

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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TestAmerica Job ID: 580-80213-9

Client Project/Site: Portland Harbor Pre-Remedial Design

For:

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Authorized for release by:
10/22/2018 3:27:46 PM

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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: 580-80213-9

Job ID: 580-80213-9

Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE

Client: AECOM

Project: Portland Harbor Pre-Remedial Design

Report Number: 580-80213-9

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

Three samples were received on 9/10/2018 12:40 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 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.

The following samples were activated for all on hold analysis by the client on 9/26/18: PDI-SG-B431 (580-80213-1) and PDI-SG-B479 (580-80213-2).

The Rinse Blank sample has been reported under separate cover.

Samples were placed in freezers at -10 degrees Celsius to extend holding time. Samples were placed in the freezer on September 11, 2018.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

SEMIVOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples PDI-SG-B431 (580-80213-1) and PDI-SG-B479 (580-80213-2) were analyzed for semivolatile organic compounds (GC-MS) in accordance with 8270D. The samples were prepared on 10/12/2018 and analyzed on 10/14/2018.

Samples PDI-SG-B431 (580-80213-1) and PDI-SG-B479 (580-80213-2) were frozen in hold. Samples were removed from freezer on 10/11/18 at 19:00 and thawed.

Bis(2-ethylhexyl) phthalate was detected in method blank MB 580-286343/1-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. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and re-analysis of samples were not performed.

Samples PDI-SG-B431 (580-80213-1)[10X] and PDI-SG-B479 (580-80213-2)[10X] required dilution prior to analysis due to the nature of

Case Narrative

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

TestAmerica Job ID: 580-80213-9

Job ID: 580-80213-9 (Continued)

Laboratory: TestAmerica Seattle (Continued)

the sample matrix. 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.

SEMIVOLATILE ORGANIC COMPOUNDS - SELECTED ION MODE (SIM)

Samples PDI-SG-B431 (580-80213-1) and PDI-SG-B479 (580-80213-2) were analyzed for semivolatile organic compounds - Selected Ion Mode (SIM) in accordance with SW846 8270D_SIM. The samples were prepared on 10/12/2018 and analyzed on 10/17/2018.

Samples PDI-SG-B431 (580-80213-1) and PDI-SG-B479 (580-80213-2) were frozen in hold. Samples were removed from freezer on 10/11/18 at 19:00 and thawed.

Anthracene failed the recovery criteria high for LCS 580-286335/2-A. This is not indicative of a systematic control problem because these were random marginal exceedances. Qualified results have been reported.

Samples PDI-SG-B431 (580-80213-1)[10X] and PDI-SG-B479 (580-80213-2)[10X] required dilution prior to analysis due to the nature of the sample matrix. 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.

ORGANOTINS BY GC/MS

Samples PDI-SG-B431 (580-80213-1) and PDI-SG-B479 (580-80213-2) were analyzed for Organotins by GC/MS in accordance with the Krone Method. The samples were prepared on 10/12/2018 and analyzed on 10/15/2018.

Samples PDI-SG-B431 (580-80213-1) and PDI-SG-B479 (580-80213-2) were frozen to maintain holding time. Samples were thawed on 10-11-18 at 19:00.

Tributyltin exceeded the RPD limit for the MSD of sample PDI-SG-B479MSD (580-80213-2) in batch 580-286496. Sample matrix interference and/or non-homogeneity are suspected because the MS/MSD and associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recoveries and precision were within acceptance limits.

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

DIESEL AND EXTENDED RANGE ORGANICS

Samples PDI-SG-B431 (580-80213-1) and PDI-SG-B479 (580-80213-2) were analyzed for diesel and extended range organics in accordance with Method NWTPH-Dx. The samples were prepared on 10/12/2018 and analyzed on 10/14/2018.

Samples PDI-SG-B431 (580-80213-1) and PDI-SG-B479 (580-80213-2) were frozen in hold. Samples were removed from freezer on 10/11/18 at 19:00 and thawed.

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-B431 (580-80213-1) and PDI-SG-B479 (580-80213-2).

