-78109-5), PDI-SG-B427-BL1 (580-78109-6), PDI-SG-B426-BL1 (580-78109-7), PDI-SG-B415-BL1 (580-78109-8), PDI-SG-B320-BL1 (580-78109-9), PDI-SG-B404-BL1 (580-78109-10), PDI-SG-B419-BL1 (580-78109-11), PDI-SG-B421-BL1 (580-78109-12), PDI-SG-B422-BL1 (580-78109-13), PDI-SG-B192-BL1 (580-78109-14) and PDI-SG-B183-BL1 (580-78109-15) were analyzed for diesel and extended range organics in accordance with Method NWTPH-Dx. The samples were prepared on 06/18/2018 and analyzed on 06/20/2018.

#2 Diesel (C10-C24) exceeded the RPD limit for the duplicate of sample PDI-SG-B183-BL1DU (580-78109-15). 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.

Motor Oil (>C24-C36) exceeded the RPD limit for the duplicate of sample PDI-SG-B208-BL1DU (580-78109-1). 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.

The following samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern was later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: PDI-SG-B208-BL1 (580-78109-1), PDI-SG-B389-BL1 (580-78109-2), PDI-SG-B391-BL1 (580-78109-3), PDI-SG-B392-BL1 (580-78109-4), PDI-SG-B428-BL1 (580-78109-5), PDI-SG-B427-BL1 (580-78109-6), PDI-SG-B426-BL1 (580-78109-7), PDI-SG-B415-BL1 (580-78109-8), PDI-SG-B320-BL1 (580-78109-9), PDI-SG-B404-BL1 (580-78109-10), PDI-SG-B419-BL1 (580-78109-11), PDI-SG-B421-BL1 (580-78109-12), PDI-SG-B422-BL1 (580-78109-13),

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Laboratory: TestAmerica Seattle (Continued)

PDI-SG-B192-BL1 (580-78109-14), PDI-SG-B183-BL1 (580-78109-15), (580-78109-F-1-B DU) and (580-78109-F-15-B DU).

Sample PDI-SG-B404-BL1 (580-78109-10)[10X] required dilution prior to analysis to bring the concentration of target analytes within the calibration range. The reporting limits have been adjusted accordingly.

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

METALS (ICPMS)

Samples PDI-SG-B208-BL1 (580-78109-1), PDI-SG-B389-BL1 (580-78109-2), PDI-SG-B391-BL1 (580-78109-3), PDI-SG-B392-BL1 (580-78109-4), PDI-SG-B428-BL1 (580-78109-5), PDI-SG-B427-BL1 (580-78109-6), PDI-SG-B426-BL1 (580-78109-7), PDI-SG-B415-BL1 (580-78109-8), PDI-SG-B320-BL1 (580-78109-9), PDI-SG-B404-BL1 (580-78109-10), PDI-SG-B419-BL1 (580-78109-11), PDI-SG-B421-BL1 (580-78109-12), PDI-SG-B422-BL1 (580-78109-13), PDI-SG-B192-BL1 (580-78109-14) and PDI-SG-B183-BL1 (580-78109-15) were analyzed for Metals (ICPMS) in accordance with 6020A_LL. The samples were prepared on 06/27/2018 and analyzed on 06/28/2018.

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

TOTAL MERCURY

Samples PDI-SG-B208-BL1 (580-78109-1), PDI-SG-B389-BL1 (580-78109-2), PDI-SG-B391-BL1 (580-78109-3), PDI-SG-B392-BL1 (580-78109-4), PDI-SG-B428-BL1 (580-78109-5), PDI-SG-B427-BL1 (580-78109-6), PDI-SG-B426-BL1 (580-78109-7), PDI-SG-B415-BL1 (580-78109-8), PDI-SG-B320-BL1 (580-78109-9), PDI-SG-B404-BL1 (580-78109-10), PDI-SG-B419-BL1 (580-78109-11), PDI-SG-B421-BL1 (580-78109-12), PDI-SG-B422-BL1 (580-78109-13), PDI-SG-B192-BL1 (580-78109-14) and PDI-SG-B183-BL1 (580-78109-15) were analyzed for total mercury in accordance with EPA SW-846 Method 7471A. The samples were prepared on 06/19/2018 and analyzed on 06/20/2018.

The following samples were received outside of holding time: PDI-SG-B208-BL1 (580-78109-1), PDI-SG-B389-BL1 (580-78109-2), PDI-SG-B391-BL1 (580-78109-3), PDI-SG-B392-BL1 (580-78109-4), PDI-SG-B428-BL1 (580-78109-5), PDI-SG-B427-BL1 (580-78109-6), PDI-SG-B426-BL1 (580-78109-7) and PDI-SG-B415-BL1 (580-78109-8). The samples were previously frozen by the client; however, Mercury does not have an extension to the hold time if the samples are frozen. The hold time remains at 28 Days.

Mercury was detected in method blank MB 580-276720/25-A 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.

Mercury exceeded the RPD limit for the duplicate of sample PDI-SG-B208-BL1DU (580-78109-1). 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.

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

TOTAL ORGANIC CARBON

Samples PDI-SG-B208-BL1 (580-78109-1), PDI-SG-B389-BL1 (580-78109-2), PDI-SG-B391-BL1 (580-78109-3), PDI-SG-B392-BL1 (580-78109-4), PDI-SG-B428-BL1 (580-78109-5), PDI-SG-B427-BL1 (580-78109-6), PDI-SG-B426-BL1 (580-78109-7), PDI-SG-B415-BL1 (580-78109-8), PDI-SG-B320-BL1 (580-78109-9), PDI-SG-B404-BL1 (580-78109-10), PDI-SG-B419-BL1 (580-78109-11), PDI-SG-B421-BL1 (580-78109-12), PDI-SG-B422-BL1 (580-78109-13), PDI-SG-B192-BL1 (580-78109-14) and PDI-SG-B183-BL1 (580-78109-15) were analyzed for total organic carbon in accordance with EPA SW-846 Method 9060. The samples were analyzed on 06/24/2018 and 06/25/2018.

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

GRAIN SIZE

Samples PDI-SG-B208-BL1 (580-78109-1), PDI-SG-B389-BL1 (580-78109-2), PDI-SG-B391-BL1 (580-78109-3), PDI-SG-B392-BL1 (580-78109-4), PDI-SG-B428-BL1 (580-78109-5), PDI-SG-B427-BL1 (580-78109-6), PDI-SG-B426-BL1 (580-78109-7), PDI-SG-B415-BL1 (580-78109-8), PDI-SG-B320-BL1 (580-78109-9), PDI-SG-B404-BL1 (580-78109-10), PDI-SG-B419-BL1 (580-78109-11), PDI-SG-B421-BL1 (580-78109-12), PDI-SG-B422-BL1 (580-78109-13), PDI-SG-B192-BL1 (580-78109-14) and PDI-SG-B183-BL1

Job ID: 580-78109-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

(580-78109-15) were analyzed for grain size in accordance with ASTM D7928/D6913. The samples were analyzed on 06/24/2018 and 06/25/2018.

Negative silt results. Due to the difference between the actual recovered mass >63µm (#230 sieve) vs the calculated recovery and the low silt/clay content in the sample, the value for Silt is negative. This error is inherent of this method. PDI-SG-B426-BL1 (580-78109-7)

Clay, Coarse Sand and Silt exceeded the RPD limit for the duplicate of sample PDI-SG-B426-BL1DU (580-78109-7).

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

PERCENT SOLIDS

Samples PDI-SG-B208-BL1 (580-78109-1), PDI-SG-B389-BL1 (580-78109-2), PDI-SG-B391-BL1 (580-78109-3), PDI-SG-B392-BL1 (580-78109-4), PDI-SG-B428-BL1 (580-78109-5), PDI-SG-B427-BL1 (580-78109-6), PDI-SG-B426-BL1 (580-78109-7), PDI-SG-B415-BL1 (580-78109-8), PDI-SG-B320-BL1 (580-78109-9), PDI-SG-B404-BL1 (580-78109-10), PDI-SG-B419-BL1 (580-78109-11), PDI-SG-B421-BL1 (580-78109-12), PDI-SG-B422-BL1 (580-78109-13), PDI-SG-B192-BL1 (580-78109-14) and PDI-SG-B183-BL1 (580-78109-15) were analyzed for percent solids in accordance with ASTM D2216. The samples were analyzed on 06/18/2018.

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

TOTAL SOLIDS @ 70C

Samples PDI-SG-B208-BL1 (580-78109-1), PDI-SG-B389-BL1 (580-78109-2), PDI-SG-B391-BL1 (580-78109-3), PDI-SG-B392-BL1 (580-78109-4), PDI-SG-B428-BL1 (580-78109-5), PDI-SG-B427-BL1 (580-78109-6), PDI-SG-B426-BL1 (580-78109-7), PDI-SG-B415-BL1 (580-78109-8), PDI-SG-B320-BL1 (580-78109-9), PDI-SG-B404-BL1 (580-78109-10), PDI-SG-B419-BL1 (580-78109-11), PDI-SG-B421-BL1 (580-78109-12), PDI-SG-B422-BL1 (580-78109-13), PDI-SG-B192-BL1 (580-78109-14) and PDI-SG-B183-BL1 (580-78109-15) were analyzed for Total Solids @ 70C. The samples were analyzed on 06/22/2018 and 06/27/2018.

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

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.
F3	Duplicate RPD exceeds the control limit

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.

General Chemistry

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

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.
¤	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: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-78109-1

Client Sample ID: PDI-SG-B208-BL1
Date Collected: 05/20/18 10:00
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-1
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	5900		2000	44	mg/Kg			06/24/18 12:22	1
Total Solids	70.2		0.1	0.1	%			06/18/18 15:45	1
Total Solids @ 70°C	70		0.10	0.10	%			06/27/18 14:25	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	3.5				%			06/24/18 14:15	1
Coarse Sand	0.9				%			06/24/18 14:15	1
Fine Sand	56.9				%			06/24/18 14:15	1
Gravel	0.6				%			06/24/18 14:15	1
Medium Sand	13.5				%			06/24/18 14:15	1
Silt	24.6				%			06/24/18 14:15	1

Client Sample ID: PDI-SG-B208-BL1
Date Collected: 05/20/18 10:00
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-1
Matrix: Solid
Percent Solids: 70.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	20	J	66	16	mg/Kg	☼	06/18/18 14:32	06/20/18 18:24	1
Motor Oil (>C24-C36)	88		66	23	mg/Kg	☼	06/18/18 14:32	06/20/18 18:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*102*		*50 - 150*	*06/18/18 14:32*	*06/20/18 18:24*	*1*

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	3.1		0.24	0.049	mg/Kg	☼	06/27/18 15:25	06/28/18 17:41	5
Cadmium	0.090	J	0.19	0.037	mg/Kg	☼	06/27/18 15:25	06/28/18 17:41	5
Copper	14		0.49	0.11	mg/Kg	☼	06/27/18 15:25	06/28/18 17:41	5
Lead	13		0.24	0.023	mg/Kg	☼	06/27/18 15:25	06/28/18 17:41	5
Zinc	61		2.4	0.78	mg/Kg	☼	06/27/18 15:25	06/28/18 17:41	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.028	J H B	0.033	0.0099	mg/Kg	☼	06/19/18 15:36	06/20/18 14:28	1

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

TestAmerica Job ID: 580-78109-1

Client Sample ID: PDI-SG-B389-BL1
Date Collected: 05/20/18 14:28
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-2
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	14000		2000	44	mg/Kg			06/24/18 12:27	1
Total Solids	51.8		0.1	0.1	%			06/18/18 15:45	1
Total Solids @ 70°C	62		0.10	0.10	%			06/27/18 14:25	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	3.9				%			06/24/18 14:15	1
Coarse Sand	0.3				%			06/24/18 14:15	1
Fine Sand	45.7				%			06/24/18 14:15	1
Gravel	0.0				%			06/24/18 14:15	1
Medium Sand	1.1				%			06/24/18 14:15	1
Silt	48.9				%			06/24/18 14:15	1

Client Sample ID: PDI-SG-B389-BL1
Date Collected: 05/20/18 14:28
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-2
Matrix: Solid
Percent Solids: 51.8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	95		93	23	mg/Kg	☼	06/18/18 14:32	06/20/18 19:05	1
Motor Oil (>C24-C36)	540		93	33	mg/Kg	☼	06/18/18 14:32	06/20/18 19:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*102*		*50 - 150*	*06/18/18 14:32*	*06/20/18 19:05*	*1*

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.7		0.35	0.070	mg/Kg	☼	06/27/18 15:25	06/28/18 17:45	5
Cadmium	0.19	J	0.28	0.054	mg/Kg	☼	06/27/18 15:25	06/28/18 17:45	5
Copper	32		0.70	0.15	mg/Kg	☼	06/27/18 15:25	06/28/18 17:45	5
Lead	14		0.35	0.034	mg/Kg	☼	06/27/18 15:25	06/28/18 17:45	5
Zinc	92		3.5	1.1	mg/Kg	☼	06/27/18 15:25	06/28/18 17:45	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.10	H B	0.049	0.015	mg/Kg	☼	06/19/18 15:36	06/20/18 14:37	1

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

TestAmerica Job ID: 580-78109-1

Client Sample ID: PDI-SG-B391-BL1
Date Collected: 05/20/18 16:11
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-3
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	6000		2000	44	mg/Kg			06/24/18 12:32	1
Total Solids	86.3		0.1	0.1	%			06/18/18 15:45	1
Total Solids @ 70°C	86		0.10	0.10	%			06/27/18 14:25	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	1.9				%			06/24/18 14:15	1
Coarse Sand	8.1				%			06/24/18 14:15	1
Fine Sand	21.6				%			06/24/18 14:15	1
Gravel	40.3				%			06/24/18 14:15	1
Medium Sand	10.3				%			06/24/18 14:15	1
Silt	17.7				%			06/24/18 14:15	1

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

TestAmerica Job ID: 580-78109-1

Client Sample ID: PDI-SG-B391-BL1
Date Collected: 05/20/18 16:11
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-3
Matrix: Solid
Percent Solids: 86.3

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	27	J	54	13	mg/Kg	☼	06/18/18 14:32	06/20/18 19:26	1
Motor Oil (>C24-C36)	130		54	19	mg/Kg	☼	06/18/18 14:32	06/20/18 19:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*102*		*50 - 150*	*06/18/18 14:32*	*06/20/18 19:26*	*1*

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	3.1		0.18	0.036	mg/Kg	☼	06/27/18 15:25	06/28/18 17:49	5
Cadmium	0.13	J	0.15	0.028	mg/Kg	☼	06/27/18 15:25	06/28/18 17:49	5
Copper	17		0.36	0.080	mg/Kg	☼	06/27/18 15:25	06/28/18 17:49	5
Lead	12		0.18	0.017	mg/Kg	☼	06/27/18 15:25	06/28/18 17:49	5
Zinc	76		1.8	0.59	mg/Kg	☼	06/27/18 15:25	06/28/18 17:49	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.046	H B	0.031	0.0092	mg/Kg	☼	06/19/18 15:36	06/20/18 14:40	1

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

TestAmerica Job ID: 580-78109-1

Client Sample ID: PDI-SG-B392-BL1
Date Collected: 05/20/18 17:31
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-4
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	7500		2000	44	mg/Kg			06/24/18 12:37	1
Total Solids	66.5		0.1	0.1	%			06/18/18 15:45	1
Total Solids @ 70°C	75		0.10	0.10	%			06/27/18 14:25	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	3.2				%			06/24/18 14:15	1
Coarse Sand	2.9				%			06/24/18 14:15	1
Fine Sand	55.1				%			06/24/18 14:15	1
Gravel	2.2				%			06/24/18 14:15	1
Medium Sand	10.3				%			06/24/18 14:15	1
Silt	26.4				%			06/24/18 14:15	1

Client Sample ID: PDI-SG-B392-BL1
Date Collected: 05/20/18 17:31
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-4
Matrix: Solid
Percent Solids: 66.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	54	J	72	18	mg/Kg	☼	06/18/18 14:32	06/20/18 19:47	1
Motor Oil (>C24-C36)	330		72	25	mg/Kg	☼	06/18/18 14:32	06/20/18 19:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*102*		*50 - 150*	*06/18/18 14:32*	*06/20/18 19:47*	*1*

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	3.6		0.21	0.041	mg/Kg	☼	06/27/18 15:25	06/28/18 17:54	5
Cadmium	0.21		0.17	0.032	mg/Kg	☼	06/27/18 15:25	06/28/18 17:54	5
Copper	28		0.41	0.091	mg/Kg	☼	06/27/18 15:25	06/28/18 17:54	5
Lead	25		0.21	0.020	mg/Kg	☼	06/27/18 15:25	06/28/18 17:54	5
Zinc	93		2.1	0.67	mg/Kg	☼	06/27/18 15:25	06/28/18 17:54	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.029	J H B	0.039	0.012	mg/Kg	☼	06/19/18 15:36	06/20/18 14:42	1

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

TestAmerica Job ID: 580-78109-1

Client Sample ID: PDI-SG-B428-BL1
Date Collected: 05/21/18 10:35
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-5
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	200	J	2000	44	mg/Kg			06/24/18 12:42	1
Total Solids	78.6		0.1	0.1	%			06/18/18 15:45	1
Total Solids @ 70°C	86		0.10	0.10	%			06/27/18 14:25	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	0.0				%			06/24/18 14:15	1
Coarse Sand	9.7				%			06/24/18 14:15	1
Fine Sand	6.2				%			06/24/18 14:15	1
Gravel	40.0				%			06/24/18 14:15	1
Medium Sand	42.0				%			06/24/18 14:15	1
Silt	2.1				%			06/24/18 14:15	1

Client Sample ID: PDI-SG-B428-BL1
Date Collected: 05/21/18 10:35
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-5
Matrix: Solid
Percent Solids: 78.6

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		58	14	mg/Kg	☼	06/18/18 14:32	06/20/18 20:07	1
Motor Oil (>C24-C36)	**40**	**J**	58	20	mg/Kg	☼	06/18/18 14:32	06/20/18 20:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*108*		*50 - 150*	*06/18/18 14:32*	*06/20/18 20:07*	*1*

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**2.5**		0.20	0.039	mg/Kg	☼	06/27/18 15:25	06/28/18 17:58	5
Cadmium	**0.041**	**J**	0.16	0.030	mg/Kg	☼	06/27/18 15:25	06/28/18 17:58	5
Copper	**14**		0.39	0.086	mg/Kg	☼	06/27/18 15:25	06/28/18 17:58	5
Lead	**8.6**		0.20	0.019	mg/Kg	☼	06/27/18 15:25	06/28/18 17:58	5
Zinc	**49**		2.0	0.63	mg/Kg	☼	06/27/18 15:25	06/28/18 17:58	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.025**	**H B**	0.025	0.0076	mg/Kg	☼	06/19/18 15:36	06/20/18 14:49	1

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

TestAmerica Job ID: 580-78109-1

Client Sample ID: PDI-SG-B427-BL1
Date Collected: 05/21/18 11:40
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-6
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	1900	J	2000	44	mg/Kg			06/24/18 12:47	1
Total Solids	86.0		0.1	0.1	%			06/18/18 15:45	1
Total Solids @ 70°C	87		0.10	0.10	%			06/27/18 14:25	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	0.0				%			06/24/18 14:15	1
Coarse Sand	9.1				%			06/24/18 14:15	1
Fine Sand	5.8				%			06/24/18 14:15	1
Gravel	69.2				%			06/24/18 14:15	1
Medium Sand	5.7				%			06/24/18 14:15	1
Silt	10.3				%			06/24/18 14:15	1