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

METALS (ICPMS)

Samples PDI-SG-B431 (580-80213-1) and PDI-SG-B479 (580-80213-2) were analyzed for Metals (ICPMS) in accordance with 6020A_LL. The samples were prepared and analyzed on 10/08/2018.

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

TOTAL MERCURY

Samples PDI-SG-B431 (580-80213-1) and PDI-SG-B479 (580-80213-2) were analyzed for total mercury in accordance with EPA SW-846 Method 7471A. The samples were prepared on 09/28/2018 and 10/04/2018 and analyzed on 09/28/2018 and 10/05/2018.

No additional 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: 580-80213-9

Job ID: 580-80213-9 (Continued)

Laboratory: TestAmerica Seattle (Continued)

TOTAL ORGANIC CARBON

Samples PDI-SG-B431 (580-80213-1) and PDI-SG-B479 (580-80213-2) were analyzed for total organic carbon in accordance with EPA SW-846 Method 9060. The samples were analyzed on 10/14/2018.

Samples PDI-SG-B431 (580-80213-1) and PDI-SG-B479 (580-80213-2) were frozen in hold and kept frozen upon receipt. Samples were removed from freezer on 10/11/18 at 19:00 and thawed..

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

PERCENT SOLIDS

Samples PDI-SG-B431 (580-80213-1) and PDI-SG-B479 (580-80213-2) were analyzed for percent solids in accordance with ASTM D2216. The samples were analyzed on 10/11/2018.

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

TOTAL SOLIDS @ 70C

Samples PDI-SG-B431 (580-80213-1) and PDI-SG-B479 (580-80213-2) were analyzed for Total Solids @ 70C. The samples were analyzed on 10/12/2018.

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: 580-80213-9

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	LCS or LCSD is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

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

TestAmerica Job ID: 580-80213-9

Client Sample ID: PDI-SG-B431

Date Collected: 09/07/18 12:08

Date Received: 09/10/18 12:40

Lab Sample ID: 580-80213-1

Matrix: Solid

Percent Solids: 65.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		15	1.3	ug/Kg	☼	10/12/18 10:39	10/17/18 15:30	10
Acenaphthene	ND		15	1.8	ug/Kg	☼	10/12/18 10:39	10/17/18 15:30	10
Acenaphthylene	ND		15	1.5	ug/Kg	☼	10/12/18 10:39	10/17/18 15:30	10
Anthracene	ND	*	15	1.8	ug/Kg	☼	10/12/18 10:39	10/17/18 15:30	10
Benzo[a]anthracene	8.4	J	15	2.3	ug/Kg	☼	10/12/18 10:39	10/17/18 15:30	10
Benzo[a]pyrene	6.7	J	15	1.2	ug/Kg	☼	10/12/18 10:39	10/17/18 15:30	10
Benzo[b]fluoranthene	11	J	15	1.8	ug/Kg	☼	10/12/18 10:39	10/17/18 15:30	10
Benzo[g,h,i]perylene	5.2	J	15	1.5	ug/Kg	☼	10/12/18 10:39	10/17/18 15:30	10
Benzo[k]fluoranthene	3.7	J	15	1.8	ug/Kg	☼	10/12/18 10:39	10/17/18 15:30	10
Chrysene	5.9	J	15	4.5	ug/Kg	☼	10/12/18 10:39	10/17/18 15:30	10
Dibenz(a,h)anthracene	ND		15	2.2	ug/Kg	☼	10/12/18 10:39	10/17/18 15:30	10
Fluoranthene	15		15	4.2	ug/Kg	☼	10/12/18 10:39	10/17/18 15:30	10
Fluorene	2.7	J	15	1.5	ug/Kg	☼	10/12/18 10:39	10/17/18 15:30	10
Indeno[1,2,3-cd]pyrene	5.1	J	15	1.8	ug/Kg	☼	10/12/18 10:39	10/17/18 15:30	10
Naphthalene	ND		15	2.4	ug/Kg	☼	10/12/18 10:39	10/17/18 15:30	10
Phenanthrene	12	J	15	2.1	ug/Kg	☼	10/12/18 10:39	10/17/18 15:30	10
Pyrene	14	J	15	2.9	ug/Kg	☼	10/12/18 10:39	10/17/18 15:30	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	84		57 - 120	10/12/18 10:39	10/17/18 15:30	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	63	J B	450	53	ug/Kg	☼	10/12/18 10:53	10/14/18 17:11	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	85		58 - 120	10/12/18 10:53	10/14/18 17:11	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	ND		120	31	ug/Kg	☼	10/12/18 09:39	10/15/18 22:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triphenyltin	18		10 - 113	10/12/18 09:39	10/15/18 22:48	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)	36	J	72	18	mg/Kg	☼	10/12/18 10:48	10/14/18 21:57	1
Motor Oil (>C24-C36)	160		72	25	mg/Kg	☼	10/12/18 10:48	10/14/18 21:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	92		50 - 150	10/12/18 10:48	10/14/18 21:57	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	3.8		0.25	0.051	mg/Kg	☼	10/08/18 12:26	10/08/18 19:25	5
Cadmium	0.084	J	0.20	0.039	mg/Kg	☼	10/08/18 12:26	10/08/18 19:25	5
Copper	22		0.51	0.11	mg/Kg	☼	10/08/18 12:26	10/08/18 19:25	5
Lead	14		0.25	0.024	mg/Kg	☼	10/08/18 12:26	10/08/18 19:25	5
Zinc	79		2.5	0.82	mg/Kg	☼	10/08/18 12:26	10/08/18 19:25	5

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-80213-9

Client Sample ID: PDI-SG-B431

Date Collected: 09/07/18 12:08

Date Received: 09/10/18 12:40

Lab Sample ID: 580-80213-1

Matrix: Solid

Percent Solids: 65.0

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.044		0.031	0.0092	mg/Kg	☼	10/04/18 09:46	10/05/18 08:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	7700		2000	44	mg/Kg	—		10/14/18 17:32	1
Total Solids	65.0		0.1	0.1	%			10/11/18 09:09	1
Total Solids @ 70°C	69	H	0.10	0.10	%			10/12/18 16:56	1

Client Sample Results

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

TestAmerica Job ID: 580-80213-9

Client Sample ID: PDI-SG-B479

Date Collected: 09/07/18 09:58

Date Received: 09/10/18 12:40

Lab Sample ID: 580-80213-2

Matrix: Solid

Percent Solids: 65.2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		15	1.3	ug/Kg	☼	10/12/18 10:39	10/17/18 15:55	10
Acenaphthene	ND		15	1.8	ug/Kg	☼	10/12/18 10:39	10/17/18 15:55	10
Acenaphthylene	ND		15	1.5	ug/Kg	☼	10/12/18 10:39	10/17/18 15:55	10
Anthracene	ND	*	15	1.8	ug/Kg	☼	10/12/18 10:39	10/17/18 15:55	10
Benzo[a]anthracene	11	J	15	2.2	ug/Kg	☼	10/12/18 10:39	10/17/18 15:55	10
Benzo[a]pyrene	8.6	J	15	1.2	ug/Kg	☼	10/12/18 10:39	10/17/18 15:55	10
Benzo[b]fluoranthene	25		15	1.7	ug/Kg	☼	10/12/18 10:39	10/17/18 15:55	10
Benzo[g,h,i]perylene	5.7	J	15	1.5	ug/Kg	☼	10/12/18 10:39	10/17/18 15:55	10
Benzo[k]fluoranthene	9.8	J	15	1.8	ug/Kg	☼	10/12/18 10:39	10/17/18 15:55	10
Chrysene	24		15	4.4	ug/Kg	☼	10/12/18 10:39	10/17/18 15:55	10
Dibenz(a,h)anthracene	ND		15	2.1	ug/Kg	☼	10/12/18 10:39	10/17/18 15:55	10
Fluoranthene	68		15	4.1	ug/Kg	☼	10/12/18 10:39	10/17/18 15:55	10
Fluorene	1.6	J	15	1.5	ug/Kg	☼	10/12/18 10:39	10/17/18 15:55	10
Indeno[1,2,3-cd]pyrene	6.3	J	15	1.8	ug/Kg	☼	10/12/18 10:39	10/17/18 15:55	10
Naphthalene	ND		15	2.4	ug/Kg	☼	10/12/18 10:39	10/17/18 15:55	10
Phenanthrene	12	J	15	2.0	ug/Kg	☼	10/12/18 10:39	10/17/18 15:55	10
Pyrene	48		15	2.9	ug/Kg	☼	10/12/18 10:39	10/17/18 15:55	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	71		57 - 120	10/12/18 10:39	10/17/18 15:55	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	92	J B	450	53	ug/Kg	☼	10/12/18 10:53	10/14/18 17:36	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	83		58 - 120	10/12/18 10:53	10/14/18 17:36	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	ND	F2	120	32	ug/Kg	☼	10/12/18 09:39	10/15/18 23:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triphenyltin	23		10 - 113	10/12/18 09:39	10/15/18 23:14	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)	39	J	75	18	mg/Kg	☼	10/12/18 10:48	10/14/18 22:19	1
Motor Oil (>C24-C36)	190		75	26	mg/Kg	☼	10/12/18 10:48	10/14/18 22:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	90		50 - 150	10/12/18 10:48	10/14/18 22:19	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	3.4		0.32	0.063	mg/Kg	☼	10/08/18 12:26	10/08/18 19:29	5
Cadmium	0.11	J	0.25	0.049	mg/Kg	☼	10/08/18 12:26	10/08/18 19:29	5
Copper	25		0.63	0.14	mg/Kg	☼	10/08/18 12:26	10/08/18 19:29	5
Lead	6.8		0.32	0.030	mg/Kg	☼	10/08/18 12:26	10/08/18 19:29	5
Zinc	67		3.2	1.0	mg/Kg	☼	10/08/18 12:26	10/08/18 19:29	5