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

TestAmerica Job ID: 580-78109-1

Client Sample ID: PDI-SG-B427-BL1
Date Collected: 05/21/18 11:40
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-6
Matrix: Solid
Percent Solids: 86.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	18	J	57	14	mg/Kg	☼	06/18/18 14:32	06/20/18 20:27	1
Motor Oil (>C24-C36)	170		57	20	mg/Kg	☼	06/18/18 14:32	06/20/18 20:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*104*		*50 - 150*	*06/18/18 14:32*	*06/20/18 20:27*	*1*

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.4		0.17	0.034	mg/Kg	☼	06/27/18 15:25	06/28/18 18:02	5
Cadmium	0.054	J	0.14	0.026	mg/Kg	☼	06/27/18 15:25	06/28/18 18:02	5
Copper	14		0.34	0.075	mg/Kg	☼	06/27/18 15:25	06/28/18 18:02	5
Lead	14		0.17	0.016	mg/Kg	☼	06/27/18 15:25	06/28/18 18:02	5
Zinc	42		1.7	0.55	mg/Kg	☼	06/27/18 15:25	06/28/18 18:02	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.031	H B	0.028	0.0084	mg/Kg	☼	06/19/18 15:36	06/20/18 14:51	1

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

TestAmerica Job ID: 580-78109-1

Client Sample ID: PDI-SG-B426-BL1
Date Collected: 05/21/18 13:30
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-7
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	2000		2000	44	mg/Kg			06/24/18 12:51	1
Total Solids	83.2		0.1	0.1	%			06/18/18 15:45	1
Total Solids @ 70°C	90		0.10	0.10	%			06/22/18 13:00	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	0.6				%			06/25/18 14:03	1
Coarse Sand	11.9				%			06/25/18 14:03	1
Fine Sand	7.1				%			06/25/18 14:03	1
Gravel	70.6				%			06/25/18 14:03	1
Medium Sand	10.8				%			06/25/18 14:03	1
Silt	-0.9				%			06/25/18 14:03	1

Client Sample ID: PDI-SG-B426-BL1

Date Collected: 05/21/18 13:30
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-7

Matrix: Solid
Percent Solids: 83.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	15	J	59	15	mg/Kg	☼	06/18/18 14:32	06/20/18 21:08	1
Motor Oil (>C24-C36)	84		59	21	mg/Kg	☼	06/18/18 14:32	06/20/18 21:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*105*		*50 - 150*	*06/18/18 14:32*	*06/20/18 21:08*	*1*

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	3.9		0.17	0.034	mg/Kg	☼	06/27/18 15:25	06/28/18 18:06	5
Cadmium	0.089	J	0.14	0.026	mg/Kg	☼	06/27/18 15:25	06/28/18 18:06	5
Copper	18		0.34	0.075	mg/Kg	☼	06/27/18 15:25	06/28/18 18:06	5
Lead	9.2		0.17	0.016	mg/Kg	☼	06/27/18 15:25	06/28/18 18:06	5
Zinc	61		1.7	0.55	mg/Kg	☼	06/27/18 15:25	06/28/18 18:06	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.027	0.0081	mg/Kg	☼	06/19/18 15:36	06/20/18 14:54	1

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

TestAmerica Job ID: 580-78109-1

Client Sample ID: PDI-SG-B415-BL1
Date Collected: 05/22/18 16:24
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-8
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	2300		2000	44	mg/Kg			06/25/18 10:41	1
Total Solids	85.0		0.1	0.1	%			06/18/18 15:45	1
Total Solids @ 70°C	86		0.10	0.10	%			06/22/18 13:00	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	0.0				%			06/25/18 14:03	1
Coarse Sand	3.8				%			06/25/18 14:03	1
Fine Sand	2.6				%			06/25/18 14:03	1
Gravel	89.4				%			06/25/18 14:03	1
Medium Sand	1.3				%			06/25/18 14:03	1
Silt	2.9				%			06/25/18 14:03	1

Client Sample ID: PDI-SG-B415-BL1
Date Collected: 05/22/18 16:24
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-8
Matrix: Solid
Percent Solids: 85.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		55	14	mg/Kg	☼	06/18/18 14:32	06/20/18 21:29	1
Motor Oil (>C24-C36)	**55**		55	19	mg/Kg	☼	06/18/18 14:32	06/20/18 21:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*103*		*50 - 150*	*06/18/18 14:32*	*06/20/18 21:29*	*1*

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**3.0**		0.18	0.035	mg/Kg	☼	06/27/18 15:25	06/28/18 18:27	5
Cadmium	**0.032**	**J**	0.14	0.027	mg/Kg	☼	06/27/18 15:25	06/28/18 18:27	5
Copper	**16**		0.35	0.078	mg/Kg	☼	06/27/18 15:25	06/28/18 18:27	5
Lead	**8.5**		0.18	0.017	mg/Kg	☼	06/27/18 15:25	06/28/18 18:27	5
Zinc	**45**		1.8	0.57	mg/Kg	☼	06/27/18 15:25	06/28/18 18:27	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.026**	**H B**	0.026	0.0077	mg/Kg	☼	06/19/18 15:36	06/20/18 14:56	1

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

TestAmerica Job ID: 580-78109-1

Client Sample ID: PDI-SG-B320-BL1
Date Collected: 05/23/18 12:36
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-9
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	4400		2000	44	mg/Kg			06/25/18 10:20	1
Total Solids	70.1		0.1	0.1	%			06/18/18 15:45	1
Total Solids @ 70°C	77		0.10	0.10	%			06/22/18 13:00	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	2.9				%			06/25/18 14:03	1
Coarse Sand	6.7				%			06/25/18 14:03	1
Fine Sand	49.4				%			06/25/18 14:03	1
Gravel	9.1				%			06/25/18 14:03	1
Medium Sand	18.4				%			06/25/18 14:03	1
Silt	13.6				%			06/25/18 14:03	1

Client Sample ID: PDI-SG-B320-BL1
Date Collected: 05/23/18 12:36
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-9
Matrix: Solid
Percent Solids: 70.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	27	J	69	17	mg/Kg	☼	06/18/18 14:32	06/20/18 21:50	1
Motor Oil (>C24-C36)	130		69	24	mg/Kg	☼	06/18/18 14:32	06/20/18 21:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*105*		*50 - 150*	*06/18/18 14:32*	*06/20/18 21:50*	*1*

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.9		0.21	0.043	mg/Kg	☼	06/27/18 15:25	06/28/18 18:32	5
Cadmium	0.13	J	0.17	0.033	mg/Kg	☼	06/27/18 15:25	06/28/18 18:32	5
Copper	21		0.43	0.094	mg/Kg	☼	06/27/18 15:25	06/28/18 18:32	5
Lead	13		0.21	0.021	mg/Kg	☼	06/27/18 15:25	06/28/18 18:32	5
Zinc	72		2.1	0.69	mg/Kg	☼	06/27/18 15:25	06/28/18 18:32	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.036	B	0.028	0.0084	mg/Kg	☼	06/19/18 15:36	06/20/18 14:59	1

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

TestAmerica Job ID: 580-78109-1

Client Sample ID: PDI-SG-B404-BL1
Date Collected: 05/23/18 10:40
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-10
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	8600		2000	44	mg/Kg			06/25/18 10:46	1
Total Solids	69.4		0.1	0.1	%			06/18/18 15:45	1
Total Solids @ 70°C	76		0.10	0.10	%			06/22/18 13:00	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	2.8				%			06/25/18 14:03	1
Coarse Sand	9.8				%			06/25/18 14:03	1
Fine Sand	36.9				%			06/25/18 14:03	1
Gravel	28.5				%			06/25/18 14:03	1
Medium Sand	11.6				%			06/25/18 14:03	1
Silt	10.3				%			06/25/18 14:03	1

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

TestAmerica Job ID: 580-78109-1

Client Sample ID: PDI-SG-B404-BL1
Date Collected: 05/23/18 10:40
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-10
Matrix: Solid
Percent Solids: 69.4

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		710	180	mg/Kg	☼	06/18/18 14:32	06/20/18 22:10	10
Motor Oil (>C24-C36)	**990**		710	250	mg/Kg	☼	06/18/18 14:32	06/20/18 22:10	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*51*		*50 - 150*	*06/18/18 14:32*	*06/20/18 22:10*	*10*

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**4.6**		0.20	0.040	mg/Kg	☼	06/27/18 15:25	06/28/18 18:36	5
Cadmium	**0.12**	**J**	0.16	0.031	mg/Kg	☼	06/27/18 15:25	06/28/18 18:36	5
Copper	**27**		0.40	0.089	mg/Kg	☼	06/27/18 15:25	06/28/18 18:36	5
Lead	**130**		0.20	0.019	mg/Kg	☼	06/27/18 15:25	06/28/18 18:36	5
Zinc	**82**		2.0	0.65	mg/Kg	☼	06/27/18 15:25	06/28/18 18:36	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.014**	**J B**	0.041	0.012	mg/Kg	☼	06/19/18 15:36	06/20/18 15:01	1

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

TestAmerica Job ID: 580-78109-1

Client Sample ID: PDI-SG-B419-BL1
Date Collected: 05/23/18 16:20
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-11
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	2000		2000	44	mg/Kg			06/25/18 10:51	1
Total Solids	88.1		0.1	0.1	%			06/18/18 15:45	1
Total Solids @ 70°C	86		0.10	0.10	%			06/22/18 13:00	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	0.0				%			06/25/18 14:03	1
Coarse Sand	6.2				%			06/25/18 14:03	1
Fine Sand	8.4				%			06/25/18 14:03	1
Gravel	71.1				%			06/25/18 14:03	1
Medium Sand	13.1				%			06/25/18 14:03	1
Silt	1.1				%			06/25/18 14:03	1

Client Sample ID: PDI-SG-B419-BL1
Date Collected: 05/23/18 16:20
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-11
Matrix: Solid
Percent Solids: 88.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		52	13	mg/Kg	☼	06/18/18 14:32	06/20/18 22:30	1
Motor Oil (>C24-C36)	**44**	**J**	52	18	mg/Kg	☼	06/18/18 14:32	06/20/18 22:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*105*		*50 - 150*	*06/18/18 14:32*	*06/20/18 22:30*	*1*