TestAmerica Seattle

Client Sample Results

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

TestAmerica Job ID: 580-80213-9

Client Sample ID: PDI-SG-B479

Date Collected: 09/07/18 09:58

Date Received: 09/10/18 12:40

Lab Sample ID: 580-80213-2

Matrix: Solid

Percent Solids: 65.2

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.037	J	0.045	0.013	mg/Kg	☼	09/28/18 10:32	09/28/18 17:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	17000		2000	44	mg/Kg	—		10/14/18 17:36	1
Total Solids	65.2		0.1	0.1	%			10/11/18 09:09	1
Total Solids @ 70°C	51	H	0.10	0.10	%			10/12/18 16:56	1

QC Sample Results

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

TestAmerica Job ID: 580-80213-9

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

Lab Sample ID: MB 580-286343/1-A
Matrix: Solid
Analysis Batch: 286479

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 286343

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	4.07	J	30	3.6	ug/Kg	-	10/12/18 10:53	10/14/18 14:42	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	83		58 - 120				10/12/18 10:53	10/14/18 14:42	1

Lab Sample ID: LCS 580-286343/2-A
Matrix: Solid
Analysis Batch: 286479

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 286343

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Bis(2-ethylhexyl) phthalate	50.0	46.2		ug/Kg	-	92	59 - 123
Surrogate	%Recovery	LCS Qualifier	Limits				
Terphenyl-d14 (Surr)	84		58 - 120				

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

Lab Sample ID: MB 580-286335/1-A
Matrix: Solid
Analysis Batch: 286695

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 286335

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		1.0	0.090	ug/Kg	-	10/12/18 10:39	10/17/18 08:48	1
Acenaphthene	ND		1.0	0.12	ug/Kg	-	10/12/18 10:39	10/17/18 08:48	1
Acenaphthylene	ND		1.0	0.10	ug/Kg	-	10/12/18 10:39	10/17/18 08:48	1
Anthracene	ND		1.0	0.12	ug/Kg	-	10/12/18 10:39	10/17/18 08:48	1
Benzo[a]anthracene	ND		1.0	0.15	ug/Kg	-	10/12/18 10:39	10/17/18 08:48	1
Benzo[a]pyrene	ND		1.0	0.080	ug/Kg	-	10/12/18 10:39	10/17/18 08:48	1
Benzo[b]fluoranthene	ND		1.0	0.12	ug/Kg	-	10/12/18 10:39	10/17/18 08:48	1
Benzo[g,h,i]perylene	ND		1.0	0.10	ug/Kg	-	10/12/18 10:39	10/17/18 08:48	1
Benzo[k]fluoranthene	ND		1.0	0.12	ug/Kg	-	10/12/18 10:39	10/17/18 08:48	1
Chrysene	ND		1.0	0.30	ug/Kg	-	10/12/18 10:39	10/17/18 08:48	1
Dibenz(a,h)anthracene	ND		1.0	0.14	ug/Kg	-	10/12/18 10:39	10/17/18 08:48	1
Fluoranthene	ND		1.0	0.28	ug/Kg	-	10/12/18 10:39	10/17/18 08:48	1
Fluorene	ND		1.0	0.10	ug/Kg	-	10/12/18 10:39	10/17/18 08:48	1
Indeno[1,2,3-cd]pyrene	ND		1.0	0.12	ug/Kg	-	10/12/18 10:39	10/17/18 08:48	1
Naphthalene	ND		1.0	0.16	ug/Kg	-	10/12/18 10:39	10/17/18 08:48	1
Phenanthrene	ND		1.0	0.14	ug/Kg	-	10/12/18 10:39	10/17/18 08:48	1
Pyrene	ND		1.0	0.19	ug/Kg	-	10/12/18 10:39	10/17/18 08:48	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	91		57 - 120				10/12/18 10:39	10/17/18 08:48	1

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-80213-9

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

Lab Sample ID: LCS 580-286335/2-A

Matrix: Solid

Analysis Batch: 286695

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 286335

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
2-Methylnaphthalene	200	164		ug/Kg		82	68 - 120
Acenaphthene	200	156		ug/Kg		78	68 - 120
Acenaphthylene	200	151		ug/Kg		75	68 - 120
Anthracene	200	141	*	ug/Kg		71	73 - 125
Benzo[a]anthracene	200	178		ug/Kg		89	66 - 120
Benzo[a]pyrene	200	145		ug/Kg		72	72 - 124
Benzo[b]fluoranthene	200	193		ug/Kg		96	63 - 121
Benzo[g,h,i]perylene	200	164		ug/Kg		82	63 - 120
Benzo[k]fluoranthene	200	184		ug/Kg		92	63 - 123
Chrysene	200	182		ug/Kg		91	69 - 120
Dibenz(a,h)anthracene	200	170		ug/Kg		85	70 - 125
Fluoranthene	200	191		ug/Kg		95	74 - 125
Fluorene	200	178		ug/Kg		89	73 - 120
Indeno[1,2,3-cd]pyrene	200	183		ug/Kg		92	65 - 121
Naphthalene	200	158		ug/Kg		79	70 - 120
Phenanthrene	200	171		ug/Kg		86	73 - 120
Pyrene	200	190		ug/Kg		95	70 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	78		57 - 120

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

Lab Sample ID: MB 580-286319/1-A

Matrix: Solid

Analysis Batch: 286496

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 286319

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	ND		75	20	ug/Kg		10/12/18 09:39	10/15/18 18:04	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triphenyltin	58		10 - 113	10/12/18 09:39	10/15/18 18:04	1

Lab Sample ID: LCS 580-286319/2-A

Matrix: Solid

Analysis Batch: 286496

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 286319

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Tributyltin	357	212		ug/Kg		59	14 - 150

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Triphenyltin	60		10 - 113

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-80213-9

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

Lab Sample ID: LCSD 580-286319/3-A

Matrix: Solid

Analysis Batch: 286496

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 286319

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Tributyltin	357	210		ug/Kg		59	14 - 150	1	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
Triphenyltin	64		10 - 113						

Lab Sample ID: 580-80213-2 MS

Matrix: Solid

Analysis Batch: 286496

Client Sample ID: PDI-SG-B479

Prep Type: Total/NA

Prep Batch: 286319

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Tributyltin	ND	F2	547	74.7	J	ug/Kg	☼	14	14 - 150		
Surrogate	MS %Recovery	MS Qualifier	Limits								
Triphenyltin	18		10 - 113								