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**3.0**		0.22	0.044	mg/Kg	☼	06/27/18 15:25	06/28/18 18:40	5
Cadmium	ND		0.17	0.034	mg/Kg	☼	06/27/18 15:25	06/28/18 18:40	5
Copper	**13**		0.44	0.096	mg/Kg	☼	06/27/18 15:25	06/28/18 18:40	5
Lead	**7.9**		0.22	0.021	mg/Kg	☼	06/27/18 15:25	06/28/18 18:40	5
Zinc	**44**		2.2	0.70	mg/Kg	☼	06/27/18 15:25	06/28/18 18:40	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.026**	**B**	0.022	0.0066	mg/Kg	☼	06/19/18 15:36	06/20/18 15:03	1

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

TestAmerica Job ID: 580-78109-1

Client Sample ID: PDI-SG-B421-BL1
Date Collected: 05/24/18 12:00
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-12
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	1300	J	2000	44	mg/Kg			06/25/18 10:56	1
Total Solids	79.1		0.1	0.1	%			06/18/18 15:45	1
Total Solids @ 70°C	79		0.10	0.10	%			06/22/18 13:00	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	0.0				%			06/25/18 14:03	1
Coarse Sand	0.7				%			06/25/18 14:03	1
Fine Sand	53.6				%			06/25/18 14:03	1
Gravel	2.3				%			06/25/18 14:03	1
Medium Sand	38.3				%			06/25/18 14:03	1
Silt	5.1				%			06/25/18 14:03	1

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

TestAmerica Job ID: 580-78109-1

Client Sample ID: PDI-SG-B421-BL1
Date Collected: 05/24/18 12:00
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-12
Matrix: Solid
Percent Solids: 79.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		59	15	mg/Kg	☼	06/18/18 14:32	06/20/18 22:51	1
Motor Oil (>C24-C36)	**44**	**J**	59	21	mg/Kg	☼	06/18/18 14:32	06/20/18 22:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*105*		*50 - 150*	*06/18/18 14:32*	*06/20/18 22:51*	*1*

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**2.8**		0.18	0.035	mg/Kg	☼	06/27/18 15:25	06/28/18 18:44	5
Cadmium	**0.053**	**J**	0.14	0.027	mg/Kg	☼	06/27/18 15:25	06/28/18 18:44	5
Copper	**11**		0.35	0.078	mg/Kg	☼	06/27/18 15:25	06/28/18 18:44	5
Lead	**6.5**		0.18	0.017	mg/Kg	☼	06/27/18 15:25	06/28/18 18:44	5
Zinc	**59**		1.8	0.57	mg/Kg	☼	06/27/18 15:25	06/28/18 18:44	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.039**	**B**	0.032	0.0096	mg/Kg	☼	06/19/18 15:36	06/20/18 15:05	1

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

TestAmerica Job ID: 580-78109-1

Client Sample ID: PDI-SG-B422-BL1
Date Collected: 05/24/18 14:10
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-13
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	2000		2000	44	mg/Kg			06/25/18 11:00	1
Total Solids	82.1		0.1	0.1	%			06/18/18 15:45	1
Total Solids @ 70°C	89		0.10	0.10	%			06/22/18 13:00	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	0.0				%			06/25/18 14:03	1
Coarse Sand	13.1				%			06/25/18 14:03	1
Fine Sand	11.5				%			06/25/18 14:03	1
Gravel	63.7				%			06/25/18 14:03	1
Medium Sand	9.5				%			06/25/18 14:03	1
Silt	2.2				%			06/25/18 14:03	1

Client Sample ID: PDI-SG-B422-BL1
Date Collected: 05/24/18 14:10
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-13
Matrix: Solid
Percent Solids: 82.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	17	J	58	14	mg/Kg	☼	06/18/18 14:32	06/20/18 23:11	1
Motor Oil (>C24-C36)	100		58	20	mg/Kg	☼	06/18/18 14:32	06/20/18 23:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*107*		*50 - 150*	*06/18/18 14:32*	*06/20/18 23:11*	*1*

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	3.0		0.20	0.041	mg/Kg	☼	06/27/18 15:25	06/28/18 18:48	5
Cadmium	0.035	J	0.16	0.031	mg/Kg	☼	06/27/18 15:25	06/28/18 18:48	5
Copper	20		0.41	0.089	mg/Kg	☼	06/27/18 15:25	06/28/18 18:48	5
Lead	24		0.20	0.019	mg/Kg	☼	06/27/18 15:25	06/28/18 18:48	5
Zinc	82		2.0	0.65	mg/Kg	☼	06/27/18 15:25	06/28/18 18:48	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.016	J B	0.027	0.0081	mg/Kg	☼	06/19/18 15:36	06/20/18 15:08	1

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

TestAmerica Job ID: 580-78109-1

Client Sample ID: PDI-SG-B192-BL1
Date Collected: 05/31/18 14:15
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-14
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	5500		2000	44	mg/Kg			06/25/18 11:05	1
Total Solids	67.1		0.1	0.1	%			06/18/18 15:45	1
Total Solids @ 70°C	69		0.10	0.10	%			06/22/18 13:00	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	1.5				%			06/25/18 14:03	1
Coarse Sand	2.9				%			06/25/18 14:03	1
Fine Sand	35.6				%			06/25/18 14:03	1
Gravel	1.5				%			06/25/18 14:03	1
Medium Sand	29.2				%			06/25/18 14:03	1
Silt	29.2				%			06/25/18 14:03	1

Client Sample ID: PDI-SG-B192-BL1

Date Collected: 05/31/18 14:15
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-14

Matrix: Solid
Percent Solids: 67.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	54	J	69	17	mg/Kg	☼	06/18/18 14:32	06/20/18 23:31	1
Motor Oil (>C24-C36)	190		69	24	mg/Kg	☼	06/18/18 14:32	06/20/18 23:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*104*		*50 - 150*	*06/18/18 14:32*	*06/20/18 23:31*	*1*

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	6.6		0.27	0.054	mg/Kg	☼	06/27/18 15:25	06/28/18 18:52	5
Cadmium	0.097	J	0.21	0.041	mg/Kg	☼	06/27/18 15:25	06/28/18 18:52	5
Copper	17		0.54	0.12	mg/Kg	☼	06/27/18 15:25	06/28/18 18:52	5
Lead	9.9		0.27	0.026	mg/Kg	☼	06/27/18 15:25	06/28/18 18:52	5
Zinc	74		2.7	0.86	mg/Kg	☼	06/27/18 15:25	06/28/18 18:52	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.032	J B	0.038	0.011	mg/Kg	☼	06/19/18 15:36	06/20/18 15:10	1

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

TestAmerica Job ID: 580-78109-1

Client Sample ID: PDI-SG-B183-BL1
Date Collected: 05/31/18 14:04
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-15
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	20000		2000	44	mg/Kg			06/25/18 11:10	1
Total Solids	66.7		0.1	0.1	%			06/18/18 15:45	1
Total Solids @ 70°C	71		0.10	0.10	%			06/22/18 13:00	1

Method: D7928/D6913 - ASTM D7928/D6913

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay	3.9				%			06/25/18 14:03	1
Coarse Sand	5.0				%			06/25/18 14:03	1
Fine Sand	28.6				%			06/25/18 14:03	1
Gravel	2.4				%			06/25/18 14:03	1
Medium Sand	39.5				%			06/25/18 14:03	1
Silt	20.7				%			06/25/18 14:03	1

Client Sample ID: PDI-SG-B183-BL1
Date Collected: 05/31/18 14:04
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-15
Matrix: Solid
Percent Solids: 66.7

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	510		72	18	mg/Kg	☼	06/18/18 14:32	06/20/18 23:51	1
Motor Oil (>C24-C36)	840		72	25	mg/Kg	☼	06/18/18 14:32	06/20/18 23:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*92*		*50 - 150*	*06/18/18 14:32*	*06/20/18 23:51*	*1*

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.2		0.20	0.041	mg/Kg	☼	06/27/18 15:25	06/28/18 18:57	5
Cadmium	0.24		0.16	0.031	mg/Kg	☼	06/27/18 15:25	06/28/18 18:57	5
Copper	37		0.41	0.090	mg/Kg	☼	06/27/18 15:25	06/28/18 18:57	5
Lead	14		0.20	0.020	mg/Kg	☼	06/27/18 15:25	06/28/18 18:57	5
Zinc	82		2.0	0.66	mg/Kg	☼	06/27/18 15:25	06/28/18 18:57	5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	B	0.037	0.011	mg/Kg	☼	06/19/18 15:36	06/20/18 15:17	1

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

Lab Sample ID: MB 580-276587/1-A
Matrix: Solid
Analysis Batch: 276859

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 276587

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		06/18/18 14:32	06/20/18 17:22	1
Motor Oil (>C24-C36)	ND		50	18	mg/Kg		06/18/18 14:32	06/20/18 17:22	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*110*		*50 - 150*	*06/18/18 14:32*	*06/20/18 17:22*	*1*

Lab Sample ID: LCS 580-276587/2-A
Matrix: Solid
Analysis Batch: 276859

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 276587

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
#2 Diesel (C10-C24)			500	480		mg/Kg		96	70 - 125		
Motor Oil (>C24-C36)			500	481		mg/Kg		96	70 - 129		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*93*		*50 - 150*

Lab Sample ID: LCSD 580-276587/3-A
Matrix: Solid
Analysis Batch: 276859

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 276587

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)			500	496		mg/Kg		99	70 - 125	3	16
Motor Oil (>C24-C36)			500	500		mg/Kg		100	70 - 129	4	16

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*95*		*50 - 150*

Lab Sample ID: 580-78109-1 DU
Matrix: Solid
Analysis Batch: 276859

Client Sample ID: PDI-SG-B208-BL1
Prep Type: Total/NA
Prep Batch: 276587

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
#2 Diesel (C10-C24)	20	J		ND		mg/Kg	☼			NC	35
Motor Oil (>C24-C36)	88			59.2	J F5	mg/Kg	☼			39	35

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
o-Terphenyl	*103*		*50 - 150*