Lab Sample ID: 580-80213-2 MSD

Matrix: Solid

Analysis Batch: 286496

Client Sample ID: PDI-SG-B479

Prep Type: Total/NA

Prep Batch: 286319

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Tributyltin	ND	F2	547	102	J F2	ug/Kg	☼	19	14 - 150	31	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
Triphenyltin	22		10 - 113								

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

Lab Sample ID: MB 580-286342/1-A

Matrix: Solid

Analysis Batch: 286486

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 286342

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		10/12/18 10:48	10/14/18 20:08	1
Motor Oil (>C24-C36)	ND		50	18	mg/Kg		10/12/18 10:48	10/14/18 20:08	1
Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac			
o-Terphenyl	93		50 - 150	10/12/18 10:48	10/14/18 20:08	1			

Lab Sample ID: LCS 580-286342/2-A

Matrix: Solid

Analysis Batch: 286486

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 286342

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	500	467		mg/Kg		93	70 - 125		
Motor Oil (>C24-C36)	500	479		mg/Kg		96	70 - 129		

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-80213-9

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

Lab Sample ID: LCS 580-286342/2-A
Matrix: Solid
Analysis Batch: 286486

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 286342

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o</i> -Terphenyl	91		50 - 150

Lab Sample ID: LCSD 580-286342/3-A
Matrix: Solid
Analysis Batch: 286486

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 286342

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	500	486		mg/Kg		97	70 - 125	4	16
Motor Oil (>C24-C36)	500	501		mg/Kg		100	70 - 129	4	16
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	100		50 - 150						

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 580-285908/22-A
Matrix: Solid
Analysis Batch: 285994

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 285908

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.25	0.050	mg/Kg		10/08/18 12:26	10/08/18 17:48	5
Cadmium	ND		0.20	0.039	mg/Kg		10/08/18 12:26	10/08/18 17:48	5
Copper	ND		0.50	0.11	mg/Kg		10/08/18 12:26	10/08/18 17:48	5
Lead	ND		0.25	0.024	mg/Kg		10/08/18 12:26	10/08/18 17:48	5
Zinc	ND		2.5	0.81	mg/Kg		10/08/18 12:26	10/08/18 17:48	5

Lab Sample ID: LCS 580-285908/23-A
Matrix: Solid
Analysis Batch: 285994

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 285908

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	200	208		mg/Kg		104	80 - 120		
Cadmium	5.00	5.18		mg/Kg		104	80 - 120		
Copper	25.0	25.5		mg/Kg		102	80 - 120		
Lead	50.0	49.4		mg/Kg		99	80 - 120		
Zinc	200	205		mg/Kg		103	80 - 120		

Lab Sample ID: LCSD 580-285908/24-A
Matrix: Solid
Analysis Batch: 285994

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 285908

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	200	209		mg/Kg		105	80 - 120	0	20
Cadmium	5.00	5.32		mg/Kg		106	80 - 120	3	20
Copper	25.0	25.6		mg/Kg		103	80 - 120	1	20
Lead	50.0	50.1		mg/Kg		100	80 - 120	1	20
Zinc	200	206		mg/Kg		103	80 - 120	0	20

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-80213-9

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 580-285160/22-A
Matrix: Solid
Analysis Batch: 285328

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 285160

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.030	0.0090	mg/Kg		09/28/18 10:32	09/28/18 17:15	1

Lab Sample ID: LCS 580-285160/23-A
Matrix: Solid
Analysis Batch: 285328

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 285160

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.167	0.178		mg/Kg		107	80 - 120

Lab Sample ID: LCSD 580-285160/24-A
Matrix: Solid
Analysis Batch: 285328

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 285160

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Mercury	0.167	0.168		mg/Kg		101	80 - 120	6	20

Lab Sample ID: MB 580-285653/20-A
Matrix: Solid
Analysis Batch: 285738

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 285653

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.030	0.0090	mg/Kg		10/04/18 09:46	10/04/18 15:38	1

Lab Sample ID: LCS 580-285653/21-A
Matrix: Solid
Analysis Batch: 285738

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 285653

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.167	0.162		mg/Kg		97	80 - 120

Lab Sample ID: LCSD 580-285653/22-A
Matrix: Solid
Analysis Batch: 285738

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 285653

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Mercury	0.167	0.158		mg/Kg		95	80 - 120	3	20

Method: 9060_PSEP - TOC (Puget Sound)

Lab Sample ID: MB 580-286515/5
Matrix: Solid
Analysis Batch: 286515

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			10/14/18 13:28	1

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-80213-9

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

Lab Sample ID: LCS 580-286515/6

Matrix: Solid

Analysis Batch: 286515

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	4300		mg/Kg	-	101	68 - 149

Lab Sample ID: LCSD 580-286515/7

Matrix: Solid

Analysis Batch: 286515

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	3350		mg/Kg	-	79	68 - 149	25	32

Lab Chronicle

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

TestAmerica Job ID: 580-80213-9

Client Sample ID: PDI-SG-B431

Date Collected: 09/07/18 12:08

Date Received: 09/10/18 12:40

Lab Sample ID: 580-80213-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	286515	10/14/18 17:32	A1K	TAL SEA
Total/NA	Analysis	D 2216		1	286202	10/11/18 09:09	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	286405	10/12/18 16:56	BAH	TAL SEA

Client Sample ID: PDI-SG-B431

Date Collected: 09/07/18 12:08

Date Received: 09/10/18 12:40

Lab Sample ID: 580-80213-1

Matrix: Solid

Percent Solids: 65.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			286343	10/12/18 10:53	BAH	TAL SEA
Total/NA	Analysis	8270D		10	286479	10/14/18 17:11	W1T	TAL SEA
Total/NA	Prep	3546			286335	10/12/18 10:39	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		10	286695	10/17/18 15:30	CJ	TAL SEA
Total/NA	Prep	Organotin Prep			286319	10/12/18 09:39	KMS	TAL SEA
Total/NA	Analysis	Organotins		1	286496	10/15/18 22:48	KFS	TAL SEA
Total/NA	Prep	3546			286342	10/12/18 10:48	BAH	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	286486	10/14/18 21:57	W1T	TAL SEA
Total/NA	Prep	3050B			285908	10/08/18 12:26	T1H	TAL SEA
Total/NA	Analysis	6020B		5	285994	10/08/18 19:25	FCW	TAL SEA
Total/NA	Prep	7471A			285653	10/04/18 09:46	T1H	TAL SEA
Total/NA	Analysis	7471A		1	285749	10/05/18 08:13	FCW	TAL SEA

Client Sample ID: PDI-SG-B479

Date Collected: 09/07/18 09:58

Date Received: 09/10/18 12:40

Lab Sample ID: 580-80213-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	286515	10/14/18 17:36	A1K	TAL SEA
Total/NA	Analysis	D 2216		1	286202	10/11/18 09:09	BAH	TAL SEA
Total/NA	Analysis	Moisture 70C		1	286405	10/12/18 16:56	BAH	TAL SEA

Client Sample ID: PDI-SG-B479

Date Collected: 09/07/18 09:58

Date Received: 09/10/18 12:40

Lab Sample ID: 580-80213-2

Matrix: Solid

Percent Solids: 65.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			286343	10/12/18 10:53	BAH	TAL SEA
Total/NA	Analysis	8270D		10	286479	10/14/18 17:36	W1T	TAL SEA
Total/NA	Prep	3546			286335	10/12/18 10:39	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		10	286695	10/17/18 15:55	CJ	TAL SEA
Total/NA	Prep	Organotin Prep			286319	10/12/18 09:39	KMS	TAL SEA
Total/NA	Analysis	Organotins		1	286496	10/15/18 23:14	KFS	TAL SEA

TestAmerica Seattle

Lab Chronicle

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

TestAmerica Job ID: 580-80213-9

Client Sample ID: PDI-SG-B479

Lab Sample ID: 580-80213-2

Date Collected: 09/07/18 09:58

Matrix: Solid

Date Received: 09/10/18 12:40

Percent Solids: 65.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			286342	10/12/18 10:48	BAH	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	286486	10/14/18 22:19	W1T	TAL SEA
Total/NA	Prep	3050B			285908	10/08/18 12:26	T1H	TAL SEA
Total/NA	Analysis	6020B		5	285994	10/08/18 19:29	FCW	TAL SEA
Total/NA	Prep	7471A			285160	09/28/18 10:32	JKM	TAL SEA
Total/NA	Analysis	7471A		1	285328	09/28/18 17:43	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: 580-80213-9