Lab Sample ID: 580-78109-15 DU
Matrix: Solid
Analysis Batch: 276859

Client Sample ID: PDI-SG-B183-BL1
Prep Type: Total/NA
Prep Batch: 276587

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
#2 Diesel (C10-C24)	510			320	F3	mg/Kg	☼			45	35
Motor Oil (>C24-C36)	840			696		mg/Kg	☼			18	35

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

Lab Sample ID: 580-78109-15 DU
Matrix: Solid
Analysis Batch: 276859

Client Sample ID: PDI-SG-B183-BL1
Prep Type: Total/NA
Prep Batch: 276587

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
o-Terphenyl	*77*		*50 - 150*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 580-277587/22-A
Matrix: Solid
Analysis Batch: 277761

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 277587

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.25	0.050	mg/Kg		06/27/18 15:25	06/28/18 16:42	5
Cadmium	ND		0.20	0.039	mg/Kg		06/27/18 15:25	06/28/18 16:42	5
Copper	ND		0.50	0.11	mg/Kg		06/27/18 15:25	06/28/18 16:42	5
Lead	ND		0.25	0.024	mg/Kg		06/27/18 15:25	06/28/18 16:42	5
Zinc	ND		2.5	0.81	mg/Kg		06/27/18 15:25	06/28/18 16:42	5

Lab Sample ID: LCS 580-277587/23-A
Matrix: Solid
Analysis Batch: 277761

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 277587

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	200	189		mg/Kg		94	80 - 120
Cadmium	5.00	4.79		mg/Kg		96	80 - 120
Copper	25.0	23.6		mg/Kg		94	80 - 120
Lead	50.0	46.8		mg/Kg		94	80 - 120
Zinc	200	184		mg/Kg		92	80 - 120

Lab Sample ID: LCSD 580-277587/24-A
Matrix: Solid
Analysis Batch: 277761

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 277587

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	200	188		mg/Kg		94	80 - 120	0	20
Cadmium	5.00	4.68		mg/Kg		94	80 - 120	2	20
Copper	25.0	23.3		mg/Kg		93	80 - 120	1	20
Lead	50.0	46.1		mg/Kg		92	80 - 120	2	20
Zinc	200	185		mg/Kg		92	80 - 120	0	20

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 580-276720/25-A
Matrix: Solid
Analysis Batch: 276893

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 276720

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0101	J	0.030	0.0090	mg/Kg		06/19/18 15:36	06/20/18 14:21	1

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

Lab Sample ID: LCS 580-276720/26-A
Matrix: Solid
Analysis Batch: 276893

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 276720

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.167	0.158		mg/Kg		95	80 - 120

Lab Sample ID: LCSD 580-276720/27-A
Matrix: Solid
Analysis Batch: 276893

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 276720

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.167	0.162		mg/Kg		97	80 - 120	2	20

Lab Sample ID: 580-78109-1 MS
Matrix: Solid
Analysis Batch: 276893

Client Sample ID: PDI-SG-B208-BL1
Prep Type: Total/NA
Prep Batch: 276720

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.028	J H B	0.192	0.230		mg/Kg	☼	105	80 - 120

Lab Sample ID: 580-78109-1 MSD
Matrix: Solid
Analysis Batch: 276893

Client Sample ID: PDI-SG-B208-BL1
Prep Type: Total/NA
Prep Batch: 276720

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.028	J H B	0.191	0.208		mg/Kg	☼	95	80 - 120	10	20

Lab Sample ID: 580-78109-1 DU
Matrix: Solid
Analysis Batch: 276893

Client Sample ID: PDI-SG-B208-BL1
Prep Type: Total/NA
Prep Batch: 276720

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Mercury	0.028	J H B	0.0107	J F5	mg/Kg	☼	88	20

Method: 9060_PSEP - TOC (Puget Sound)

Lab Sample ID: MB 580-277252/3
Matrix: Solid
Analysis Batch: 277252

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			06/24/18 10:42	1

Lab Sample ID: LCS 580-277252/4
Matrix: Solid
Analysis Batch: 277252

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	3680		mg/Kg		86	68 - 149

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

Lab Sample ID: LCSD 580-277252/5
Matrix: Solid
Analysis Batch: 277252

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	3940		mg/Kg		92	68 - 149	7	32

Lab Sample ID: MB 580-277284/3
Matrix: Solid
Analysis Batch: 277284

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			06/25/18 10:13	1

Lab Sample ID: LCS 580-277284/4
Matrix: Solid
Analysis Batch: 277284

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	3640		mg/Kg		85	68 - 149

Lab Sample ID: LCSD 580-277284/5
Matrix: Solid
Analysis Batch: 277284

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	3600		mg/Kg		84	68 - 149	1	32

Lab Sample ID: 580-78109-9 MS
Matrix: Solid
Analysis Batch: 277284

Client Sample ID: PDI-SG-B320-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	4400		120000	108000		mg/Kg		86	68 - 149

Lab Sample ID: 580-78109-9 MSD
Matrix: Solid
Analysis Batch: 277284

Client Sample ID: PDI-SG-B320-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	4400		120000	118000		mg/Kg		94	68 - 149	9	32

Lab Sample ID: 580-78109-9 DU
Matrix: Solid
Analysis Batch: 277284

Client Sample ID: PDI-SG-B320-BL1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon - Duplicates	4400		4440		mg/Kg		0.6	50

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

Lab Sample ID: 580-78109-9 TRL
Matrix: Solid
Analysis Batch: 277284

Client Sample ID: PDI-SG-B320-BL1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		TRL Result	TRL Qualifier	Unit	D			RSD	RSD Limit
Total Organic Carbon - Duplicates	4400			4560		mg/Kg				2	20

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-78109-15 DU
Matrix: Solid
Analysis Batch: 276591

Client Sample ID: PDI-SG-B183-BL1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Solids	66.7			64.4		%				4	20

Method: Moisture 70C - Percent Moisture, 70 C

Lab Sample ID: 580-78109-7 DU
Matrix: Solid
Analysis Batch: 277578

Client Sample ID: PDI-SG-B426-BL1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Solids @ 70°C	90			90		%				0.2	20

Method: D7928/D6913 - ASTM D7928/D6913

Lab Sample ID: 580-78109-7 DU
Matrix: Solid
Analysis Batch: 277296

Client Sample ID: PDI-SG-B426-BL1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Clay	0.6			0.0	F3	%				200	20
Coarse Sand	11.9			16.5	F3	%				32	20
Fine Sand	7.1			7.7		%				8	20
Gravel	70.6			62.3		%				12	20
Medium Sand	10.8			12.4		%				14	20
Silt	-0.9			1.0	F3	%				3800	20

Lab Chronicle

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

TestAmerica Job ID: 580-78109-1

Client Sample ID: PDI-SG-B208-BL1
Lab Sample ID: 580-78109-1
Date Collected: 05/20/18 10:00
Matrix: Solid
Date Received: 06/15/18 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	277252	06/24/18 12:22	Z1T	TAL SEA
Total/NA	Analysis	D 2216		1	276591	06/18/18 15:45	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	277572	06/27/18 14:25	DB	TAL SEA
Total/NA	Analysis	D7928/D6913		1	277237	06/24/18 14:15	DB	TAL SEA

Client Sample ID: PDI-SG-B208-BL1
Lab Sample ID: 580-78109-1
Date Collected: 05/20/18 10:00
Matrix: Solid
Date Received: 06/15/18 12:20
Percent Solids: 70.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			276587	06/18/18 14:32	TTN	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	276859	06/20/18 18:24	W1T	TAL SEA
Total/NA	Prep	3050B			277587	06/27/18 15:25	CJB	TAL SEA
Total/NA	Analysis	6020B		5	277761	06/28/18 17:41	FCW	TAL SEA
Total/NA	Prep	7471A			276720	06/19/18 15:36	CJB	TAL SEA
Total/NA	Analysis	7471A		1	276893	06/20/18 14:28	FCW	TAL SEA

Client Sample ID: PDI-SG-B389-BL1
Lab Sample ID: 580-78109-2
Date Collected: 05/20/18 14:28
Matrix: Solid
Date Received: 06/15/18 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	277252	06/24/18 12:27	Z1T	TAL SEA
Total/NA	Analysis	D 2216		1	276591	06/18/18 15:45	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	277572	06/27/18 14:25	DB	TAL SEA
Total/NA	Analysis	D7928/D6913		1	277237	06/24/18 14:15	DB	TAL SEA

Client Sample ID: PDI-SG-B389-BL1
Lab Sample ID: 580-78109-2
Date Collected: 05/20/18 14:28
Matrix: Solid
Date Received: 06/15/18 12:20
Percent Solids: 51.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			276587	06/18/18 14:32	TTN	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	276859	06/20/18 19:05	W1T	TAL SEA
Total/NA	Prep	3050B			277587	06/27/18 15:25	CJB	TAL SEA
Total/NA	Analysis	6020B		5	277761	06/28/18 17:45	FCW	TAL SEA
Total/NA	Prep	7471A			276720	06/19/18 15:36	CJB	TAL SEA
Total/NA	Analysis	7471A		1	276893	06/20/18 14:37	FCW	TAL SEA

Client Sample ID: PDI-SG-B391-BL1

Lab Sample ID: 580-78109-3
Date Collected: 05/20/18 16:11
Matrix: Solid
Date Received: 06/15/18 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	277252	06/24/18 12:32	Z1T	TAL SEA
Total/NA	Analysis	D 2216		1	276591	06/18/18 15:45	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	277572	06/27/18 14:25	DB	TAL SEA
Total/NA	Analysis	D7928/D6913		1	277237	06/24/18 14:15	DB	TAL SEA

Client Sample ID: PDI-SG-B391-BL1

Lab Sample ID: 580-78109-3
Date Collected: 05/20/18 16:11
Matrix: Solid
Date Received: 06/15/18 12:20
Percent Solids: 86.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			276587	06/18/18 14:32	TTN	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	276859	06/20/18 19:26	W1T	TAL SEA
Total/NA	Prep	3050B			277587	06/27/18 15:25	CJB	TAL SEA
Total/NA	Analysis	6020B		5	277761	06/28/18 17:49	FCW	TAL SEA
Total/NA	Prep	7471A			276720	06/19/18 15:36	CJB	TAL SEA
Total/NA	Analysis	7471A		1	276893	06/20/18 14:40	FCW	TAL SEA

Client Sample ID: PDI-SG-B392-BL1

Lab Sample ID: 580-78109-4
Date Collected: 05/20/18 17:31
Matrix: Solid
Date Received: 06/15/18 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	277252	06/24/18 12:37	Z1T	TAL SEA
Total/NA	Analysis	D 2216		1	276591	06/18/18 15:45	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	277572	06/27/18 14:25	DB	TAL SEA
Total/NA	Analysis	D7928/D6913		1	277237	06/24/18 14:15	DB	TAL SEA

Client Sample ID: PDI-SG-B392-BL1

Lab Sample ID: 580-78109-4
Date Collected: 05/20/18 17:31
Matrix: Solid
Date Received: 06/15/18 12:20
Percent Solids: 66.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			276587	06/18/18 14:32	TTN	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	276859	06/20/18 19:47	W1T	TAL SEA
Total/NA	Prep	3050B			277587	06/27/18 15:25	CJB	TAL SEA
Total/NA	Analysis	6020B		5	277761	06/28/18 17:54	FCW	TAL SEA
Total/NA	Prep	7471A			276720	06/19/18 15:36	CJB	TAL SEA
Total/NA	Analysis	7471A		1	276893	06/20/18 14:42	FCW	TAL SEA

Client Sample ID: PDI-SG-B428-BL1

Lab Sample ID: 580-78109-5

Date Collected: 05/21/18 10:35

Matrix: Solid

Date Received: 06/15/18 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	277252	06/24/18 12:42	Z1T	TAL SEA
Total/NA	Analysis	D 2216		1	276591	06/18/18 15:45	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	277572	06/27/18 14:25	DB	TAL SEA
Total/NA	Analysis	D7928/D6913		1	277237	06/24/18 14:15	DB	TAL SEA

Client Sample ID: PDI-SG-B428-BL1

Lab Sample ID: 580-78109-5

Date Collected: 05/21/18 10:35

Matrix: Solid

Date Received: 06/15/18 12:20

Percent Solids: 78.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			276587	06/18/18 14:32	TTN	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	276859	06/20/18 20:07	W1T	TAL SEA
Total/NA	Prep	3050B			277587	06/27/18 15:25	CJB	TAL SEA
Total/NA	Analysis	6020B		5	277761	06/28/18 17:58	FCW	TAL SEA
Total/NA	Prep	7471A			276720	06/19/18 15:36	CJB	TAL SEA
Total/NA	Analysis	7471A		1	276893	06/20/18 14:49	FCW	TAL SEA

Client Sample ID: PDI-SG-B427-BL1

Lab Sample ID: 580-78109-6

Date Collected: 05/21/18 11:40

Matrix: Solid

Date Received: 06/15/18 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	277252	06/24/18 12:47	Z1T	TAL SEA
Total/NA	Analysis	D 2216		1	276591	06/18/18 15:45	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	277572	06/27/18 14:25	DB	TAL SEA
Total/NA	Analysis	D7928/D6913		1	277237	06/24/18 14:15	DB	TAL SEA

Client Sample ID: PDI-SG-B427-BL1

Lab Sample ID: 580-78109-6

Date Collected: 05/21/18 11:40

Matrix: Solid

Date Received: 06/15/18 12:20

Percent Solids: 86.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			276587	06/18/18 14:32	TTN	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	276859	06/20/18 20:27	W1T	TAL SEA
Total/NA	Prep	3050B			277587	06/27/18 15:25	CJB	TAL SEA
Total/NA	Analysis	6020B		5	277761	06/28/18 18:02	FCW	TAL SEA
Total/NA	Prep	7471A			276720	06/19/18 15:36	CJB	TAL SEA
Total/NA	Analysis	7471A		1	276893	06/20/18 14:51	FCW	TAL SEA

Lab Chronicle

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

TestAmerica Job ID: 580-78109-1

Client Sample ID: PDI-SG-B426-BL1
Date Collected: 05/21/18 13:30
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	277252	06/24/18 12:51	Z1T	TAL SEA
Total/NA	Analysis	D 2216		1	276591	06/18/18 15:45	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	277578	06/22/18 13:00	DB	TAL SEA
Total/NA	Analysis	D7928/D6913		1	277296	06/25/18 14:03	KAB	TAL SEA

Client Sample ID: PDI-SG-B426-BL1
Date Collected: 05/21/18 13:30
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-7
Matrix: Solid
Percent Solids: 83.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			276587	06/18/18 14:32	TTN	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	276859	06/20/18 21:08	W1T	TAL SEA
Total/NA	Prep	3050B			277587	06/27/18 15:25	CJB	TAL SEA
Total/NA	Analysis	6020B		5	277761	06/28/18 18:06	FCW	TAL SEA
Total/NA	Prep	7471A			276720	06/19/18 15:36	CJB	TAL SEA
Total/NA	Analysis	7471A		1	276893	06/20/18 14:54	FCW	TAL SEA

Client Sample ID: PDI-SG-B415-BL1
Date Collected: 05/22/18 16:24
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-8
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	277284	06/25/18 10:41	Z1T	TAL SEA
Total/NA	Analysis	D 2216		1	276591	06/18/18 15:45	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	277578	06/22/18 13:00	DB	TAL SEA
Total/NA	Analysis	D7928/D6913		1	277296	06/25/18 14:03	KAB	TAL SEA

Client Sample ID: PDI-SG-B415-BL1
Date Collected: 05/22/18 16:24
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-8
Matrix: Solid
Percent Solids: 85.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			276587	06/18/18 14:32	TTN	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	276859	06/20/18 21:29	W1T	TAL SEA
Total/NA	Prep	3050B			277587	06/27/18 15:25	CJB	TAL SEA
Total/NA	Analysis	6020B		5	277761	06/28/18 18:27	FCW	TAL SEA
Total/NA	Prep	7471A			276720	06/19/18 15:36	CJB	TAL SEA
Total/NA	Analysis	7471A		1	276893	06/20/18 14:56	FCW	TAL SEA

Lab Chronicle

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

TestAmerica Job ID: 580-78109-1

Client Sample ID: PDI-SG-B320-BL1
Date Collected: 05/23/18 12:36
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-9
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	277284	06/25/18 10:20	Z1T	TAL SEA
Total/NA	Analysis	D 2216		1	276591	06/18/18 15:45	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	277578	06/22/18 13:00	DB	TAL SEA
Total/NA	Analysis	D7928/D6913		1	277296	06/25/18 14:03	KAB	TAL SEA

Client Sample ID: PDI-SG-B320-BL1
Date Collected: 05/23/18 12:36
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-9
Matrix: Solid
Percent Solids: 70.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			276587	06/18/18 14:32	TTN	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	276859	06/20/18 21:50	W1T	TAL SEA
Total/NA	Prep	3050B			277587	06/27/18 15:25	CJB	TAL SEA
Total/NA	Analysis	6020B		5	277761	06/28/18 18:32	FCW	TAL SEA
Total/NA	Prep	7471A			276720	06/19/18 15:36	CJB	TAL SEA
Total/NA	Analysis	7471A		1	276893	06/20/18 14:59	FCW	TAL SEA

Client Sample ID: PDI-SG-B404-BL1
Date Collected: 05/23/18 10:40
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-10
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	277284	06/25/18 10:46	Z1T	TAL SEA
Total/NA	Analysis	D 2216		1	276591	06/18/18 15:45	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	277578	06/22/18 13:00	DB	TAL SEA
Total/NA	Analysis	D7928/D6913		1	277296	06/25/18 14:03	KAB	TAL SEA

Client Sample ID: PDI-SG-B404-BL1
Date Collected: 05/23/18 10:40
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-10
Matrix: Solid
Percent Solids: 69.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			276587	06/18/18 14:32	TTN	TAL SEA
Total/NA	Analysis	NWTPH-Dx		10	276859	06/20/18 22:10	W1T	TAL SEA
Total/NA	Prep	3050B			277587	06/27/18 15:25	CJB	TAL SEA
Total/NA	Analysis	6020B		5	277761	06/28/18 18:36	FCW	TAL SEA
Total/NA	Prep	7471A			276720	06/19/18 15:36	CJB	TAL SEA
Total/NA	Analysis	7471A		1	276893	06/20/18 15:01	FCW	TAL SEA

Lab Chronicle

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

TestAmerica Job ID: 580-78109-1

Client Sample ID: PDI-SG-B419-BL1
Date Collected: 05/23/18 16:20
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-11
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	277284	06/25/18 10:51	Z1T	TAL SEA
Total/NA	Analysis	D 2216		1	276591	06/18/18 15:45	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	277578	06/22/18 13:00	DB	TAL SEA
Total/NA	Analysis	D7928/D6913		1	277296	06/25/18 14:03	KAB	TAL SEA

Client Sample ID: PDI-SG-B419-BL1
Date Collected: 05/23/18 16:20
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-11
Matrix: Solid
Percent Solids: 88.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			276587	06/18/18 14:32	TTN	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	276859	06/20/18 22:30	W1T	TAL SEA
Total/NA	Prep	3050B			277587	06/27/18 15:25	CJB	TAL SEA
Total/NA	Analysis	6020B		5	277761	06/28/18 18:40	FCW	TAL SEA
Total/NA	Prep	7471A			276720	06/19/18 15:36	CJB	TAL SEA
Total/NA	Analysis	7471A		1	276893	06/20/18 15:03	FCW	TAL SEA

Client Sample ID: PDI-SG-B421-BL1
Date Collected: 05/24/18 12:00
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-12
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	277284	06/25/18 10:56	Z1T	TAL SEA
Total/NA	Analysis	D 2216		1	276591	06/18/18 15:45	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	277578	06/22/18 13:00	DB	TAL SEA
Total/NA	Analysis	D7928/D6913		1	277296	06/25/18 14:03	KAB	TAL SEA