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
Nevada	State Program	9	WA000502019-1	07-31-19
Oregon	NELAP	10	WA100007	11-05-18
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-19

Sample Summary

Client: AECOM

Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-80213-9

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-80213-1	PDI-SG-B431	Solid	09/07/18 12:08	09/10/18 12:40
580-80213-2	PDI-SG-B479	Solid	09/07/18 09:58	09/10/18 12:40

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580-80213 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		Project Contact: Amy Dahl / Chelsea Cook Tel: (206) 438-2261 / (206) 438-2010 Analysis Turnaround Time Calendar (C) or Work Days (W)		Site Contact: Jennifer Ray Laboratory Contact: Elaine Walker		9/10/2018 COC No: 1 of 1 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 Water Sediment		21 days (water) Other ASAP (63 only)		Carrier: Courier		Sample Specific Notes:																	
Sample Type	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	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 (104C & 70C)	PAHs, BEHP, Tributyltin, 8270-SIM, 8270-LT, Kron/Unger	WQ - PCB Congeners 168A	WQ - PCDD/Fs 1613B	WQ - TPH Diesel NWTPH-Dx	WQ - Metals, Mercury 6020B, 7470	WQ - Total Organic Carbon SMS10B	WQ - PAHs 8270-SIM	WQ - Pesticides 1669M	WQ - BEHP EPA 8270D-LT	WQ - Tributyltin Kron/Unger	
PDI-SG-B431	9/7/2018	12:08	SS		MT	7	H	H	H	H	H	H	H										
PDI-SG-B479	9/7/2018	9:58	SS		MT	7	H	H	H	H	H	H	H										
PDI-RB-VV-090718	9/7/2018	14:50	W		JH	14								X	X	X	X	X	X	X	X	X	
Container Type: WMG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, RC=Resin Column Preservative: HCl = Hydrochloric Acid, H3PO4 = Phosphoric Acid, HNO3 = Nitric Acid Fraction: D = Dissolved, PRT = Particulate, T = Total (unfiltered)																							
Special Instructions/QC Requirements & Comments: Analyze samples for grain size ASAP, Hold (H) remaining analyses pending further instruction. Separate reports for each lab.																							
Relinquished by: <i>[Signature]</i> Relinquished by: <i>[Signature]</i> Relinquished by: <i>[Signature]</i>		Company: <i>[Signature]</i> Company: <i>[Signature]</i> Company: <i>[Signature]</i>		Date/Time: 9/10/18 1204 Date/Time: 9/10/18 1240 Date/Time:		Received by: <i>[Signature]</i> Received by: <i>[Signature]</i> Received by:		Company: <i>[Signature]</i> Company: <i>[Signature]</i> Company:		Date/Time: 9/10/18 1204 Date/Time:		Date/Time:											

[illegible]

Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-80213-9

Login Number: 80213

List Source: TestAmerica Seattle

List Number: 1

Creator: Antonson, Angeline D

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	

Presley, Kim

From: Walker, M Elaine
Sent: Wednesday, September 26, 2018 1:36 PM
To: 'Dahl, Amy'
Cc: Cook, Chelsey; Presley, Kim
Subject: RE: authorization of D/U sample

Got it Amy, thanks.

M. ELAINE WALKER
Project Manager

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From: Dahl, Amy [<mailto:amy.dahl@aecom.com>]
Sent: Wednesday, September 26, 2018 12:57 PM
To: Walker, M Elaine
Cc: Cook, Chelsey
Subject: PH: authorization of D/U sample

External Email

Hi Elaine, all analysis has been authorized for the following sample currently logged in under sample group 580-80213-1:

580-80213-2 PDI-SG-B479

Keep the other sample on hold for now:

580-80213-1 PDI-SG-B431

Thank you,

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