Client Sample ID: PDI-SG-B421-BL1
Date Collected: 05/24/18 12:00
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-12
Matrix: Solid
Percent Solids: 79.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			276587	06/18/18 14:32	TTN	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	276859	06/20/18 22:51	W1T	TAL SEA
Total/NA	Prep	3050B			277587	06/27/18 15:25	CJB	TAL SEA
Total/NA	Analysis	6020B		5	277761	06/28/18 18:44	FCW	TAL SEA
Total/NA	Prep	7471A			276720	06/19/18 15:36	CJB	TAL SEA
Total/NA	Analysis	7471A		1	276893	06/20/18 15:05	FCW	TAL SEA

Lab Chronicle

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

TestAmerica Job ID: 580-78109-1

Client Sample ID: PDI-SG-B422-BL1
Date Collected: 05/24/18 14:10
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-13
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	277284	06/25/18 11:00	Z1T	TAL SEA
Total/NA	Analysis	D 2216		1	276591	06/18/18 15:45	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	277578	06/22/18 13:00	DB	TAL SEA
Total/NA	Analysis	D7928/D6913		1	277296	06/25/18 14:03	KAB	TAL SEA

Client Sample ID: PDI-SG-B422-BL1
Date Collected: 05/24/18 14:10
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-13
Matrix: Solid
Percent Solids: 82.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			276587	06/18/18 14:32	TTN	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	276859	06/20/18 23:11	W1T	TAL SEA
Total/NA	Prep	3050B			277587	06/27/18 15:25	CJB	TAL SEA
Total/NA	Analysis	6020B		5	277761	06/28/18 18:48	FCW	TAL SEA
Total/NA	Prep	7471A			276720	06/19/18 15:36	CJB	TAL SEA
Total/NA	Analysis	7471A		1	276893	06/20/18 15:08	FCW	TAL SEA

Client Sample ID: PDI-SG-B192-BL1
Date Collected: 05/31/18 14:15
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-14
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	277284	06/25/18 11:05	Z1T	TAL SEA
Total/NA	Analysis	D 2216		1	276591	06/18/18 15:45	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	277578	06/22/18 13:00	DB	TAL SEA
Total/NA	Analysis	D7928/D6913		1	277296	06/25/18 14:03	KAB	TAL SEA

Client Sample ID: PDI-SG-B192-BL1
Date Collected: 05/31/18 14:15
Date Received: 06/15/18 12:20

Lab Sample ID: 580-78109-14
Matrix: Solid
Percent Solids: 67.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			276587	06/18/18 14:32	TTN	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	276859	06/20/18 23:31	W1T	TAL SEA
Total/NA	Prep	3050B			277587	06/27/18 15:25	CJB	TAL SEA
Total/NA	Analysis	6020B		5	277761	06/28/18 18:52	FCW	TAL SEA
Total/NA	Prep	7471A			276720	06/19/18 15:36	CJB	TAL SEA
Total/NA	Analysis	7471A		1	276893	06/20/18 15:10	FCW	TAL SEA

Lab Chronicle

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

TestAmerica Job ID: 580-78109-1

Client Sample ID: PDI-SG-B183-BL1

Lab Sample ID: 580-78109-15

Date Collected: 05/31/18 14:04

Matrix: Solid

Date Received: 06/15/18 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	277284	06/25/18 11:10	Z1T	TAL SEA
Total/NA	Analysis	D 2216		1	276591	06/18/18 15:45	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	277578	06/22/18 13:00	DB	TAL SEA
Total/NA	Analysis	D7928/D6913		1	277296	06/25/18 14:03	KAB	TAL SEA

Client Sample ID: PDI-SG-B183-BL1

Lab Sample ID: 580-78109-15

Date Collected: 05/31/18 14:04

Matrix: Solid

Date Received: 06/15/18 12:20

Percent Solids: 66.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			276587	06/18/18 14:32	TTN	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	276859	06/20/18 23:51	W1T	TAL SEA
Total/NA	Prep	3050B			277587	06/27/18 15:25	CJB	TAL SEA
Total/NA	Analysis	6020B		5	277761	06/28/18 18:57	FCW	TAL SEA
Total/NA	Prep	7471A			276720	06/19/18 15:36	CJB	TAL SEA
Total/NA	Analysis	7471A		1	276893	06/20/18 15:17	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: 580-78109-1
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: 580-78109-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-78109-1	PDI-SG-B208-BL1	Solid	05/20/18 10:00	06/15/18 12:20
580-78109-2	PDI-SG-B389-BL1	Solid	05/20/18 14:28	06/15/18 12:20
580-78109-3	PDI-SG-B391-BL1	Solid	05/20/18 16:11	06/15/18 12:20
580-78109-4	PDI-SG-B392-BL1	Solid	05/20/18 17:31	06/15/18 12:20
580-78109-5	PDI-SG-B428-BL1	Solid	05/21/18 10:35	06/15/18 12:20
580-78109-6	PDI-SG-B427-BL1	Solid	05/21/18 11:40	06/15/18 12:20
580-78109-7	PDI-SG-B426-BL1	Solid	05/21/18 13:30	06/15/18 12:20
580-78109-8	PDI-SG-B415-BL1	Solid	05/22/18 16:24	06/15/18 12:20
580-78109-9	PDI-SG-B320-BL1	Solid	05/23/18 12:36	06/15/18 12:20
580-78109-10	PDI-SG-B404-BL1	Solid	05/23/18 10:40	06/15/18 12:20
580-78109-11	PDI-SG-B419-BL1	Solid	05/23/18 16:20	06/15/18 12:20
580-78109-12	PDI-SG-B421-BL1	Solid	05/24/18 12:00	06/15/18 12:20
580-78109-13	PDI-SG-B422-BL1	Solid	05/24/18 14:10	06/15/18 12:20
580-78109-14	PDI-SG-B192-BL1	Solid	05/31/18 14:15	06/15/18 12:20
580-78109-15	PDI-SG-B183-BL1	Solid	05/31/18 14:04	06/15/18 12:20

SURFACE SEDIMENT
CHAIN OF CUSTODY

TestAmerica-Seattle 5755-8th-Street-East Tacoma, WA 98424-1317 **Ph: 253-922-2310 Fax: 253-922-5047**	**Project Contact: Amy Dahl / Chelsey Cook** **Tel: (206) 438-2261 / (206) 438-2010** **Analysis Turnaround Time** Calendar (C) or Work Days (W) _____ ☐ 21 days ☐ Other _____	**Site Contact: Jennifer Ray / Michaela McCoog** **Laboratory Contact: Elaine-Walker**	**6/15/2018** **Carrier: courier**	COC No: 4 1 of 2 pages

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

580-78109 Chain of Custody

Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	Archive Archive -20 C	PCB Congeners 1668A	PCDD/Fs 1613B	TPH Diesel, Metals, Mercury NWTPH-Dx, 6020B, 7471A	Grain size ASTM D7928/D6913	Total organic carbon, Total solids 9060	Sample Specific Notes:
PDI-SG-B208-BL1	5/20/2018	10:00	SS		AC	6		x	x	x	x	x	x	Frozen 5/20/18 18:30
PDI-SG-B389-BL1	5/20/2018	14:28	SS		BC	6		x	x	x	x	x	x	Frozen 5/20/18 18:30
PDI-SG-B391-BL1	5/20/2018	16:11	SS		BC	6		x	x	x	x	x	x	Frozen 5/20/18 18:30
PDI-SG-B392-BL1	5/20/2018	17:31	SS		BC	6		x	x	x	x	x	x	Frozen 5/20/18 18:30
PDI-SG-B428-BL1	5/21/2018	10:35	SS		AM	6		x	x	x	x	x	x	Frozen 5/21/18 18:40
PDI-SG-B427-BL1	5/21/2018	11:40	SS		AM	6		x	x	x	x	x	x	Frozen 5/21/18 18:40
PDI-SG-B426-BL1	5/21/2018	13:30	SS		AM	6		x	x	x	x	x	x	Frozen 5/21/18 18:40
PDI-SG-B415-BL1	5/22/2018	16:24	SS		MM	6		x	x	x	x	x	x	Frozen 5/22/18 17:00
PDI-SG-B320-BL1	5/23/2018	12:36	SS		MM	6		x	x	x	x	x	x	Frozen 5/23/18 13:50
PDI-SG-B404-BL1	5/23/2018	10:40	SS		MT	6		x	x	x	x	x	x	Frozen 5/23/18 18:40
PDI-SG-B419-BL1	5/23/2018	16:20	SS		MT	6		x	x	x	x	x	x	Frozen 5/23/18 18:40
PDI-SG-B421-BL1	5/24/2018	12:00	SS		MT	6		x	x	x	x	x	x	Frozen 5/24/18 18:15

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:

FREEZE SAMPLES UPON RECEIPT

Separate reports for each lab

-0.2, -1.3, -3.4

Relinquished by:	Company: AECOM	Date/Time: 6/15/18/1150	Received by:	Company: M.E	Date/Time: 6-15-18 1150
Relinquished by:	Company: M.E	Date/Time: 6-15-18 / 1220	Received by:	Company: CARGO	Date/Time: 6/15/18 1220
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

SURFACE SEDIMENT
CHAIN OF CUSTODY

TestAmerica-Seattle 5755-8th-Street-East Tacoma, WA 98424-1317 **Ph: 253-922-2310 Fax: 253-922-5047**	**Project Contact: Amy Dahl / Chelsey Cook** **Tel: (206) 438-2261 / (206) 438-2010** **Analysis Turnaround Time** Calendar (C) or Work Days (W) _____ ☐ 21 days ☐ Other _____	**Site Contact: Jennifer Ray / Michaela McCoog** **Laboratory Contact: Elaine-Walker**	**6/15/2018** COC No: 4 **Carrier: courier** 2 of 2 pages

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 Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	Archive Archive -20 C	PCB Congeners 1668A	PCDD/Fs 1613B	TPH Diesel, Metals, Mercury NWTPH-Dx, 6020B, 7471A	Grain size ASTM D7928/D6913	Total organic carbon, Total solids 9060									Sample Specific Notes:
PDI-SG-B422-BL1	5/24/2018	14:10	SS		MT	6		x	x	x	x	x	x									Frozen 5/24/18 18:15
PDI-SG-B192-BL1	5/31/2018	14:15	SS		CS	6		x	x	x	x	x	x									Frozen 5/31/18 17:50
PDI-SG-B183-BL1	5/31/2018	14:04	SS		AM	6		x	x	x	x	x	x									Frozen 5/31/18 17:50

Container Type: WMG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, RC=Resin Column

Preservative: HCl = Hydrochloric Acid, H3PO4 = Phosphoric Acid, HNO3 = Nitric Acid

Fraction: D = Dissolved, PRT = Particulate, T = Total (unfiltered)

Sample Disposal

☐ *Return To Client* X *isposal By Lab* X *rchive For 12 Months*

Special Instructions/QC Requirements & Comments:

FREEZE SAMPLES UPON RECEIPT

-0.2

Separate reports for each lab

Relinquished by:	Company: AECOM	Date/Time: 6/15/18/1150	Received by:	Company: UE	Date/Time: 6-15-18/1150
Relinquished by:	Company: UE	Date/Time: 6-15-18/1220	Received by:	Company: TA Pool	Date/Time: 6/15/18 1220
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

SURFACE SEDIMENT
CHAIN OF CUSTODY

TestAmerica-Seattle 5755-8th-Street-East Tacoma, WA 98424-1317 **Ph: 253-922-2310 Fax: 253-922-5047**	**Project Contact: Amy Dahl / Chelsey Cook** **Tel: (206) 438-2261 / (206) 438-2010** **Analysis Turnaround Time** Calendar (C) or Work Days (W)	**Site Contact: Jennifer Ray / Michaela McCoog** **Laboratory Contact: Elaine-Walker**	**6/15/2018** **Carrier: courier**	**COC No: 4** 1 of 2 pages
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	☐ 21 days ☐ Other _____			

580-78109 Chain of Custody

Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	Archive Archive -20 C	PCB Congeners 1668A	PCDD/Fs 1613B	TPH Diesel, Metals, Mercury NWTPH-Dx, 6020B, 7471A	Grain size ASTM D7928/D6913	Total organic carbon, Total solids 9060	Sample Specific Notes:
PDI-SG-B208-BL1	5/20/2018	10:00	SS		AC	6		x	x	x	x	x	x	Frozen 5/20/18 18:30
PDI-SG-B389-BL1	5/20/2018	14:28	SS		BC	6		x	x	x	x	x	x	Frozen 5/20/18 18:30
PDI-SG-B391-BL1	5/20/2018	16:11	SS		BC	6		x	x	x	x	x	x	Frozen 5/20/18 18:30
PDI-SG-B392-BL1	5/20/2018	17:31	SS		BC	6		x	x	x	x	x	x	Frozen 5/20/18 18:30
PDI-SG-B428-BL1	5/21/2018	10:35	SS		AM	6		x	x	x	x	x	x	Frozen 5/21/18 18:40
PDI-SG-B427-BL1	5/21/2018	11:40	SS		AM	6		x	x	x	x	x	x	Frozen 5/21/18 18:40
PDI-SG-B426-BL1	5/21/2018	13:30	SS		AM	6		x	x	x	x	x	x	Frozen 5/21/18 18:40
PDI-SG-B415-BL1	5/22/2018	16:24	SS		MM	6		x	x	x	x	x	x	Frozen 5/22/18 17:00
PDI-SG-B320-BL1	5/23/2018	12:36	SS		MM	6		x	x	x	x	x	x	Frozen 5/23/18 13:50
PDI-SG-B404-BL1	5/23/2018	10:40	SS		MT	6		x	x	x	x	x	x	Frozen 5/23/18 18:40
PDI-SG-B419-BL1	5/23/2018	16:20	SS		MT	6		x	x	x	x	x	x	Frozen 5/23/18 18:40
PDI-SG-B421-BL1	5/24/2018	12:00	SS		MT	6		x	x	x	x	x	x	Frozen 5/24/18 18:15

Container Type: WMG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, RC=Resin Column

Preservative: HCl = Hydrochloric Acid, H3PO4 = Phosphoric Acid, HNO3 = Nitric Acid

Fraction: D = Dissolved, PRT = Particulate, T = Total (unfiltered)

Sample Disposal

☐ Return To Client X Disposal By Lab X Archive For 12 Months

Special Instructions/QC Requirements & Comments:

FREEZE SAMPLES UPON RECEIPT

Separate reports for each lab

-0.2, -1.3, -3.4

Relinquished by:	Company: AECOM	Date/Time: 6/15/18 1150	Received by:	Company: M.E	Date/Time: 6-15-18 1150
Relinquished by:	Company: M.E	Date/Time: 6-15-18 1222	Received by:	Company: TARGET	Date/Time: 6/15/18 1270
Relinquished by:	Company: TARGET	Date/Time: 6/15/18 1700	Received by: B. Gall B. Gall	Company: SEA TAC	Date/Time: 6/16/18 1000

IRS = -37/-37 w/c.s.

SURFACE SEDIMENT
CHAIN OF CUSTODY

TestAmerica-Seattle 5755-8th-Street-East Tacoma, WA 98424-1317 **Ph: 253-922-2310 Fax: 253-922-5047**	**Project Contact: Amy Dahl / Chelsey Cook** **Tel: (206) 438-2261 / (206) 438-2010** **Analysis Turnaround Time** Calendar (C) or Work Days (W) _____ ☐ 21 days ☐ Other _____	**Site Contact: Jennifer Ray / Michaela McCoog** **Laboratory Contact: Elaine-Walker**	**6/15/2018** **Carrier: courier**	COC No: 4 2 of 2 pages
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 Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	Archive Archive -20 C	PCB Congeners 1668A	PCDD/Fs 1613B	TPH Diesel, Metals, Mercury NWTPH-Dx, 6020B, 7471A	Grain size ASTM D7928/D6913	Total organic carbon, Total solids 9060	Sample Specific Notes:
PDI-SG-B422-BL1	5/24/2018	14:10	SS		MT	6		x	x	x	x	x	x	Frozen 5/24/18 18:15
PDI-SG-B192-BL1	5/31/2018	14:15	SS		CS	6		x	x	x	x	x	x	Frozen 5/31/18 17:50
PDI-SG-B183-BL1	5/31/2018	14:04	SS		AM	6		x	x	x	x	x	x	Frozen 5/31/18 17:50

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:

FREEZE SAMPLES UPON RECEIPT

-0.2

Separate reports for each lab

Relinquished by:	Company: AECOM	Date/Time: 6/15/18 1150	Received by:	Company: UE	Date/Time: 6-15-18 1150
Relinquished by:	Company: UE	Date/Time: 6-15-18 1220	Received by:	Company: TA Rok	Date/Time: 6/15/18 1220
Relinquished by:	Company: TA Rok	Date/Time: 6/15/18 1700	Received by:	Company:	Date/Time:

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Walker, Elaine M	Carrier Tracking No(s):	COC No: 580-56350.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: elaine.walker@testamericainc.com	State of Origin: Oregon	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 580-78109-1
Address: 880 Riverside Parkway, ,	Due Date Requested: 7/3/2018			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Portland Harbor Pre-Remedial Design	Project #: 58012120			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/HRMS_Sox_P (MOD) Full List w/o Totals	AutoOP/ PH Frozen Archive Container billed @ $0.	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
PDI-SG-B208-BL1 (580-78109-1)	5/20/18	10:00 Pacific		Solid			X	X	2	
PDI-SG-B389-BL1 (580-78109-2)	5/20/18	14:28 Pacific		Solid			X	X	2	
PDI-SG-B391-BL1 (580-78109-3)	5/20/18	16:11 Pacific		Solid			X	X	2	
PDI-SG-B392-BL1 (580-78109-4)	5/20/18	17:31 Pacific		Solid			X	X	2	
PDI-SG-B428-BL1 (580-78109-5)	5/21/18	10:35 Pacific		Solid			X	X	2	
PDI-SG-B427-BL1 (580-78109-6)	5/21/18	11:40 Pacific		Solid			X	X	2	
PDI-SG-B426-BL1 (580-78109-7)	5/21/18	13:30 Pacific		Solid			X	X	2	
PDI-SG-B415-BL1 (580-78109-8)	5/22/18	16:24 Pacific		Solid			X	X	2	
PDI-SG-B320-BL1 (580-78109-9)	5/23/18	12:36 Pacific		Solid			X	X	2	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

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

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		6/17/14 1700	TAPOR		6-16-18 930	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: -36

* recd 1 jar broken on 6-16-18

Ver: 09/20/2016

7/9/2018

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Walker, Elaine M	Carrier Tracking No(s):	COC No: 580-56350.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: elaine.walker@testamericainc.com	State of Origin: Oregon	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 580-78109-1
Address: 880 Riverside Parkway, .	Due Date Requested: 7/3/2018			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Portland Harbor Pre-Remedial Design	Project #: 58012120			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/HRMS_Sox_P (MOD) Full List w/o Totals	AutoOP/ PH Frozen Archive Container billed @ $0.	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
PDI-SG-B404-BL1 (580-78109-10)	5/23/18	10:40 Pacific		Solid			X	X	2	
PDI-SG-B419-BL1 (580-78109-11)	5/23/18	16:20 Pacific		Solid			X	X	2	
PDI-SG-B421-BL1 (580-78109-12)	5/24/18	12:00 Pacific		Solid			X	X	2	
PDI-SG-B422-BL1 (580-78109-13)	5/24/18	14:10 Pacific		Solid			X	X	2	
PDI-SG-B192-BL1 (580-78109-14)	5/31/18	14:15 Pacific		Solid			X	X	2	
PDI-SG-B183-BL1 (580-78109-15)	5/31/18	14:04 Pacific		Solid			X	X	2	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. I

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

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

	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	6/15/18 1700			6-16-18 930	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: -36

Ver: 09/20/2016

7/9/2018

Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-78109-1

Login Number: 78109
List Number: 1
Creator: O'Connell, Jason I

List Source: TestAmerica Seattle

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.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	